

Inoculating Against Jealousy: Attempting to Preemptively Reduce the Jealousy Experience and
Improve Jealousy Expression

By

Chadwick Alexander Sutton

(Under the Direction of Jennifer Monahan)

ABSTRACT

Inoculation theory was applied to the context of jealousy to evaluate the success of inoculation as a preemptive strategy for combating jealousy in relationships. Participants ($N = 100$) were assigned to one of three conditions: control, jealousy experience inoculation, or jealousy expression inoculation. Over a three week period, respondents in the inoculation conditions received and responded to inoculation messages. At post-test, participants responded to a jealousy evoking scenario and the dependent measures of threat, jealousy emotions and jealousy expressions. Inoculation increased perceptions of threat for female participants. As hypothesized, inoculation successfully improved the likelihood of participants utilizing one of the two positive jealousy expressions, compensatory restoration, when faced with a jealousy-evoking scenario. Inoculation was not successful for reducing negative jealousy expression, and counter to the hypotheses, inoculation increased anger for female participants. This thesis expands the applicable scope of inoculation theory to jealousy and other interpersonal contexts.

INDEX WORDS: Jealousy experience, Jealousy expression, Inoculation, Compensatory restoration, Sex differences

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Chadwick Alexander Sutton

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By

Chadwick Alexander Sutton

Major Professor:

Jennifer Monahan

Committee:

Lijiang Shen
Kirsten Weber

Electronic Version Approved:

Maureen Grasso
Dean of the Graduate School
The University of Georgia
May 2011

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Chapter One: Theoretical Rationale

The concept of jealousy has existed since biblical times. Guerrero and Andersen (1998) provide excerpts from the Bible, Shakespeare, historians and social scientists to demonstrate the prevalence of romantic jealousy within society. Yet, scholars have had a hard time consistently defining jealousy. This thesis will examine romantic jealousy as a prototypical emotional episode. Russell and Barrett (1999) state, a prototypical emotional episode is a “complex set of interrelated subevents concerned with a specific object. The object is the person, condition, event, or thing that the emotional episode is about (p. 806).” In terms of jealousy, this emotional episode stems from individual perceptions of a threat, imagined or real, that pose varying levels of potential harm to an individual and his/her desired romantic relationship (White & Mullen, 1989). As a prototypical emotional episode, romantic jealousy consists of core affect; cognitive processes; the individual’s experience of having specific emotions; and the neurological, chemical, and physiological changes that occur with the previous components. While some individuals exhibit pathological jealousy-- being hyper-aware of potential threats, creating a near-constant state of jealousy-- most individuals only experience it within certain situations, triggered by specific cues. As such, the romantic jealousy episode is of interest in this thesis.

Given the critical importance of close romantic relationships to most individuals, jealousy-evoking situations can be highly problematic to a relationship. For example, jealousy-evoking situations have been shown to increase uncertainty about the relationship and decrease relationship satisfaction (Afifi & Reichert, 1996; Andersen, Eloy, Guerrero, & Spitzberg, 1995). Afifi and Reichert’s (1996) research has demonstrated that the challenge caused by a perception

of threat, such as jealousy, creates uncertainty. Uncertainty, in turn, affects the experience and potential expression of jealousy by an individual. More specifically, this uncertainty can affect individual beliefs and attitudes, e.g. beliefs and attitudes about the relationship (Berger & Bradac, 1982). According to Jamieson (1992; see also, Szabo & Pfau, 2002), inoculation theory, is a useful strategy to foster attitudinal resistance within contexts where one's attitudes are likely to be challenged. Since jealousy has been shown to be problematic in a number of ways (e.g. problem drinking and partner violence, decreased relationship satisfaction, a negative perception within American society) it could be a very applicable context for extending inoculation theory (Foran & O'Leary, 2008; Andersen et al., 1995; Guerrero & Andersen, 1998). Most of the research on how to manage romantic jealousy has been focused on how to change attitude and behavior once a person is experiencing jealousy, yet, a more preemptive approach may be possible with inoculation theory.

This thesis explores the use of inoculation theory to create resistance to strengthen attitudes related to the experience of romantic jealousy, as well as, the behavioral intention of expressing jealousy. First, I present a model of jealousy as a prototypical emotional episode. After the model has been presented, an overview of jealousy research is provided to illustrate how past research supports this model. Then a brief overview of inoculation theory is provided, which is used to demonstrate the applicability of the concept of inoculation to jealousy. Subsequently, hypotheses related to the effects of inoculation treatments on jealousy experience and jealousy expression are presented. Once the hypotheses have been laid out, this thesis discusses the research methods that were used to examine the hypotheses. Finally, the results of the study are explained, including limitations of this study and directions for future research.

Jealousy as a Prototypical Emotional Episode

As mentioned above, not only have jealousy researchers had a hard time agreeing on definitions for the various forms of jealousy (e.g. romantic compared to friendship jealousy), but there has also been disagreement as to how the phenomenon should be modeled. Since romantic jealousy is comprised of multiple components, a working model of romantic jealousy is very important to any research. Most recent models of jealousy are derived from a cognitive appraisal perspective (e.g. White & Mullen, 1989). For instance, Guerrero and Andersen's (1998) componential model of jealousy is heavily influenced by White and Mullen's cognitive research. However, even with this emphasis, the models are overly simplistic in their depiction of how romantic jealousy changes based on psychological and physiological processes. Instead, these processes are simply grouped into vague categories of cognition and emotion.

Russell and Barrett's (1999) article on the difference between prototypical emotional episodes and core affect, as well as other phenomenon labeled emotion, illustrates how emotion researchers need better distinctions on the classification and structure of what *emotion* really is. The analogy used by Russell and Barrett is that of biologists needing their own taxonomy to properly function. As defined above, a prototypical emotional episode is directed at an object. In romantic jealousy, this object of focus is a threat to the individual and the existing romantic relationship. The threat comes in the form of a real or imagined relationship rival. For jealousy researchers, the threat is seen as a generative mechanism, because it starts the jealousy episode (Guerrero and Andersen, 1998; Pfeiffer & Wong, 1989). However, such theories do not adequately explain what specifically is threatened in an episode to create jealousy. To do so, a model of jealousy should start by recognizing that individuals hold many beliefs and attitudes, which are subsequently challenged by a relationship threat. Some researchers recognize

antecedent factors that influence the perception/appraisal of threat as the first component of their models (e.g. Guerrero & Andersen, 1998), but a general category of “antecedents” differs from recognizing that there is a general status quo required for dating relationships to function.

Roloff and Cloven (1994) discuss the importance of relational rules in maintaining relationships and note these rules are often implied and more abstract rather than explicit and concrete. One key implicit rule for dating relationships is fidelity (Roloff & Cloven, 1994). I would also add that in order to assume fidelity, an individual must hold beliefs about their partner’s attraction to the relationship. Based on this, I believe that these beliefs and attitudes are part of a status quo within relationships. If the individual believes his/her partner is no longer attracted to the relationship, then fidelity may be compromised. Therefore, for romantic jealousy to occur, the beliefs or attitudes concerning fidelity must be challenged. Once a perceived threat has challenged this status quo, the emotional episode of romantic jealousy occurs. According to Russell and Barrett (1999), the prototypical emotional episode includes core affect; cognitive processes and cognitive structures; the individual’s experience of discrete emotions; the neurological and physiological changes that occur within the body as affect, emotion, and cognition shift; and a behavior that is related to the object causing the emotional episode. Based on their work, Figure 1.1 illustrates a theoretical model of jealousy as a prototypical emotional episode.

Figure 1.1

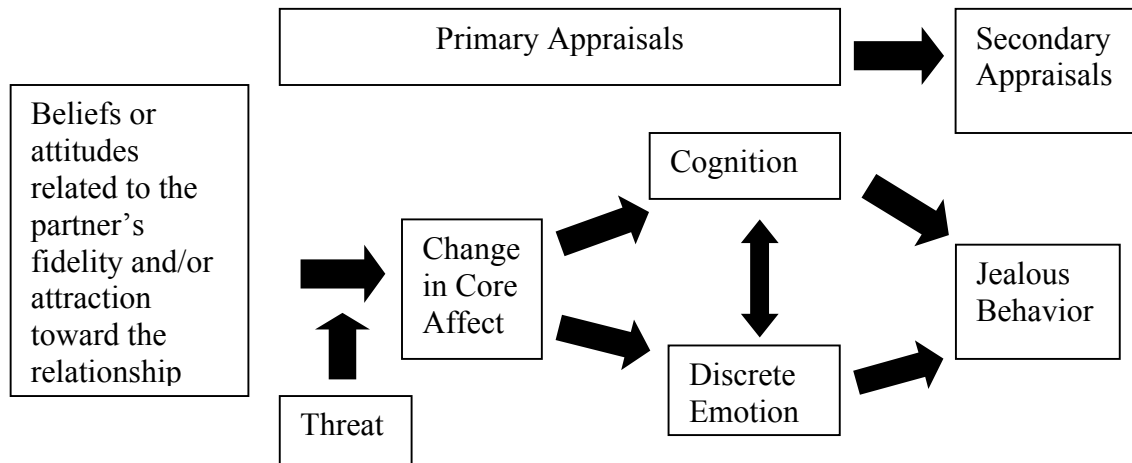
A Model of Romantic Jealousy as an Emotional Episode

Figure 1.1 divides the jealousy episode into three stages which demonstrates the model's lineage in cognitive appraisal theory. Specifically, the pre-jealousy stage where there are basic beliefs or attitudes about the partner's fidelity. The jealousy experience stage which consists of the sub-processes associated with primary appraisals. Finally, the jealousy expression stage consists of thoughts and action tendencies provoked by the secondary appraisals. Below, an explication of key model components is offered. However, given the model is derived from cognitive appraisal theory (CAT), CAT is first briefly reviewed.

Cognitive Appraisal Theory. The importance of cognitive appraisal in past research on jealousy has been most aptly demonstrated by White and Mullen's (1989) book, which summarized their own, as well as other researchers, approaches to jealousy. Jealousy researchers often rely on Richard Lazarus' (1991) version of cognitive appraisal theory (CAT). Lazarus' version of CAT argues that a reaction to an emotional event is a function of one's cognitive and affective responses to that event. Cognitive appraisal theories (CATs) begin with the assumption

that one's emotional state depends on how one appraises a specific situation (Ellsworth & Scherer, 2003). For jealousy, these appraisals are based on antecedent factors that are important to each individual. These antecedent factors shape the perceived threat that creates the jealousy experience, a combination of the cognitive, affective, and emotional aspects of jealousy, and influences how people express jealousy, which in turn lead to relational consequences.

Antecedent factors can include a variety of personal, relational, and social phenomena, such as biological sex, gender, cultural views on jealousy, self-esteem/insecurity, chronic/trait jealousy, etc.

The concept of an "appraisal" was first used by Arnold in 1960, who defined them as "direct, immediate, and intuitive evaluations to account for qualitative distinctions among emotions (Ellsworth & Scherer, 2003, p. 572)." Lazarus' (1991) CAT assumes specific appraisals about a message or event elicit each emotion (e.g., sadness from the appraisal of loss, anger from blaming someone else, etc.) and also evoke certain behavioral responses. A second assumption of CAT is that emotions aid in survival by motivating us to act (Ellsworth & Scherer, 2003). Lazarus (1991) argues that emotions are discrete and reflect a unique person-environment relationship; thus emotions are associated with different goals and action tendencies to support these goals.

CAT theorists also propose negative emotions are typically associated with an obstacle in goal achievement (Lazarus, 1991). Therefore, according to CAT, negative emotional arousal follows a complication of some sort that obstructs one's goal which results in the aroused individual to take action to correct the obstruction. When applied to jealousy, the emotional event is the perception of a threat to the fidelity belief of the relationship, triggering cognitive and affective responses, which in turn trigger jealousy experiences and jealousy behaviors. As

White and Mullen's (1989) work has shown, the cognitive appraisals within jealousy have direct effects on all the components of a jealousy episode. According to cognitive appraisal theory, the experience of threat to a relationship should evoke both primary and secondary appraisals.

Lazarus (1991) writes, "primary appraisals concern whether something of relevance to the person's well-being has occurred," while "secondary appraisals concern coping options" (p. 133). White and Mullen further differentiate this distinction by suggesting that the primary appraisals are related to the perception of a threat and the secondary appraisals relate more to the behavioral responses available to an individual.

Primary appraisals and the related processes. Lazarus' (1991) work offers little in terms of primary appraisals for jealousy, only offering one real appraisal for how threat may create the emotional episode of jealousy. In contrast, White and Mullen (1989) offer three varying appraisals that look at the relationship threat as coming from a rival relationship, not just a rival person. The appraisals are for the potential of a rival relationship, followed by verifying the existence of such a relationship, and lastly by the amount of threat/harm that is posed by the potential/actual rival relationship. By placing the importance on determining a rival relationship, White and Mullen (1989) have included the importance of witnessing or assuming interaction between the partner and the rival. No matter how great the rival may be as a person, the appraisals would not be triggered unless potential is seen for the rival and the partner to develop a relationship. Only with a rival relationship can the desire for the partner's affection or favor be threatened, which is Lazarus' (1991) only jealousy-specific primary appraisal.

Once an individual has appraised the potential for a rival relationship, additional cognitive processes, as well as discrete emotions related to jealousy are triggered. The intensity of the discrete emotions then comes from determining if the rival relationship is real and the

amount of harm that could occur. In the model presented in Figure 1.1, primary appraisals can be seen to include the components of threat, change in core affect, cognition, and discrete emotions. I have not drawn arrows connecting primary appraisals to the components, but that is because primary appraisals are an aggregate of these three components. As such, the following paragraphs are devoted to explaining these components in greater detail.

Threats. According to most jealousy researchers, *threat* is a generative mechanism, in that it triggers the jealousy experience and response (Guerrero & Andersen, 1998). Thus, without the threat there is no experience of jealousy. Based on White and Mullen's (1989) definition of romantic jealousy, threat can affect self-esteem or relationship quality. The aforementioned quality aspect is subjective and could appear as a weakening of the relationship or a loss of the relationship altogether. Antecedent factors may influence people to focus on different characteristics of the relationship to determine if that quality has declined (e.g. partner investment, sexual exclusivity, etc.). While the relationship of self-esteem and jealousy can be important, threats to the loss of quality of the relationship are more important for this thesis because part of this research will be aiming to show individuals that the loss of quality may just be their perception. Therefore, the present study will examine perceived loss to a quality of the relationship.

Perceived loss to a quality of the relationship is generated whenever real or potential romantic attraction is appraised by the individual. Guerrero and Andersen (1998), further argue that threats are embedded within social interaction, but that this perception of threat may still be appraised without any real basis. Therefore, without social interaction, perception of any threat would be limited. If one's partner does not interact with other people, then it would be hard to imagine how the partner might be attracted to anyone else. In this case, a real threat would be an

instance where an individual sees the partner interacting with someone and has seen evidence that there is attraction between the partner and target (e.g. watching your partner flirt with a stranger at a bar). On the other hand, an imaginary threat would be based upon the assumption that this is occurring without witnessing any evidence (e.g. having low self-esteem and assuming one's partner must be able to find others who are much better by comparison) or assuming that specific behaviors are a sign of attraction when they are not intended to be (e.g. misinterpreting nonverbal behavior that may be seen as flirtation).

Additional research has shown that threat type is important based on what aspect of the relationship it may infringe upon. Previous research has noted a difference between a sexual threat and an emotional threat. Of these types, a sexual threat has been shown to evoke the most intense forms of jealousy within both men and women (Hansen, 1985). Besides the emotional aspect of jealousy, threat type has also been demonstrated to influence how individuals communicate about their jealousy (Guerrero et al., 2005).

Core affect. According to Russell and Barrett (1999), *core affect* refers to “the most elementary consciously accessible affective feelings (p. 806).” Basic pleasure or displeasure, tension or relaxation, contentedness or uncertainty, are all examples of core affect. Core affect is so basic that it can be diffuse and not directed at any specific object, which is one difference from prototypical emotional episodes. However, core affect can be involved within prototypical emotional episodes. When it is involved in prototypical emotional episodes, core affect becomes directed at the object causing the emotional episode. The importance for this distinction is based on whether or not the affect is *directed*, not if the affect is caused. As Russell and Barrett note, core affect always has a cause, even if it is something as simple as the weather, but these causes are not always conscious, which makes it hard for a person to focus on them. Also, similar to

discrete emotions, Russell and Barrett note that core affect varies in intensity, which makes it more or less salient for an individual's consciousness.

When core affect is part of a prototypical emotional episode, it becomes directed and more salient, focusing on the object of the episode. As mentioned previously, the rival relationship, created by the jealousy threat, becomes that object. The rival relationship has to challenge or threaten beliefs and attitudes that allow the relationship to function. Based on this premise, the threat interrupts an individual's core affect, creating a change in the affect that an individual experiences. The present model's *change in core affect* overlaps somewhat with what White and Mullen's (1989) term the *jealousy flash*. White and Mullen's *jealousy flash* is conceptualized as the physiological arousal produced by jealousy which overlaps with Russell and Barrett's (1999) conceptualization of core affect. According to White and Mullen, this *jealousy flash* is the *primary* emotional response to jealousy, which is tied to the primary appraisals. Once individuals focus on this change in core affect, more appraising occurs, along with the formation of discrete emotions.

Cognition. Most jealousy researchers focus on appraisals as the cognitive portion of jealousy (e.g. White & Mullen, 1989; and Guerrero & Andersen, 1998), but this is only a narrow portion of the cognition that an individual will experience. Some researchers allude to other processes, thoughts, or worries (e.g. Pfeiffer & Wong, 1989) but not enough attention is paid to these processes. For instance, Russell and Barrett (1999) include appraisals, attention, and attributions as three cognitive components that are directed at the cause of a prototypical emotional episode. Some jealousy researchers have been exploring the role of attributions, related to jealousy and attention to jealousy (in the form of rumination), but none of this research looks at all three together (Bauerle, Amirkhan, & Hupka, 2002; Bevan, 2006). Attributions are

causal explanations that humans develop in order to understand their own behavior or the behavior of others. For jealousy, attributions can come in many forms. For instance, a jealous individual will use attributions when they try to determine whether the partner, the rival, or both are to blame for instigating flirtatious behavior. While all three of these; appraisals, attributions, and attention; are important when conceptualizing jealousy, this thesis focuses specifically on cognitive appraisals as its primary focus. The primary appraisals posited by White and Mullen overlap with the cognitive scale of jealousy created by Pfeiffer and Wong (1989); to assess actual thoughts that individuals have while feeling jealous.

