

**The Evolutionary Basis of Sex Differences in Identifying the Intentional Object of
Romantic Jealousy: A Cross-cultural Replication**

Ritasha Sookdew

972152516

Supervisors:

Prof. Johannes John-Langba

Prof. Nhlanhla J. Mkhize

Submitted in partial fulfilment of the requirements for the degree of Master of Social Science
in the School of Applied Human Sciences, College of Humanities, at the University of
KwaZulu-Natal, Pietermaritzburg Campus.

January 2022

Declaration

I, Ritasha Sookdew, declare that:

- the research reported in this thesis, unless otherwise indicated, is my original research;
- this thesis has not been submitted for any degree or examination at any other university;
- this thesis does not contain any other persons' data, pictures, graphs, or other information, unless specifically acknowledged as being sourced from other persons;
- this thesis does not contain other persons' writing unless acknowledged as being sourced from other researchers;
- where other written sources have been quoted, then their words have been re-written, but the general information attributed to them has been referenced;
- where other written sources have been quoted wherein their exact words have been used, their writing has been placed in quotation marks and referenced;
- this thesis does not contain text, graphics, or tables copied and pasted from the Internet, unless specifically acknowledged, and the sources being detailed in the thesis and the references section; and
- a Turnitin originality report is attached as Appendix One.

Signature: Ritasha Sookdew



Date: 22 June 2022

Signature: Prof. Johannes-John Langba _____

Date: _____

Signature: Prof. Nhlanhla Mkhize _____

Date: _____

Acknowledgements

To the participants for sharing your input with interest; to Prof. John-Langba for your guidance; to Prof. Mkhize, for your encouragement; and to Prof. Schutzwahl, for positively receiving this study, much obliged.

Table of Contents

Declaration.....	2
Acknowledgements	4
Table of Contents	5
Abstract.....	8
List of Tables	9
List of Figures.....	10
Chapter 1: Introduction	11
1.1 Chapter Overview	11
1.2 Background and Context of the Study	12
1.3 Statement of the Research Problem	14
1.4 Study Aim and Objectives	15
1.5 Research Questions	16
1.6 Rationale for the Study	16
1.7 Significance of the Study.....	18
1.8 Definition of Terms	19
1.9 Dissertation Structure.....	20
Chapter 2: Literature Review	21
2.1 Theoretical and Empirical Perspectives of Romantic Jealousy	21
2.1.1 <i>Non-evolutionary perspectives of romantic jealousy</i>.....	23

2.1.2 A Summary of the Non-Evolutionary Perspective of Romantic Jealousy.....	42
2.1.3 An Evolution in Understanding Romantic Jealousy.....	43
2.1.4 The Intentional Object of Romantic Jealousy.....	45
2.2 The Evolutionary Psychological Theoretical Framework.....	48
2.2.1 The Biological Theory of Evolution.....	49
2.2.2 Evolutionary Psychology.....	53
2.3 Replication.....	56
Chapter 3: Methodology.....	62
3.3 Research Design.....	62
3.3.1 Hypotheses.....	64
3.3.2 Variables.....	65
3.3.3 Measures.....	66
3.3.4 The Type of Replication Study.....	67
3.4 Limitations of the Study.....	85
Chapter Four: Results.....	86
4.1 Univariate Analyses: Descriptive Statistics.....	86
4.1.1 Age Distribution of Participants.....	86
4.1.2 Sex and Sexual Orientation of Participants.....	86
4.1.3 Race and Religion: Frequency Distribution.....	88
4.1.4 Relationship Status: Frequency Distribution.....	89
4.2 Bivariate Analyses.....	91

4.2.1 Associations between Intentional Object of Romantic Jealousy and Sexual Infidelity	91
4.2.2 Associations between the Intentional Object of Romantic Jealousy and Emotional Infidelity	93
4.2.3 The Intentional Object of Romantic Jealousy and Emotional Infidelity in Females	95
4.2.4 The Intentional Object of Romantic Jealousy and Sexual Infidelity in Males	97
Chapter Five: Discussion.....	98
Chapter 6: Conclusion.....	103
References	107
Appendix One: Turnitin Originality Report.....	117
Appendix Two: Questionnaires	118
Appendix Three: Letter of Ethical Approval	126

Abstract

This investigation is about studying the intentional object of romantic jealousy using the controversial evolutionary psychological approach which has made headway into understanding the intentional object of romantic jealousy. The point of departure of this study however is that the potential of using evolutionary findings to better understand romantic jealousy rests on testing if it is a reliable observation. Thus, grounded on an evolutionary psychological theoretical framework, this study employed replication research methodology to investigate the replicability of a study by Schützwohl (2008) about the intentional object of romantic jealousy in a bid to test the consistency of the findings on a sample of university students in South Africa. For the findings which replicated, a chi square test for independence showed that there is a sex difference in the intentional object of romantic jealousy between males and females under the conditions of sexual infidelity ($\chi^2 = 4.806$; $df = 1$; $n = 202$; $p < 0.05$) and emotional infidelity ($\chi^2 = 8.596$; $df = 1$; $n = 97$; $p < 0.05$), further confirming that males direct the intentional object of romantic jealousy to their partner under the condition of sexual infidelity ($\chi^2 = 8.345$; $df = 1$; $p < 0.05$; $p = .004$). The finding which did not replicate for this sample, the chi square test for independence showed that the intentional object of romantic jealousy of females is not the rival, when their partner is emotionally unfaithful to them ($\chi^2 = 1.573$; $df = 1$, $p > 0.05$, $p = .210$). Although evolutionary psychology has made significant advancements to help understand the intentional object and romantic jealousy, it remains necessary to improve the quality of data used to test evolutionary predictions about the intentional object of romantic jealousy in order to yield appropriate data that adequately tests the predictions. Future research in evolutionary psychology, the intentional object of romantic jealousy, and the use of replication research design for evolutionary psychological studies is recommended.

List of Tables

Table 3.1 A Methodological Comparison of the Parent Study to the Present Study

Table 4.1 Frequency Distribution of Sex and Sexual Orientation

Table 4.2 Frequency Distribution of Relationship Status

Table 4.3 Frequency Distribution of Participants Experience of Infidelity

Table 4.4 Male and Female Frequency Counts of the Intentional Object of Romantic Jealousy in Response to Sexual Infidelity

Table 4.5 Chi-Square Analysis of the Intentional Object of Romantic Jealousy in Response to Sexual Infidelity

Table 4.6 Male and Female Frequency Counts of the Intentional Object of Romantic Jealousy in Response to Emotional Infidelity

Table 4.7 Chi-Square Analysis of the Intentional Object of Romantic Jealousy in Response to Emotional Infidelity

Table 4.8 Observed and Expected Frequency Distribution of the Females Intentional Object of Romantic Jealousy in Response to Emotional Infidelity

Table 4.9 Chi-Square Analysis of the Females Intentional Object of Romantic Jealousy in Response to Emotional Infidelity

Table 4.10 Observed and Expected Frequency Distribution of the Males Intentional Object of Romantic Jealousy in Response to Sexual Infidelity

Table 4.11 Chi-Square Analysis of the Males Intentional Object of Romantic Jealousy in Response to Sexual Infidelity

List of Figures

Figure 4.1 Histogram of Age Distribution

Figure 4.2 Bar Graph of Racial Distribution

Figure 4.3 Bar Graph of Religious Affiliation

Chapter 1: Introduction

1.1 Chapter Overview

Being in a romantic relationship comes with the propensity to experience romantic jealousy. Experiencing a degree of romantic jealousy is normal, although the emotion can shift to obsessive or delusional states (Batinic, Duisin, & Barisic, 2013). As such, romantic jealousy can promote relationship stability, relationship instability, or cause harm to an individual (Demirtas-Madran, 2011). Perhaps, the latter is most attention grabbing, and is attributed to the strong association between romantic jealousy and poor relationship quality (Barelds & Barelds-Dijkstra, 2007). This association correlates with partner distress and leaves a partner vulnerable to the risk of abuse, as well as to the possibility of homicide or suicide (Batinic et al., 2013; Shackelford, LeBlanc, & Drass, 2000).

Overall, the potential impact of romantic jealousy on an individual's relationship quality, quality of life, and survival impress a necessity for continued efforts to better understand the emotion. In turn, this bodes well for devising or enhancing targeted interventions that address issues associated with romantic jealousy. In this vein, the present study is directed to further understand romantic jealousy by means of investigating the intentional object of the emotion and possible sex differences in this regard.

This chapter introduces the present study, beginning with a description of its context, which provides the background to the research problem. Thereafter, the research problem is presented and emanating from this, the aims and objectives of this study are stated. The research questions are then posed and the reasons which justify pursuing the questions are outlined thereafter in the rationale for this study. Somewhat linked to the rationale, the

significance of conducting this study is then explained. With the scope of this study focused, a conceptual orientation is then provided wherein the main concepts are delineated, in the definition of terms. Drawing this chapter to a close, an overview of the structure of this dissertation is presented before concluding by summation of its main points, subsequently leading into the next chapter, which focuses on the review of literature.

1.2 Background and Context of the Study

The background to this study rests against the context of prominent conceptual and theoretical contributions that have shaped the understanding of romantic jealousy, especially from evolutionary psychology. Two conceptualisations of romantic jealousy, coined during the onset of research into the emotion are noteworthy. The first, by Pines and Aronson (1983), conceptualising romantic jealousy as complex cognitions, affect, and behaviour that occurs when an individual perceives a threat to their relationship. The second, by Buunk (1984), conceptualising romantic jealousy to be an aversive affective state that is evoked by a real or imagined attraction of one's partner to a rival. Both conceptualisations agree that a perceived threat triggers romantic jealousy but disagree over what is threatened; that is, the relationship or a partner's attraction to a rival. An important point to note is that there is no agreed upon conceptualisation of romantic jealousy, a point that will be discussed further.

Theoretically, there are two long standing theories that have been amenable to understanding romantic jealousy. These are attribution theory (Bauerle, Amirkhan, & Hupka, 2002) and attachment theory (Mikulicer & Shaver, 2005). Both have made significant contributions to understanding the emotion from a motivational and developmental perspective, respectively. These perspectives afford a descriptive understanding of romantic jealousy, particularly intricacies about the nature, constitution, and expression of the emotion.

Contemporary literature has seen evolutionary psychology offer a novel contribution to understanding romantic jealousy which stems from emphasising the functional value of the emotion.

Evolutionary psychology conceptualises romantic jealousy as a psychological mechanism that evolved to protect romantic relationships from infidelity (Buss, 1995). In support, studies have shown that the key triggers of romantic jealousy are sexual infidelity and emotional infidelity (Buss, 1995; Buunk, Angleitner, Oubaid, & Buss, 1996). Once triggered, the emotion motivates the jealous partner to engage mate retention tactics which is thereby protective of the romantic relationship (Buss & Shackelford, 1997; Brewer, 2009).

Furthermore, evolutionary psychologists argue that integral to understanding romantic jealousy is that males and females weigh both types of infidelity differently. In this regard, studies show that females tend to have a greater jealousy response to their partner's emotional infidelity and males tend to have a greater jealousy response to their partner's sexual infidelity (Fussell & Stollery, 2012; Guadagno & Sagarin 2010).

From this basis, Schutzwahl (2008) looked deeper into romantic jealousy by exploring whether its intentional object assorts accordingly. Schutzwahl (2008) found that males hold the intentional object of their romantic jealousy to be their partner if their partner is sexually unfaithful to them, whilst females hold the intentional object of their jealousy to be the rival if their partner is emotionally unfaithful to them. Hence, males and females differ in who they identify the intentional object of their romantic jealousy as a function of infidelity type.

The identification that infidelity and infidelity type is a jealousy trigger; that there are sex differences in the experience of romantic jealousy as a function of infidelity type; and that the intentional object is also linked to a sex difference, evolutionary psychology offers a

perspective that significantly contrasts with the more dominant psychological views. The evolutionary perspective has gained prominence, however equally as prominent are the strong contestations of and resistance thereto (Fitzgerald, 2010). For example, Harris (2004) argues that much of the evolutionary explanations can be readily attributed to social learning and culture.

Amid the contestations, it is hard to ignore the avenue that Schützwohl (2008) offers to gain a better understanding of romantic jealousy as an emotion. Consequently, it is also hard to ignore the positive implications for interventions that can address issues associated with romantic jealousy. As such, Schützwohl's (2008) study is worthy of closer examination, and is therefore the focus of the present investigation. This is encapsulated in the research problem which frames the present investigation and is stated next.

1.3 Statement of the Research Problem

Given the potential findings from Schützwohl's (2008) study holds to benefit further understanding of romantic jealousy, it needs to be carefully considered. On closer examination, there are aspects of the study which requires revisiting. This is primarily because the findings are limited to the scope of Schützwohl's (2008) study. In particular, there is little indication of the stability and consistency of findings in samples other than the German undergraduates the study was conducted on. Extended further, the sufficiency of testing the evolutionary prediction on this basis becomes questionable. Testing evolutionary predictions in particular should ideally involve a degree of cultural diversity in the sample, which is all the more prudent when dealing with plausible rival explanations that draw on culture and social learning (refer to Harris, 2004).

It is therefore reasonable to enquire if the same results will emerge should the study be conducted on a sample of students from the University of KwaZulu-Natal (UKZN). Thus, the question of the repeatability of the findings from Schutzwahl's (2008) study heavily looms. This prompts the present investigation to replicate the study conducted by Schutzwahl (2008), henceforth referred to as the parent study, the aims and objectives of which are presented next.

1.4 Study Aim and Objectives

This study is an independent investigation that repeats the parent study on a sample of South African students from the UKZN. The study therefore aims to establish if the findings from the parent study replicates among this sample of participants.

The specific objectives of this study are to therefore determine whether:

- there is a sex difference in the intentional object of romantic jealousy when an individual experiences their partner being sexually unfaithful to them;
- there is a sex difference in the intentional object of romantic jealousy when an individual experiences their partner being emotionally unfaithful to them;
- males direct the intentional object of their romantic jealousy to their partner when faced with sexual infidelity as found by Schutzwahl (2008); and
- females direct the intentional object of their romantic jealousy to the rival when faced with emotional infidelity as found by Schutzwahl (2008).

These aims and objectives lead to posing a similar research question to the parent study.

1.5 Research Questions

1. Is there a sex difference in the intentional object of romantic jealousy when an individual experiences their partner being sexually unfaithful to them?
2. Is there a sex difference in the intentional object of romantic jealousy when an individual experiences their partner being emotionally unfaithful to them?
3. Do males direct the intentional object of their romantic jealousy to their partner when faced with sexual infidelity as found by Schutzwahl (2008)?
4. Do females direct the intentional object of their romantic jealousy to the rival when faced with their partner's emotional infidelity as found by Schutzwahl (2008)?