Discrete emotions. As mentioned previously, many jealousy researchers pair cognition with emotions as the jealousy experience (Guerrero & Andersen, 1998). Within my model, the change in core affect not only affects cognitive processes, but also the formation of discrete emotions, consistent with this aforementioned pairing. According to White and Mullen (1989), the *jealousy flash*, or core affect, is the first “emotional response,” which ultimately leads to a composite of affect and emotion. Based on this pattern within the existing research, White and Mullen suggest six “affective composites” of jealousy related emotion: anger, fear, sadness, envy, sexual arousal, and guilt; all of which are composed of multiple related affects (e.g. sexual arousal was composed of lust, desire, and passion). Continuing with this research, Guerrero, Trost, and Yoshimura (2005) examined these six composite emotions and related affective components and argue the emotions best represented in jealousy experiences are passion, hostility, irritation, fear/envy, guilt, and sadness. While this breakdown varied from White and Mullen’s previously mentioned conceptualizations, it reaffirmed the importance of these basic jealousy emotions. Within my model, I believe that these “affective composites” are best labeled as discrete emotions, which are easily identified by individuals.

Uncertainty and Emotions. One aspect of a jealousy episode which is important yet difficult to logically place in a model is the concept of uncertainty. The role of uncertainty within the experience and expression of jealousy was first demonstrated by Afifi and Reichert (1996). Research by Afifi and Reichert showed that uncertainty had a direct relationship with cognitive jealousy, emotional jealousy, and an individuals' expression of jealousy. This research would suggest that uncertainty occurs throughout the whole jealousy episode. As soon as a rival relationship is perceived as possible, the status quo will be challenged, and uncertainty evoked. Therefore, uncertainty could be conceived of as a component of core affect. Yet research has demonstrated uncertainty's role in both emotion (e.g. anxiety) and affect, yet in jealousy it is not necessarily the only core affect or emotion that an individual experiences. Instead of simply labeling uncertainty as part of the *change in core affect* or as a *discrete emotion*, I would rather introduce the history of uncertainty research within communication and personal relationships to demonstrate its importance in every aspect of the jealousy episode.

Uncertainty reduction theory (Berger & Calabrese, 1975; Berger, 1993) assumes that individuals want to predict and explain the behavior of themselves and the behavior of others. Although some of the theory's original premises have been challenged (e.g., Kellerman, 1986), research has demonstrated consistently that uncertainty influences both cognitive assessments of others and behavior toward them. While uncertainty reduction theory was first applied to initial interactions between people, it has been expanded and demonstrated to affect information gathering and behavior regarding jealousy (Berger, 1988; Berger, 1993; Berger, 1995; Afifi & Reichert, 1996). URT argues that for relationships to develop and be maintained, relational partners need to manage their uncertainty about their partner, their relationship, and their own feelings about the relationship. Uncertainty in relationships fluctuates throughout the lifespan of

relationships (see e.g., Planalp & Honeycutt, 1985). This initial work on URT has been tailored to various relationship contexts, producing the concept of *relational uncertainty*.

Individuals in established relationships experience *relational uncertainty*, or the uncertainty one feels about the status or the future of the relationship (e.g., Afifi & Reichert, 1996). Dainton and Aylor (2001) found relational uncertainty was positively associated with jealousy such that the more uncertain a partner was about his or her relationship, the more jealousy he or she experiences. As Afifi and Reichert (1996) note, the research on how individuals attempt to reduce uncertainty can be very useful in understanding jealousy expression. Berger (1987) provides three categories of various strategies for reducing uncertainty; passive observation (any attempt to reduce uncertainty through unobtrusive observation), active attempts (any attempts to reduce uncertainty through active manipulation of the environment, but without direct interaction with the target), and interactive attempts (any attempts to reduce uncertainty based on direct interaction between the information seeker and the target). These broad categories share conceptual similarities with many of the categories of jealousy expression (Guerrero, Andersen, Jorgensen, Spitzberg, & Eloy, 1995) and conflict (Sillars, 1980; 1982).

Afifi and Reichert's (1996) research demonstrated a positive relationship between the experience of jealousy and levels of uncertainty. Furthermore, a second study demonstrated a relationship between level of uncertainty and the way in which people would be likely to express jealousy. This study found evidence that people would be more likely to reduce uncertainty through indirect means when in situations of high uncertainty (Afifi & Reichert, 1996). This pattern of indirectness does not line up with the more successful strategies for resolving conflict (Sillars, 1980; Sillars, 1982) or expressing jealousy (Guerrero, Andersen, Jorgensen, Spitzberg,

& Eloy, 1995). Afifi and Reichert (1996) note that increased uncertainty likely makes it harder to predict a partner's reaction to jealousy expression, thus reducing the likelihood of expressing it in a more direct manner.

Afifi and Reichert (1996) believed relational uncertainty to be more important to jealousy than general uncertainty, but their evidence did not support this belief. One possible explanation for this finding is that general uncertainty could be increased by the level of interpretation required with jealousy inducing behaviors. Jealous individuals are not only going to question what the behavior means for the relationship, but also question basic beliefs about the partner. More recent research by Bevan (2006) and Knobloch (2007; 2008) has demonstrated the importance of relational uncertainty for jealousy and relationships. Knobloch (2007; 2008) defines relational uncertainty as stemming from three sources: self uncertainty (uncertainty about one's own involvement in a relationship), partner uncertainty (uncertainty about the involvement of a partner), and relationship uncertainty (uncertainty about the nature of the relationship itself). This research does not mean to suggest that general uncertainty has no importance to jealousy, but that there is a difference between general uncertainty and relational uncertainty. For this research, the focus will be on relational uncertainty because jealousy is a relationship-centered phenomenon, which gives more immediacy to reducing relational uncertainty.

The relationship between uncertainty and jealousy experience is demonstrative of the link between uncertainty and cognition. Reducing uncertainty within relationships is a cognitive process, one which aptly fits within the jealousy experience given the information-gathering nature of some secondary appraisals. White and Mullen (1989) provide the secondary appraisals of motive assessment, social comparison, loss assessment, and alternative assessment as information-gathering appraisals. Since these appraisals ask why the partner is interested in the

rival, what the jealous individual may be lacking in comparison, and how the individual will fair if the relationship is lost, they are directly related to self, partner, and relationship uncertainty.

This provides a theoretical argument for placing relational uncertainty within the jealousy experience, as part of the cognitive processing that occurs within jealous individuals.

While Afifi and Reichert's research (1996) suggests that relational uncertainty occurs simultaneously with jealousy, it could also be extended to include the perception of future jealousy. This link could be used to argue that the perception of the relationship threat will also change as uncertainty increases or decreases due to cognitive processing. It is this potential relationship between threat leading to cognition and cognition leading back to perception of the threat that could potentially be altered with inoculation theory. Therefore, any successful treatment of jealousy experience should also reduce relational uncertainty.

Secondary appraisals, coping, and expression. Once an individual experiences a relational threat and the concomitant cognitive and affective responses to the relational threat appraisals are triggered, secondary appraisals become relevant. Secondary appraisals are important to the planning of coping strategies for an individual, with coping being defined as "cognitive and behavioral efforts to manage specific external or internal demands (Lazarus, 1991, p.112)." Since Lazarus defines emotions as being discrete and having specific person-environment relationships, he believes that coping strategies can affect this relationship in two ways. Coping strategies can either change the actual person-environment relationship or they can change how that relationship is attended to. Based on this, White and Mullen (1989) delineate six secondary appraisals. The first four that are important to mention are coping strategies related to information gathering and interpreting the situation (Guerrero & Andersen,

1998). These four appraisals are motive assessment, social comparison to the rival, loss assessment, and alternative assessment.

While motive assessment (determining why the partner is attracted to the rival) and social comparison to the rival (determining what qualities make the rival potentially better than the individual) may be triggered in most jealousy situations, loss assessment (determining what the individual loses if the relationship ends) and alternative assessment (what is available to the individual if he/she is left) should only be appraised if more intense jealousy is triggered from the primary appraisals. White and Mullen (1989) elaborate further to stress that while these four appraisals are information gathering appraisals, they can influence how individuals respond to jealousy. Sometimes this response is purely internal. As Lazarus (1991) notes, not all coping will result in communicative responses. For instance, cognitive coping strategies that involve internal restructuring will only involve thinking.

There are two additional secondary appraisals that shape whether or not communication occurs. These two appraisals, planning coping efforts and assessing the outcomes of such coping efforts, are the most important for communication scholars to note. After individuals have gathered information and interpreted it, they will plan ways in which to deal with their person-environment relationship. Many times, these plans will involve some form of communication, which can lead to improving the relationship or damaging the relationship. This leads us to the last component, jealousy expression, presented within my model of jealousy as a prototypical emotional experience.

Jealousy expression. Research by Guerrero, Andersen, Jorgensen, Spitzberg, & Eloy (1995) combined qualitative and quantitative research methods to create 11 communicative responses to jealousy. Based on factorial evidence, the types of jealousy responses were initially

broken down to reflect two differing categories, interactive and general responses. Interactive responses contained expression types that more directly engaged the partner, whereas general responses could involve the partner (indirectly), the environment, or the rival. Further research by Andersen et al. (1995) sought to determine what behaviors have positive and negative consequences for relationships. The results showed that some of the communicative response types led to decreased relationship satisfaction, while others lead to increased relationship satisfaction. More recent research by Guerrero et al.'s (2005) have shown how some communicative responses are linked with greater amounts of negative emotion, whereas others related to less perceived threat and less negative emotions. For this thesis, not all 11 response types are of interest. In order to apply inoculation theory later, I had to evaluate which response types would be most useful and potentially effective. To be useful, the response types had to be clearly defined, with clarity about why the response type had positive or negative relationship consequences. To be potentially effective with inoculation theory, I looked for response types that could easily be translated into conversational examples involving verbal communication. These examples would be easier to include within the message setup that inoculation theory traditionally uses, which will be explained in greater detail within the methodology section of this thesis. Based on these two criteria, I selected two positive and two negative response types. Table 1.1 shows each response type, whether it has positive or negative consequences, a definition for the response type, and an example.

Table 1.1

Jealousy Expressions By Response Type

| | Definition | Example |
|----------------------------|---|--|
| Positive Responses | | |
| Integrative Communication | The expression of thoughts and feelings without placing blame on the partner. | Calmly questioning your partner. |
| Compensatory Restoration | Attempts at restoring the relationship to a desired level. | Trying to prove one's love for the partner. |
| Negative Responses | | |
| Distributive Communication | Negatively valenced responses that target the partner. | Confronting the partner in an accusatory manner. |
| Manipulation Attempts | Attempts at controlling the partner's actions through manipulation. | Trying to make the partner feel guilty. |

To summarize, a jealous episode occurs when certain individual and environmental factors combine in a way that causes an individual to perceive a threat to his/her relationship. This perception is based on primary and secondary appraisals, which make up much of the cognitive component of jealousy. The complex combinations of core affect and discrete emotions are produced from this perception of threat, simultaneously with cognition, and can be further shaped by additional cognition. In attempting to deal with these emotions, individuals will develop coping strategies. These coping strategies will attempt to reduce the intensity of the discrete emotions, reduce uncertainty or other core affects, and attend to or change the

person-environment relationship that causes the threat. Some of these coping strategies can involve communicative behavior to the partner, rival, or environment. In turn, these communicative responses can then have direct positive or negative consequences on the individual and his/her relationship.

Often times, these negative consequences are detrimental to the relationship. Despite these negative consequences, I do not believe that jealousy is always problematic to relationships. As an emotion, jealousy has evolved with people to show them when they may be in danger of losing a relationship that they love. In terms of romantic jealousy, this relationship is a dating relationship or marriage. When it serves its purpose, romantic jealousy serves to remind people how important the relationship is to them. It can also serve to save an individual in the case where actual infidelity is occurring. For instance, if I witness a dating partner cheating on me, my jealousy can cause anger, which may cause me to end the relationship, saving me from being hurt further in the future.

Therefore, it is ultimately a person's communicative response to jealousy that determines if it is problematic or helpful. As Andersen et al. (1995) first demonstrated, jealousy expression can directly lead to individual increases or decreases in relationship satisfaction. Bevan's (2006) research has also started to show that an individual's expression of jealousy can affect their partner's relationship satisfaction. Furthermore, Foran and O'Leary (2008), as well as other research, have been demonstrating that when jealousy is not managed well, it can lead to abusive behavior. These detrimental consequences of harmful jealousy coping, paired with negative jealousy expression, are why people such as literary figures, have even compared jealousy to a disease, infecting not just the jealous individual, but also the relationship. In medical literature, one way to treat people for a disease is to build up their resistance against that disease. People in

our society can be seen doing this every year when they stop to get their flu shots. Much like a disease, I believe people could also build up a resistance to jealousy. In this sense, treating people in relationships could be taken as a pre-emptive measure, just like vaccinating infants and children. In persuasion literature, inoculation theory can be explained by this very same biological metaphor.

Inoculation Theory

The inoculation attempt is compared to exposing a person to low levels of a virus in order to build up resistance. This metaphor and the success of inoculation research is why Eagly and Chaiken called inoculation theory “the grandparent theory of resistance to attitude change (1993, p. 561).” The metaphorical overlap between jealousy and inoculation exists alongside a conceptual overlap that can be explored through the framework of inoculation theory.

According to Szabo and Pfau (2002), “Contemporary research alludes to inoculation’s efficacy in protecting attitudes in a variety of applied settings (p. 233).” Papageorgis and McGuire (1961) state that resistance is created within individuals due to the production of a threat to existing attitudes, which is caused by refutational pretreatments. Refutational pretreatments consist of a threat and refutational preemption (Szabo & Pfau, 2002). The inoculation threat is created by providing a forewarning that an individual could face arguments that challenge existing attitudes (Papageorgis & McGuire, 1961). The threat component of inoculation creates motivation within an individual to recognize the susceptibility of attitudes to be challenged, which makes it the most significant feature of inoculation theory (Pfau, 1997). Combining these principles, Pfau, Tusing, Koerner, Lee, Godbold, Penaloza, Yang & Hong (1997) state that threat is successfully created by warning of possible future attacks on attitudes and the individual realization that attitudes are susceptible to change.

Refutational preemption is conceptualized as providing constructed counterarguments in response to the attack arguments before they even occur. Receivers can then use these arguments to bolster attitudes and create resistance (Pfau, Tusing, Koerner, et al., 1997). Refutational preemption and inoculation threat work in conjunction with each other (Pfau, 1997). Once the receivers are motivated, by threat, they use scripts from the refutational preemption to protect existing attitudes (Szabo & Pfau, 2002). Pfau & Kenski (1990) note that if inoculation were left only to refutational preemption then individuals would need to prepare a script for every anticipated attack on an attitude, which would significantly limit the utility of inoculation. The efficacy of inoculation lies in its ability to provide a “broad blanket of protection against specific counterarguments raised in refutational preemption and against those counterarguments not raised (Pfau, 1997, p. 137-138).”

Szabo and Pfau (2002) provide examples of the application of inoculation to political campaigns, smoking prevention, adolescent drinking prevention, public relations/advocacy advertising, crisis communication, etc. Examination of the inoculation literature by Szabo and Pfau (2002) provides a few potential limits that must be addressed before applying inoculation to any context. The factors that may influence the application to jealousy are whether the topic is controversial, the differences between threat within jealousy and inoculation, the significance of topic involvement, and the refutational message style.

While the original inoculation work suggested that inoculation may only work on noncontroversial topics, there is now adequate research evidence that shows inoculation can work for both noncontroversial and controversial topics (Szabo & Pfau, 2002). Noncontroversial topics were originally thought of as “cultural truisms.” O’Keefe (2002) stated that cultural truisms are beliefs that are rarely attacked within a given culture. Adding onto this, he

designated two main criteria for the vulnerability of cultural truisms: the lack of practice defending this belief and the lack of motivation to defend the belief. A cultural truism could be something like, “It’s a good idea to take a shower every day,” or, “It’s a good idea to brush your teeth twice a day.” Non-truisms on the other hand are simply defined as more controversial beliefs, which may not be seen as invulnerable.

Attitudes about a partner’s fidelity, which are important to the threatening nature of jealousy, may be similar to cultural truisms. Roloff and Cloven (1994) note that sexual exclusivity, or fidelity, within relationships is assumed by most people, but most relational rules are also usually stated at a high level of abstraction. That means that individuals treat fidelity and attitudes about jealousy more like cultural truisms because they do not practice defending these attitudes, nor do they have the motivation to defend them until after a jealous episode or infidelity. This is further supported by the distinction between normal jealousy and pathological jealousy. The distinction lies not just in the intensity of the jealousy experienced, but also in the delusions of infidelity and suspicion that surround the individual (White & Mullen, 1989). While pathological individuals may constantly feel threatened or see vulnerability, most individuals do not. Treating attitudes about the partner’s fidelity as a cultural truism should allow inoculation attempts to create attitude resistance.