1.6 Rationale for the Study

Having stated the aims, objectives, and the questions this study will address, it is important to explain why this study is focused thus. There are a few important reasons hinged to the topic under study, empirical aspects of the parent study, and to the underpinning theory which justify pursuing this study.

As a type of social relations jealousy (Salovey & Rodin, 1986), romantic jealousy is deemed to be a complex emotional state (Volling, McElwain, & Miller, 2002) characterised as a complex of thoughts, feelings, and actions (Bauerle et al., 2002). Literature primarily focuses on the jealousy complex (emphasis on complex) and less so on the fundamentals of its emotional constitution. Focus on the latter is where the intentional object becomes integral. Although it may appear obvious, a promising angle to understand the complexity of romantic jealousy is to hone a deeper understanding of the emotion, by looking at its intentional object, for which the parent study offers a viable avenue.

Understanding the intentional object of romantic jealousy may provide an indication of where (toward whom) the emotion is directed. Knowledge of this could offer some predictive power over where a jealousy response may be behaviourally directed. This may prove valuable in instances where individuals can be protected from potential harm. For example, this is observed in love triangles where a jealous partner expresses aggression and is sometimes violent to their partner or rival (Felson, 1997). Extended further, the proposed sex asymmetry in who is held the intentional object may be a precursor to understanding potential links with gender based violence.

The extent to which knowledge of the intentional object of romantic jealousy can be instrumental to such advancements though is also curtailed by the empirical limitations of the parent study. A major limitation in this regard is that the parent study was conducted once on a sample of university students in Bielefeld, Germany. Although valid for that sample, there is little indication that the findings will consistently present in different populations. It is therefore important to determine the consistency of the findings in other samples in order to rely on such knowledge to advance the understanding of romantic jealousy.

The implication of diversifying the sample also extends to testing predictions theoretically underpinned by evolutionary psychology. Testing an evolutionary prediction requires demonstrating that human beings have evolved domain specific psychological mechanisms which are non-random (Tooby & Cosmides, 1992). Therefore, testing the evolutionary prediction requires a research design that detects if the phenomenon under study is systematic (or non-random). Although, the statistical significance of the parent study demonstrated this, applying Tooby and Cosmides (1992) comment about non-random domain specific psychological mechanisms implies that non-random domain specific psychological mechanisms should be detected across diverse samples, which the parent study did not demonstrate. On this reasoning, one should expect that the findings replicate in the present

study. Put differently, if evolutionary psychology proposes that these domain specific psychological mechanisms have evolved in humans, then the findings should replicate.

Thus the rationale for conducting this study is to address these aspects of the parent study to enable a clearer understanding of the intentional object of romantic jealousy as an evolved psychological mechanism, the significance of which is outlined next.

1.7 Significance of the Study

Among the various aspects which render this study noteworthy, here the significance of its applied value will be briefly noted.

Emphasising a previous point, conducting this study enables a clearer understanding of romantic jealousy by giving due consideration to its intentional object and any associated sex differences in this regard. Such understanding better supports the design or improvement of interventions directed at addressing issues associated with romantic jealousy. These interventions could be therapeutic, the development and institution of de-escalation protocols in instances of violent behaviour, and even the development and implementation of policies.

The methodological imperative of testing evolutionary predictions is another aspect to the significance of this study. In this respect, the present investigation delves into how replication can be used to strengthen the scientific integrity of evolutionary studies.

Unique to the sample, this study is significant in that it helps understand toward whom UKZN undergraduates direct the intentional object of romantic jealousy. This is useful to informing counselling support services offered to students on an individual level and may even extend to devising support strategies which may also involve institutional policy instruments.

1.8 Definition of Terms

With an indication of the context, focus, parameters, and justification for this investigation, this section provides conceptual clarity on the key terms used in this study. These are romantic jealousy and the intentional object.

Romantic jealousy. The evolutionary psychological definition of romantic jealousy is that it is a psychological mechanism that evolved to protect romantic relationships from infidelity (Buss, 1995). It is an adaptive emotional response to sexual or emotional infidelity (Shackelford et al., 2000).

Sexual infidelity. Evolutionary psychologists define sexual infidelity to be when a partner engages in sexual activity with someone other than their partner (Shackelford et al., 2000).

Emotional infidelity. Evolutionary psychologists define emotional infidelity as instances when one's partner directs resources like time, love, and attention to someone else (Shackelford et al., 2000).

Intentional object. This is a distinctive feature of an emotion which is that it is directed at “something”, which is deemed the object of the emotion thus being directed at an object renders an emotion intentional because an object is taken beyond itself, hence “jealousy is directed at a rival over someone” (Deonna & Scherer, 2013, p. 45).

With this conceptual clarity rounding up the orientation of this research enquiry, what to expect in terms of how this study written up and presented is discussed next.

1.9 Dissertation Structure

Having explained what the present investigation is about, this section describes how this study is structurally documented in this dissertation. Chapter one introduces this study by orienting the reader to the background of this investigation, focusing the research question and providing the rationale for this study. Chapter two, the literature review, explores the research question in detail by discussing and evaluating relevant theories and empirical studies particularly about evolutionary psychology and the intentional object of romantic jealousy. Chapter three describes the methodology used in this study, whilst chapter four presents the results of the analysed data. These results are then interpreted in chapter five by drawing on the reviewed literature and additional studies. This dissertation is then concluded in chapter six wherein the key findings are consolidated and areas for future research initiatives are suggested.

Chapter 2: Literature Review

This chapter reviews relevant literature within the parameters demarcated in chapter one. Thus, the research question is discussed in detail through a theoretical lens and the examination of empirical studies. Theoretically, the evolutionary psychology of romantic jealousy is explained and is pitted against a dominant rival theory rooted in social learning. Taking this critical standpoint reveals a gap in literature which exists seemingly due to limited engagement with romantic jealousy as an emotion. Consequently, the discussion shifts to explaining how this study can potentially address the gap. Ergo, the discussion banks toward the argument that evolutionary psychology promotes an enhanced understanding of romantic jealousy through its intentional object and the appropriateness of the methodological approach taken in this study. This discussion then tapers to a summary of the main points to conclude this chapter.

2.1 Theoretical and Empirical Perspectives of Romantic Jealousy

In this section, the introductory discussion about understanding of romantic jealousy is expanded by outlining key aspects of studies advanced from evolutionary and non-evolutionary perspectives. The purpose in doing so is to situate the intentional object. This is because romantic jealousy and its intentional object are inextricably linked. Therefore, the discussion cannot exclusively focus on the intentional object absent the referent emotion. Noting this at the outset is imperative as this is the foundation of the argument that underpins part of the rationale for this study, which is that understanding the intentional object enhances the understanding of romantic jealousy.

Taking this approach deviates from how the intentional object and romantic jealousy is treated in literature where, as will be seen, typically romantic jealousy is the focus without mention of its intentional object, despite it being an emotion. Here, romantic jealousy is discussed first and then the intentional object. A caveat to adopting this approach is that the discussion may appear disjointed at points seeing as there is no language yet on how the intentional object integrates into the conceptualisation of romantic jealousy, though there ought to be.

When surveying literature about romantic jealousy, directly noticeable are the diverse perspectives of the emotion. These include psychoanalytic, evolutionary, social cognitive, attachment, attributional, and cultural perspectives among others. It is hard not to appreciate this, as it impresses the cornucopia of information available and promotes a fascinating outlook about romantic jealousy. This impression however is not sustained as the immediacy of a lack of consensus becomes conspicuous. Harris and Darby (2010) do well to point out the implication of this being that although the diverse perspectives result in intriguing findings, major theoretical ideas about these are difficult to convey, because researchers use different terminologies and do not place their findings within a larger theoretical framework.

The impact on this literature review is that the terminological diversity does not provide a conceptual common ground from which to work as a basis. Furthermore, the lack of theoretical placement leaves the findings about romantic jealousy decontextualised. Thus, this review may appear broad, at some points somewhat cursory, and perhaps descriptive. This however is reflective of the status of literature about romantic jealousy and its intentional object.

Amidst these difficulties, this review will establish a semblance of common ground by leveraging off Volling et al., (2002) observation that underscored by all jealousy theorists

regardless of their theoretical perspective is that jealousy occurs in the context of a social triangle, which usually comprises three individuals. With respect to romantic jealousy, these are the jealous partner, non-jealous partner (or beloved), and the rival. This will scaffold this review which therefore assorts in accordance with the triangle drawing on the more prominent perspectives about each aspect.

2.1.1 Non-evolutionary perspectives of romantic jealousy

Romantic jealousy conceptually originates from a non-evolutionary perspective and is born off the application of jealousy to the romantic relationship. As such, one of the more notable trends in literature is the concentrated effort invested in understanding the characteristics of romantic jealousy and its intricacies under varying conditions. Given that romantic jealousy is conceptually rooted in jealousy, it is therefore appropriate to commence the discussion with the conceptualisation of jealousy.

Developmentally, the tendency to experience jealousy is thought to exist early in the emotional repertoire. Markova, Stieben, & Legerstee (2010) explain that the experience of jealousy can occur in the first year of infancy because this is when infants have an innate desire to form social bonds, which when threatened results in a reaction of jealousy. Hence, Markova et al. (2010) argues that it can be deemed normal for infants to express jealousy because it is a response to possible exclusion by a loved one (Markova et al., 2010).

An effective way to comprehend jealousy is to differentiate it from envy. This is because jealousy is often confused with envy (Salovey & Rodin, 1986). These emotions however are quite different. Whereas envy involves two people and is evoked when one lacks something that another enjoys, jealousy involves three people where “one fears losing someone to another person” (Smith & Kim, 2007). Hence, the former it is about a desire to

obtain something that someone already has whereas the latter is about a desire to not lose something (someone) that somebody already has (Ben-Ze'ev, 2010).

Turning to understanding romantic jealousy, the following sections will discuss the more prominent conceptualisations and theoretical orientation, which vary depending on the aspect of the triangle it emphasises.

2.1.1.1 Romantic jealousy and the Jealous Partner. In their conceptualisation, Salovey and Rodin (1986) focus on the central role the jealous partner plays in the onset of romantic jealousy. They explain that a partner reacts with jealousy when their attainment of a desired object which is a person that the individual shares a romantic relationship with is threatened (which they refer to as an eliciting event). Therefore, Salovey and Rodin (1986) argue that romantic jealousy is best understood by carefully looking at the eliciting event because it provokes (elicits) the emotion. Their study demonstrated that an eliciting event creates a situation of threat over attaining the desired object or goal (which could or could not involve a person).

Salovey and Rodin's (1986) view of romantic jealousy is based on the jealous partner's goal directed nature because they argue that the emotion is elicited when the attainment of a desired object is threatened. Salovey and Rodin's (1986) conceptualisation may tempt the view that aside the reaction of jealousy, the jealous partner may be rather static in the experience of romantic jealousy. However, their presupposition that the jealous partner plays a significant role in their experience of romantic jealousy opens the door to further research worthy of discussion because it reveals the intrinsic complexities of the jealous partner to the onset and experience of romantic jealousy.

Studies show that there are two characteristics intrinsic to the jealous partner which makes them prone to the onset of romantic jealousy. These characteristics are the

individual's personality and their attachment style. Both these characteristics renders an individual partial to the onset of romantic jealousy by shaping how they experience their romantic relationship.

2.1.1.1.1 The Jealous Partner's Personality. Certain personality dimensions appear to readily facilitate feelings of romantic jealousy. Dijkstra and Barelds (2008) studied the association between personality and romantic jealousy, measuring a typology of romantic jealousy comprising reactive jealousy, preventative jealousy, and anxious jealousy (this typology will be explained within the context of the findings). The results showed a positive relationship between neuroticism (N) and all three types of romantic jealousy.

The researchers explain that the characteristic anxious, worried, insecure, and nervous nature of neurotic individuals impacts on how they experience their relationship, which sets the stage for romantic jealousy. Individuals high in (N) experience romantic jealousy more readily because they tend to worry more about their partners potential infidelity, which makes them anxious (anxious jealousy), in turn this makes it more likely for them to employ behaviours which prevent their partner from coming into contact with members of the opposite sex (preventative jealousy) and as such they react more intensely (reactive jealousy) when/if their partner is unfaithful (Dijkstra & Barelds, 2008). This finding is fortified by the negative association Dijkstra and Barelds (2008) found between emotional stability and romantic jealousy.

Interestingly, the results also showed a positive relationship between reactive jealousy (the degree to which jealousy is experienced) and conscientiousness. The researchers explain that this could be attributed to conscientious individuals having high expectations of their partners to be as sexually exclusive as they are. On another interesting note the results showed that agreeable individuals tend to experience less jealousy. However, (N) remains the most significant dimension associated with romantic jealousy.

On closer examination, at its core, (N) appears rooted in matters of social inclusion. Denissen and Penke (2008) demonstrated that (N) is fundamentally about individual differences in the predisposition to react vigilantly to threats to social inclusion. Using self-esteem as an indicator of threats to social inclusion and using threats to relationship quality and relationship conflict as indicators of threats to social inclusion, their study showed that the self-esteem of people high in (N) decreased when they perceived low relationship quality and relationship conflict (Denissen & Penke, 2008). Thus, it may be reasonable to entertain the thinking that the nervous, insecure, and worrying nature of neurotic individuals could be a manifestation of their vigilance for threats to social inclusion.

That at its core (N) is about individual differences in vigilance to threats to social inclusion invites another perspective of romantic jealousy when it is considered that romantic jealousy is conceptually rooted in jealousy. It has already been pointed out that developmentally, the preconditions for a jealousy experience exist during infancy (Markova et al. 2010). Given that infants innately tend toward forming social bonds, when these bonds are threatened, the infant is exposed to the risk of social exclusion which prompts the infant to experience jealousy (Markova et al., 2010).

Seeing that at its core, jealousy is an emotional response to the risk of social exclusion in infants and that romantic jealousy is conceptually rooted in jealousy, it could be plausible that romantic jealousy is an emotional response to the risk of social exclusion or seen another way to a threat to social inclusion. Thus, the neurotic individual's heightened sensitivity to threats to social inclusion which makes them more vigilant to such threats may actually be that the rival is perceived to threaten social inclusion. This is because the jealous-partner is at risk of losing their relationship or more specifically their involvement in the relationship, which represents a threat to social inclusion. Seen another way, the individual faces the risk of being rejected by their partner which would exacerbate the threat to social inclusion or of

social exclusion. If so, in the conceptualisation of romantic jealousy, it may be worthwhile to investigate social exclusion or threats to social inclusion as core to the onset.

That jealousy presents in response to a risk of being socially excluded from social bonds in infancy brings into immediate focus that the attachment relationship an infant has with their caregiver may play an important role in the jealousy experience. For example, neurotic individuals may be disposed such because their significant social bonds may have been characteristically anxious, which would serve to make them particularly vigilant to threats to those bonds and consequently makes them especially inclined to experience romantic jealousy.

The development of jealousy in infancy receives further empirical support by virtue of the style of attachment developed in infancy. This has been found strongly associated with the experience of romantic jealousy, and is understood under attachment theory which is applied to romantic jealousy. This significant theoretical approach is discussed next.

2.1.1.1.2 The Jealous Partner's Attachment Style: Attachment Theory. The attachment relationship between an infant and caregiver is significant because it influences how an infant relates to the social world cognitively, emotionally, and behaviourally. This is because the attachment relationship guides the infant on what to expect of others and on how to respond (Harris & Darby, 2010).

Although attachment theory focuses on infant-caregiver attachment, studies show that its scope extends to understanding adult romantic relations. In a bid to better understand romantic relationships, Hazan and Shaver (1987) applied attachment theory to conceptualise romantic love as they argue that romantic love can also be construed as an attachment process. This process is one in which lover's form bonds of affection, which is analogous to the process by which infants bond with their caregivers (Hazan & Shaver, 1987). Therefore,

they argue that attachment theory is an appropriate framework for conceptualising romantic love (Hazan & Shaver, 1987). The study supported this argument by showing that the attachment style developed in infancy continued into adulthood.

In adulthood, these attachment styles translated into individual differences in the experience of romantic love. Thus, individuals with an avoidant attachment style and anxious attachment style as opposed to the secure attachment style experienced romantic love to involve jealousy (Hazan & Shaver, 1987). Individuals with an avoidant attachment style experienced romantic love as avoidant lovers who characteristically feared intimacy, experienced emotional highs and lows as well as jealousy (Hazan & Shaver, 1987). Individuals of an anxious attachment style experienced romantic love as anxious lovers who characteristically experienced romantic love as an obsession, emotional highs and lows, extreme sexual attraction, and jealousy (Hazan & Shaver, 1987).

The mechanism by which the attachment style shapes an individual's experience of romantic love is a mental model, to which it is linked (Hazan & Shaver, 1987). This model is a working model of the self and the major social interaction partner which serves to direct the individual's expectations of the self and the social interaction partner, particularly with respect to a partner's accessibility and responsiveness (Hazan & Shaver, 1987). The study revealed that in adulthood, an individual's mental model of romantic love is also linked to their attachment style developed in infancy (Hazan & Shaver, 1987).

Thus, individuals with an avoidant attachment style believed that in reality, the head over heels romantic love displayed in books and movies did not exist and that it is rare to find someone to fall in love with (Hazan & Shaver, 1987). Individuals of an anxious attachment style believe that it is easy to fall in love, that romantic feelings wax and wane, and that it is rare to find real love (1987). Notably, the findings from Hazan and Shavers' (1987) study

was successfully replicated by Freeny and Noller (1990), which confirms that attachment style is a fairly reliable predictor of adult romantic relationships.

The continuity of mental models and attachment styles from infancy into adulthood is important because it is through these mechanisms that individuals experience their romantic relationship, which is the context of romantic jealousy. Although Hazan and Shaver (1987) treated the individual's attachment style as dispositional, this study is important because it indicates that mental models of romantic love guide the individual's expectations of their relationship and their partner. This in turn drives the individual's emotions and behaviour in response.

Thus, the mental model of romantic love by anxious and avoidant attached individuals leave ample opportunity for jealousy to arise. For example, the expectation that finding real love is rare increases the chances of a rival for one's partner because there is little to no expectation of real love with one's partner or any other partner. The expectation that falling in love is easy may also promote the rival's success by attracting one's partner due to the ease of falling in love but may also mean that the jealous partner could easily move on with someone else. In a sense, Hazan and Shavers' (1987) findings suggest that attachment style influences the nature of the adult romantic relationship, which is the context in which a certain profile of feelings and behaviours may be expressed. Perhaps it acts as a framework for the relationship which sets the parameters within which relational interactions, thoughts, feelings and behaviours occur. That an individual's relationship style is predicted by their attachment style is significant because it indicates that individuals of certain attachment styles, more specifically the anxious and avoidant styles are partial to experiencing romantic jealousy. However, it is important to get a clearer sense of how attachment is related to an individual's emotional reactions in their romantic relationship.

Sharpsteen and Kirkpatrick (1987) looked at how jealousy is linked with attachment. Their study was fuelled by the similarities between romantic jealousy and attachment relationships. As such, they conceptualised romantic jealousy as an emotion which is elicited when an individual is separated from one's partner or perceives that there is a threat of losing a desired attachment relationship, especially if the person is being abandoned by their partner for someone else. Much like an infant's attachment system is activated to fulfil the purpose of relationship maintenance; romantic jealousy is activated to maintain an individual's romantic relationship (Sharpsteen & Kirkpatrick, 1997).

Jealousy is activated because an individual's relationship is under threat as well as their ability to maintain the relationship, therefore, when activated; the jealous individual seeks physical and psychological proximity to their partner which provides a sense of security about one's partner (Sharpsteen & Kirkpatrick, 1997). Thus, the functioning of the attachment system can be thought of as an attachment-related strategy which has a regulatory goal (Mikulciner & Shaver, 2005). The attachment style shapes cognitive and emotional processes which allow attainment of the goal (Mikulciner & Shaver, 2005), which in the case of romantic jealousy is attainment of maintaining one's romantic relationship. This view contrasts with Salovey and Rodin (1986) because it appears that the individual's goal is to regulate their relationship as opposed to attaining their romantic partner. And it also contrasts with Pines' (1989) view because it is the threat to the attachment bond which triggers romantic jealousy as opposed to a valued romantic relationship.

Akin to an infant's attachment system being triggered by separation or a threat to or separation from an attachment figure, romantic jealousy is triggered by separation from or a threat of separation from one's partner, when the threat is attributed to the partner's interest in another person (Sharpsteen & Kirkpatrick, 1997). Therefore, Sharpsteen and Kirkpatrick (1997) suggest that the thoughts, feelings, and behaviour elicited when the attachment system

is activated, is in part the same thoughts, feelings, and behaviours elicited in a romantically jealous individual. Thus, they suggest that individual differences in attachment style would also influence the frequency or intensity of romantic jealousy.

This is because losing or the possible loss of a romantic partner disrupts the attachment bond and also signals the possible loss of caregiving (Sharpsteen & Kirkpatrick, 1997). Similar to the feelings elicited in the infant-caregiver attachment, adults would also feel anxious and fearful when presented with the prospect of losing their partner which is a source of security and comfort (Sharpsteen & Kirkpatrick, 1997). Like infants, they may also express their anger to punish or discourage their partner from leaving them and if the partner leaves mourn this loss and express sadness over the loss (Sharpsteen & Kirkpatrick, 1997).

Given the similarity that activation of an infant's attachment system in response to separation or a threat thereof has with eliciting romantic jealousy, Sharpsteen and Kirkpatrick (1997) found that the three core emotions of anger, sadness, and fear which infants feel when separated or threatened to be separated from their attachment figure is also associated with romantic jealousy. Asking participants the extent to which they experience each emotion when reflecting on a jealousy episode, the results of their study showed that the experience of anger sadness and fear varied in line with the individual's attachment style. In this respect, anxiously attached individual's experienced greater jealousy and were more fearful than securely attached individuals. Securely attached individuals felt more anger and avoidant attached individuals felt more fear. That anxiously attached individuals are most susceptible to experiencing romantic jealousy may account for why (N) is significantly associated with the experience of romantic jealousy. This is because, individuals high in (N) are characteristically anxious.

Stemming from their comprehensive review of studies about the emotional correlates to attachment style, Mikulciner and Shaver (2005) make a compelling argument that attachment style qualitatively influences an individual's emotional experience of a romantic relationship. In the instance of romantic jealousy, they found that one relational event was especially jealousy evoking for individuals of an anxious attachment style. That is an anxiously attached individual feels jealousy when their partner experiences happiness which is not related to their relationship. This relational event is jealousy evoking because an anxious individual is susceptible to viewing their partner's happiness as a threat to maintaining their relationship because their partner's attainment may motivate them to seek someone more attractive and successful than they are (Mikulciner & Shaver, 2005). Thus, anxiously attached individuals would feel heightened fears of separation, abandonment, and worry about "imaginary" rivals for her/his partner (Mikulciner & Shaver, 2005).

The jealous individual's personality and attachment style predisposes them to experiencing romantic jealousy by shaping the relationship experience. None of these characteristics however have been found to be causatively linked with the onset of romantic jealousy, just that it readily facilitates experiencing the emotion. Moreover, this also shows that there is a complexity to the jealous partner's role in the experience of romantic jealousy.

Understanding romantic jealousy from the perspective of the jealous partner reveals the jealous partners importance to the conceptualisation of romantic jealousy because their personality and attachment style plays a critical role in rendering them susceptible to the emotion. Furthermore, it has also become clear that these intrinsic characteristics shape how the jealous partner experiences the romantic relationship thereby setting the appropriate context for the emotion to be elicited. This has been extended to the possibility that the emotion is a response to the threat of social exclusion. However characteristically biased and immersed in this relational context the jealous partner may be, romantic jealousy would not

be triggered unless a rival is perceived, which bring these factors into play to react with jealousy. This makes the rival particularly significant to understanding romantic jealousy.

2.1.1.2 Romantic Jealousy and the Rival. Common among the diverse conceptualisations presented thus far is that each conceptualisation rests on the presence of a rival that poses a threat, paving the way for the onset of romantic jealousy. This section discusses how a rival is perceived and the specific characteristics of a rival that is jealousy evoking. It is important to note that this section will be light in theoretical placement but heavy on specific findings about the rival.

2.1.1.2.1 Sizing up a Rival. The process by which a rival is perceived as such is a cognitive process of social comparison which represents the social cognitive aspect of romantic jealousy. The presence of a rival must be perceived by the jealous partner for romantic jealousy to be elicited. This occurs when the jealous partner compares their personal characteristics to a perceived interloper and on evaluating that the perceived interloper's characteristics exceeds their characteristics, the interloper is then perceived as a rival (Buunk, Solano, Zurriaga, & Gonzalez, 2011).

The perception that their attributes does not measure up to that of the rivals prompts the jealous partner to reflect that the rival's superiority in this regard enables the rival to seduce away the non-jealous partner (Salovey & Rodin, 1986). This results in the jealous partner feeling what Salovey and Rodin (1986) term social-comparisons jealousy. When the rival is perceived to threaten the jealous partner's relationship with the non-jealous partner, the jealous partner imagines losing their relationship, and this results in feeling romantic jealousy (Salovey & Rodin, 1986). In this instance, romantic jealousy cannot be experienced without experiencing social-comparisons jealousy (Salovey & Rodin, 1986).

The process of social comparison depends on an individual's characteristics or attributes. The characteristics of the rival is significant because he/she is the benchmark

against which the jealous partner finds that they do not measure up. In this perceptual process, certain rival characteristics tend to be particularly jealousy evoking and is therefore important to understand.

2.1.1.2.2 Jealousy Evoking Rival Characteristics. Research by Dijkstra and Buunk (1998) provides much insight on jealousy evoking rival characteristics. The researchers conducted an experiment in which they investigated the characteristics of physical attractiveness and dominance on evoking male and female romantic jealousy. Using a hypothetical scenario which involved witnessing one's partner flirting with a rival who reciprocates the flirtation, Dutch university participants rated if the rival's physical attractiveness or dominance evoked their jealousy. The findings were sexually asymmetrical in that females found a physically attractive rival more jealousy evoking whereas males found a physically dominant rival more jealousy evoking. This study is also notable because it causatively links the rival to evoking romantic jealousy.

In 2002, Dijkstra and Buunk furthered their enquiry by ranking which rival characteristics are more jealousy evoking. In open interviews with Dutch university participants, they asked which characteristics in a person would evoke more jealousy in relation to their partner. The feedback revealed the following five factors in a rival to be significantly jealousy evoking: social dominance (e.g. more charismatic, more self-confident, and more popular), physical attractiveness (e.g. more attractive body, more slender, better figure), seductive behaviour (behaves provocatively, dresses more nakedly), physical dominance (built heavier, more muscular, better in sports), and social status (has more money, better job, and a better education) (Dijkstra & Buunk, 2002). These factors were then used to create a Dutch 56 item inventory which they administered in a survey of Dutch university participants. Consistent with the results from the experiment, the study showed

that male jealousy was evoked by the rival's social and physical dominance and female jealousy was evoked by the rival's physical attractiveness.

Buunk et al (2011) then used this inventory in a cross-cultural study of Spanish and Argentinian university students. Upon validating the inventory for this sample, different jealousy evoking factors to the Dutch sample emerged. Four factors were significant. Two of which (physical attractiveness and physical dominance) were consistent with the Dutch sample. The other two factors were: social power and dominance (e.g. behaves more provocatively, has more authority, is more popular, has a better education, and is shrewder) and social communal attributes (e.g. is more attentive, more self-confident, has a better sense of humour, is more sensitive to a partner's needs).

The results for the combined sample were consistent with the Dutch sample in that males felt more jealousy to a physically dominant rival. Females however, felt more jealousy when the rival was more physically attractive and had more social-communal attributes as well as more social power and dominance. Most jealousy evoking for males and females was social communal attributes. This was followed by females finding a rival's physical attractiveness and social power jealousy evoking and males' findings a rival's dominance jealousy evoking. Thus, this study demonstrated that jealousy evoking rival characteristics is culturally sensitive to certain extent.

Buunk and Dijkstra (2015) used the inventory on an Iraqi Kurdistan sample. Although they found that the inventory was valid and reliable they found that the cultural differences in jealousy evoking rival characteristics more pronounced. In this study, the five jealousy evoking rival characteristics of physical attractiveness, social dominance, physical dominance, seductive behaviour and social status were significant and consistent with the

Dutch sample. However, females found that all five rival characteristics were threatening and as a result jealousy evoking whilst males found physical dominance least threatening.