Within the model of jealousy as an emotional episode, depicted in Figure 1.1, it can be seen that a threat interrupts the balance of an individual’s beliefs and attitudes, which creates a change in core affect. For inoculation to defend these beliefs and attitudes, a person must first understand that they are vulnerable to attack. So the threat from inoculation theory must also be introduced at this step of the model. Despite this similarity, the threat evoked within inoculation also has a fundamental difference from that of a jealousy threat. With jealousy, the threat is

direct and specific. More specifically, it is the direct threat of a rival relationship, giving something specific for the individual to focus on. This is consistent with Russell and Barrett's (1999) notion of an object causing the emotional episode. Within inoculation, the threat is a forewarning of a general vulnerability to the target attitudes or beliefs. Therefore, in a jealousy context, this threat takes the form of a forewarning that individuals may experience situations that make them question their partner's fidelity. However, this forewarning does not specify specific actions, settings, or rivals. This is also consistent with Russell and Barrett's (1999) depiction of core affect as potentially being undirected. Since this threat is undirected, it cannot start a jealous episode, it can only create cognitive and affective arousal, which could become directed at a specific threat.

For inoculation to function, individuals must also realize potential negative consequences for when their defense is broken. Therefore, it is not enough to demonstrate vulnerability and direct this vulnerability at a specific threat within a jealousy context. When combining these two threats (the specific jealousy threat and the general inoculation threat), a researcher must show participants that negative outcomes may happen if one ignores the refutational counterargument. This last threat is similar to the type of threat used in fear appeals, but is also less important for the current study. So from this point on, when I discuss various threats throughout the study, they will be differentiated as the jealousy threat or the inoculation threat. Even though all three of these are threatening to individuals, they are fundamentally different, as well. Therefore, the operationalization of the threats must also be different.

Within inoculation research, this threat, in the operationalized as a forewarning, usually comes from an external source, but jealousy can stem from external or internal sources. An external source of a jealousy threat would be finding out information that invokes jealousy from

a third party (e.g. finding out from someone else that a partner has behaved inappropriately). In comparison, an internal source of jealousy threat, would involve an individual appraising the threat from firsthand information (e.g. personally witnessing behavior or making assumptions). Previous inoculation research has examined the effects of these external sources; however, within a jealousy framework, internal sources of threat abound and would seem to be the most salient. So while the design of the threat is similar to existing inoculation research, the perspective has to be shifted. The hypothetical scenarios, discussed in the method section of this thesis, are paired with the inoculation messages in a way to suggest future threat to the relationship via firsthand encounter with jealousy-inducing behaviors. Therefore, the hypothetical scenarios create an internalized threat through jealousy induction, but the messages will discuss future implications.

The concept of issue involvement is also important to inoculation researchers and is speculated as dictating the boundaries of inoculation's effectiveness. Pfau et al. (1997) argue that in low involvement conditions, people do not care if attitudes are vulnerable to attack. Additionally, high levels of involvement can mean that individuals are already aware that a threat could exist, which causes them to attempt to bolster attitudes before inoculation attempts can even occur. This would prevent inoculation having any affect on the attitude even if sufficient threat has been created. For Pfau et al. (1997), moderate levels of issue involvement are ideal. However, this aspect of involvement becomes more complicated in a jealousy context. Jealousy occurs within relationships with vested interest, as such, low involvement levels will most likely not be an issue. If an individual is involved enough to become jealous and perceive a threat, then it is likely that they are already past the low level of involvement. From a relational standpoint, low levels of involvement could be seen in the earliest stages of dating when

individuals may not perceive the relationship as monogamous. On the other hand inoculation theory would suggest that a high level of involvement is problematic, but this would only be the case if fidelity were not a basic assumption. Since fidelity becomes a basic assumption of romantic relationships and partners rarely discuss fidelity or jealousy until after a problem occurs, they are less likely to attempt self-inoculation, even with high involvement. Fortunately for this research, the meta-analysis on inoculation results by Banas and Rains (2010) did not find a curvilinear relationship for involvement in terms of applying inoculation. Instead, the meta-analysis found that resistance went up as involvement increased. For this thesis, that would suggest that inoculation should work as long as individuals report moderate or high involvement in their dating relationship.

Last, the ability of inoculation-same and inoculation-different messages to produce resistance is significant because it provides a potentially more flexible design for providing refutational messages about jealousy. Inoculation-same messages are messages designed to preempt specific counterarguments that may occur within an attack. On the other hand, inoculation-different messages deal with the same threat, but address altogether different counterarguments that are not present in the attack. Since inoculation's effectiveness comes more from the motivational aspect of threat than the refutational messages, it is understandable that both message types are equally effective (Szabo & Pfau, 2002).

To summarize, inoculation theory is a very useful strategy for creating individual resistance to problematic information. This resistance is created by warning the individual of possible future attacks on the desired attitude or belief. In a jealousy situation, this also involves combining the inoculation threat with a specific jealousy threat. If an individual has enough involvement with the issue at hand, he/she will then be motivated to defend against these

possible attacks. Inoculation helps with this defense by pairing the inoculation threat with a refutational message that is designed to create counterarguing against any attack on the desired attitude, belief, or intention. Now that inoculation theory has been introduced, a further explanation is provided to explain how the current study's hypotheses were derived.

Application of Inoculation Theory to Jealousy

The theoretical frameworks for inoculation theory and jealousy research overlap in significant ways, which suggests inoculation is a potentially practical treatment. The threat and cognitive aspects of inoculation theory are already involved in the conceptualization of jealousy. In instances of jealousy experience, the threat is great enough that it causes uncertainty about what to believe or feel within a relationship. Afifi and Reichert (1996) and Guerrero and Andersen (1998) both posit that reducing uncertainty may be a primary goal once jealousy is triggered. Since failed attempts to reduce uncertainty can trigger more jealousy, which can trigger more uncertainty, it is important to address this uncertainty.

Inoculation theory “provides an operational model of attitude defense (Szabo & Pfau, 2002, p. 235).” In existing inoculation research, defense is created because the attack on attitudes is undesirable. In terms of relationships, jealousy is not inherently negative, as noted previously, but our society tends to view it that way (Guerrero & Andersen, 1998). On top of that, when jealousy becomes extreme, it can lead to domestic abuse and problem drinking (Foran & O’Leary, 2008). Also, since there are more negative expression types than positive expression types and these expression types damage the relationship (Andersen et al., 1995; Bevan, 2006), it is understandable why moderate to high levels of jealousy are undesirable for most people. By increasing resistance, inoculation should limit the amount of jealousy and

uncertainty that an individual would experience when facing future jealousy situations or should limit their likelihood of using negative communicative responses to cope with the jealousy.

Some research has already been conducted to explore the potential use of social comparison as a bolstering mechanism against jealousy (Salovey & Rodin, 1988). This social comparison is perceived as positive thinking about oneself in comparison to others. However, the findings by Salovey and Rodin suggest that a self-bolstering approach after experiencing jealousy does little to reduce jealousy. Guerrero and Andersen (1998) provide an explanation for this lack of effect when they mention that to perceive jealousy individuals must realize that their relationship partner has already compared them to the relationship rival. It is very likely that this realization of negative comparison makes it hard to produce bolstering messages after experiencing jealousy. The theoretical framework for social comparison as self-bolstering makes sense, but it fails in its efficacy against jealousy. Inoculation theory bolsters attitudes more effectively because refutational messages have been preemptively created. Furthermore, self-bolstering as described by Salovey and Rodin requires an individual to create positive affirmations compared to a specific individual, which the individual may know nothing about. The uncertainty caused by jealousy may make it hard to create these rival-specific messages while currently experiencing jealousy.

The “broad blanket” of defense that Pfau (1997) discusses may be more suitable for jealousy because of its ability to reduce overall uncertainty, as well as uncertainty related to specific topics regarding jealousy. Based on this flexible nature, inoculation can be applied to both the experience and expression of jealousy. Inoculation itself is a highly cognitive process, which requires a point of focus to defend, such as an attitude, belief, or intention. Jealousy itself is not a simple point of focus. Therefore, I have chosen to focus on the initial attitude about a

partner's fidelity, that is assumed within relationships and depicted within my model, for jealousy experience, and I have chosen to focus on attitudes related to the positive or negative nature of specific jealousy expression types for jealousy expression. Once the process of inoculation has been started, the counterarguing within inoculation should create supportive cognition for these attitudes, which in turn would create a preemptive defense for the attitudes. In terms of jealousy, this defense will then protect against negative aspects of the jealousy experience, such as negative thoughts or increased anger that are harmful to the jealous individual, or against the intention of using negative expressions of jealousy, which end up harming the relationship. Both of these components are worth targeting because of their interrelated nature.

For my model of jealousy as an emotional episode, the application of inoculation should then first start with the cognitive component. The counterarguments should focus the individual on the process of reappraising the jealous episode. Lazarus (1991) defines reappraisal simply as further evaluation. According to Lazarus, "feedback about the environment from one's own actions and reactions, constitutes new information to be evaluated (p. 134)." Based on this, the only difference between appraisal and reappraisal is the self-generated nature that makes it come after appraisal.

When faced with hypothetical jealousy scenarios, the participant are presented with a situation to appraise, starting the primary and secondary appraisal processes. Since I have paired these hypothetical scenarios with the inoculation messages, as discussed in the next chapter, the counterarguing process should start theoretically start the reappraisal process. The counterarguments provided in the refutational messages should then serve two functions, in terms of reappraisal. This reappraisal process can then be focused on the experience of jealousy

or the expression of jealousy. First, the participant's thoughts and appraisals should be redirected back to the initial attitude of focus. Once they are focused on this attitude, the counterarguments within each inoculation message should increase attitudinal resistance, making the attitude stronger. By reaffirming the attitude, inoculation should make it more salient to an individual's future appraisals of jealousy. For example, if an individual starts to believe that compensatory restoration is a good way to deal with jealousy, then in future situations, when secondary appraisals are evoked, the attitude about compensatory restoration as a successful expression type should make it salient to the planning of how to respond to jealousy. To explain more, I first start by explaining my proposed hypotheses related to the jealousy experience before covering my hypotheses related to jealousy expression, and finally introducing my hypothesis about inoculations ability to reduce uncertainty at the end of a jealous episode.

Attitudes for fidelity and sexual exclusivity are two attitudes that have received attention by past jealousy researchers (see Guerrero & Andersen for summary). By targeting attitudes for fidelity and sexual exclusivity, inoculation should create attitudinal resistance, which would require greater threats to trigger jealousy. As noted previously, the primary appraisals for jealousy focus on perception of threat. Therefore, with greater threats required to trigger jealousy, individuals should experience reduced cognitive jealousy, related to the primary appraisals, when faced with a threat. Given this, the following hypothesis is posited:

H1: Individuals who are inoculated with the jealousy experience messages will report significantly less cognitive jealousy in response to a jealousy-evoking scenario than will individuals who are not inoculated.

Traditional inoculation campaigns measure a threat level to their messages as a manipulation check to make sure the inoculation can actually occur. Following this procedure

this thesis also tests jealousy threat levels for the hypothetical scenarios. The threat used by inoculation campaigns is measured in a way that is similar with existing jealousy research (e.g. Guerrero et al., 2005), both of which are measured using affective elements. As noted above, with increased attitude resistance to attitudes about fidelity, individuals should be able to experience jealousy scenarios without perceiving as much threat. Additionally, while these threat measures differ from the operationalization of cognitive jealousy, there should be significant correlation between the two. The cognitive jealousy measures focus on establishing possible relationships from the partner or rival's perspectives. This is the basis for the primary appraisals, determining whether it is a potential relationship, real relationship, and how much damage will be done. Therefore, the cognitive jealousy measures should indicate a level a threat. Given the strength in the theoretical framework of inoculation theory, and the overlap in the concepts of threat and cognitive jealousy, the following hypothesis is also posited:

H2: Individuals who are inoculated with either the jealousy experience or the jealousy expression messages will perceive less threat in the jealousy-evoking scenario as compared to individuals are not inoculated.

Furthermore, since jealousy has a strong emotional component, which is directly related to individual beliefs and attitudes, inoculation theory should prove to decrease negative emotions related. With an increase in the expectation for positive attitudes for fidelity, it should be expected that negative emotions would decrease. Past research (Guerrero & Andersen, 1998; Guerrero et al, 2005; White & Mullen, 1989), found that anger is one of the most significant emotions related to the jealousy experience; this is most likely due to sexual threats being perceived as the strongest type of threat. Since inoculation theory should increase attitudes that would decrease worry about a sexual threat, reported anger should also decrease. Reported anger

is different than actual anger itself. For instance, when White and Mullen (1989) talk about the *jealousy flash* they mention that it may be hard to control this initial amount of affect or emotion, but that once individuals reach the point of coping with it, the emotion can be reduced.

Therefore, while individuals may still experience anger, the inoculation may influence the cognitive processes involved with coping with anger, resulting in less reported anger once the individual starts reappraising the situation.

Most inoculation research also notes that inoculation can occur directly from a topic, but also indirectly. For the previous hypotheses this means that inoculation about jealousy expression could also help inoculate for the jealousy experience. However, the reduction of reported anger would already be a more indirect effect, occurring only if reappraisal has a significant effect. Therefore, more direct inoculation may have to occur, which may make individuals in the jealousy experience inoculation group more susceptible to inoculation than those in the jealousy expression inoculation group. For the effects of inoculation on anger, I propose the following hypothesis:

H3: Individuals who are inoculated with the jealousy experience messages will report significantly less anger in response to a jealousy-evoking scenario than will individuals in the control or the jealousy expression groups.

Since jealousy contains a behavior or expressive component as well, it is necessary to see if inoculation could have any effects on the expressions that are used by individuals. In arguing for word-of-mouth campaigns (WOMC) as a potential inoculation strategy, Compton and Pfau (2009) argue that the threat created by inoculation is likely to affect behavior in individuals, causing word of WOMC to be effective at distributing inoculation. While this study is not testing WOMCs, the link between inoculation and behavior is one that I wish to explore.

Guerrero et al. (2005) found that jealousy threat also affected expression type directly, such that threat was negatively related to integrative communication and positively related to surveillance behavior. Compton and Pfau (2009) further argue that individuals will turn to their social network and peers after inoculation has occurred, in order to receive further reassurance about their targeted attitudes. In jealousy, this could likely mean turning to the relationship partner in an effort to reaffirm their attitudes.

While jealousy expression can be a function of habit, it can also be strategic as well (Guerrero & Andersen, 1998). For inoculation research, this means attitudes about expression could also be targeted. Herek (1986) talks about the instrumentality of attitudes and lays out two functions, one being an evaluative function, which can also be thought of as an appraisal function. This function is linked to differentiating between rewards and punishments related to that attitude. Herek further explains that attitudes can be evaluative based on experience or based on expected future utility. This would suggest that if individuals are seeking a way to express their jealousy, that expression could be targeted for evaluation of future utility. Furthermore, since jealousy experience and expression can be based on previous experiences outside of the relationship, but also based on factors that they are experiencing as the relationship goes on, the attitudes about jealousy expression are likely to be more malleable than more stable attitudes.

Due to this likelihood, both positive and negative expressions should be targeted for inoculation, in an effort to see if the behavioral component can be changed as well. Guerrero et al. (2005) found that jealous threat had a negative relationship to integrative communication, which would suggest that individuals do not perceive the utility of integrative communication when they are threatened. Since inoculation provides a context where the threat can be used to

motivate resistance, inoculation could counter this negative relationship. Additionally, compensatory restoration has been identified as an expression type that can be used to produce positive outcomes in relationships when jealousy is experienced (Andersen et al, 1995). This utility could be pointed out to inoculated individuals, which would provide positive evaluation of the expression type. Based on these expression types and their positive utility, the following hypothesis is posited.

H4a: Individuals who are inoculated with the jealousy expression messages will report that they are likely to use more integrative communication with their partner in response to a jealousy-evoking scenario than will individuals who are not inoculated.

H4b: Individuals who are inoculated with the jealousy expression messages will report that they are likely to use more compensatory restoration with their partner in response to a jealousy-evoking scenario than will individuals who are not inoculated.

Since attitudes can be evaluated based on both rewards (as discussed above) and punishments, it also makes conceptual sense to examine corresponding negative expression types. Distributive communication is often seen as the negative counter to integrative communication. This makes it a likely target for inoculation as well. By demonstrating the positive outcomes of using integrative communication, as well as the negative outcomes of distributive communication, it is likely that individuals should decrease their attitude towards distributive communication. Additionally, where compensatory restoration focuses on restoring positive emotions (often passion) to a relationship, manipulation attempts often use negative emotions to control a partner's reactions. This suggests that the negative effects of manipulation attempts could be shown in comparison to compensatory restoration in order to decrease attitudes about manipulation. Given this, the following hypothesis is posited.

H5a: Individuals who are inoculated with the jealousy expression messages will report that they are likely to use less distributive communication with their partner in response to a jealousy-evoking scenario than will individuals who are not inoculated.

H5b: Individuals who are inoculated with the jealousy expression messages will report that they are likely to use less manipulation attempts with their partner in response to a jealousy-evoking scenario than will individuals who are not inoculated.

Since jealousy experience and expression also depend on uncertainty, the role of inoculation on uncertainty should be examined. Guerrero and Andersen (1998) state that the effects of increased uncertainty on jealousy expression are unclear, which may be a potential setback when trying to determine positive ways to deal with jealousy once it has already been evoked within a relationship. This makes uncertainty an important aspect of jealousy, one that needs to be reduced. Given that uncertainty is part of cognitive jealousy, inoculation for jealousy experience, targeting attitudes for fidelity, should reduce uncertainty with a reduction in perceived threat. Furthermore, since uncertainty about jealous situations affects individuals' level of uncertainty about how to behave, inoculation about jealousy expression should also reduce overall uncertainty. This can easily be tested using the concept of relational uncertainty, but more specifically, relationship uncertainty. Research has shown that relationship uncertainty can be highly correlated to self and partner uncertainty (Knobloch & Solomon, 1999), giving the need to only measure relationship uncertainty, rather than all three. Based on the ability of inoculation to bolster attitudes, which should have an effect on uncertainty, the following is hypothesis is posited:

H6: Individuals who are inoculated with either the jealousy experience or the jealousy expression messages will feel less relationship uncertainty in response to a jealousy-evoking scenario as compared to individuals are not inoculated.

Chapter Two: Method

Overview

The application of inoculation theory to a jealousy context was implemented by creating a three week experiment. The experiment had three different conditions: a control condition, a jealousy experience inoculation condition, and a jealousy expression inoculation condition. By splitting the inoculation into two groups, I was able to focus on multiple attitudes that could be influential to jealousy research by examining both cognition and emotion (jealousy experience) and the communication of jealous individuals (jealousy expression).

In accordance with past inoculation research, I created two messages to be read per group spaced out at one message each week for the first two weeks. This procedure was adopted from past inoculation research that has used previously created messages as the mechanism for inoculation. The first component of each inoculation message included a threat component that was followed by arguments to neutralize the threat. For the two inoculation groups, the threat was produced by introducing a hypothetical jealousy-inducing scenario, which was followed by a forewarning that such a scenario could be possible in the future. After the threat section of the message, the participants answered measures related to how threatening the possibility of such a scenario seemed. Next, they were presented arguments to neutralize the threat, based on the group that they were in. These arguments centered on attitudes related to jealousy experience or jealousy expression. Each of the messages (2 per group) contained differing content.

The control group also had two messages, which I created to mirror the amount of reading done by the inoculation group. These messages did not contain any jealousy scenario or

content related to jealousy. This step was taken to insure that the control group did not self-inoculate. Measurement of the dependent measures occurred at the end of the three weeks with participants in all conditions reading a jealousy scenario and completing the dependent measures.

Participants and Design

One hundred individuals from undergraduate courses in Interpersonal Communication at a large southeastern university served as participants. Participants were required to be 18 years of age or older and currently in a romantic relationship (romantic relationship was broadly defined to include individuals who are in the talking stage of a relationship, casually dating, and exclusively involved; exclusive involvement includes dating, engagement, marriage, and serious partnerships). While this flexible definition could lead to some participants with low involvement levels, I did not want to exclude participants before the data could be collected. Since I planned for participants to identify how committed they were to the relationships, I was able to assess their involvement levels and overall, the participants described very committed relationships ($M = 6.30$, $S.D. = 1.12$, on a 1-7 Likert scale).

The study was presented as an alternative to the traditional second paper assignment for students in basic interpersonal classes. Students had the option of completing this study or completing Paper Two. Those who wanted to participate who were not in a romantic relationship were given a similar project to work on that was related to friendship jealousy. Students who volunteered to do the project option were screened for which option, the romantic or friendship option; they were qualified for. Only 100 participants were available for the romantic option. Those participants were assigned to participate in one of three groups, a control group, a jealousy experience inoculation group, and a jealousy expression inoculation group.

Knowing that power might be an issue, I had initially oversampled to double the inoculation groups and halve the control (leaving 40, 40, and 20 respectively).

Upon being selected into a group, participants were assigned an identification number to keep track of their participation and allow the researchers to give them credit for their participation. Credit for the experiment was based on their completion of the various data collections and turning everything in on time. Each data collection (4 in total) contributed to a participant's grade. The initial pre-test data collection amounted to 15% of the overall grade, whereas the remaining three data collections were worth 20% of the participants grade (a subtotal of 60%). Combined, these four data collections created a total of 75% of the grade that was assigned. The remaining 25% of the grade was obtained by writing a short two page summary essay to demonstrate the academic merit of participation in this alternative assignment. While this may vary some from normal participation requirements, participants were informed that they could stop at any time and complete the original paper assignment to receive full credit, if they decided not to finish the research. These procedures were approved by the University's Institutional Review Board.

After data collection was completed, I was faced with a dilemma. I had hoped to collect 200 participants, but given the requirements of the study, there were a low number of initial participants. While there were 100 who initially signed up, by the end of the data collection, only 79 participants had completed all of the questionnaires. These 79 participants were split across the three conditions as follows: there were 33 participants in the jealousy experience inoculation group, 29 in the jealousy expression inoculation group, and 17 in the control group. Due to this power issue, I needed more control group participants. However, I was unable to collect data in the same fashion again and thus decided to collect more control group participants

through our normal research pool; since the originally approved IRB allowed for that procedure. Through this, 21 additional control group participants were obtained. These participants were only asked to complete the final questionnaire. They did not fill out the pre-test questionnaire or receive either of the control group messages. The decision to not administer the pre-test questionnaire was made after preliminary analyses showed that the covariates collected on the pre-test questionnaire did not have any significance, as tested with the first control group. While this was not the most ideal procedure, previous inoculation studies have gone without introducing a control message altogether (e.g. Ivanov et al., 2009). Therefore, this second procedure is not inconsistent with some past inoculation research.

Procedures

After discussing the assignment with the available class instructors, the assignment was introduced to the students via the researcher or their instructor. Those who were interested signed up on separate sheets to keep track of which participants were taking the relationship version and which were taking the friendship version. I then contacted them via email to allow them to sign up for the initial data collection periods. There were nine initial data collection periods available to the students. The number of participants who showed up at each data collection ranged from $N = 8$ to $N = 37$. A few additional participants had to schedule individual appointments with the researcher in order to complete the initial data collection before the deadline at the end of the first week.

At the initial data collection period, participants completed a pre-test questionnaire and received materials to take home. The initial pre-test questionnaire collected basic relationship information, demographics, chronic jealousy, relationship jealousy, and relationship uncertainty measures. Some other antecedent factors of jealousy were also collected, but they will be used in

a future study¹. This was Phase 1 of the experiment. The participants were instructed that they would receive all future instructions and material for the duration of the study (3 weeks) via e-mail at weekly intervals. Additionally, each participant received three envelopes for turning in future assignments. The envelope contained the week numbers (1-3) and the ID number of the participant. This way, the participants could keep track of what material to turn in once they received further instructions.

The next phase, Phase 2, started the same week as the initial data collection. Participants were sent the first inoculation message via email and instructed to print off the inoculation/control message. During this phase, those in the inoculation conditions were asked to read the first inoculation message which contained one of the jealousy scenarios built into it. The inoculation participants also answered the relationship manipulation check items, threat items, and a counter-arguing manipulation check for the message that they received. During Phase 2, the control group received a control message and answered the relationship manipulation check items. Since the control group was not threatened, they did not receive the threat items, but they were still engaged in a critical writing task about their message, which was designed to simulate the counter-arguing that the inoculation groups completed. Once all of this was completed, participants were instructed to turn the materials into their instructor by the end of the week.

Phase 3 of the experiment was conducted the following week and contained the same setup as phase 2. The participants received their new messages via email and were notified when the deadline for the phase was. The only difference between Phase 2 and Phase 3 was the message given to each group. Once again, the participants were instructed to read the message

and complete all of the manipulation checks. At the end of the week, the participants turned the material in to their instructors, who then forwarded the material to the author.

Phase 4 was conducted the following week after Phase 3. Participants received their last assignment via email, which contained the post-test questionnaire. Once again, participants were instructed to print out the material, follow the written instructions, and then turn it in to their instructor by the final experiment deadline. In this phase, participants in all conditions answered a relationship check question and were then exposed to the final jealousy-inducing scenario. After reading the scenario, participants answered items about the level of threat, cognitive jealousy, emotional jealousy, jealousy expression, and their relationship uncertainty. Once all of the phases were completed, participants turned their completed packets in to the researcher. Table 2.1 provides a summary of the design phases for the inoculation groups.

Table 2.1

Explanations for the group procedures by phase and week

| Phase # | Week # | Measures |
|---------|--------|---|
| Phase 1 | Week 1 | Participants answered demographic questions, basic dating questions, chronic & relationship jealousy measures, & relationship uncertainty |
| Phase 2 | Week 1 | Inoculation messages were read, threat items were answered, and counter-arguing tasks were completed |
| Phase 3 | Week 2 | Inoculation messages were read, threat items were answered, and counter-arguing tasks were completed |
| Phase 4 | Week 3 | All participants read the same hypothetical scenario and answered measures for threat, cognitive jealousy, emotional jealousy, jealousy expressions, and relationship uncertainty |

Materials

Jealousy Scenarios. The jealousy scenarios were created as an integral part of the inoculation messages. To test if inoculation worked, jealousy had to be induced in the final questionnaire. Additionally, jealousy had to be evoked during the threat component of the inoculation messages in order to make the idea of the future threat more realistic.

The scenarios were constructed from Pfeiffer and Wong's 1989 emotional jealousy items, selecting the five potential scenarios most applicable to the given research. All scenarios were pretested within a speech communication class (n=20) and were tested with items for likelihood of experiencing jealousy (1 item), the cognitive jealousy items (8 items), frequency of the

possible scenario (1 item) and level of threat (1 item). After evaluating the scenarios, the scenario with the lowest scores for all measures (with the exception of the frequency possible for that scenario) was dropped to include the final three scenarios. The threat scores ranged from 3.4 to 5.89 on a 1-7 scale, suggesting moderate to moderately high threat throughout the three scenarios. Each scenario contains the same structure and similar wording (76 words, 77 words, and 65 words, respectively). See Appendix A for the three jealousy scenarios.

All three jealousy scenarios were set in a bar/restaurant scenario where the participant was accompanying his/her partner to a work-related function. This setup allowed for the participant to imagine more of a potential relationship than if mere strangers were involved, increasing the likelihood of evoking a threat. Each scenario also contained the partner directly interacting with another individual (specified as a member of the opposite sex for heterosexual relationships and a member of the same sex for homosexual relationships), but the depth of the interaction varied depending on the scenario. The first scenario was seen as the least threatening and included nonverbal behaviors related to having an interesting conversation (e.g. smiling and nodding). The second scenario was seen as slightly more threatening and contained behaviors deemed as flirtatious (e.g. winking, light touching of the other person's arm, etc.). The third scenario was deemed the most threatening in pre-tests and was used for the post-test questionnaire. This scenario involved the partner giving a hug and a kiss (not specified as on the cheek or on the lips), which allowed for a greater perception of threat.

While some researchers may not use hypothetical scenarios to test relational phenomena (e.g. relational uncertainty), it has been used consistently within jealousy research (e.g. Bevan, 2004). Bevan notes that the primary reason for using hypothetical scenarios in a jealousy context is out of ethical concern. Since jealousy can be highly upsetting, ethical concerns related to

jealousy induction exist. Additional reasons cited by Bevan include the ability of hypothetical scenarios to reduce problems of memory recall, as well as research that has shown hypothetical scenarios to predict actual behavior use (Applegate, 1980).

Inoculation Messages. After reading the jealousy scenarios and receiving the forewarning that such scenarios could occur in the future, participants had to receive refutational messages against the threat. The following inoculation messages were designed for this purpose and combined with the first two jealousy scenarios to create over-arching messages that the participants were presented with during Phases 2 and 3. The inoculation messages were constructed by the researcher after examining various topics relevant to each inoculation group and the course material that participants were exposed to as part of the interpersonal communication classes.

For the jealousy experience inoculation messages, topics relevant to both fidelity and the interpersonal communication course were selected (e.g. attractiveness). For the jealousy expression inoculation messages, the researcher selected two positive expression types (i.e. integrative communication and compensatory restoration) and two negative expression types (i.e. distributive communication and manipulation attempts) that have been significant in past research. The messages have been constructed in a similar manner and contain a similar number of words. The experience messages contain 783 words and 816 words respectively, and the expression messages contain 802 words and 814 words respectively. These may seem lower than the control messages, but during the inoculation periods, the scenarios were merged into the message, creating similar length. See Appendix B for the inoculation messages (prior to being combined with the scenarios). The messages were presented to the participants in the order that they are presented in Appendix B.

Control Messages. The control messages were constructed by selecting further topics related to the interpersonal communication course. The two topics selected for the control messages were relationship formation and friendships. The messages contain similar structure and a similar number of words (901 words and 852 words respectively) as the inoculation messages in order to limit any message bias. See Appendix C for control messages. The control messages were also presented in the order that they are presented in Appendix C.

Covariate Measures

Chronic Jealousy and Relationship Jealousy. In traditional inoculation research, participants are screened based on their initial attitude levels to determine which groups they can be placed into, because it can affect inoculation results. This is normally done because participants who have a negative attitude cannot be placed into a positive attitude inoculation group and vice versa. While this thesis is looking primarily at situational jealousy, individuals' previous experience with jealousy in their current relationship and previous relationships could hinder the effects of inoculation. Individuals will have varying levels of experience dealing with jealousy and this could affect the amount of inoculation potential that each participant has. Thus, such measures will be used as potential covariates.

White and Mullen's (1989) Chronic Jealousy and Relationship Jealousy scales were utilized. The measures ask individuals to give their own perception of jealousy in previous relationships, the perception that other people may have of the participants' previous jealousy, and how problematic this jealousy may have been. The Chronic Jealousy scale examines the history of an individual's relationship jealousy, in all of their previous relationships. White and Mullen (1989) report an approximation for the reliability at $\alpha = .80$. The preliminary analyses yielded similar results, establishing a good internal reliability of $\alpha = .87$. This scale has six

items, usually measured on a 1-5 Likert scale, but that was changed to a 1-7 Likert scale for this experiment.

The Relationship Jealousy scale examines the amount of jealousy that has been experienced within their current relationship. This scale is also measured by six items, usually measured on a 1-5 Likert scale, but changed to a 1-7 Likert scale for this experiment. The measures assess the participant's perception of jealousy within their current relationship, with one measure assessing how other people may characterize it. These perceptions involve such things as frequency, intensity, and how problematic the jealousy may be. Reliability for this scales is approximately $\alpha = .80$ (White & Mullen, 1989, p. 295, report the reliabilities as being, "in the .80s"). The preliminary analyses also showed good internal reliability for the Relationship Jealousy scale, $\alpha = .89$.

White and Mullen (1989) also note that these scales are highly correlated (ranging between .50-.70), but that they have been associated with different predictors. This correlation is likely due to some of the trait-like aspects of jealousy. It may also be an artifact of certain populations. Younger participants (e.g. college students) are also likely to have had fewer relationships to differentiate between, making it harder to compare a current relationship to past relationships. Our preliminary analyses showed a significant correlation, Pearson's $r = .65$. See appendix D for these items.

Basic Dating Questions. In the pre-test questionnaire, participants were asked some basic dating questions designed to target their commitment (1 item), relationship length (1 item), and a check question asking for the first name of the dating partner. The participant was asked for the first name of their partner in order for the researcher to track the relationship during the three weeks. Participants could have changed dating partners, which would have compromised

them for the study. The following questionnaires also asked the participant to note if the relationship had terminated and if so, who the new partner was. Participants whose relationships ended in the middle of collection were allowed to continue participating for course credit, but were removed from the data for final analyses. Only one participant was removed due to relationship termination (one of the 21 who were removed before the second control group was collected).

Demographic Questions. The last items on each questionnaire were related to basic demographic questions. Participants were asked their age, biological sex (male or female), ethnicity, and their relationship status.

Dependent Measures

Threat Measures. The level of threat created by the messages and scenarios were measured using six items on a 1-7 Likert scale. The items included “extremely threatening/not threatening,” “very harmful/not harmful,” “extremely dangerous/not dangerous,” “highly risky/not risky,” “calm/very anxious,” and “very scary/not scary.” The stem for these items on the final questionnaire was, “After reading this scenario and imagining it as it is happening to you, how does the scenario seem?” In the final questionnaire, these items were only presented in conjunction with the hypothetical scenario, targeting the jealous threat rather than the inoculation threat. These items were highly reliable ($\alpha = .94$) as reported by Ivanov et al. (2009). Similar items (only five items, one of which was “intimidating/not intimidating”) have been used in another inoculation study (Pfau et al, 2009), in which the threat items also received a reliability of $\alpha = .94$. In the present study, the final threat measures had a high reliability ($\alpha = .95$).

Cognitive Jealousy. Cognitive jealousy was measured using a slightly modified version of Pfeiffer and Wong’s (1989) cognitive jealousy scale. The items were adjusted to fit the

scenario based nature of this study as well as to include homosexual couples (saying “someone else” instead of “a member of the opposite sex”). The initial items also mention relationship rivals, leaving it open to multiple possibilities, which did not fit with the scenario. So the items were adjusted to indicate only one potential rival rather than the possibility of multiple or unidentified rivals. Additionally, the items were adjusted to fit grammatically with the questionnaire. This scale comprises 8 items (measured on a 1-7 Likert scale) and achieved an initial internal consistency reliability score of $\alpha = .92$ (Pfeiffer & Wong, 1989). It has also been used in additional jealousy research (Afifi & Reichert, 1996), where it was paired with emotional jealousy items for an overall jealousy experience measure ($\alpha = .85$), which was positively related to relational state uncertainty ($r(155) = .34, p < .001$). See Appendix E for the cognitive jealousy items that were used. The internal consistency reliability of the cognitive jealousy scale for the thesis data collection was high ($\alpha = .96$).

Emotions Related to Jealousy. White and Mullen (1989) categorize six affective elements of jealousy, with each affective element containing multiple emotions (e.g. fear was suggested to be composed of anxiety, tenseness, worry, and distress). Guerrero et al. (2005) took twenty-four emotion terms from this categorization and factor analyzed them to verify the six affective elements. A principal component analysis with oblique rotation was conducted on the 24 items, which produced a six-factor solution comprised of 22 out of the original 24 terms (the hopelessness and embarrassment failed to meet the criteria). A Kaiser-Meyer-Olkin adequacy index was produced with a value of .86 for this six-factor solution, which accounted for 66.06% of the variance. The six factors and their components were passion (sexual arousal, sexual desire, passion, and lust), fear/envy (worry, fear, envy, and anxiety), hostility (hate, contempt, disgust, rage, and vengefulness), sadness (sadness and depression), irritation (annoyance, anger,

tenseness, and stress), and guilt (regret, guilt, and shame. All six of the factors had Cronbach's alpha scores for internal consistency reliability ranging from a low of .69 (guilt) to a high of .90 (passion). While the names of the six factors varied somewhat from White and Mullen (1989), they still upheld the characteristics suggested by White and Mullen (Guerrero et al., 2005). This study used these 24 items, measured on a 1-7 Likert scale, with a 1 being "Not at all Likely" and a 7 being "Very Likely." In Guerrero et al.'s (2005) research, the emotions correlated strongly with various expression types (e.g. fear and envy correlated with negative affect expression, $\beta = .33$, $t = 4.12$, $p < .001$; as well as surveillance behavior, $\beta = .21$, $t = 2.92$, $p < .001$; and compensatory restoration, $\beta = .47$, $t = 5.94$, $p < .001$). Other emotions that predicted expressions (at $p < .001$) included hostility (intense anger), irritation (a mild form of anger), passion, and guilt (see Guerrero et al., 2005 for a review). See Appendix F for the emotional jealousy items.