These studies illustrate that the characteristics which a jealous partner would typically compare themselves to a rival on are those of physical attractiveness, physical dominance, social dominance, social status, seductive behaviour, social-communal, and social power and dominance to determine if they are better than the rival. And although physical attractiveness and physical dominance appear to be the more important characteristics, the extent to which each characteristic is more jealousy evoking and threatening tends to vary culturally. Furthermore, while a sex asymmetry on jealousy evoking rival characteristics has been found, this also appears to be culturally relevant.

When the jealous partner deems the rival superior to himself/herself, the negative social comparison that he/she is lesser than the rival is an inequity which creates the perception of a threat. Thus, the rival is a powerful jealousy eliciting factor because of the threat he/she poses. Perhaps understanding this rival threat could be the crux to understanding romantic jealousy.

It is important to note however that although conceptualisations of romantic jealousy are in accord about a rival threat, there is discord over exactly what is threatened. For example, from the conceptualisations presented thus far it could be the relationship (Pines, 1998), relational closeness (Attridge, 2013), the jealous partner (Salovey & Rodin, 1986), and the attachment (Sharpsteen & Kirkpatrick, 1987). Literature points to two main threats. That is, the threat could be to the self or to the relationship.

Although the rival holds a powerful role in eliciting romantic jealousy because of the threat he/she poses, the perception that the individual's romantic partner is romantically

inclined to a rival is jealousy evoking. This brings into focus the role of the romantic partner to the onset of romantic jealousy.

2.1.1.3 Romantic Jealousy and the Romantic Partner. Once a rival is perceived and their threat confirmed, the romantic partner plays a very influential jealousy evoking role, in terms of their behaviour toward the rival. This may be so because it tangibly associates a partner to a rival potentially romantically and is the basis on which a risk to the nature, quality, and survival of one's romantic relationship may be ascertained. Whilst the rival is an external risk to the romantic relationship, one's partner's interest in a rival can be seen as an internal risk to the relationship. This is because it signifies to the individual that the relational closeness which was once fostered may no longer be as rewarding and valued, hence the partner shows interest in a rival, and could therefore exit the current relationship because they may no longer be committed to the relationship.

With respect to jealousy evoking partner behaviours, Dijkstra, Barelds, and Groothof (2010) conducted two important studies. The studies are notable because it comprehensively looks at a host of jealousy evoking partner behaviours and examines the extent to which these behaviours evoke romantic jealousy. In addition, it explores the significance of a partner's internet and media use on evoking romantic jealousy. This line of enquiry is relevant because these mediums are contemporary aspects of societal communication which serves to expand the pool of rivals for one's partner. Furthermore, the studies are conducted on a Dutch sample of undergraduate university students (referred to as a student sample) and community sample (referred to as an adult sample), which strengthens generalisability of the findings.

The first study focused on developing a comprehensive inventory of partner behaviours that evoke romantic jealousy. This involved selecting and reviewing empirical studies which were exclusively focused on jealousy from 1954 until 2008. Upon review,

romantic jealousy was found to be evoked if/when a partner engages in the following behaviours: has sex with; spends much of their time with; flirts with; has an interesting conversation during which they laugh and touch with; kisses; is attracted to; has a sexual affair with; works intensively with; embraces; shares a strong emotional bond with; shares a dance with; gives a present/love letter/postcard to; phones; shares their feelings and secrets with; has sexual fantasies about; looks interested in; has sex without having intercourse with; leaves for; has a romantic date with; and falls in love with someone of the opposite sex (Dijkstra et al., 2010). Further, if one's partner goes to places without them and if one's partners expresses how nice she/he thinks a person of the opposite sex is, romantic jealousy can be evoked (Dijkstra et al., 2010). These behaviours were treated as 22 categories and formed the basis of a 42 - item inventory about jealousy evoking partner behaviours.

In the second study, this questionnaire was administered to the student and adult sample. The results showed that four factors of partner jealousy evoking behaviours were satisfactory for both samples. These include: suspicious behaviour; unfaithful behaviour; involvement with pornography; and technological investment. Suspicious behaviours include those that do not openly indicate infidelity, but raises suspicion in this regard. For example, embracing or sharing an emotional bond with someone of the opposite sex. A partner's unfaithful behaviour on the other hand involves direct acts of sexual and or emotional infidelity. Technological investment includes behaviours where one's partner gets involved with someone of the opposite sex through the internet or mobile telephone. Pornography involves behaviours of viewing pornographic materials in media.

Across both samples a partner's unfaithful behaviour was most jealousy evoking. This finding is especially significant from an evolutionary perspective which will be discussed further on in this chapter. For adults, a partner's technological investment evoked the second most feelings of romantic jealousy whereas undergraduate females rated their

partner's technological investment as more jealousy evoking than their suspicious behaviour. This was especially relevant when the partner shared emotional or romantic feelings with someone else through these mediums. The researchers attribute this to technology offering more secrecy, which in turn makes it difficult to detect any suspicious behaviour. Thus, it appears that a partner's involvement with someone over the internet is perceived as a severe act of infidelity and a breach of trust which can potentially undermine relationship functioning. Among students, a partner's involvement with pornography evoked the least amount of jealousy. The researchers suggest that this may indicate that it is necessary for an interaction between the rival and partner to evoke romantic jealousy. Thus, whilst technological investment and unfaithful behaviours involve such interaction, viewing pornography does not and may therefore not threaten the stability of one's relationship.

The study also showed that with age, a partner's suspicious and unfaithful behaviours evoked less jealousy. The researchers explain that with age, individuals could have relationships that are longer and experience less relationship insecurity as well as higher trust. However, this study also showed that in older adults, a partner's involvement in pornography evoked more jealousy, especially in females. The researchers attributed this to a partner feeling that they cannot compete with the young and very physically attractive males and females featured in pornographic content.

The findings from these studies suggest that jealousy evoking partner behaviours are those which appear as if the partner is investing meaningful attention in someone else which could have potential for developing romantic relations. This could be gleaned because many of the behaviours suggest a level of intimacy or the potential for intimacy to develop. Of significance is that the most jealousy evoking behaviours are those where the partner is romantically involved with someone else.

Insofar as jealousy evoking partner behaviours, this discussion has highlighted that the romantic partner plays a fundamental role in evoking romantic jealousy. Most of the partner behaviours investigated in the aforementioned studies are those which are closely linked to a partner's involvement or potential involvement with a rival. However, Mikulciner and Shavers' (2005) finding that a partner being happy outside his/her relationship is jealousy evoking for anxiously attached individuals should not be forgotten. This opens partner behaviours to include those which increases the likelihood of encountering a rival (even if it is imaginary). This also raises further considerations into the possibility that an individual's personality and attachment style could predispose a jealousy response to certain partner behaviours. Thus, it may be useful to investigate in this regard because these characteristics make it more likely for a jealousy reaction.

2.1.1.4 The Threat. Thus far, the conceptualisations of romantic jealousy has been discussed in line with the social triangle, and it is clear that there is no consensus among these. However, a common assumptive underpinning hinges each conceptualisation. This is the rival and concomitant threat posed. And although conceptualisations of romantic jealousy are in accord about a rival threat, there is discord over exactly what is threatened. For example, the following question can then be posed: is the perception of a rival threat the primary trigger to romantic jealousy or is the perception that a partner is inclined toward a rival the primary trigger of romantic jealousy?

Attridge (2013) says that it is elicited when relational closeness is threatened by a rival; Salovey and Rodin (1986) say that it is elicited when an individual's attainment of a goal which is a person they have a relationship with is threatened by a rival; and Sharpsteen and Kirkpatrick (1987) say that it is elicited when the attachment system is disrupted by losing or a threat to losing a romantic relationship, or when the individual is abandoned by their partner for someone else.

Literature gravitates around two main threats, being a threat to the self or to the relationship. Bauerle et al. (2002) argue that the threat is perceived as double threat, because the individual's self-esteem and the quality or existence of the romantic relationship is threatened. Rydell, McConnell, and Bringle (2004) underscore the importance of the double threat by stressing that it facilitates the experience of romantic jealousy which they demonstrated to play a causal role in the experience of romantic jealousy.

To better understand the impact of the threat to elicit romantic jealousy, a closer look at the romantic relationship is necessary. A romantic relationship is an intimate relationship wherein an individual's experience of self is very closely and intricately tied with the other (the partner). This is because intimacy develops in a process where the individual's psychological boundaries are removed to include their partner in the self (Franzoi, 2003). As a result, the individual experiences their partner as part of him/her, which is the essence of intimacy (Franzoi, 2003).

The individual includes the partner in the self quite extensively. This includes attributional shifts, where an individual makes attributions about their partners actions which are similar to the attributions they would make for themselves; resources are allocated with little distinction between the self and the partner; the relationship is communal in that it is governed by being responsive to a partner's needs with little concern for what is received in return; the partner's self-schema is incorporated in the individuals self-concept; and a shared memory system (transactive memory) is used to encode, store and retrieve information (Franzoi, 2003). Thus, the individual extending the self to incorporate their partner structures their experience of self by including the partner.

In this way, being in a romantic relationship sustains significant parts of the self because it is through relational interaction with the partner, who formatively attends to the

individual, that parts of the self are created and validated (Parrott, 2001). This also means that in a romantic relationship, the individual's happiness is closely connected to their partner (Ben-Ze'ev, 2010). Sustaining the individual's concept of self is what makes a romantic relationship valuable to the individual and why the risk of losing or losing a romantic relationship is devastating to an individual (Parrott, 2001). Thus, when an individual perceives a threat to a valued relationship or to the quality of this relationship, jealousy is experienced as a complex reaction (Pines, 1998).

2.1.2 A Summary of the Non-Evolutionary Perspective of Romantic Jealousy

Thus far, romantic jealousy has been discussed along the dimensions of a social triangle. Aside the insight each conceptualisation offers, taken together, it is apparent that each has a unique approach with little intersection. The discussion extended into a shared point of the rival threat, which was worthwhile delving into because this is the impetus which triggers the emotion. Romantic jealousy also presents in typologies. For example, suspicious jealousy is experienced when there is a potential threat to the relationship whereas reactive jealousy occurs due to an actual threat (Barelds & Dijkstra, 2007; Buunk et al., 2011). On the other end of the spectrum is the irrational side of romantic jealousy. This includes obsessive and delusional jealousy which is due to one's irrational beliefs of their partner's unfaithfulness irrespective of whether or not it has occurred (Batinic et al., 2013).

The non-evolutionary perspective contributes a comprehensive description of romantic jealousy, which when summed up, the emotional range, behavioural association, and cognitive processing illustrates its complexity. This is why Bauerle, Amirkhan, and Hupka (2002) see romantic jealousy as a complex of thoughts, feelings, and actions which is elicited in response to a threat to or a loss of a relationship of value due to a real or imagined rival for one's partner (Barelds & Barelds-Dijkstra, 2007).

The purpose in drawing out this discussion is to show how romantic jealousy is understood as an emotion. More recently, a conceptual shift can be seen, in that the emotion is considered to be complex. Amid this complexity however, is a lack of recognition, that if romantic jealousy is an emotion, what would be the intentional object of the emotion? Being directed at an object renders an emotion intentional because an object is taken beyond itself (Deonna & Scherer, 2010). By implication, the intentional object of romantic jealousy could potentially be the rival, the partner, or the self from a non-evolutionary perspective. If this is the case, questions immediately loom around what factors would drive a romantically jealous person to direct their emotion to the relevant intentional object.

2.1.3 An Evolution in Understanding Romantic Jealousy

There has been a decided shift in the understanding of romantic jealousy has occurred due to research which focuses on jealousy evoking factors. These factors include those specific to the jealous partner, the partner, and the rival. With respect to the jealous partner, intense feelings of jealousy have been noted in individuals high on neuroticism (Dijkstra et al., 2010). On rival characteristics, males have been found to be more jealous of rivals who are physically dominant whereas females are more jealous over rivals who are more physically attractive, have more social power, and dominance Buunk et al (2011).

The induction of romantic jealousy as a tactical strategy exemplifies partner involvement. In this regard, Fleischmann, Spitzberg, Andersen, and Roesch (2005) found that one may use a series of behaviours to deliberately induce their partner's jealousy in order to achieve specific relational goals such as to enhance a relationship, hurt a partner, gain a partners attention, reinforce ones self-esteem, enhance oneself or to control ones partner.

Most interesting though is the impact of infidelity. Dijkstra et al (2010) illustrated this in their investigation on developing an inventory of jealousy evoking partner behaviours. High on the inventory is extra-dyadic involvement with someone else and partner unfaithfulness (Dijkstra et al., 2010). The latter of which aroused the most feelings of jealousy (Dijkstra et al., 2010). This finding synergises with the evolutionary psychological view of romantic jealousy.

Evolutionary psychology maintains that romantic jealousy is a psychological module which evolved as an adaptive response to the recurring problem of being successful at reproduction, experienced by males and females. A seminal study conducted by Buss, Larsen, Westen, and Semmelroth in 1992 on the physiological and psychological sex differences in romantic jealousy provided traction for this perspective.

The study proposed that males face the adaptive problem of paternity uncertainty to their reproductive success, which is threatened by a partner's sexual infidelity. Females on the other hand, face an adaptive problem of the potential loss of parental investment and associated resources, which could get diverted to a rival and her children. In this instance, the partner's emotional infidelity threatens reproductive success. The study found that males reported greater jealousy related distress to a partner's sexual infidelity as opposed to emotional infidelity. Whilst females reported greater jealousy related distress to a partner's emotional infidelity as opposed sexual infidelity. These findings were strengthened by the correlating physiological responses to both types of infidelity.

Later in 1996, Buunk et al successfully replicated the aforementioned study on a cross-cultural sample. More support came from other studies (e.g. Edlund & Sagarin, 2009; Fussell & Stollery, 2012; Shackelford et al., 2000) that also replicated these findings. As a

result, romantic jealousy evolved to its re-conceptualisation as an adaptive emotional response to sexual or emotional infidelity (Shackelford et al., 2000).

It is important to note that romantic jealousy is a sex specific psychological mechanism because the triggers and experience of romantic jealousy varies by sex. Furthermore, because romantic jealousy involves autonomic physiological reactions to a perceived threat which consequently motivates actions directed at reducing the threat, romantic jealousy is deemed to be a positive emotion (Buss et al., 1992). This is because it deals with the adaptive problem of reproductive success (Fussell & Stollery, 2012).

In contrast with the non-evolutionary perspectives presented, evolutionary psychology sees romantic jealousy about a threat to one's reproductive success as opposed to a fear of losing a partner or a relationship. These novel findings challenge the contemporary understanding of romantic jealousy and suggest another facet to its complexity. Thus, it appears that romantic jealousy remains a complex emotion to be further understood.