All of the emotion items were measured as part of a larger study, but this thesis was only concerned with the emotion of anger. Initially, an exploratory principle components analysis with a Varimax rotation was used to examine the 24 items in the jealous emotions scale and results were not nearly as clean as those reported by earlier researchers. However, for the purposes of this thesis, out of the four factors that were found that had Eigen values of greater than 1, the primary factor was related to anger. In the anger factor, 9 items (rage, tense, annoyed, contempt, angry, hate, stressed, disgusted, and vengeful) applied to the anger categories found by White and Mullen (1989) or Guerrero et al. (2005). These 9 items were examined in a reliability analysis and four items were removed due to low item-total correlations. The five remaining items (rage, tense, angry, hate, and vengeful) achieved a high reliability ($\alpha = .95$).

Jealousy Expression. This study used four of the jealousy expression categories created by Guerrero et al. (1995): integrative communication, compensatory restoration, distributive

communication, and manipulation attempts. Guerrero and colleagues provided four forms for initial validity for their communicative response types. The first form of validity, preliminary factorial validity was established between the strong correlation between the initial qualitative categories in the first study conducted by Guerrero et al. and the principal component analysis of their second study. Next, Guerrero et al. demonstrated convergent validity by showing that the CRJ items correlate with other measures of jealousy. This was done using both jealousy experience and jealousy expression measures. As expected, the CRJ items correlated more strongly with the jealousy expression measures than the jealousy experience measures, which was the third form of validity. The last form of validity was the promising results of the confirmatory factor analysis provided by their third study. For more information on the convergent validity, see Guerrero et al. (1995). Furthermore, expression type has been linked to positive and negative outcomes, giving it predictive validity as well (Andersen et al., 1995).

The modified Communicative Responses to Jealousy scale used by this study included 19 items for the four communicative responses measure by this thesis. These items are measured on a 1-7 Likert scale. On this scale, a 1 represents “strongly disagree” and a 7 represents “strongly agree.” See Appendix G for the jealousy expression items. Of the four expression types important to this study, all four expressions had adequate to moderate reliability (distributive communication, $\alpha = .88$; manipulation attempts, $\alpha = .83$; integrative communication, $\alpha = .84$; and compensatory restoration, $\alpha = .73$).

Uncertainty Measures. This study employed the use of a modified version of the relationship uncertainty scale created by Knobloch and Solomon (1999). While the initial researchers also created a self uncertainty scale and a partner uncertainty scale, in addition to the relationship uncertainty scale, this thesis did not look at either self or partner uncertainty.

Knobloch and Solomon (1999) demonstrated that the relationship uncertainty items covary strongly with both self and partner uncertainty. Thus the research suggests that the relationship uncertainty items should denote whether there would be a strong sense of both self and partner uncertainty. The relationship uncertainty scale has internal consistency α -values ranging from .73-.96 for the individual subscales (see Knobloch & Solomon, 1999 for review). Items for the relationship uncertainty (6 items) scale were measured on a 1-4 Likert scale, with a 1 representing “never or not at all” uncertain about their relationship and a 4 representing that they are uncertain “all of the time.” See Appendix H for the scale. The preliminary analyses showed that the relationship uncertainty items retained a high reliability, $\alpha = .91$. Relationship uncertainty scales were used both as a potential covariate, and during the final data collection.

¹ Several of these antecedent factors, e.g. love styles, are for a future study and were not analyzed as covariates at this time.

Chapter Three: Results

Second control group comparison

As noted above, additional control group participants ($N = 21$) were assessed from the Communication Studies Research Pool. These participants were only asked to complete the final questionnaire. T-test analyses were conducted to determine if the data from the two control groups significantly differed for the dependent measures (cognitive jealousy, threat, anger, integrative communication, compensatory restoration, distributive communication, manipulation attempts, and relationship uncertainty). As shown in Table 3.1 only distributive communication and relationship uncertainty were significantly different. Therefore, distributive communication and relationship uncertainty were both removed as dependent variables. For the rest of the analyses, control groups 1 and 2 are collapsed into “control group”.

Table 3.1

Dependent Variable Mean Comparison among Control Group Samples

| Dependent Variable | Condition | N | Mean | Std. Deviation |
|-------------------------|------------|----|---------------------|----------------|
| DistributiveComm | Control | 17 | 3.4941 ^a | 1.90410 |
| | 2ndControl | 21 | 2.2286 ^a | 1.69503 |
| IntegrativeComm | Control | 17 | 4.7059 | 1.65698 |
| | 2ndControl | 21 | 4.5714 | 1.31040 |
| CompensatoryRestoration | Control | 17 | 2.6588 | .97408 |
| | 2ndControl | 21 | 2.8381 | .96254 |
| ManipulationAttempts | Control | 17 | 3.0441 | 1.55934 |
| | 2ndControl | 21 | 2.5238 | 1.56306 |
| CognitiveJealousy | Control | 17 | 4.3750 | 1.80548 |
| | 2ndControl | 21 | 3.6488 | 1.73143 |
| ThreatFinal | Control | 17 | 4.4510 | 1.64756 |
| | 2ndControl | 21 | 3.9683 | 1.73415 |
| RelUncerPosttest | Control | 17 | 2.9804 ^b | .82471 |
| | 2ndControl | 21 | 2.3651 ^b | .83603 |

Note. Between subjects t-test, shared subscripts indicate a significance level $p < .05$ comparing the two control groups within each measure.

Covariate Analyses

As a function of testing each hypothesis several potential covariates were examined: relationship length, relationship seriousness, chronic jealousy, relationship jealousy, and

biological sex. Covariates were tested one at a time. Only biological sex significantly affected the tests of the hypotheses and thus it is included in analyses below when significant.

Test of Hypotheses

Cognitive jealousy. Hypothesis 1 states individuals inoculated with the jealousy experience messages will report significantly less cognitive jealousy in response to a jealousy-evoking scenario than will individuals who are not inoculated. This hypothesis was tested two-fold; by a one-way ANOVA test comparing the two inoculation groups and the control group, and then a t-test that compared overall inoculation effects (grouping both inoculation groups together, called the “inoculate group”) against the control group. This last test was used because of the ability for inoculation to indirectly inoculate about associated topics, as noted in the literature section. Both the one-way ANOVA and the t-test showed no significant differences for cognitive jealousy, $F(2, 97) = .486, ns$ and $t(98) = .99, ns$. Thus, H1 was not supported.

Threat. Hypothesis 2 states that individuals who are inoculated with either the jealousy experience or the jealousy expression messages will perceive less threat in the jealousy-evoking scenario as compared to individuals are not inoculated. A t-test comparing the inoculate group ($M = 4.96, SD = 1.51$) against the control group ($M = 4.18, SD = 1.69$) was significant, $t(97) = 2.37, p < .05$. However, H2 was not supported because threat was larger for the inoculation than the control group.

Additionally, a 2 (biological sex) x 2 (inoculation condition) analysis of variance test was done to examine how biological sex may affect these findings. The initial test used both biological sex and the condition type (inoculate vs. control) as fixed factors with the final threat level as the dependent factor. The results showed no main effect for biological sex, $F(1, 94) = .03, ns$, as well as no interaction between biological sex and group type, $F(1, 94) = 1.30, ns$.

However, the plot showed what seemed to be an atypical interaction between biological sex and condition. To test this, a t-test for the effects of inoculation on threat level was used after isolating only female participants. A second, similar t-test was done, but this time male participants were isolated. The results of both t-tests are shown in table 3.2.

Table 3.2

Comparison of Inoculation Effects by Condition Type and Biological Sex for Threat

| | Condition | N | Mean | Std. Deviation |
|---------|-----------|----|-------------------|----------------|
| Females | Control | 22 | 3.99 ^a | 1.62 |
| | Inoculate | 42 | 5.04 ^a | 1.46 |
| Males | Control | 16 | 4.45 | 1.79 |
| | Inoculate | 18 | 4.71 | 1.66 |

Note. Shared subscripts indicate a significant difference, $p < .05$

Table 3.2 illustrates that females in the control condition had lower perceptions of threat than did participants other conditions whereas females in the inoculation condition had higher levels of perceived threat than all other conditions. While the female inoculation group was significantly higher than the female control group, it was not significantly different than either of the two male groups. In sum, it appears that females in the inoculation condition were significantly more likely to experience threat as a function of exposure to the inoculation messages than were females in the control condition who did not receive the inoculation messages.

Anger. Hypothesis Three states that those inoculated with the jealousy experience messages will report significantly less anger in response to a jealousy-evoking scenario as compared to individuals in the control or the jealousy expression group. Similarly to the

previous hypotheses, this hypothesis was tested using a one-way ANOVA and then a t-test comparing overall inoculation effects to the control group. The one-way ANOVA did not yield significant results, $F(2, 96) = 2.02, ns$. However, the t-test comparing the inoculate ($M = 4.56, SD = 2.03$) against the control group ($M = 3.77, SD = 1.82$) was significant, $t(97) = 2.00, p < .05$. This result was counter to H3, as the inoculation condition reported *more* anger than the control condition, and thus H3 was not supported.

In a 2 (inoculation condition) x 2 (biological sex) analysis of variance, there was no main effect for biological sex, $F(1, 94) = 2.26, ns$, as well as no interaction between biological sex and group type, $F(1, 94) = 2.00, ns$. However, the plot produced by SPSS showed another atypical interaction. A t-test of female participants in the inoculate group against the female participants in the control group showed a significant difference, $t(62) = 2.59, p < .05$ while the differences for the males were not significantly different, $t(32) = 1.36, ns$. Table 3.3 shows a comparison of the means and standard deviations.

Table 3.3

Comparison of Inoculation Effects by Condition Type and Biological Sex for Anger

| | Condition | N | Mean | Std. Deviation |
|---------|-----------|----|---------------------|----------------|
| Females | Control | 22 | 3.27 ^{ab†} | 1.86 |
| | Inoculate | 42 | 4.52 ^a | 1.82 |
| Males | Control | 16 | 4.46 [†] | 2.11 |
| | Inoculate | 18 | 4.55 ^b | 1.88 |

Note. Shared subscripts indicate a significant difference, $p < .05$. [†] Indicates a significance level of $p = .07$

It is clear in Table 3, that females in the control condition show less anger than those in the inoculation condition or males in the control or inoculation condition. Thus, inoculation appears to increase anger for females such that it is comparable to that reported by the males.

Positive Jealousy Expression: Integrative communication. Hypothesis 4a states that individuals who are inoculated with the jealousy expression messages will report that they are likely to use more integrative communication with their partner in response to a jealousy-evoking scenario than will individuals who are not inoculated. This hypothesis was also tested using first a one-way ANOVA and then a t-test. The one-way ANOVA showed no significant results, $F(2, 94) = .19, ns$. Additionally, the t-test between the inoculate group ($M = 4.79, SD = 1.32$) and the control group ($M = 4.63, SD = 1.46$) showed no significant results, $t(95) = .55, ns$.

Biological sex was suspected to be a possible covariate and as such, an analysis of variance test was used placing both group type and biological sex as fixed factors. When tested for a main effect for biological sex, a non-significant result was obtained, $F(1, 92) = 2.38, ns$. However, an interaction between biological sex and group type was discovered, $F(1, 92) = 4.38, p < .05$. Subsequent t-tests comparing the control and inoculate groups by biological sex are shown in Table 3.4.

Table 3.4

Comparison of Inoculation Effects by Condition Type and Biological Sex for Integrative Communication

| | Condition | N | Mean | Std. Deviation |
|-----------|-----------|----|-------------------|----------------|
| Control | Male | 16 | 4.72 | 1.46 |
| | Female | 22 | 4.56 | 1.48 |
| Inoculate | Male | 17 | 4.06 ^a | 1.29 |
| | Female | 41 | 5.12 ^a | 1.22 |

Note. Shared subscripts indicate a significant difference, $p < .05$

As shown in Table 3.4, the females in the inoculate group were significantly more likely to use integrative communication than were males in the inoculate group. All other comparisons were not significant. Thus, H4a was not supported.

Positive Jealousy Expression: Compensatory Restoration. Hypothesis 4b stated that individuals who are inoculated with the jealousy expression messages will report that they are likely to use more compensatory restoration with their partner in response to a jealousy-evoking scenario than will individuals who are not inoculated. The one-way ANOVA for condition was significant, $F(2, 97) = 2.96, p < .05$. A post hoc LSD test was used to analyze this difference further, which showed that the expression group ($M = 3.41, SD = 1.11$) was significantly different from the control group ($M = 2.76, SD = .96$), $p < .05$, but that neither group was significantly different from the experience group ($M = 3.16, SD = 1.28$). H4b is supported as the expression group was hypothesized to have a higher likelihood of using compensatory restoration strategies than the control group.

Negative Jealousy Expression: Distributive Communication. Hypothesis 5a was not tested due to the significant difference between control group means for the distributive communication variable. Therefore I am unable to determine if H5a would have been supported.

Negative Jealousy Expression: Manipulation Attempts. Hypothesis 5b stated that individuals who are inoculated with the jealousy expression messages will report that they are likely to use less manipulation attempts with their partner in response to a jealousy-evoking scenario than will individuals who are not inoculated. This was tested using the same procedures described above. Neither the one-way ANOVA, $F(2, 97) = 1.80, ns$, nor the t-test comparing the inoculate group ($M = 3.15, SD = 1.54$) against the control group ($M = 2.76, SD = 1.56$), $t(98) = 1.21, ns$, produced significant results. Thus, H5b was unsupported.

Relationship Uncertainty. Hypothesis six was also unable to be tested². This was due to the difference between control group means for the variable of relationship uncertainty.

² I examined relationship uncertainty as a covariate in analyses with the original sample (prior to collecting data with the second control group) and it had no significant or even marginal effects.

Chapter Four: Discussion

The results of this thesis provide evidence for the use of inoculation as a practical application for treating jealousy within romantic relationships, albeit more narrowly than hypothesized. More specifically, the results demonstrate that inoculation can be specifically applied to the positive jealousy expression of compensatory restoration. I will argue below that the findings show support for inoculation research in the context of behavioral intention, an extension of inoculation research that has been explored in past research (e.g. Compton & Pfau, 2004), but should be further explored by communication scholars. In this chapter, I first discuss the findings for jealousy expression. Then I discuss the counter-theoretical and unsupported findings for jealousy experience. Throughout these sections I will also discuss some potential explanations for these findings. To end this chapter, I will discuss avenues for future research, including ways to improve the current study, as well as recommendations for future jealousy research and future inoculation research.

Jealousy Expression

Positive Expressions. The most significant contribution of this thesis to communication and persuasion research came from the finding that inoculation worked to improve the likelihood of participant use of compensatory restoration as a way to communicate their jealousy. Compensatory restoration is a positive jealousy expression type because it focuses on repairing the relationship, such as trying to increase affection for the partner. Previous research has shown that compensatory restoration is effective in maintain relationships (Buss, 1988) and is linked with less negative emotions within jealousy situations (e.g. less anger, Guerrero et al.,

2005). Therefore, the increase in likelihood of compensatory restoration by inoculation is an important finding for improving romantic relationships.

Unfortunately there was no significant increase in the use of integrative communication as a way for participants to express their jealousy. However, of the two positive jealousy expression types (integrative and compensatory restoration), it is my belief that compensatory restoration is *less likely* to occur naturally as a response to jealousy. The strategies involved with integrative communication overlap significantly with what may be deemed as polite or appropriate responses (e.g. talking about bothersome issues in a calm manner). As Brown and Levinson (1987) note, politeness can be based on whether or not behaviors are seen as face threatening towards the other person. It is very likely that individuals realize most negative jealousy expressions are face-threatening. Additionally, given the negative perception that jealousy receives in our society, individuals are likely to realize that expressing jealousy in a negative way can ruin their public self-image. Therefore, individuals are likely to believe that there is a societal expectation to deal with jealousy in a calmer manner, which would make them more likely to use integrative communication. Given these assumptions, compensatory restoration then would not be the primary way that individuals communicate about jealousy in a positive manner, unless their awareness about compensatory restoration has been increased.

To explore this explanation further, some post hoc analyses of the expression types using a within subjects t-test showed a significant difference between the use of integrative communication ($M = 4.73$, $SD = 1.37$) and compensatory restoration ($M = 3.08$, $SD = 1.14$), $t(96) = 10.28$, $p < .001$, for all participants regardless of inoculation condition. Another post hoc within subjects t-test showed that there was also a significant difference between integrative communication and manipulation attempts ($M = 3.01$, $SD = 1.58$), $t(96) = 8.31$, $p < .001$. Based

on these analyses, it is easy to see that integrative communication is the primary jealousy expression type regardless of condition type. Since compensatory restoration is such an important positive expression type for maintaining relationships and it is not the primary positive expression type, the inoculation effect provided by this study becomes much more important. By improving a lesser used communicative strategy, one which has significant positive effects on relationships; inoculation has served to increase the overall likelihood of positive expression use.

This thesis also hypothesized that inoculation would have the same effect on integrative communication, meaning that those who were inoculated for expression, would report an increased likelihood of using integrative communication. As the results showed, no main inoculation effect was found for integrative communication. Guerrero and Anderson (1998) mention the use of integrative communication in many problematic relationship situations, such as conflict, negotiating relational rules, and jealousy (e.g. Sillars, 1980; Rusbult and Buunk, 1993; and Andersen et al., 1995). While this does not confirm that integrative communication is the most widely used positive expression type, it does show that individuals are likely to have previous experience with using integrative communication in problematic contexts. Previous inoculation research suggests that individuals can self-inoculate due to previous exposure or high self-motivation (Szabo & Pfau, 2002). Given this assumption, the inoculation produced by our study would not be effective, because self-inoculation is likely to have already occurred. As noted above, the participants reported a much higher likelihood of using integrative communication ($M = 4.73$, $SD = 1.37$) than the other expression types. With no significant increase in the reported likelihood of integrative communication due to inoculation, this moderately high mean would suggest that individuals, control and inoculation alike, have existing knowledge about the importance of integrative communication.