2.1.4 The Intentional Object of Romantic Jealousy

The evolutionary perspective has paved the way to discovering an important missing link to understanding romantic jealousy. The parent study wherein Schutzwohl (2008) investigated the intentional object of romantic jealousy demonstrates this point.

Intentional comes from a psychological state that can have directive content which means that an activity is to be performed or an outcome is to be achieved and descriptive content which is a state that is the same as the information carried (Price, 2006). Thus, the intentional object of romantic jealousy is established from descriptive content that a rival may pose a threat and directive content which motivates actions to “cope with the situation”. As these psychological states involve a combination of descriptive and directive content, it is

characterised as an appraisal (Price, 2006). Being directed at an object renders an emotion intentional because an object is taken beyond itself, hence “jealousy is directed at a rival over someone” (Deonna & Scherer, 2013, p 45).

An appraisal falls in the realm of a cognitive approach to emotion because it involves an evaluation (Oatley & Johnson-Liard, 2013). The strongest proponents of the cognitive approach to emotion are Ortny, Clore and Collins. The authors explain that an appraisal encompasses using goals, standards, or attitudes to evaluate an object, which is when one focuses on certain aspects of interest or imputed properties of the object (Ortny, Clore & Collins, 1990). By focusing on and evaluating an object, one may for example be able to deem it to be a rival threat which accounts for the social comparative process of rival detection discussed earlier.

Thus, the intentional object refers to what (the object) an individual’s emotion is directed at and the evaluation of the object in terms its descriptive content (e.g. characteristics) and directive content, which may involve an individual’s goals or objectives for an outcome to be achieved. From this standpoint, the intentional object of romantic jealousy appears to be a bit difficult to clearly pick out.

From the non-evolutionary conceptualisations of romantic jealousy presented, it may be reasonable to also consider the partner, self, or rival as the intentional object of romantic jealousy. There is no consensus on what the intentional object of romantic jealousy is from this perspective. This is quite the conundrum as the object is quite elusive for an integral aspect to understanding the emotion of romantic jealousy.

According to the evolutionary perspective, the intentional object can only be the rival or the partner, depending on the type of infidelity and the sex of the jealous partner. Thus, males hold their partner as the intentional object of their romantic jealousy in the face

of sexual infidelity whilst the heterosexual females hold the rival as the intentional object of their romantic jealousy in the face of emotional infidelity (Schutzwohl, 2008). This is consistent with the evolutionary definition of romantic jealousy.

As an emotion, it is difficult to comprehensively understand romantic jealousy in the absence of understanding its intentional object. This cannot be disregarded because it is through understanding emotion in terms of its intentional object that advances in understanding emotions as adaptive mechanisms can be made (Deonna & Scherer, 2010). Therefore, the next appropriate direction for research into unravelling the complexity of romantic jealousy would be to integrate the emotional understanding. It may very well come to pass that romantic jealousy should be defined in terms of its intentional object. The non-evolutionary perspective does not yet offer a way forward on the intentional object of romantic jealousy, aside implicitly through application of the understanding of emotion. The evolutionary approach though does offer a way forward by specifying the intentional object of romantic jealousy, which arises from the definition of romantic jealousy.

The evolutionary approach a young perspective that has brought to surface a fresh undiscovered and valuable understanding of romantic jealousy as an emotion by looking into the intentional object. The difficulty is that this nascent perspective does not sport the empirical heritage of the non-evolutionary views.

Thus, in order to better understand romantic jealousy by delving into its intentional object the scientific pressure is placed on the evolutionary perspective of the intentional object of romantic jealousy. In response, this investigation focuses on reliability, because the parent study was conducted once, leaving the consistency of the finding questionable. Thus, the same question is asked again. The discussion about reliability is taken further in the final section of this chapter, about replication.

2.2 The Evolutionary Psychological Theoretical Framework

Evolutionary psychology is a hotly debated area. Although nascent, it is backed by a growing amount of empirical studies which offer very novel explanations of human behaviour. With a foundation in evolutionary biology, it is difficult to understand how the theory can be comprehensively applied to human psychology which is a complex combination of biological, cognitive, affective, social, cultural, and individual factors among others. Yet, this is touted as an important advantage of evolutionary psychology because it is argued to be a paradigm which provides a framework within which the disparate areas of psychology can be drawn together and integrated into a coherent psychological analysis of human behaviour (Buss, 1992). It is risky for psychology to subscribe to a singular theoretical framework but this framework has already demonstrated potential by the contributions made to the social psychology of romantic relationships, where it has advanced the understanding of romantic jealousy and shows potential for further advancement by promoting insights into its intentional object.

Thus, this section delves into the evolutionary psychology of romantic jealousy, discusses the theoretically contentious issues and explores an alternate theoretical perspective in response. The discussion in this section is treated in three parts as follows: firstly, the bedrock of evolutionary psychology which is the biological theory of evolution is discussed in order to describe evolutionary processes; secondly, the biological theory of evolution is then translated into evolutionary psychology; which thirdly leads to the evolution of romantic jealousy and its intentional object.

Of the numerous theoretical approaches to evolutionary psychology (e.g. general selection theories, sociality theories, multilevel evolutionary theories and systems theories),

evolutionary psychology has come to be associated with the inclusive fitness interpretation of evolution (Caporael, 2001). The central tenet of this interpretation is that the mind comprises a set of information processing mechanisms that has evolved through natural selection (Ploeger, 2010).

2.2.1 The Biological Theory of Evolution

Many scientific developments have led to the present day understanding of evolutionary theory. Principally, it is a synthesis of Charles Darwin's theory of evolution by natural selection and Gregor Mendel's theory of genetic inheritance (Ridley, 2004). Though important in its own right, a discussion of all the developments falls outside the ambit of this review. Instead, the description of evolutionary theory will be constrained to its key concepts, which are: evolution, natural selection, adaptation, inheritance, competition, and fitness.

In 1859, Charles Darwin first proposed the theory of evolution by natural selection. Darwin developed the theory to explain the observable variation in characteristics between and among organisms. He surmised that such variation cannot only be caused by external environmental factors and thus focused his enquiry on the intrinsic aspects of organisms which may also cause them to vary in characteristics (Darwin, 1859).

Biological evolution can be understood as a change in the form and behaviour (or characteristics) of organisms in a population of species, between generations, which occurs as a population descends from another (Ridley, 2004). Darwin proposed that organisms within a population evolve or change through a process of natural selection (Darwin, 1859). He explained that when an organism is in an environment in which it faces a frequent and recurring struggle for existence, even the slightest characteristics (under the complexity of life) that favours the organisms survival will be naturally selected (Darwin, 1859). Thence

from the principle of inheritance, this selected organism will continue propagation in a changed or modified form (Darwin, 1959).

Three premises of evolution proposed by Dunbar, Barrett and Lycett (2005) well explain what Darwin (1859) meant. Before discussing these, it is important to note the context of evolution. The process of natural selection requires an environment in which organisms within a species compete and reproduce to form new generations (Ridley, 2004). In this competitive environment, all organisms must by nature, characteristically vary. Such variation can be in the organism's morphological, cellular, biochemical (Ridley, 2004), physiological, or behavioural characteristics, known as the phenotype (Dunbar et al., 2005). Thus, the first premise for evolution by natural selection is that all organisms must vary in their characteristics (Dunbar et al., 2005).

The second premise calls on the nature of the organism's variable characteristics. These variable characteristics must be genetically heritable (Dunbar et al, 2004) for natural selection to operate (Ridley, 2004). This enables the characteristics between individual organisms to be passed from one generation to the next through reproduction (Dunbar et al., 2005). Consequently, offspring will resemble their parents because they have inherited characteristics (variations) from their parents which imply that evolutionary modification (change) occurs in a series of populations that descend from one another (Ridley, 2004). Hence, the intrinsic aspect which Darwin premised to be responsible an organisms variation in characteristics can be attributed to the premise of genetic inheritance.

The value that a characteristic confers to an organism is critical to its inheritance. The competitive success that a variable characteristic offers an organism is therefore the focus of the third premise (Dunbar et al., 2005). When organisms in a population compete for scarce resources (e.g. for mates, food etc.), certain variable characteristics will facilitate relatively

more effective competition (Dunbar et al., 2005) and are therefore more valuable. Being a more effective competitor may result in leaving relatively more offspring than other individuals in the population (Dunbar et al., 2005). Therefore the result of natural selection is that the characteristic which causes the organism to leave more offspring than average will increase in frequency in a population over time (Ridley, 2004). Thus, offspring will have inherited these successful characteristics from their parents; which mean that natural selection has taken place (Dunbar et al., 2005).

That an organism can survive and reproduce successfully into the next generation suggests that the organisms design (e.g. morphological, behavioural etc.) has adapted in its properties to allow survival and reproduction (Ridley, 2004). How successfully a characteristic is passed on from one generation to another relative to alternative characteristics is termed fitness, which is a measure of reproductive success and is referred to as the principle of evolution (Dunbar et al., 2005).

There is a dispute about the unit of selection, in other words, what is actually naturally selected? This debate has serious implications for understanding evolution from a broader perspective. Although Darwin's idea was that natural selection favours the characteristics of individual organisms (individual selection), others argue that natural selection operates by selecting characteristics (variation) that benefit a group or species, that is group selection (Ridley, 2004).

In 1976, Richard Dawkins put forth a compelling and logical argument that natural selection favours that which is beneficial to the individual. Importantly, the level of analysis in Dawkins (1976) argument is that of the organism's genes. It is critical to keep in mind that though natural selection acts on the individual's survival and reproductive success, it is

the frequency of genes in a population's gene pool that changes over time (Dunbar et al, 2005).

Dawkins (2006) argued that animals (including humans) are machines created by their genes, some of which have survived for millions of years, in a highly competitive environment (Dawkins, 2006). Genes comprise DNA, which serve two very important functions. Firstly, genes replicate and make copies of "themselves" and secondly genes contain information which directs the manufacture of proteins which lead to the development of the organism (Dawkins, 2006). Thus, this is how variations (characteristics) which confer survival and reproductive success are propagated and reproduced in offspring which resemble parents.

It is through reproduction that the frequency of genes (variations) increases in the population's gene pool. Dawkins (2006) argues that the evolutionary importance of genes controlling embryonic development is that genes are in part responsible for their own survival in future generations because they depend on the efficiency of the organism in which they live and helped build. Hence he argues that natural selection favours genes which replicate to build survival machines (organisms) by controlling embryonic development (Dawkins, 2006). Sometimes when genes copy, random mistakes occur in the form of genetic mutation or genetic recombination, a change in variation which dictates long term evolutionary change (Ridley, 2004).

In short, evolution can simply be considered how organisms change over generations. When organisms are in a consistently competitive environment, those organisms that have characteristics which allow them to compete more effectively are advantaged. These organisms have the characteristics that allow them to survive and confer reproductive success, as they are more than likely to genetically pass on these successful characteristics to

their offspring over time. Hence, the descendant organisms have adapted such that they successfully survive and reproduce. These heritable characteristics are genetically dictated. Using this biological theory of evolution as a conceptual foundation, the following section explains how this translates into human psychology.

2.2.2 Evolutionary Psychology

The intellectual origins of evolutionary psychology is mainly located within the instinct psychology of William James, the ethological approach of Niko Tinbergen (in the 1950's to the late 60's) and the sociobiological approach (in the 1970's to the late 80's) of Trivers, Hamilton and Wilson (Dunbar et al., 2005). Each approach was proposed and developed as a response to overcome the weaknesses of previous approaches with little consensus over the appropriate approach, which is part of the reason for this was that each approach had inherent conceptual handicaps (Tooby & Cosmides, 2005).

Taking a multidisciplinary perspective, Tooby and Cosmides (2005) derived a set of foundational concepts drawing from evolutionary biology, the cognitive revolution and palaeoanthropology, hunter-gather studies and primatology into evolutionary psychology. In doing so, Tooby and Cosmides are deemed pioneers of evolutionary psychology (Buss, 2005). Tooby and Cosmides (2005) propose that the human mind comprises evolved psychological mechanisms that are naturally selected functional adaptations which compute informational inputs and in response regulate behaviour and the body. These psychological mechanisms exist in the form of neural circuits in the brain (Tooby & Cosmides, 2005). Tooby and Cosmides (2005) see evolutionary psychology as a scientific attempt to assemble a single logically integrated research framework that incorporates the evolutionary sciences into the psychological, social and behavioural sciences (Tooby & Cosmides, 2005).

The concepts that Tooby and Cosmides drew from evolutionary biology as foundational concepts of evolutionary psychology are adaptation and natural selection. In line with the discussion on evolutionary biology earlier, Tooby and Cosmides explain that organisms have a set of complex functional designs which are adaptations that are naturally selected.

Adaptations are responses to recurring problems that an organism faces, which places a selection pressure on an organism (Tooby & Cosmides, 2005). Importantly, for the selection pressure to make an impact such that an adaptation becomes part of species typical design, the same pressure must persist and span a large area across many generations (Tooby & Cosmides, 2005). At this juncture Tooby and Cosmides (2005) make a crucial point that distinguishes evolutionary psychology. They argue that evolutionary psychology concerns those functional designs of adaptations in an ancestral environment rather than fitness striving of organisms in the present environment. Thus, in order to understand human adaptive design, one has to understand the ancestral environments of humans and the selective pressures they faced.

Drawing from the cognitive revolution, Tooby and Cosmides (2005) see mental events as structured informational relationships that are organised in the physical systems of the brain. On this basis, Tooby and Cosmides (2005) argue that mental phenomena are an expression of complex functional biological design created by natural selection. In this regard, they consider psychological mechanisms as computational adaptations.

Palaeoanthropology contributes studies on adaptive problems human ancestors had to solve in order to survive and reproduce.

Tooby and Cosmides (2005) argue that natural selection does not operate on behaviour but rather operates on a systematically caused relationship between information and behaviour that is functional for the organism. For example, running is a neutral behaviour that has neither good nor bad connotations. Yet, running away from a snake has

the potential to promote survival and reproduction whereas running toward a snake has the potential to do the complete opposite. Hence, natural selection works on the relationship between a behaviour and information.

The neural circuits in the brain cause the link between information and behaviour which function as programs that process information (Tooby & Cosmides, 2005). Mutations can alter these programs and create alternate information-behaviour relationships. Hence, selection operates on those circuits that produce information-behaviour relationships which promote its genetic proliferation, which then spread and becomes species typical (Tooby & Cosmides, 2005).

In sum, humans have psychological mechanisms which are adaptations in response to consistent adaptive problems faced by our ancestors. These mechanisms exist as neural circuits, which are genetically encoded. Evolved psychological mechanisms are species typical, which means that it is non-random.