Interestingly enough, this thesis did find a sex difference in terms of inoculation for integrative communication. This interaction effect showed that within the inoculation condition, women were more likely to use integrative communication than men. Previous research has shown that the use of integrative communication depends on the level of threat, such that a lower threat leads to more integrative communication (Guerrero et al., 2005). When controlling for threat level in post hoc tests, this sex difference remained. Guerrero and Andersen (1998) also mention that expression use is generally related to behavioral tendencies. The sex difference within the inoculation condition may be a result of a combination of inoculation and threat level.

The results of this study showed that women had an increase in threat level for those who were inoculated, compared to those in the control condition. If the default level of threat for women is lower in jealousy situations, as the control condition suggests, then that would suggest women may have more of a behavioral tendency for using integrative communication. As Guerrero and Andersen also note, individuals often respond to jealousy based on behavioral tendencies, which can limit the impact of situational factors. This tendency might produce a situation where women would have an increased level of threat, but still use integrative communication as a positive expression type. This speculation receives some very modest support in that inoculated females ($M = 5.12$, $SD = 1.22$) were *slightly more likely* (e.g., a half of a scale point) to use the integrative communication strategies than the control group females ($M = 4.56$, $SD = 1.48$, note the significance value was only .11 though). Remember that inoculated females also had a significant increase in perceived threat level. Therefore, the results show that while inoculated females had an increase in the jealousy threat, they were modestly more likely to report an increase in the likelihood of using integrative communication. This would suggest that female participants who were inoculated had an increase in perceived threat, which should

have lowered the use of integrative communication, but the participants expressed it with their default communication strategy.

In terms of positive jealousy expressions, the results of this study showed preliminary success for the use of inoculation theory to increase positive jealousy expression. The success of inoculation theory was confirmed by the significant increase for compensatory restoration within inoculated participants, in comparison to the control group participants. Inoculation was unable to increase integrative communication as a whole, but results did show that inoculated females were more likely to use integrative communication than inoculated males. It is very likely that inoculation did not significantly increase integrative communication because of previous knowledge and self-motivation to adhere to politeness rules. Overall though, I believe that these results provide a good framework for inoculation and jealousy researchers to build upon for improving positive jealousy expression.

Negative Expressions. In addition to the hypotheses about positive jealousy expressions, I expected to find a decrease in negative jealousy expressions for inoculated individuals. The two negative jealousy expression types that were examined within the present study were distributive communication and manipulation attempts. Unfortunately I was unable to test distributive communication due to the control group problems mentioned in the results section, but I was still able to test how likely participants were to use manipulation attempts as a jealousy strategy. Manipulation attempts are problematic for relationships because they involve the jealous individual attempting to control the partner's emotions (e.g. making him/her feel guilty) in order to control the partner's actions (Guerrero & Andersen, 1998). This simply creates more negative emotion for the relationship, rather than dealing with the root problem of jealousy. This study attempted to influence participants' attitudes about the negative nature of

using manipulation attempts. In theory, this should lower their behavioral intention towards manipulation attempts. However, these results showed no significant decrease in the likelihood of manipulation attempts.

While it is comforting that there was also no significant increase, I had hoped to demonstrate inoculation's ability to decrease negative behaviors, as well as increase positive ones. This rationale came from the belief that improving attitudes about the negative nature of the behavior would ultimately decrease likelihood. One limitation of this study was that the attitudes about the positive or negative nature of the expression types were not collected. Since traditional inoculation research measures the attitude directly, instead of the behavioral intention, it is not possible to say whether inoculation could be possible for negative behaviors at this time. While this limitation does hinder some of my ability to examine these results, traditional inoculation research also provides a potential explanation for these results.

According to traditional inoculation theory, threat level is one of the most important characteristics for determining the effectiveness of inoculation (Szabo & Pfau, 2002). Ideally, a low to moderate level threat would be required. The final scenario that was used within this study pretested with a high threat level. Descriptive analyses show that participants viewed it as a moderately-high threat ($M = 4.66$, $SD = 1.62$). Previous jealousy research has also shown the ability of perceived threat to predict negative jealousy expression (e.g. surveillance/restriction, Guerrero et al., 2005). Based on this, I tested for a correlation between threat level and manipulation attempts, and I also ran a post hoc regression analysis³ to see if threat could predict the use of manipulation attempts. These post hoc results showed that threat was highly predictive of the use of manipulation attempts within the regression model, $b = .47$, $t(95) = 4.93$, $p < .001$. This strong relationship ($R^2 = .21$) between threat and the use of manipulation attempts

is likely to have significantly limited the success of inoculation. For instance, it could be possible that the messages were working as intended (as the results for compensatory restoration would suggest), but that the final threat level was too high to maintain the resistance.

To summarize, inoculation did not decrease manipulation attempts as hypothesized. Fortunately, it did not increase negative jealousy expression. This is important to note because of the impact that perceived threat had on predicting manipulation attempts. The high threat level was heavily correlated with the use of manipulation attempts and it was also predictive of the use of manipulation attempts within a regression model. Given this relationship, it could have been possible to see a significant increase in the use of manipulation attempts. Instead, it seems that the high threat level may have canceled out any chance of successful inoculation. Future inoculation researchers should examine this expression type under a lower level threat, with a moderately perceived threat being the most ideal threat level.

Jealousy Experience: Counter to Predictions

The results of this study showed that inoculation lead to a higher perception of jealous threat and higher amounts of reported anger after being exposed to a jealousy-evoking scenario, contrary to predictions. These results were further analyzed and it was shown that the increase in perceived threat and anger only occurred for women, as male participants had no noticeable increase. Since these results were counter to the hypotheses, it is important to provide possible explanations, which future researchers should take into account. I believe that there are three potentially valid explanations for these findings, which would explain why they ended up counter to the hypotheses. The first explanation involves the concept of rumination and the second explanation involves a potential enabling effect for female participants. Both of these explanations may be interrelated. However, the third explanation is related to the fundamental

nature of inoculation. As such, I will first explain the findings in greater detail and then provide support for these explanations.

For both perceived level of threat and the level of anger experienced, male participants did not have a significant increase between the control and the inoculation conditions. However, there was a large increase between female participants, such that the female participants in the inoculation groups experienced more perceived threat and more reported anger than female participants in the control conditions. These increases were large enough to create what appeared to be a simple main effect for inoculation on these variables. In reality, the mean values for perceived level of threat and the level of anger experienced by male participants did not increase significantly or much at all for that matter. Therefore, the findings that inoculation increased the perceived level of threat and the level of anger experienced is qualified by the finding that this really only occurred for female participants.

I believe there are two primary explanations for this finding. The first explanation is provided by research on rumination, which has shown that women tend to ruminate more than men (e.g. Nolen-Hoeksema, Larson, Grayson, 1999). Nolen-Hoeksema et al.'s work even showed that women were more vulnerable to depressive symptoms than men. As women are more likely to dwell on issues related to the emotion that they're experiencing, it is very likely that a rumination effect occurred. Since this study involved three weeks of participation, it provided ample opportunity for female participants to ruminate over the emotion of jealousy and its possibility within their relationships. Had this study occurred over only one data collection, this rumination effect may not have influenced the research. Future research should take this into account and examine how much individual rumination may have occurred within inoculation participants, as participants can do a whole lot of ruminating within the timeframe of

a week or more. Since the study did occur over three weeks, evoking jealousy on three different occasions, it is likely that some rumination occurred. While this study had no measures related to rumination and therefore could not confirm this with absolute certainty, it is still a likely explanation.

I also believe that the inoculation may have produced somewhat of an enabling effect for women. The messages provided to participants in both inoculation groups mention that jealousy is not inherently evil, stating that, “Jealousy itself is not always the evil emotion that most people see it as.” This statement was also accompanied by statements that it is normal to have initial feelings of jealousy in similar jealousy situations. Statements like these could have validated jealous feeling resulting in an intensifying effect rather than the dissipating effect hypothesized. Such a bolstering effect would only be further enhanced by rumination and may actually distract from the attempts to inoculate attitudes about fidelity. However, this study did not directly assess attitudes about fidelity, sexual exclusivity, or the acceptability of jealousy, a weakness of this study that should be rectified in future research. Therefore, a direct comparison of inoculation effects on these attitudes cannot be measured or compared. Despite this weakness, it could be possible that attitudes about fidelity were actually increased, but that these attitudes did not equate to threat or anger. It could also be possible for attitudes on fidelity to have been increased, but also have attitudes on the acceptability of jealousy increase. In this case, the latter could increase perception of threat and justify any anger experienced due to that threat, meaning that inoculation had worked, but not on the desired attitudes.

This explanation can be further justified by some arguments made by previous jealousy scholars. The sociobiological explanation for jealousy argues that threats to sexual exclusivity threaten men more than they threaten women (Hendrick & Hendrick, 1992; Guerrero &

Andersen, 1998), as men are predominantly only threatened by sexual threats, but women are threatened by emotional threats as well. This argument should be qualified by the fact that Hansen (1985) has shown sexual threat to be the most jealousy-invoking threat, regardless of biological sex, but it does not disprove the possibility of women typically experiencing lower levels of sexual threat. This is further supported by the fact that in contemporary Western culture, jealousy is believed to be more of a patriarchal emotion (Guerrero & Andersen, 1998). Underwood (2003) supports this by illustrating that aggression and other related emotions, such as jealousy, present a dilemma for women. Societal expectations demand that women have emotional control and composure in every situation. When faced with aggression, jealousy, or other intense emotions, women have to deal with them, but still have to try to meet social expectations. Given these assumptions, it would make an enabling effect more likely to occur in women than in men. Since the increases in perceived level of threat and level of reported anger experienced by participants in the inoculation condition only occurred within women, the results suggest that women were enabled to acknowledge their jealousy.

The two explanations for the increase in jealous threat and anger are sufficient, but I also believe another mechanism could be at work here. It may have actually been fault of my own assumptions about the application of inoculation theory to a jealousy context that caused the increase in perceived threat and reported anger. As mentioned before, there were three types of threat involved in this research: a specific jealousy threat, a threat in the form of general vulnerability of the relationship, and a threat in form of a fear appeal stating that bad things could happen. I had believed that the jealous threat itself would be reduced because of counterarguing that would defend beliefs and attitudes about the partner's fidelity. However, it may be the case that inoculation should actually increase the perceived threat. The inoculation threat was

supposed to create a sense of general vulnerability, which could make individuals hypersensitive to specific threats. Added to this, would be the potential impact that the fear appeal threat, telling individuals that negative things could happen if jealousy is not handled correctly, may have had. Therefore, individuals may have realized how problematic jealousy can be and, as a result, became hypersensitive to potential jealous threats. In this case, the individual would have more perceived threat, not less, as hypothesized.

While this explanation makes theoretical sense, it is hard to verify with the current study. When I measured threat in the final questionnaire I had intended to measure the perceived jealousy threat. Only the jealousy scenario was presented, which lead me to believe that participants would be reporting their perceived threat based on the jealousy they experienced. However, the threat question did not direct the individual to think about their assumptions of fidelity or any other specific object, e.g. the behavior of the partner or rival. Therefore, it cannot be said with certainty that the threat items were only measuring the perceived jealousy threat. Since inoculation individuals had been exposed to these items twice before, in conjunction to the other threats, it could be expected that the threats had become interrelated for the participants. This also becomes problematic because it hinders the ability to determine if attitudes about fidelity were directly threatened and if those attitudes are threatened more by the partner or the rival. Therefore, even though this is another possible explanation, it is also hard to verify.

Jealousy Experience: Cognitive Jealousy and Relationship Uncertainty

Even though perceived threat and the amount of reported anger ended up producing results counter to my hypotheses, there are two components of the jealousy experience that were unsupported either way. The first unsupported result came from the measures on cognitive jealousy. These measures were related to the individual's perception of a rival relationship,

either focusing on the partner as interested in a rival relationship, or the rival as attempting to start a relationship with the partner. One possible explanation for this stems from the lack of direction specified during the inoculation treatments. When creating the inoculation threat, I did not specifically mention the attitude or beliefs related to the partner's fidelity. These were brought up in the refutational messages, but not during the threat component. Therefore, the individuals may have realized a general vulnerability about experiencing jealousy, but not have related that vulnerability to the targeted attitudes.

Since I did not collect information on these attitudes directly, this is only speculation, but if the attitudes were not targeted correctly, then the inoculation may not have created any resistance. I think that future inoculation studies within a jealousy context could correct this issue and potentially create resistance for the correct attitudes about the partner's fidelity. This resistance should create the hypothesized result of lowering cognitive jealousy in comparison to a control group. I also believe that this effect could still be created, even if inoculation does serve to increase the perceived jealousy threat. This threat is based on the three primary appraisals, determining the potential for a rival relationship, establishing if the rival relationship actually exists, and determining how harmfully that relationship can be. When an individual is hypersensitive to a jealousy threat, as may have been the case in this study, only the first primary appraisal is required to trigger the perceived threat. On the other hand, the cognitive jealousy items also focus on the possibility of actual relationships. Therefore, individuals could perceive the threat by noticing the potential for a relationship, but then realize through reappraisal that their partners are faithful (no actual relationship exists) and thus, do not need to worry anymore. This should reduce overall cognitive jealousy, even with an increase in perceived threat.

The second unsupported hypothesis was related to relationship uncertainty. Hypothesis six stated that inoculated individuals would have less uncertainty because of the resistance created by inoculation. Unfortunately, the addition of the second control group made it impossible to analyze this variable in the same manner as the others. When comparing the two control groups, there was a significant difference in the mean values for relationship uncertainty. Additionally, the means for the two inoculation groups fell inside of the means for the two control groups. Essentially, the original control group had the highest mean of all groups and the second control group had the lowest of all four groups. This split would surely have affected the data, requiring the removal of the variable instead. I do not know for sure, but I believe this was due to the setup of the two data collections. The first control group was part of a larger experiment, one where the participant had a grade in question. The second control group was fulfilling their basic research requirement for a course, a much lesser requirement than a paper grade. Therefore, I believe the first control group put more effort into honestly analyzing the situation and their subsequent thoughts, emotions, and expressions.

Future Research

Limitations. This thesis had important limitations, some of which have briefly been discussed already. These limitations are important to note because future research can learn from them in order to create better inoculation studies within a jealousy context. An important limitation was the small sample size, almost half of what I anticipated collecting. If more participants had been available, a second control group sample would not have been collected, which would have allowed me to analyze the data for the fourth jealousy expression variable and to assess relational uncertainty. Future research should be able to easily address this before data collection.

A second important limitation of this thesis is related to attitudes about the jealousy experience. Since I did not directly measure attitudes related to fidelity, sexual exclusivity, or the acceptability of jealousy, why the inoculation backfired for the perception of threat and the level of anger experienced remains a mystery about which I can only speculate. As mentioned above, attitudes about fidelity may have actually been increased, but this may still not have had any effect on the perception of threat or anger experienced. I do know that some other mechanism was driving the increase of perceived threat and anger for inoculated females, but can only offer suspected explanations, which cannot be verified without future study.

Finally, a third important limitation for this thesis is that a moderately high-high threat level was involved in the final jealousy scenario. Pre-test participants rated it the most threatening ($M = 5.89$ on a 7 point Likert scale), with the participants of the study rating it as a moderately high threat ($M = 4.66$ on a 7 point Likert scale). Previous inoculation research has demonstrated the importance of low-moderate threat levels for successful inoculation. While it is clear that this higher threat level did not hinder inoculation for compensatory restoration, it may be part of the explanation for why inoculation did not occur as expected in the jealousy experience condition. Future studies can build on these scenarios and create a better design by incorporating scenarios of increasing threat that are capped at a moderate threat level.

Inoculation Research. This study has helped push inoculation research by expanding it to a new context. Previous inoculation research has focused predominantly on health and politics, with some extension into public relations, advertising, and business (e.g. Pfau et al., 2003; Ivanov et al., 2009; Pfau et al., 2009; see Szabo & Pfau, 2002 for more examples). By expanding inoculation research to jealousy, this study has shown that inoculation could be applied to a host of attitudes related to problematic situations (e.g. attitudes in conflict situations

or attitudes that lead to serial arguments). Additionally, it has provided two avenues for future extensions to follow.

The first avenue for future inoculation research is to explore the conceptualization and measurement of the inoculation threat. Past inoculation research predominantly operationalizes threat as a forewarning coming from an external source. As stated in the literature section, jealousy is predominantly going to occur from an internal source (e.g. one's own observations). This internal source may even produce greater motivation to protect positive attitudes, which would facilitate the process of inoculation. While this may still need to stem from a forewarning, future inoculation research should explore the possibility of inoculating against internal sources of threat, as well as external sources. This study may have provided better evidence for this exploration had more attitudes been explored, but it can still serve as a template to be improved upon.

When examining the threat measures, it is easy to notice that these are all affective measurements. However, inoculation itself is a highly cognitive process. Affect alone is not enough to make inoculation theory work. If inoculation researchers want to maximize threat, assuming that it will create more resistance, then they should also examine the cognitive side of this threat. For instance, inoculation researchers laud inoculation's ability to defend unspecified attitudes, but do not fully understand why this occurs. It may be directly related to the general vulnerability created by the inoculation threat. If more beliefs and attitudes are being defended than the number that is targeted, it is likely because of the cognitive influence of inoculation. When individuals realize one attitude is vulnerable, it is likely that they realize other associated attitudes are also vulnerable. Simply measuring the affective aspect of the inoculation threat

cannot account for this. However, it may be possible to further explore this if cognitive threat measures were created.

Related to this, another portion of the cognitive threat may be related the amount of cognitive attention that individuals direct at the inoculation threat. It is very likely that when individuals focus on the threat and potential vulnerability in a more cognitive manner, then they will create more counterarguments, and thus more resistance. This is somewhat related to the possible rumination effect created within this study. Unless all the measures are administered at one time, the participants have ample opportunity to focus on their attitudes or beliefs outside of the study. In contrast, if individuals focus on only the affective portion of the threat (e.g. dwelling on their potential uncertainty) then it is likely that little resistance will be created. This differentiation could only be made by adding cognitive threat measures. Recent research by Pfau et al. (2009) has started to explore differences related to cognitive versus affective based inoculation strategies and found some differences in terms of affect-positive, affect-negative, and cognitive inoculation messages. This research is related to the idea I have presented, but unfortunately their study only measured inoculation threat in the same manner, using five affective measures. Expanding the threat measures to include both cognitive and affective components expand upon the nuanced differences already found by the Pfau et al. study.

The second avenue for future research is related to the possibility of using inoculation to shape behavioral intention. Previous inoculation research notes the importance of involvement on inoculation, meaning that the topic and attitude have to be personally relevant for inoculation to occur, but the same previous research does not often explore actions related to that involvement. For example, Pfau et al. (2009) selected the topics of whether or not the U.S. should legalize marijuana and assessed attitudes related to that, but the researchers never

extended this to test whether participants would vote for or against such legalization. It cannot be assumed that an attitude will always equate to action. For instance, many people in our country have opinions about the presidential election, but nowhere near that many people actually go out and vote for the president. If more studies follow this path and explore inoculation's ability to influence behavioral intention, then it would provide researchers greater insight into actual behavioral change. This is not the first study that has applied inoculation to behavioral intention, but there are not many (e.g. Compton & Pfau, 2004 applied inoculation to behavioral intention). For communication researchers, this could mean helping people change how they actually communicate in problematic situations. So I would strongly recommend that more future inoculation research focuses on behavior intention and potentially even behavior/attitudinal change.

Jealousy Research. In addition to the contributions to inoculation literature, this study has provided new insight for jealousy researchers. From the results of this study, I believe there are three major research areas that jealousy researchers can continue to expand upon. The first area for future research is the same call posed to inoculation researchers above. As the results have shown, jealousy researchers should consider inoculation as a potential mechanism for improving jealousy expression. By focusing on improving jealousy expression, researchers can offer aid to troubled relationships, which may be doomed otherwise. Additional research on inoculation's success for increasing positive jealousy expression could lead to extensions in abusive relationships. Abusive relationships are likely to have more negative behaviors as primary action tendencies, but that may be from a lack of awareness for better alternatives. As shown by this study, the reported likelihood of positive expression, such as compensatory

restoration, can be increased by inoculation. Therefore, future research should continue to explore inoculation's ability to improve behavioral intention within a jealousy context.

At the same time, any future researcher should be cautious because of the potential for increased perceived threat and anger, at least within female participants. Any researcher attempting to deal with this potential dilemma should pay attention to the newer inoculation research that has focused on differences between affective versus cognitive treatments (Pfau et al., 2009). For instance, Pfau et al. found that affective-negative messages elicited the most threat when compared to affective-positive or cognitive messages. Since jealousy occurs as a prototypical emotional episode, inoculation within a jealousy context can easily incorporate these cognitive and affective elements. By doing so, future research may be able to apply inoculation to jealousy and produce results that influence behavioral intention without increasing threat.

The second area for future jealousy research is related to one of the main limitations of this study, attitudes about the experience of jealousy. In terms of the experience of jealousy, previous research has explored topics related to attitudes, such as what type of threat is seen as more problematic, but from an inoculation standpoint, there is little research on what attitudes may cause sexual threats. Some research has shown that individuals who value sexual exclusivity are more likely to feel intense jealousy if that expectation is violated (e.g. White, 1981), but that is also contradicted by research from Pines and Aronson (1983) that states individuals who value monogamy tend to not experience as much actual jealousy within relationships. This means that individuals who value monogamy may experience more intense jealousy when they have proof that infidelity has occurred, but they may not experience much jealousy for other behaviors, such as flirtation. Therefore, attitudes about flirtatious behaviors may be a better predictor of the jealousy threat level than attitudes about fidelity or monogamy.

Future jealousy research should explore more specific attitudes, which could inform future inoculation research within jealousy.

The third major area for future research within a jealousy context should focus on enriching and expanding the model of jealousy proposed. The first weakness of the model comes from the lack of a sound conceptualization of cognitive jealousy. As it stands right now, researchers mostly define cognitive jealousy from an appraisal perspective and yet there are many other processes that can influence these appraisals. For instance, it may be an individual's attributions about jealousy that shape the primary and secondary appraisals of jealousy. Additionally, no study looks at the three cognitive aspects mentioned in this current study; appraisals, attributions, and attention; all at the same time.

A second weakness of the model is related to the discrete emotions of jealousy. Within Lazarus' (1991) CAT, he focuses on different appraisals for each discrete emotion that he brings up. Yet, jealousy researchers seem to focus on the appraisals of jealousy and then mention all these discrete emotions that stem from jealousy. From a CAT perspective, this is flawed. The primary appraisals of jealousy would only cause jealousy. The primary appraisals of the other emotions would have to kick in at some point for those emotions to develop. Therefore, I propose that jealousy researchers stop looking at jealousy as a composite emotion and instead conceptualize it as a primary emotion that leads to other discrete emotions. In this sense, once the individual has evaluated their primary appraisals of jealousy and are going through the secondary appraisals, then primary appraisals of other emotions would become salient as well.

This second weakness is also related to the third area for enriching the model. As I mentioned in this current study, I did not have the ability to examine the neurophysiological aspects of jealousy as an emotion. However, I believe that research needs to establish the

neurophysiological processes involved in jealousy. These processes can then be incorporated in the model or they can be used to modify the model if the neurophysiological data disproves the model. Furthermore, with future advancements of collecting this neurophysiological data, it may be possible to prove that jealousy is a primary emotion, one that leads to other discrete emotions.

General Conclusions

Although past research has focused on ways to manage jealousy in relationships, it has neglected to explore inoculation as a potential mechanism. This study has done so by applying inoculation theory to both the experience and the expression of jealousy. Results have shown that inoculation can be used to improve jealousy expression, with further research needed to determine the extent of that improvement. These results held true for 1 out of the 3 types of jealousy expression that were analyzed within the current study. Additionally, this study has provided a framework to extend inoculation research further. Future endeavors can also reassess the ability of inoculation to influence the experience of jealousy. For communication researchers, the importance of inoculation influencing the likelihood of participant use of compensatory restoration as a jealousy expression type lies in the possibility of extending inoculation to other behavioral intention within interpersonal relationships. By improving the behavioral intention of individuals, communication researchers can help improve the interpersonal relationships that those individuals are involved in.

³ The regression analysis was a step-wise regression with manipulation attempts as the dependent measure. In block one, gender and inoculation condition were entered and neither were significant predictors. In block two, threat was entered.

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Appendix A: Jealousy Scenarios

1. You and your dating partner are out at a restaurant/bar with some of his/her work colleagues.
You don't really know anyone there besides your dating partner because he/she talked you into going. At one point in the evening, you notice that your partner is talking animatedly with a member of the opposite sex. Your partner seems very interested in this person, to the point of nodding, smiling and laughing as if hanging on every word.
2. You and your dating partner are out at a restaurant/bar with some of his/her work colleagues.
You don't really know anyone there besides your dating partner because he/she talked you into going. At one point in the night, you look across the bar to see your partner flirting with a member of the opposite sex. Your partner is standing very close to the person and is laughing, smiling, winking, and keeps touching the other person's arm.
3. You and your dating partner are out at a restaurant/bar with some of his/her work colleagues.
You don't really know anyone there besides your dating partner because he/she talked you into going. At one point in the night, you see your partner greet someone of the opposite sex. Upon greeting the person, you see your partner hug and kiss someone of the opposite sex.

Appendix B: Jealousy Inoculation Messages

Jealousy Experience Message 1 (Attraction)

How to Help with your Jealous Thoughts

The scenario that you just read is one possible situation that could happen to you at some point in your relationship. Jealousy is a common occurrence within dating relationships and most people do not think about it happening to them until after they feel the emotion. So even if this specific scenario doesn't happen, something similar could. Whether it comes in the form of seeing your dating partner around one of his/her closest friends for the first time, hearing about flirtation that you didn't witness, or even meeting dating partner's exes, jealousy can occur.

Jealousy itself is not always the evil emotion that most people see it as. At the root of jealousy is the feeling of losing the person that you love. Research on jealousy shows that once you feel threatened there is a quick emotional experience that occurs. That emotion is often accompanied by worrisome thoughts about the situation and more emotion. This means that anticipating your jealous thoughts before they occur can help reduce the amount of jealousy that you feel and stop that feeling from growing.

When you're in a situation like the one that you just read, it's possible that you might think to yourself, "Wow, my boyfriend/girlfriend looks like he/she attracted to that person." Now normally, if you think this, you might feel threatened by that attraction. Once you start worrying about this, you will probably try to think of what might be attracting your boyfriend/girlfriend to that person. For many people, this depends on issues that they are insecure about. So you need to understand yourself and know if you're more worried about

physical attraction, societal attraction, or task attraction. Physical attraction has to deal with the other person's looks/appearance and it would be related to how athletic or in shape someone appears as well as their facial symmetry. Societal attraction has to deal with aspects of friendship and being able to interact with others, which could include things like having a good sense of humor. Task attraction has to deal with the desirability of an individual to help achieve personal or work related goals, which might stem from having experience in a certain job or situation.

When you feel jealous about attraction, you need to make sure that you are aware of what you feel insecure about and how that might create a bias in your thoughts. For instance, if you worry about being shy and the other person appears to be outgoing, it is often your perception of that difference that causes jealousy. You need to remember that this does not mean your boyfriend/girlfriend is actually attracted to that. Additionally, most people need to be attracted to someone across these three levels for that attraction to matter in terms of relationships. So just perceiving one type does not mean you have anything to worry about.

Thinking, "Wow, my boyfriend/girlfriend looks like he/she attracted to that person," is also a matter of how you perceive the actions of your boyfriend/girlfriend and the other person. In the situation that was given to you, nothing could be heard about the conversation, but instead, any jealous thoughts that occur would be from thinking about how the two people appear to be acting. Research into nonverbal behaviors has shown that the meaning given to nonverbal behaviors in any situation is a lot less concrete than meaning that can be given to words. In this case, simply giving his or her attention to the other person could easily be mistaken as attraction. Nonverbal behaviors such as smiling, laughing, and making eye contact could mean that your boyfriend/girlfriend is attracted, but it's much more likely that he/she is simply trying to politely

give his/her attention to the other person. Similarly, friendly gestures like giving the other person a hug could be mistaken as attraction, but would also occur between friends or close co-workers.

So when you find yourself feeling jealous in the future, you need to really understand your thoughts and feelings. If you are worried about your partner being attracted to someone, make sure to think about all of the things that we mentioned above. Remember that it's normal to have the initial feeling of jealousy. Emotions such as anger, sadness, fear, anxiety, etc. can all accompany that initial feeling of jealousy. By being aware of and understanding yourself, you can help manage your thoughts once you start feeling jealous. Managing your thoughts can help lower the amount of those emotions that you experience. If you stop yourself from jumping to the worst conclusions, your emotions won't be as intense. This will help you keep control of your own emotions and allow you to act in a more positive way.

Jealousy Experience Message 2 (Similarity)

How to Help with your Jealous Thoughts

The scenario that you just read is one possible situation that could happen to you at some point in your relationship. Jealousy is a common occurrence within dating relationships and most people do not think about it happening to them until after they feel the emotion. So even if this specific scenario doesn't happen, something similar could. Whether it comes in the form of seeing your dating partner around one of his/her closest friends for the first time, hearing about flirtation that you didn't witness, or even meeting your partner's exes, jealousy can occur.

Jealousy itself is not always the evil emotion that most people see it as. At the root of jealousy is the feeling of losing the person that you love. Research on jealousy shows that once you feel threatened there is a quick emotional experience that occurs. That emotion is often

accompanied by worrisome thoughts about the situation. This means that anticipating your jealous thoughts before they occur can help reduce the amount of jealousy that you feel and stop that feeling from growing.

When you're in a situation like the one that you just read, it's possible that you might think to yourself, "Wow, it looks like my boyfriend/girlfriend has a connection with that person." Why is it that you feel threatened by the connection? The first reason might be based on the societal stereotype that opposites attract. If you see your partner interested in someone who first appears to be the opposite of him/her or the opposite of the type of people that your partner normally associates with, then you might be afraid that it is a case of opposites attracting. The first thing that you need to know is that dating research has shown that over time, the opposites attract metaphor usually falls apart. Opposites might create some initial attraction, but overall, people prefer individuals who are similar to them. Having things like hobbies, affiliations, attitudes, and values in common means that individuals can create a stronger connection. So while your first instinct might be to worry about opposites attracting, overall, research has shown that there is less likelihood that the opposites will stay attracted to each other.

Once you think about this, your next thought might be something like, "Well what if they're very similar?" While overall similarity does seem to lead to more of a connection, it is not the only aspect of similarity that matters. Successful relationships can be seen as having behaviors, beliefs, attitudes, and values that are thought of as either symmetrical or complementary. Symmetrical aspects to relationships are those that are the same between both people. So if you and your partner like to go swimming, then your behavior is symmetrical. Since it's positive for both of you and it's the same behavior (symmetrical), it is also positive for the relationship. The same principle applies to both partners seeing something as being negative.

If both partners agree that it's negative, which makes it symmetrical, then it doesn't cause any problems.

On the other hand, when the component of the relationship is seen as opposites of each other, they are only successful if the opposing views complement each other. That means the opposing components have to fit together, much like two puzzle pieces. So if you hate cleaning, but your partner loves it, then they can fit together despite being opposing views. In that instance, your partner might take on more of the cleaning, but it won't be seen as a bad thing. Usually another complementary behavior will be established to make sure that the overall responsibility is closer to being equal. This means that while similarity is important within relationships, it depends on how well that similarity functions for the two people involved. In society we like to joke that two people can be so alike that they will either hate or love each other. Looking at whether or not that similarity is symmetrical and the opposition is complementary can help you understand how your own relationship functions, which can help you feel more secure.

So when you find yourself feeling jealous in the future, you need to really understand your thoughts and feelings. If you are worried about your partner having a connection with someone, make sure to think about all of the things that we mentioned above. Remember that it's normal to have the initial feeling of jealousy. Emotions such as anger, sadness, fear, anxiety, etc. can all accompany that initial feeling of jealousy. By being aware of and understanding yourself, you can help manage your thoughts once you start feeling jealous. Managing your thoughts can help lower the amount of those emotions that you experience. If you stop yourself from jumping to the worst conclusions, your emotions won't be as intense. This will help you keep control of your own emotions and allow you to act in a more positive way.

Jealousy Expression Message 1 (Integrative Comm./Distributive Comm.)

How to Help with your Jealous Actions

The scenario that you just read is one possible situation that could happen to you at some point in your relationship. Jealousy is a common occurrence within dating relationships and most people do not think about it happening to them until after they feel the emotion. So even if this specific scenario doesn't happen, something similar could. Whether it comes in the form of seeing your dating partner around one of his/her closest friends for the first time, hearing about flirtation that you didn't witness, or even meeting your partner's exes, jealousy can occur.

Jealousy itself is not always the evil emotion that most people see it as. At the root of jealousy is the feeling of losing the person that you love. Research on jealousy shows that once you feel threatened there is a quick emotional experience that occurs. That emotion is often accompanied by worrisome thoughts about the situation, more emotion, and some kind of response to the emotion. Research in communication and psychology has shown that it is a lot harder to control our thoughts than it is our actions. For instance, while it may be hard to shake the thought of worrying about the situation, it is possible to focus on how you will express that worry.

Since jealousy can have an intense initial emotion, a common response is to focus solely on that emotion. That means that when you express the emotion, your tendency might already be leaning towards only worrying about yourself. When this happens, distributive communication is likely to occur. Distributive communication is characterized as making openly negative comments to the partner. Things like cursing, picking a fight with the partner, and making intentionally hurtful comments are all examples of distributive communication. One reason that this can occur is to relieve our negative emotions, but it is also lashing out at our partner, which

is unproductive. Distributive communication has been shown to be the second most negative response to any jealousy or conflict situation. The only responses that are worse than this are ones that involve violence.

Distributive communication is such a negative response because it causes negative emotions within the partner and increased conflict within the relationship. Think about it, if your partner was jealous and he/she yelled at you, your first instinct would likely be to feel hurt and get defensive. This just prolongs the amount of time that both partners feel negative emotions. Since distributive communication is so negative, you need to strive to control it when you express your jealousy.

One reason that distributive communication is common is because it is a direct way to talk about jealousy. However, there is an alternative response that is just as direct, but more beneficial, integrative communication. While distributive communication is a self-centered approach to communicating, integrative communication is more of a relationship-centered approach. Integrative communication strives to incorporate the partner and the relationship in regards to your own feelings. Examples of integrative communication can include calmly questioning your partner about the situation, trying to talk about your feelings, and trying to talk about what aspects of the relationship might be bothering you in an attempt to reach an understanding. Someone who is trying to use integrative communication might say something like, "I'm feeling jealous right now, but I want to fix that. What can we do about it?" Another example could look like this, "I get jealous when I see you flirting with other people. I know you don't mean anything by it, but it bothers me."

This strategy is more inclusive of the partner, avoids negative language, and creates more of a sense of relationship. It focuses on putting the relationship first or repairing aspects of the

relationship. Research has supported this, showing that integrative communication is linked to more relationship satisfaction. On the other hand, distributive communication is linked to a decline in relationship satisfaction. Since we all value our relationships, we should strive to use more integrative communication than distributive communication.