An important consideration about evolved psychological mechanisms that has already been raised is about methodologically investigating these mechanisms. Contextualised to the significance of this study looking into the intentional object of romantic jealousy, replication has been positioned as one way in which to more appropriately research evolutionary predictions. The section to follow discusses replication methodology contextualised to this study and is deliberately positioned here as it dovetails with theoretical aspects discussed in this review and is the precursor to the methodology chapter, to follow.

2.3 Replication

In a call to restore confidence in the findings of psychological science, Cousineau (2014) strongly argues for implementing replication to achieve this, especially considering that “the gold standard of science is after all reproducibility”(p. 77). The paper was written as a proposed solution to the affliction that psychological science amounts a body of knowledge that has not been subjected to the rigours of a process of weeding out and correcting for errors. This negatively impacts the accuracy and quality of the findings of individual studies as well as the resultant collective body of knowledge, which can be well addressed by making space for the practice of replication. Although small, the present study falls in line with Cousineau’s (2014) sentiments. A good way to comprehend why replication is a suitable methodological approach for this study and its appropriateness for evolutionary psychological studies is to start by looking at what replication is and what it achieves.

Replicating the design of the parent study is a deliberate independent attempt at determining if the results of the parent study is consistent on a different sample, thus conferring further empirical value to the results of the parent study. This merit underpins the rationale for the design and methodological approach taken, the significance of which was expressed in chapters one, two, and the prelude to this chapter.

The parent study is a one-off study, which produces a one-off result which conveys little primarily because it leaves questions about the conditions under which the results will hold again (Lindsay & Ehrenberg, 1993). The present study is a first replication, the results of which will indicate whether the results “could potentially become widely generaliseable” and “whether or not a wider or law like generalisation is possible” (Lindsay & Ehrenberg, 1993, pg. 220). This is very significant for the present study which is looking to establish that the

evolved psychological mechanism that is the intentional object of romantic jealousy is non-random. Thus, the evolutionary underpinnings of the predictions imply that replicated results should be expected. Exactly how the replication design enables this determination requires a careful look at what replication is and its purpose.

Replication or repeated studies are well regarded as a powerful approach that can be employed to test the reliability of findings. Reliability implies generalisability which is indicated by the repeatability or replicability of results (Rosenthal & Rosnow, 1991, p.56). Thus, the results of a replication study tend to be more empirically powerful, especially because generalisability is a good indicator to the external validity of a study.

Replication is often defined as a repetition of previous research, which promotes a view that such studies are somewhat simplistic and valueless; because it is merely duplicating an earlier study (Morrison, Matuszek, & Self, 2010) and is therefore mundane (Lindsay & Ehrenberg, 1993). Such a view however, is misguided, when the purpose of replication is considered. Its purpose is to extend the scope of previous results in order to lead to more powerful generalisations (Lindsay & Ehrenberg, 1993). Thus, the reality is that replication studies are complicated and require careful consideration in design as well as the discerning systematic application of scientific principles (Schmidt, 2009).

Despite the scientific value offered by replication studies a bias exists against conducting such studies in the social sciences (Easley, Madden, & Dunn, 2000; Jones et al, 2010; Lindsay & Ehrenberg, 1993; Schmidt, 2009). The more prominent reasons for this is that replications are viewed as impractical because it is a time consuming undertaking that lacks originality and is therefore unjustifiable; it carries the risk of discrediting and decreasing the confidence of original findings; and is discouraged by institutions like journal

publications and research funding bodies which favour original studies (Burman, Reed, & Alm, 2010; Easley et al, 2000).

A statistical view attributable to the power ascribed in the interpretation of statistical significance also tends to dissuade the practice of replication. In the social and behavioural sciences, significance testing is used to justify the research result because it indicates whether or not a relationship exists between two or more variables in the population from which the sample is drawn (Rosenthal & Rosnow, 1991, p.38). Therefore, when studies are found to be statistically significant, it is often considered to eliminate the need for replication (Lindsay & Ehrenberg, 1993).

Rosenthal and Rosnow (1991, p.39) argue that statistical significance carries too much of the burden for scientific inference in the behavioural sciences and is awarded characteristics and properties that it does not really have. A statistically significant result indicates that the phenomena are real under the assumption that the whole population was measured and that the result was unlikely due to sampling error (Lindsay & Ehrenberg, 1993). This means that the parent study has confirmed that the findings about the intentional object of romantic jealousy is a systematic phenomenon. It is therefore scientifically merit worthy for further investigation.

A statistically significant result does not indicate whether the same result will hold under different conditions or in a different population (Lindsay & Ehrenberg, 1993), in other words the generalisability of the results. Thus, although merit worthy, the results are bound to the parameters of the parent study, with little indication of whether the intentional object of romantic jealousy findings in parent study will replicate on another sample. This consideration has bigger implications for evolutionary psychological studies because what looms largely is demonstrating that the psychological mechanism is non-random to attribute

it to evolutionary underpinnings. Given the purpose of replication studies, this would be a very useful methodology to do so. Hence the parent study is replicated, but on a different sample, geographically and culturally differentiated from the sample in the parent study. However, statistical significance alone is insufficient for a researcher to justify the significance of the result. In order to justify that a result is significant, Rosenthal and Rosnow (1991, p.39) argue that both statistical power and effect size be taken into consideration for inferential power.

The undesirable status of replications places methodological developments and refinements at risk which is especially concerning because replications also addresses important connections between existing and new knowledge (Schmidt, 2009). The results of replication studies also have a key role to play in theory development and refinement (Easley et al, 2000). This advantage is a critical to note when considering Harris and Darby's (2010) critique that romantic jealousy suffers a lack of terminological concurrence and contextualisation within a larger theoretical framework, which was discussed in the literature review.

Earlier, it was mentioned that an undesirable feature of replications is that it is potentially discrediting to researchers and results (Burman, Reed, & Alm, 2010; Easley et al, 2000; Jones et al, 2010). Unsuccessful replications however are beneficial. This is because it compels the researcher to ask and explain why an outcome has been arrived at and in doing so, the potential to identify complexities within the knowledge that the chance of a type one error has been reduced (Lindsay & Ehrenberg, 1993). In the case of successful replications, a basis is provided for further and deeper explanatory studies (Lindsay & Ehrenberg, 1993). Therefore, the value of replication studies to advancing the understanding of romantic jealousy is that it can facilitate a better understanding of romantic jealousy from an explanatory angle in instances of failed replications and delving into a deeper understanding

in the case of a successful replication. Thus, in both instances, replication encourages further research enquiry to expand understanding. Successful replications increase confidence in research findings, especially if the replication uses a variety of methods and procedures (Jones, Derby, & Schmidlin, 2010). In doing so, it offers greater certainty of the validity and reliability of findings. Thus, the power of evolutionary predications can be tested through replication.

Furthermore, given that data generated from replicated studies are scientifically stronger, it can effectively respond to contentious matters, as in the case of evolutionary psychology, due to a stronger empirical stance. Replication is an important tool to verify findings in empirical sciences (Schmidt, 2009). As such, it can be viewed as a self-correction process in science because successful replications substantiate an original finding and unsuccessful replication falsifies it (Jones et al, 2010). It is on this basis that Cousineau (2014) argued for using replication to improve confidence in psychological findings, because it helps to identify “flawed” information that can be “purged away with time” (pg. 77). For the present study, replicating the parent study will validate or invalidate the finding that there is a sexual asymmetry with respect to the intentional object of romantic jealousy in response to emotional and sexual infidelity. Thus, it if a finding is robust and valid (Derby, 2010).

Conducting a replication study also means that a result from the original study will have its scope extended thereby leading to a generaliseable result (Lindsay et al, 1993). That is the phenomena generalises beyond the conditions of the original study (Lindsay & Ehrenberg, 1993). In this study it can be ascertained if the sex asymmetry in the object of romantic jealousy is only specific to the parameters of the sample of German undergraduate students.

Generalisability takes on further significance in this study because the evolutionary mechanisms that underlie the object of romantic jealousy are argued to be universal. Should this be the case, the results of the parent study should generalise across different populations. The significant result of the original study attests to the probability that the result in the parent study sample is real and unlikely that a sampling error contributed to the finding. However, a significant result does not attest to whether or not the same result will be seen in a different sample or under different conditions (Lindsay & Ehrenberg, 1993).

Thus, it is expected that the predictions of this evolutionary investigation should hold on a different population under different conditions because the psychological mechanisms that underlie the intentional object of romantic jealousy is universal for males and females. Therefore, taking a replication approach is not only appropriate to addressing some of the unique aspects about romantic jealousy but is also appropriate for studying evolutionary predictions. And on the note of the latter, it is hard not to point out the obvious, the fundamental basis of evolution is indeed replication, genetic replication.

Chapter 3: Methodology

This chapter describes the methodological approach adopted in this study. By accentuating the value of retesting the predictions of the parent study, the introduction and literature has highlighted significant aspects about replication research which justifies its appropriateness for this study. Therefore, the framework of replication design predicates the methodological approach taken. Thus, the methodology of the parent study is applied in this study, to independently determine if the results of the parent study repeats.

The perspective of replication taken here however stems from the argument in the literature review, that replication is more than just redoing a previous study. A view well conveyed by Nosek and Errington (2020) in their construal of replication as “a study for which any outcome would be considered diagnostic evidence about a claim from prior research” (p.1). This shifts the traditional operational focus of repeating the procedures of a study to the “confrontation of existing understanding with new evidence” (Nosek & Errington, 2020, p.1).

This chapter explains the methodological approach taken in this study by detailing the research design and methodology. It describes the procedures used to implement the study, collect data, and to analyse data. The validity and reliability status is discussed as well as the ethical considerations which guided this study.

3.3 Research Design

“A research design is a plan or blueprint of how you intend conducting the research” (Babbie & Mouton, 2001, p. 74). The research problem or question influences the design which is consequently set up to logically determine the “kind of evidence...required to address the

research question adequately...” (Babbie & Mouton, 2001, p.75). The framework of the research design is set out by the paradigm of this study, as dictated by the research questions.

The parent study and hence this study, falls within the positivist paradigm. This paradigm views reality as empirically evidenced, adopts an objective approach, uses deductive reasoning to advance knowledge, seeks nomothetic explanations, and uses replication to verify explanations (Neuman, 2006). This means that a researcher will derive a cause-effect relationship from a general theory and links the abstract ideas from the theory to measurements in the social world, which they study in a detached objective manner (Neuman, 2006).

This study is positivist because answering the research questions requires the testing of hypotheses which in turn requires several quantitative data points generated through measurement which can be statistically analysed. In the main, the data required is categorical in nature. This paradigm, influences the study design which in turn influences the methodological approach taken.

The methodological approach taken to obtain the data is a survey. Developed within the positivist paradigm, this method involves the sampling of many participants, all of whom answer the same questions, allows for the measurement of many variables, the testing of multiple hypotheses, and supports questions about behaviours, characteristics, experiences, and attitudes (Neuman, 2006). Given that there are several variables under study, that being romantic jealousy due to sexual infidelity and emotional infidelity which are the independent variables and the intentional object which is the dependant variable; that there are four hypotheses to be tested, and that the questions focus on the intentional object of their jealousy, the survey method is appropriate for the parent and this study.

Surveys also accommodate the inclusion of items that measure variables which provide alternative explanations, in the form of control variables, which can be analysed to rule out possible alternative explanations (Neuman, 2006). This provision for alternative explanations has been made in this study by looking at variables linked to the participant's relationship status and experience with sexual and emotional infidelity. This is explained in section on instrumentation.

In the parent study, the survey employed a structured questionnaire measurement instrument comprising close-ended questions which enquires male and female participants to assign who the intentional object of their romantic jealousy would be under the conditions of their partner being sexually or emotionally unfaithful to them. The study was conducted in Germany, at the University of Bielefeld and used a convenient sampling method to recruit participants. The data was analysed using the chi-square data analytic technique.

This discussion of the design and associated methodological aspect calls on the need to re-present hypotheses to be tested and to then look into the specific variables under study as well as the measurement thereof.

3.3.1 Hypotheses

The following are four hypotheses emanating from the research questions.

Hypothesis 1:

H₀: There is no sex difference in the intentional object of romantic jealousy when an individual experiences their partner being sexually unfaithful to them.

H₁: There is a sex difference in the intentional object of romantic jealousy when an individual experiences their partner being sexually unfaithful to them.

Hypothesis 2:

H₀: There is no sex difference in the intentional object of romantic jealousy when an individual experiences their partner being emotionally unfaithful to them.

H₂: There is a sex difference in the intentional object of romantic jealousy when an individual experiences their partner being emotionally unfaithful to them.

Hypothesis 3:

H₀: Males do not direct the intentional object of their romantic jealousy to their partner when their partner is sexually unfaithful.

H₃: A male's intentional object of romantic jealousy is their partner when their partner is sexually unfaithful.

Hypothesis 4:

H₀: Females do not direct the intentional object of their romantic jealousy to the rival when they are faced with their partner is emotionally unfaithful.

H₄: Females direct the intentional object of their romantic jealousy to the rival when their partner is emotionally unfaithful.

3.3.2 Variables

The hypotheses reveal the following variables under study:

3.3.2.1. Sexual infidelity, romantic jealousy (*independent variable*). This is characterised by romantic jealousy evoked by sexual infidelity.

3.3.2.2. Emotional infidelity, romantic jealousy (*independent variable*). This is characterised by romantic jealousy evoked by emotional infidelity.

3.3.2.3. Romantic rival as the intentional object of romantic jealousy (*dependant variable*).

3.3.2.4. Romantic partner as the intentional object of romantic jealousy (*dependant variable*).

3.3.3 Measures

According to Engel and Schutt (2009) variables are characteristics or properties that could vary or take on different values or attributes. The variables in this study are operationalised in a questionnaire by using a hypothetical scenario. Operationalisation is the “the process of specifying the operations that will indicate the value of cases on a variable” (Engel & Schutt, 2009, p.77). There are two hypothetical scenarios, that being scenario A, which operationalises romantic jealousy under the condition of sexual infidelity, and scenario B, which operationalises romantic jealousy under the condition of emotional infidelity.

Scenario A, in keeping with Schutzwahl (2008): “Think of a serious committed romantic relationship that you have had in the past, that you currently have, or that you would like to have. Imagine that you discover that the person with whom you have been seriously involved has **sexual intercourse** with another man”.

Scenario B, in keeping with Schutzwahl (2008). “Think of a serious committed romantic relationship that you have had in the past, that you currently have, or that you would like to have. Imagine that you discover that the person with whom you have been seriously involved has **fallen in love** with another man”.

The participant is asked to imagine being involved in the hypothetical scenario and self-report toward whom their jealous response would be primarily directed (intentional object) from two options are presented, that being the partner or the rival. Thus the intentional object of romantic jealousy is measured using a forced choice rating scale.

An advantage of the scale is that it helps control the bias introduced by the halo effect (Rosenthal & Rosnow, 1991). In this study the halo effect is likely to express with the participant responding in a manner that makes them appear favourable in terms of who they direct their jealousy toward, especially if it is toward their partner. By presenting the partner and rival as equal options, the participant is less likely to feel any negative judgement and is therefore forced into a choice, which should encourage an honest response.

Given that the variables are measured using categorical responses, the level of measurement of each variable is nominal.

Now that the design, variables, and measurement thereof have been clarified, it is important to look into the type of replication this study is, as this underpins the methodology.

3.3.4 The Type of Replication Study

Although this study employs the design and methodology of the parent study, it is not the same as, rather similar to the parent study. It differs to the parent study in that this is an independent investigation which is conducted in a different country, at a different university, and on a sample from a different population group. This deviation is important to note because it lends understanding to the type of replication study this is.

Replication studies vary typologically, which is important to understand because each type achieves a specific outcome. Morrison et al. (2010) propose a useful typology that can be applied in this regard, as follows: a strict replication refers to a replication study which keeps closely to as many aspects of the parent study; a partial replication refers to a study that changes an aspect of the parent study; an operational replication tests whether the experimental and sampling procedures of the parent study are valid; a conceptual replication uses a different methodology to the parent study but seeks to confirm the findings; a

replication with update replicates an empirical parent study but will update certain aspects if there are changes in the research landscape which will therefore supersede the parent study; and a strict update occurs when a non-empirical parent study is updated due to changes that happen in the research environment, which will supersede the parent study's findings.

There are other typologies of replication studies. These overlap with those proposed by Morrison et al. (2010) but vary in terms of the degree of detail in classification. Morrison et al. (2010) is used here because their proposed typology is detailed enough to clearly delineate this study's parameters.

Applying the Morrison et al. (2010) typology, the present investigation is a partial replication, primarily because it is conducted on a sample different to the parent study. This deviation is a good check of the underpinning evolutionary proposition that the evolved psychological mechanisms are indeed non-random. Doing so is where the diagnostic purpose of replication proposed by Nosek and Errington's (2020) is of relevance. Therefore, it can be predicted that findings of the parent study will replicate.

At this juncture, there is no justification to implement any other type of replication because the parent study is subject to the limitations of a once-off study, which is explained in the literature review. Testing this sets the stage for key considerations which inform other types of replications that can subsequently be undertaken. There may, for example, be reason to indulge the possibility of a conceptual replication based on the findings of this study, especially if it does not replicate.

What is important to bear in mind about these however is an argument by Brandt, Iljerzman, Dijksterhuis, Farach, Geller, Giner-Sorolla, Grange, Perugini, and van't Veer (2014) in response to the critique that no replication in psychological science can be an exact replication. Therefore, Brandt et al. (2004) propose the type of a close replication attempt

which refers to “those replications that are based on methods and procedures as close as possible to the original study” (p. 218).

Applying Brandt et al (2014), this study aligns very closely to the parent study because the main difference to the parent study is that of the sample, which also helps understand the degree to which it aligns to the parent study. A clearer indication of the alignment of the present study to the parent study is provided next.

3.3.5 A Methodological Comparison of the Parent Study to the Present Study

Being a partial replication, table one presents a comparison which shows the methodological similarities and differences between the parent and present study.

Table 3.1

A Methodological Comparison of the Parent Study to the Present Study

Methodological Element	Parent Study	Present Study
Study Location	Students from the University of Bielefeld, Germany.	Dissimilar to parent study. Students from UKZN, South Africa.
Sample Size	104 females and 92 males	144 females and 57 males
Sample Characteristics	Males and females (no further information provided)	Similar to parent study. Male and female students of the following racial diversity Black, White, Indian, and Coloured who are South African nationals.
Sampling Method	Convenience sampling	Same as the parent study.
Participation	Unpaid voluntary participation.	Same as the parent study.

Methodological Element	Parent Study	Present Study
Instrument	Questionnaire with a hypothetical scenario and a forced choice response format.	Same as the parent study.
Procedure	Participants approached in public areas on campus and asked to complete a short questionnaire.	Same as the parent study.
Questionnaire Submission	Folded questionnaire submitted in an opaque box.	Same as the parent study.
Data analysis	Non parametric chi-square.	Same as the parent study.

As table 3.1 indicates, the main areas of deviation from the parent study is with respect to the sample and geographic location of the study. With respect to the sample, like the parent study, the participant characteristics are male and female, but unlike the parent study they are South African nationals who are of Black, White, Indian, and Coloured racial descent as opposed to male and female German students. Geographically, this study is conducted at UKZN in South Africa as opposed to the University of Bielefeld, Germany

As can be gleaned from the table, the sampling method, instrument, procedure, and data analytic technique is exact to the parent study. With an indication of how this study is comparatively positioned in relation to the parent study in perspective, the following section delves into the methodology of the present study.

3.3.6 Methodology: the Survey

As indicated earlier, the nature of the research question requires the generation of quantitative data in the form of frequencies of the variables sex, the intentional object of romantic jealousy, and infidelity type, in order to respond to the question.

The measurement instrument in this survey is a structured questionnaire which uses a hypothetical scenario about which close ended questions are posed. In response, participants are presented with a categorical forced choice scale from which to select an answer. To follow is a description of each element of the survey, as implemented in the present study.

3.3.6.1 Population. The population group were male and female students from the University of KwaZulu-Natal. Their age ranged from 18 years old to 31 years old. Participation in this study was voluntary with no financial incentive offered. The nationality is South African and they are from the Black, White, Coloured, and Indian race groups.

As previously emphasised, a key element of this study is that the participants differ to those in the parent study in terms of their characteristics. For example this study has a racially diverse sample. This deviation is important because the socio-cultural diversity of the sample is the plausible rival explanation to what is predicted, the latter of which should emerge as a non-random observation.

Changing the sample from the parent study (and the geographic location) is also significant because of the implication of genetic diversity. This is the fundamental basis of the evolutionary proposition explained in the literature review, because genes underpin the evolution of the psychological mechanisms, which in this instance implies that despite this genetic variance, the findings should replicate.

3.3.6.2 Sampling. A convenience sampling technique was used. In convenience sampling “the researcher uses members of a population that are easy (convenient) to use in the research. A convenience sample is not a random sample because some people in a population have no chance of being selected (Pittenger, 2003, p. 48).

Students were recruited by firstly observing those who were socialising as opposed to involved in any studying. They were politely approached and asked if they would be interested to hear about the study and on this basis to consider participating. The sample was selected from the Pietermaritzburg, Westville, and Howard College Campuses.

A sample size of 70 males and 70 females was deemed adequate for this study, which the power and effect size calculations explain.

3.3.6.3 Power and Effect Size Calculations. Power, refers to the probability of not making a type 2 error (β), which is rejecting a null hypothesis that is false, resulting in a failure to detect a relationship that actually exists between the variables (Rosenthal & Rosnow, 1991, p. 439). The risk of making a type 2 error in this study has heightened significance, because the evolutionary theory predicts in favour of the directional alternate hypothesis, requiring a rejection of the null hypothesis. Therefore, it is important to focus on controlling the β risk.

The statistics used to ascertain the significance level; selected alpha level (α); sample size; and the effect size determine the level of power of a study (Rosenthal & Rosnow, 1991, p. 440). Here the focus will be on the effect size and the sample size, which Rosenthal and Rosnow (1991, p. 443) indicate Cohen’s power table to be most useful, because it advises on the power by taking the aforementioned factors into consideration.

In this study, it may be appropriate to use a medium effect size which the power table reports for a χ^2 to be $w=.30$ which is a power of .70, and requires an $n=70$ at a $p=.05$ two tailed.

The parent study, reports a χ^2 of 14.23; $df = 1$ for an $n=196$ at $p = 0.01$, across sexual and emotional infidelity, the combined sample of males and females see the rival as the intentional object.

$$W = \sqrt{\chi^2 / N}$$

$$= \sqrt{14.23 / 196}$$

$$= 0.269$$

$$= 0.3 \text{ rounded off}$$

This is a medium effect size (Rosenthal & Rosnow, 1991, p. 444).

In the instance of emotional infidelity, significantly more females chose the rival as opposed to males. Thus the effect size calculation is:

$$W = \sqrt{\chi^2 / N}$$

$$= \sqrt{26/101}$$

$$= 0.5 \text{ rounded off, which is a large effect size according to Cohen's classification.}$$

Whilst the sample size contributes to detecting an effect, the consideration to retain a medium effect size also speaks to the nature of the phenomena under investigation. An evolved psychological mechanism, if non-random should be readily detected, which a medium effect size is a discerning test of. Based on these calculations, the minimum sample size is seventy ($n=70$).

3.3.6.4 Instrumentation. The instrument used in this study is a structured questionnaire, the same as the parent study, as shown in appendix two. To follow is an explanation of the instrument structure, items, and response format.

3.3.6.4.1 Instrument Items and Structure. The instrument is structured in three parts. The first part, introduces the participant to the study by providing an overall description of the study and its intended purpose. An indication of how the results are used and reported is given. The ethical considerations which govern the study are outlined and a clear indication about exercising ethical rights during participation is provided. Thereafter, the participant is requested to sign in consent to voluntary participation. This information is provided to help contextualise the participant's understanding about the study and set them at ease to safely participate in a bid to obtain their honest responses while respecting them.

The second part of the instrument firstly, deals with obtaining socio-demographic information. A series of socio-demographic questions are asked about the participant's age, sex, sexual orientation, nationality, race, and religious affiliation. Secondly, it enquires about the participant's relationship status at the time of completing the questionnaire and their experience of sexual and emotional infidelity in the capacity of being a target of and having possibly committed sexual and emotional infidelity.

These variables are enquired about to obtain a descriptive understanding of the sample in terms of their socio-demographic characteristics and to get a sense of their relationship experience with respect to the variables under study in a bid to identify trends that may emerge in the data with respect to control variables for example.

The third part of the instrument contains the items that operationalise the variables under study. The hypothetical scenarios are presented and response solicited.

3.3.6.4.2 Response Format. These were paper based questionnaires hence the overall objective of the response format provided was to enable ease of response within a short time frame and without the need of support like pressing on a desk for example. Thus, response options were provided with boxes that could be easily marked. In the socio-demographic aspect of the questionnaire, only the question about religious affiliation made provision for the participant to indicate otherwise, should their religion not be reflected.

3.3.6.4.3 Item Ordering. The questionnaire was set out in a specific order. Part one was presented first with the intention to introduce the study to the participant, outline the ethical guidelines, and to obtain written consent to participate.

The second part of the questionnaire was ordered such that the socio-demographic questions appeared first. This was done to distract the participant, thereby desensitising them to the influence of any preconception that would have formed when the purpose of the study was explained and read. Although care was taken in the introduction not to influence a response, any unintended memory prompted about romantic jealousy the participant may experience needed to be considered and controlled for, given a potential impact on the validity of the response.

Thereafter, the third part of the questionnaire was presented. Here, the scenarios were sequenced by counter balancing the conditions across participants, resulting in two questionnaire versions for males and two for females. Thus, one version contained the scenario of sexual infidelity appearing first whereas the other version contained the scenario of emotional infidelity appearing first. Counterbalancing was applied in order to control for potential confounding (Rosenthal & Rosnow, 1991) in the participants responses, which would eventually effect the reliability and validity of the response.

The questionnaire was concluded with the relationship status and experience of infidelity enquiry of part two. The reason for placing this at the end of the questionnaire is to avoid any influence the questions may have on the validity of the responses to the intentional object. This is because the nature of the questions directly relate to the scenarios, and whereas the scenarios were hypothetical, these questions relate to actual experiences.

3.3.6.5 Validity and Reliability. Validity is an indication of how accurately a measurement reflects an individual's actual (truthful) score on a trait (Whitely, 2002). Reliability refers to a measurement instrument producing similar results when it is used repeatedly under the same conditions (Bordens & Abbott, 2002). Both indicators are critical to informing the accuracy and consistency of the data, hence aspects linked to validity and reliability are discussed here.

3.3.6.5.1 Validity. The previous sections about the format of the responses and the ordering of items have explained the considerations taken into account so as to control for valid responses. What determines a valid response in this instrument is to as realistically as possible invoke a jealousy response that will motivate the participant to indicate who the intentional object of the emotion is and understanding the two intentional objects being the rival and the partner. Although the parent study does not mention anything about validity, in this study there are two types of validity which are important to further consider, that being content validity and construct validity.

Content validity refers to demonstrating that the contents of a measure adequately assess all aspects of a trait being measured by showing that the measure must be relevant and representative of the trait (Whitely, 2002). In this instrument, content validity is established by setting up the hypothetical scenario using the triangle which invokes jealousy, as discussed in the literature review. This triangle includes the participant, their partner, and the rival who poses a threat due to infidelity, which is jealousy evoking. Stating that the

participant is in a committed relationship, implies that it is a valued relationship, which taken is sufficient context for romantic jealousy, which the literature review has gone into great deal about.

The capturing of sexual infidelity was fairly clear by being direct about the individual involved in sexual intercourse with another and emotional infidelity being suggested by falling in love with another, which is a strong emotional connection. The rival can be readily inferred in the scenarios, as this is where the participant's partner has turned their sexual or emotional attention to. With respect to content validity, the items in the questionnaire satisfy the requirements of being relevant and representative, and is therefore an adequate measure.

Construct validity refers to a measurement instrument that is designed to measure a variable which is not directly observable (Bordens & Abbott, 2002). In this respect, the emotion of romantic jealousy cannot be directly observed, hence the instrument has to effectively evoke the emotion which motivates the participant to indicate the intentional object of their emotion is. Using a scenario technique facilitates the participant's immersion in the jealousy evoking narrative. The scenario is also written directly, in the active voice, and does not use any distancing language, which means that there is no severity softening on the matter or infidelity.

Hence, the participant is more likely to connect with the emotion, rather than being asked to summon or reflect on the emotion. In addition, the jealousy triangle scenario involving the two significant types of infidelity, is true to a jealousy evoking scenario, which was discussed at length in the literature review. Taken together, this comprehensively addresses the construct validity of the instrument.