So when you find yourself feeling jealous in the future, remember that it's normal to have the initial feeling of jealousy. Emotions such as anger, sadness, fear, anxiety, etc. can all accompany that initial feeling of jealousy. While it may be hard to change how you feel right away, you can control how you react. By being aware of yourself, you can understand when you are feeling jealous and strive to communicate about it more effectively. It may take practice to force yourself into better habits, but those habits can make or break your relationship. Since your communication is directly tied to relationship satisfaction, they can strengthen or weaken your relationship. That's why it's important not to just give into your first instinct about how to react, but to evaluate your communication and strive for the most effective communication.

Jealousy Expression Message 2 (Compensatory Restoration/Manipulation)

How to Help with your Jealous Actions

The scenario that you just read is one possible situation that could happen to you at some point in your relationship. Jealousy is a common occurrence within dating relationships and most people do not think about it happening to them until after they feel the emotion. So even if this specific scenario doesn't happen, something similar could. Whether it comes in the form of seeing your dating partner around one of his/her closest friends for the first time, hearing about flirtation that you didn't witness, or even meeting your partner's exes, jealousy can occur.

Jealousy itself is not always the evil emotion that most people see it as. At the root of jealousy is the feeling of losing the person that you love. Research on jealousy shows that once

you feel threatened there is a quick emotional experience that occurs. That emotion is often accompanied by worrisome thoughts about the situation, more emotion, and some kind of response to the emotion. Research in communication and psychology has shown that it is a lot harder to control our thoughts than it is our actions. For instance, while it may be hard to shake the thought of worrying about the situation, it is possible to focus on how you will express that worry.

Since jealousy can have an intense initial emotion, a common response is to focus solely on that emotion. That means that when you express the emotion, your tendency might already be leaning towards only worrying about yourself. When this happens, you may try to manipulate your partner into stopping whatever it was they were doing to cause it. By manipulating your partner, you may feel more secure in the interaction. This can happen in ways such as reassuring yourself about your own control over the situation, making your partner show his/her own emotions, or making your partner stop his/her behavior. While this may seem gratifying in the moment, it leads to less relationship satisfaction overall by both people. Examples of manipulation attempts related to jealousy are things like trying to make your partner feel jealous, trying to make our partner feel guilty about his/her actions, trying to get revenge, or trying to test your partner's loyalty.

Even though these may seem satisfying in the sense that you are reassured, it creates more problems for the relationship. In the future, you will only be reassured as long as you can manipulate your partner. None of these attempts establish any constructive communication. Instead, they turn the relationship into a battle for power, which can easily create more negative emotions when expectations aren't met in the future. The negativity created by manipulation can

easily create more negativity. This is why manipulation attempts are seen as a negative strategy for communication.

An alternative to manipulating your partner is called compensatory restoration. Compensatory behaviors focus on restoring or repairing the relationship. These behaviors increase closeness between partners and promote partner responsiveness. This means that compensatory restoration helps partners to feel more connected and opens up more positive communication. Examples of compensatory restoration are increasing your affection towards your partner, spending more time with your partner than usual, trying to prove your love, and trying to prove how good of a partner you are. Besides trying to spend more time with your partner, you might try to surprise them with a special occasion or a gift. Additionally, someone who uses compensatory restoration might say something like, “I really do love you so much. I just want you to know that.”

While manipulation attempts are self-centered, compensatory restoration is more partner-centered. By focusing on your partner, you are demonstrating that he/she is important and that the relationship is too. With manipulation, the negativity builds on itself, but compensatory restoration attempts to use positivity to build more positivity. Reciprocity, or giving back, is a very prominent response among people. This means that when you show your partner more affection in an attempt to restore the relationship, it is likely that your partner will appreciate it and give you more affection as well.

So when you find yourself feeling jealous in the future, remember that it's normal to have the initial feeling of jealousy. Emotions such as anger, sadness, fear, anxiety, etc. can all accompany that initial feeling of jealousy. While it may be hard to change how you feel right away, you can control how you react. By being aware of yourself, you can understand when you

are feeling jealous and strive to communicate about it more effectively. It may take practice to force yourself into better habits, but those habits can make or break your relationship. Since your communication is directly tied to relationship satisfaction, they can strengthen or weaken your relationship. That's why it's important not to just give into your first instinct about how to react, but to evaluate your communication and strive for the most effective communication.

Appendix C: Control Messages

Message 1 (Relationship Formation)

How Do Relationships Form?

Since relationships are seen as such an important part of our lives, there is quite a bit of research exploring what relationships are and how they form. Some communication research has sought to explain the types of behaviors that happen as a relationship develops. This research has created a model that is quite useful for understanding our own relationships. This model is broken into 5 stages for relationship formation. As research has shown, behaviors from one stage in the model can occur at different stages, but it's the overall frequency that matters most for determining where the relationship is.

The first stage of the relationship is called the initiating phase. This is literally the first contact with the other person. In this stage, people size up the other person, the situation, and determine the best way to approach the other person. For instance, if the other person is in the middle of a conversation, most people wouldn't interrupt unless they were comfortable with the other people present. That means people have to either think of the most appropriate way to join the conversation or determine what they will say after the individual is free to talk. The initiating stage of the relationship can transition right into the next stage, or it can exist as its own encounter that is continued later. Communication in this phase often contains basic statements such as, "Hey, how's it going?" or "Do you know the time?" However, it can be any communication that gets the encounter started, including suggestive nonverbal expression (e.g. smiling and making eye contact).

The second stage of the relationship is called the experimenting stage of the relationship. The stage is intended to reduce uncertainty about the other person, gather information about them, and gauge if future interactions will occur. This stage can be seen as the initial testing period for compatibility. The information that people talk about during this stage is mostly related to their cultural and social groups. Common examples of this on a college campus could include such things as, “What classes are you taking?” “What’s your major?” or even, “What dorm do you live in?” In that sense, the information is less personal than at later stages of the relationship. While this information is less personal, there is a high level of reciprocity involved. Meaning, the more someone tells you about his/her culture, the more you will share about your culture. In terms of dating, first dates would characteristically be part of the experimenting stage, but would also bridge into the next stage.

The third stage is called the intensifying stage. This is because this is the stage that marks an increase in intimacy, both physically and psychologically. That means the information becomes more personal. Examples of verbally expressing these feelings could include statements like, “You’re a lot of fun to be around,” or, “I...I think I love you.” When people get in this stage, they are careful about how they initiate intimacy. This is partly done through a process called deviation testing, which simply means that people test the level of the relationship and gauge whether their actions can maintain it or move it forward. Any actions that would seem inappropriate are held back, in an attempt at keeping the relationship moving forward. This is also the stage where things like nicknames, verbal shortcuts, self-disclosure, and terms of endearment begin to show up.

The fourth stage is called the integrating stage. This is the stage where the concept of being a “couple” takes the most precedence. The two individuals develop more interdependence

and their behaviors show that. The couple will begin to emphasize that they have something special and start to introduce their friends and families. For instance, someone in this stage could easily make the statement, “You are such a huge part of my life. I don’t know what I’d do without you.” Similarities between the two people are overemphasized and routines even become more synchronized. This is also when property between the two people begins to be seen more as common property. New purchases are seen as joint rather than independent, such as buying a pet together. At this point in the relationship, the individuals are seen a couple rather than two separate people.

The last stage of the relationship is called the bonding stage. This is not to imply that bonding has not occurred, but rather to say that the bonding is ritualized in some fashion. In the intensifying and integrating stages, people work to create a special bond, but it is in this fifth stage that the bond is seen as complete. This is usually done through some form of public ritual. In our culture, marriage is the ultimate symbol of bonding two people together for a relationship. Once two people bond together in marriage, they are a family instead of being individuals of separate families. Obviously, the question of, “Will you marry me?” is the biggest example of how this can be expressed. Less serious bonding rituals can occur within romantic relationships as well. For instance, the act of asking someone to be your boyfriend/girlfriend or to “go steady” is still a bonding ritual. The process of becoming engaged is even a bonding ritual. It signifies that both people have the intent of marriage, the intent to cement that bond. It is in this stage, that the relationship is seen as fully formed.

Message 2 (Friendships)

The Importance of Friendship

In terms of important relationships that people have, friendships fall somewhere between family and romantic relationships. On one hand, family members cannot be chosen, our activity with them can be limited, but our family members are determined for us. At the other end of the spectrum, romantic relationships are mostly voluntary, in the sense that in our culture, people choose who they date. Friendships are in the middle of this because they are voluntary, just like romantic relationships, but for the most part people will invest their energy in their romantic relationships more than their friendships. People also have more flexibility when choosing to distance themselves with friends than they do with family or romantic relationship.

Friendships are also fragile and resilient. Since relationships with family members or dating partners can take precedence over friendships, friendships can be hard to maintain over time. For example, our closest friends in high school may not be our closest friends in college. Studies have shown that the best predictor of whether your college friends stay as close friends is whether or not they live near you after college.

People have a limited ability to maintain close relationships. This means that the more close relationships that a person tries to maintain, the more effort it will take. Eventually the person will reach a point where they cannot maintain any more additional relationships than the ones they are currently managing. So when family and dating partners come first, friendships can be fragile or lose their importance. However, since they are voluntary and do not require as much investment as dating relationships, they can function more flexibly.

Despite that potential fragility, research attests to how significant friendships are for people. Friendships can be seen as highly positive or highly toxic to the individual. Positive

friendships help provide people with social support, companionship, and validation. This means that when friendships are beneficial, they provide people with reassurance, confidence, and a sense of connectedness. On the other hand, when friendships are toxic, they can lead to negative emotions, lower self-esteem, being antisocial, and potentially even illegal activities.

To understand friendships more, people need to understand what creates such a strong connection in friendships. This connection usually stems from intimacy, the unique connection that two people share with each other, within friendships. The most documented source of intimacy within friendships is self-disclosure. Self-disclosure is when you voluntarily talk about personal information that most people do not learn easily. This means that self-disclosure only occurs when you want to talk about the information (voluntary) and that information is more unique than most information you would share with other people (e.g. You might share the story about the first time you fell in love with closer friends rather than just acquaintances).

The second path to intimacy in relationships comes from shared activities. Shared activities are activities that allow participation by multiple people, which also allow for close interaction during the course of the activity. Shared activities could include sports, watching movies together, touring a museum, as well as many more. Self-disclosure and shared activities differ in how they create intimacy. Self-disclosure creates intimacy through shared knowledge while shared activities create intimacy through shared experiences. The interaction within shared activities can allow for some self-disclosure, just as self-disclosure can establish some shared activities, but the primary focus usually lies on either the self-disclosure or the shared activity.

Some research has looked at which of these two is more important for creating intimacy in relationships. According to this research, one of the first things to look at is whether the

friendship is a cross-sex friendship or same-sex friendship. Same-sex friendships would be when two men are friends or two women are friends. On the other hand, cross-sex friendships are when a man and a woman are friends. In our culture, both types of friendships are acceptable, but this is different from the way things have been in the past or even in different cultures. For example, in some cultures, men and women are separated into their respective groups when it comes to social activities. In the U.S. it has only been the last couple of generations that have really strengthened cross-sex friendships.

In lots of other cultures, same-sex friendships have the most amount of shared activities, self-disclosure (voluntarily talking about personal information), and time spent together. However, in American culture, this varies somewhat based on sex. In general, that norm of same-sex friendships only holds for females. Women will go to their female friends to spend time, do joint activities and engage in self-disclosure. When it comes to men, this dynamic is split. Male-male friendships are generally preferred when men want to spend time doing activities with their closest friends. However, when it comes to talking, research shows that men often turn to their closest female friend(s) to disclose information.

Since friendships can play such an important role for individuals, giving them support, companionship, and acceptance, everyone should strive to understand their own friendships. This is why most people value some level of friendship within their own relationships. Creating a friendship within a dating relationship allows people to have a stronger connection that makes it easier to get through the tough times in relationships. So it is important to understand how friendships work, to not only create healthy friendships, but also strengthen dating relationships.

Appendix D: Chronic/Relationship Jealousy Scales

Chronic Jealousy Scale

1. How jealous a person are you generally?

| | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|----------------|
| Not at all Jealous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Fairly Jealous |
|--------------------|---|---|---|---|---|---|---|----------------|

2. How often have you experienced jealousy in your romantic relationships?

| | | | | | | | | |
|-------------|---|---|---|---|---|---|---|--------------|
| Very Rarely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Fairly Often |
|-------------|---|---|---|---|---|---|---|--------------|

3. When you get jealous, how intense is that feeling usually?

| | | | | | | | | |
|-----------|---|---|---|---|---|---|---|-------------|
| Very Weak | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Very Strong |
|-----------|---|---|---|---|---|---|---|-------------|

4. Do those who know you well tend to think of you as jealous?

| | | | | | | | | |
|---------------------|---|---|---|---|---|---|---|---------------|
| Not Usually Jealous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Often Jealous |
|---------------------|---|---|---|---|---|---|---|---------------|

5. How much have your jealous feelings been a problem in your romantic relationships?

| | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|-----------------|
| No problem at All | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Often a Problem |
|-------------------|---|---|---|---|---|---|---|-----------------|

6. Do you think of yourself as a person who can get jealous easily?

| | | | | | | | | |
|---------------|---|---|---|---|---|---|---|----------------|
| Definitely No | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Definitely Yes |
|---------------|---|---|---|---|---|---|---|----------------|

Relationship Jealousy Scale

1. Compared to your previous romantic relationships, are you more or less jealous in your relationship with your partner?

| | | | | | | | | |
|--------------|---|---|---|---|---|---|---|--------------|
| Less Jealous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | More Jealous |
|--------------|---|---|---|---|---|---|---|--------------|

2. How much is your jealousy a problem in your relationship with your partner?

| | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|-------------------|
| No problem at All | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Often a Problem n |
|-------------------|---|---|---|---|---|---|---|-------------------|

3. How jealous do you get of your partner's relationships with those of the opposite sex?

| | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|----------------|
| Not at all Jealous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Fairly Jealous |
|--------------------|---|---|---|---|---|---|---|----------------|

4. Do those who know your relationship with your partner tend to think of you as jealous?

| | | | | | | | | |
|---------------------|---|---|---|---|---|---|---|---------------|
| Not Usually Jealous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Often Jealous |
|---------------------|---|---|---|---|---|---|---|---------------|

5. How intense are your feelings of jealousy in your relationship with your partner?

| | | | | | | | | |
|-----------|---|---|---|---|---|---|---|-------------|
| Very Weak | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Very Strong |
|-----------|---|---|---|---|---|---|---|-------------|

6. How often do you get jealous of your partner's relationships with those of the opposite sex?

| | | | | | | | | |
|-------------|---|---|---|---|---|---|---|------------|
| Very Rarely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Very Often |
|-------------|---|---|---|---|---|---|---|------------|

Appendix E: Cognitive Jealousy Items

| | Strongly Disagree | | | | Strongly Agree | | | |
|---|----------------------|---|---|---|-------------------|---|---|--|
| 1. I would suspect that my partner is seeing someone else. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 2. I am worried that someone else may be chasing after my partner. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 3. I suspect that my partner may be attracted to someone else. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 4. I suspect that my partner may be physically intimate with someone behind my back. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 5. I'd think someone else may be romantically interested in my partner. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 6. I am worried that someone else may be trying to seduce my partner. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 7. I'd think my partner is secretly developing an intimate relationship with someone else. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 8. I suspect that my partner is crazy about other people. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |

Appendix F: Emotional Jealousy Items

| | Not at all | | | | | Very | |
|----------------------|------------|---|---|---|---|--------|---|
| | Likely | | | | | Likely | |
| 1. Hopeless | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Rage | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Fear | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Lust | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. Embarrassed | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. Sad | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Depressed | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. Tense | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. Regret | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. Worried | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. Sexually Aroused | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. Annoyed | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. Contempt | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. Shame | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. Sexual Desire | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. Envious | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. Guilty | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. Angry | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. Hate | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | |
|---------------|---|---|---|---|---|---|---|
| 20. Stressed | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. Anxious | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22. Passion | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23. Disgusted | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24. Vengeful | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Appendix G: Jealousy Expression Items

| | Strongly Disagree | | | | | Strongly Agree | |
|---|------------------------------|---|---|---|---|---------------------------|---|
| 1. I would have yelled or cursed. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. I would have tried to be the “best” partner possible. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. I would have tried to be more attractive and appealing. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. I would have tried to make my partner feel guilty. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. I would have disclosed my jealous feelings to my partner. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. I would have made hurtful comments. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. I would try to get revenge. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. I would calmly question my partner | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. I would increase affection or do special things for my partner. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. I would try to talk and reach an understanding. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. I would spend more time with my partner than usual. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. I would trick my partner to test his/her loyalty. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 13. I would explain my feelings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. I would act rude. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. I would quarrel or argue with my partner | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. I would try to make my partner jealous | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. I would try to prove my love for my partner. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. I would discuss bothersome issues with my partner. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. I would confront my partner in an accusatory manner. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Appendix H: Relationship Uncertainty Items

Please think of the past 2 weeks as you answer each of the following questions.

Sometimes people have moments of doubt or uncertainty in their relationships. We are interested in learning about how often you doubt or question different aspects of your relationship. Using the following scale, mark the answer that best indicates your response to each item.

| | 1 | 2 | 3 | 4 |
|---------------------------|--|--------------|------------|-----------------|
| | Never or not at all | Occasionally | Frequently | All of the time |
| In the past 2 weeks . . . | | | | |
| 1 | I questioned or doubted the future of our relationship. | | | 1 2 3 4 |
| 2 | I questioned or doubted how to resolve conflict in our relationship. | | | 1 2 3 4 |
| 3 | I questioned or doubted what me and my partner can and cannot say to each other. | | | 1 2 3 4 |
| 4 | I questioned or doubted how my partner and I support each other. | | | 1 2 3 4 |
| 5 | I questioned or doubted how my partner and I communicate with each other. | | | 1 2 3 4 |
| 6 | I questioned or doubted how my partner and I show affection to each other. | | | 1 2 3 4 |