The forced choice-hypothetical scenario under the conditions of sexual and emotional infidelity like this one has been employed in a variety of evolutionary studies (Berman &

Fraser, 2005). It should also be remembered that having been implemented in the parent study which yielded significant findings, the instrument can be deemed validated in the parent study.

3.3.6.5.2 Reliability. This study uses the questionnaire items validated in the parent study, the psychometric properties of which have been deemed reliable. There is however no reliability co-efficient. The section on instrumentation has also highlighted important considerations that helped contribute to supporting reliable responses. These being standardisation of the recruitment process by keeping the accounts of the study consistent and implementing counterbalancing. It should not be forgotten that the present study is focused on investigating the reliability of the parent study findings.

3.3.6.6 Data Collection Procedure. Participants were approached on campus from 12pm until 2pm, as this was when a larger number of the student population was available. On the Pietermaritzburg campus, students were approached outside the cafeteria on Golf road; on the Westville campus, students were approached in the quad area, near the cafeteria and library, and on the Howard College campus, students were approached outside the MTB building.

Each of these locations were chosen because they are major social points with a greater likelihood of a diverse student population. Furthermore, the locations were conducive to choosing a private area in which to easily and comfortably complete the questionnaire.

When approached, the student was respectfully asked for some time and if they would be interested in participating in the study, after explaining what the study was about and why it was being conducted. Care was taken not to influence the responses by sharing the predictions. The study was therefore explained in keeping with the questionnaire with special emphasis on the ethical considerations. A sensitive aspect at this stage was constraining

participation to South African nationals and capped to those who were a minimum of 18 and maximum of 31 years old on the age spectrum. Although this was understood and surprisingly well received, this task was difficult for an unanticipated reason. Students were genuinely interested to participate and although some foreign nationals understood that their data could not be used, they asked to complete the questionnaire anyway.

Upon verbal confirmation of intent to participate, the participant was reminded that they could discontinue the questionnaire at any point, should they wish. The questionnaire (randomly issued) was provided and signed consent given and checked before they undertook the questionnaire.

A suitable space was sought for privacy and ease of completion. Once completed, the participant was instructed to immediately fold the questionnaire and deposit it through a slot in a sealed opaque box. The participant was thanked for their participation and reminded that counselling services are available, should they need psychological support. The entire process took approximately 12-15 minutes, of which the completion and submission of the questionnaire took approximately 3-4 minutes.

The total number of questionnaires obtained was 217, of which 13 were unusable. The questionnaires were unusable because one questionnaire was an administrative error as it only contained the demographic component, nine questionnaires were completed by foreign national participants, and three questionnaires were submitted un-responded. Thus, 204 questionnaires were useable, which is a 94% response rate.

3.3.6.7 Data Management and Analysis. The data was analysed using the Statistical Package for the Social Sciences (SPSS) version 27 (IBM, 2017), which this section will discuss. It will explain how the data was inputted, how the data was descriptively explored, and then how the Chi-Square (χ^2) was computed in order to test the hypotheses.

The level of measurement of the variables has a bearing on the data input and the type of analysis that can be applied. Age is the only continuous variable in the study. Sex, sexual orientation, race, religion, the intentional object, relationship status, the experience of sexual infidelity, the experience of emotional infidelity, being sexually unfaithful, and being emotionally unfaithful are nominal variables.

The continuous variable is amenable to a variety of exploratory data analyses, whereas the nominal variables are mainly amenable to frequency based analyses.

3.3.6.7.1 Data Input. Inputting the data into SPSS version 27 (IBM, 2017), required the items on the questionnaire to first be coded for numerical representations of each variables. The variable age was not coded as the participant's actual age was inputted. The nominal variables were coded as follows: for participant sex, males were coded "1" and females "2"; the participant's sexual orientation of heterosexual, homosexual, bisexual, were respectively coded "1", "2", and "3"; the participant's race group, Black, Indian, White, and Coloured, were respectively coded "1", "2", "3", "4"; the participant's religious affiliation Christianity, Hinduism, Islam, African Traditional, None, were respectively coded "1", "2", "3", "4", "5", additional categories reported by participants of Rastafarian, and Spiritual was respectively coded "6", and "7"; the rival intentional object and partner intentional object was respectively coded 1 and 2; current relationship status was coded "1" for yes and "2" for no; experienced sexual infidelity and experienced emotional infidelity was coded "1" for no and "2" for yes; the participant being sexually unfaithful and emotionally unfaithful was coded "1" for no and "2" for yes.

The variables were defined, labelled, and the level of measure indicated. Thereafter, the data was inputted using the coding system described in batches of 5 questionnaires. During input, verification checks were conducted at three points, that being the socio-demographics, the scenarios, and the relationship status. Upon completion of input per questionnaire, a final check was done before signing off. The questionnaire number was recorded as a variable which corresponded to the questionnaire. This was done for ease of reference should there be a need to inspect the questionnaire discrepancies detected.

Upon inputting all questionnaires, the data was eye balled for errors, in the main for codes that should not appear under certain variables. Frequency statistics were computed to inspect the dataset for errors in coding and double check missing data. Once done, the data set was deemed “clean” to conduct the further statistical analyses, described in the following two sections.

3.3.6.7.2 Exploratory Data Analysis. The data was explored by conducting descriptive statistical analyses. The variable age was analysed by computing the central tendency, frequencies, and graphically represented using a histogram with a normal curve, to understand the nature of the distribution. The remainder of the variables were analysed using frequency analysis, because they are nominal, and can therefore be counted. Percentages were used to represent the proportions.

3.3.6.7.3 Non-Parametric Statistical Analysis: the Chi-Square (χ^2) Test for Independence. The data analytical technique used is a non-parametric statistical test, the Chi-Square (χ^2), which is appropriate for categorical data of this nature. This statistic is a test of independence, summarising how close the observed count is to the expected count (Agresti & Franklin, 2007, p. 494).

The procedure for applying the χ^2 analysis is to firstly, state the null and alternate hypothesis; secondly, indicate the level of significance; thirdly, establish the degrees of freedom; fourthly, indicate the critical value and rejection region; fifthly, calculate the statistic; sixthly, decide on whether to accept or reject the null hypothesis; and seventhly, interpret the decision within the context of the study (Larson and Farber, 2006, p. 512). The Chi-Square was processed using the Cross Tabs function on SPSS using the nominal variable option and creating two-by-two contingency table with the variables sex and intentional object as the rows and columns respectively. The directional hypotheses required a one sample χ^2 test to be computed because the analyses needed to be conducted on males and females separately, as a function of infidelity type.

3.3.3 Ethical Considerations

Neuman (2006) argues that one of the key characteristics of an effective social researcher is to “treat people in a study in ethical and moral ways” (p.2). This section discusses the key ethical considerations in this study. Before discussing this however, it is important to note that this study proceeded on ethical approval, granted by the university ethics committee. Approval for which appears in appendix two.

3.3.3.1 Informed Consent. With respect to informed consent, care was taken to be transparent about the study and its intended purpose. This was underscored by the declaration the study does not involve deception. Applying this ethical consideration was important because it fosters trust which bodes positively for promoting a valid response to the questionnaire. The researcher was available to provide any required clarification so as to further ensure that the participant was comfortable with the information provided before undertaking the survey.

3.3.3.2 Human Participant Protection. The topic under study is sensitive. It can stimulate recall in participants who have experienced trauma with romantic jealousy thereby inducing re-trauma. Furthermore, it has the potential to encourage the development sensitivities about romantic relationships in anticipation of experiencing the issues enquired about. The participant was made aware that this could potentially happen and to therefore factor this into their deliberations about participating in the study. For those who proceeded to participate, they were advised that they could discontinue the questionnaire at any point. In addition, if they felt troubled or experienced emotional discomfort, they were advised to seek support from student counselling services, who were alerted to the study.

3.3.3.3 Anonymity. The participants were notified that they will remain anonymous, that their individual contributions to this study will not be known. This is because the questionnaire does not ask any question or information that may be a key identifier of the participant. Assuring anonymity is important because literature points to jealousy being a response to the threatened self, where self-esteem is directly affected (DeSteno, Valdesolo, & Bartlett, 2006). Anonymity, helps protect the individual from potential threats to their self-esteem.

3.3.3.4 Confidentiality. Assurance was provided that the responses are kept confidential. The questionnaire was folded and submitted through a slot in an opaque box, which was only handled by the researcher. The questionnaires are stored by the researcher in their private residence in a locked cupboard. The researcher has exclusive access to the raw data and is the only one to have inputted the data. The questionnaires will be kept in storage for another three years on completion of this study and will thereafter be destroyed using a shredding process.

3.3.3.5 Privacy and Voluntary Participation. Although the study was conducted in a social setting, care was taken to offer the participant privacy to complete the questionnaire.

This was done by selecting a quiet spot to complete the questionnaire, maintaining distance from the participant while completing the questionnaire, and allowing the participant control over when to submit the questionnaire. With respect to the latter, when the box was presented, it was done on a one-one basis.

That this study required voluntary participation was made clear on the questionnaire. The participant was also advised that they could discontinue the questionnaire at any point during the process reinforced the voluntary participation.

3.3.3.6 Risks and Benefits of the Study. Rosenthal and Rosnow (1991) explain a decision-plane model where researchers usually weigh the benefits of conducting the research study against the risks to the participants, when deciding to proceed with the study.

In the main, the potential risks to the participants in this study are social and psychological, and no foreseeable physical risk. Psychologically, participants can experience emotional distress. Social risks are those associated with violations of confidentiality and maintaining anonymity, which have already been discussed. The psychological risk was managed such that the researcher was sensitised to observing emotional distress and being open to distress that the participant may report. This would result in immediate termination of the survey. Appropriate referral was instituted with student counselling services and the participant would be directed accordingly. Protecting the participant from this risk was made known on the questionnaire making informed decision to participate satisfactory under these circumstances. Thus, the participant knows what to expect and that they have the control to manage and mitigate the potential negative consequences. It should be noted that instances of psychological distress were not observed or reported for the immediate discontinuance of the survey or the referral protocol to be instituted.

The benefits of conducting this study have been outlined to a large extent in chapter one. However, the following three key aspects make this study beneficial: firstly, the applied value of the findings can offer to develop or enhance therapeutic interventions; secondly, contributions to the conceptualisation of romantic jealousy by being more specific to the uniqueness of the emotion through inclusion of its intentional object; and thirdly, engaging with using replication research for evolutionary psychological investigations thereby enhancing its scientific integrity.

3.4 Limitations of the Study

There are three notable limitations of this study that should be borne in mind when interpreting the findings especially. Firstly, this study, like the parent study is constrained in generalisability to the sample, which is UKZN students. Secondly, the convenience sampling technique that was employed violates a fundamental assumption of a Chi-Square analysis, which requires a random sample (Larson & Farber, 2006, p. 512). Although the sampling technique is aligned to the parent study, satisfying the assumptions of the test statistic lends credence to scientific merit of this study. Thirdly, the sample size of males in this study fell short of the required 70 participants, for statistical power and a medium effect size.

Chapter Four: Results

This chapter presents the results of this study in two parts. Firstly, univariate analyses which presents descriptive statistics about individual variables and secondly, bivariate analyses, which looks at potential associations between the central study variables.

4.1 Univariate Analyses: Descriptive Statistics

The univariate analyses focuses on the socio-demographic variables, relationship status, and the participants experience with infidelity. It is intended to describe the characteristics of the sample.

4.1.1 Age Distribution of Participants

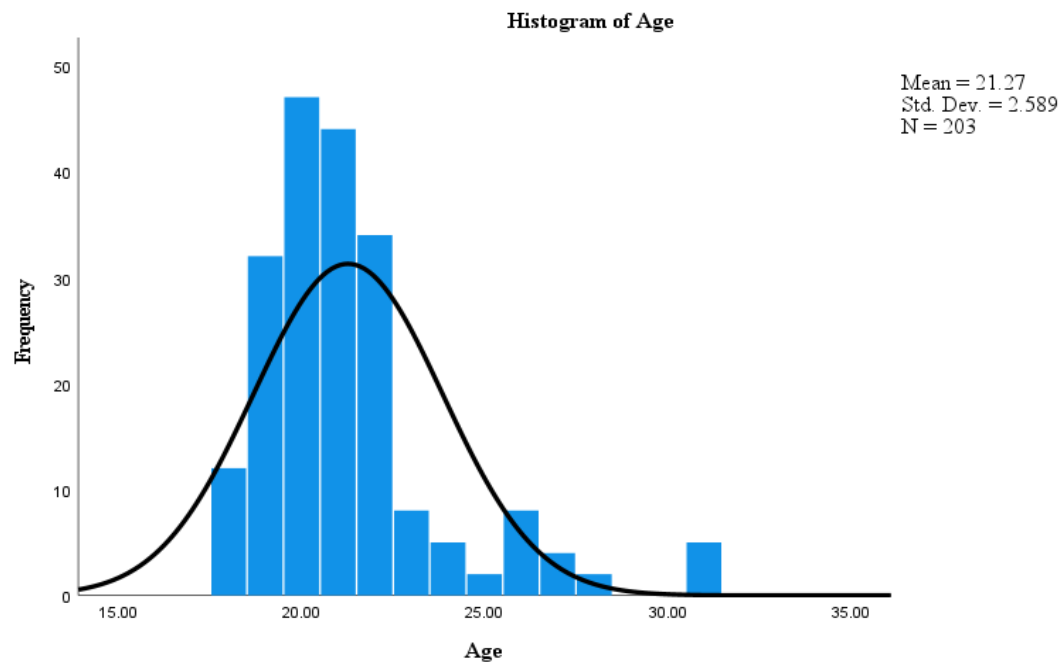
The ages of participants ranged from 18 to 31 years ($M=21.26$; $S.D. = 2.5$). In comparison to the parent study where the age ranged from 17 to 33 years ($M = 2.3$; $S.D = 2.5$). In figure 4.1, this histogram of age shows an approximate normal distribution with a mild increased kurtosis (3.817), hence the slight pointed peak around 21 years.

4.1.2 Sex and Sexual Orientation of Participants

Table 4.1 shows that the sample ($n=201$) comprised 71.64% females ($n=144$) and 28.36% males ($n=57$), of which the majority 93.03 % were heterosexual ($n= 187$); 1.49% were homosexual ($n=3$); and 5.47% were bisexual ($n=11$). In comparison with the parent study, there were 104 females and 92 males of unknown sexual orientation.

Table 4.1*Frequency Distribution of Sex and Sexual Orientation*

		Percentage	Frequency
Sex	Male	28.36	57
	Female	71.64	144
Sexual Orientation	Heterosexual	93.03	187
	Homosexual	1.49	3
	Bisexual	5.47	11
Total		100	201

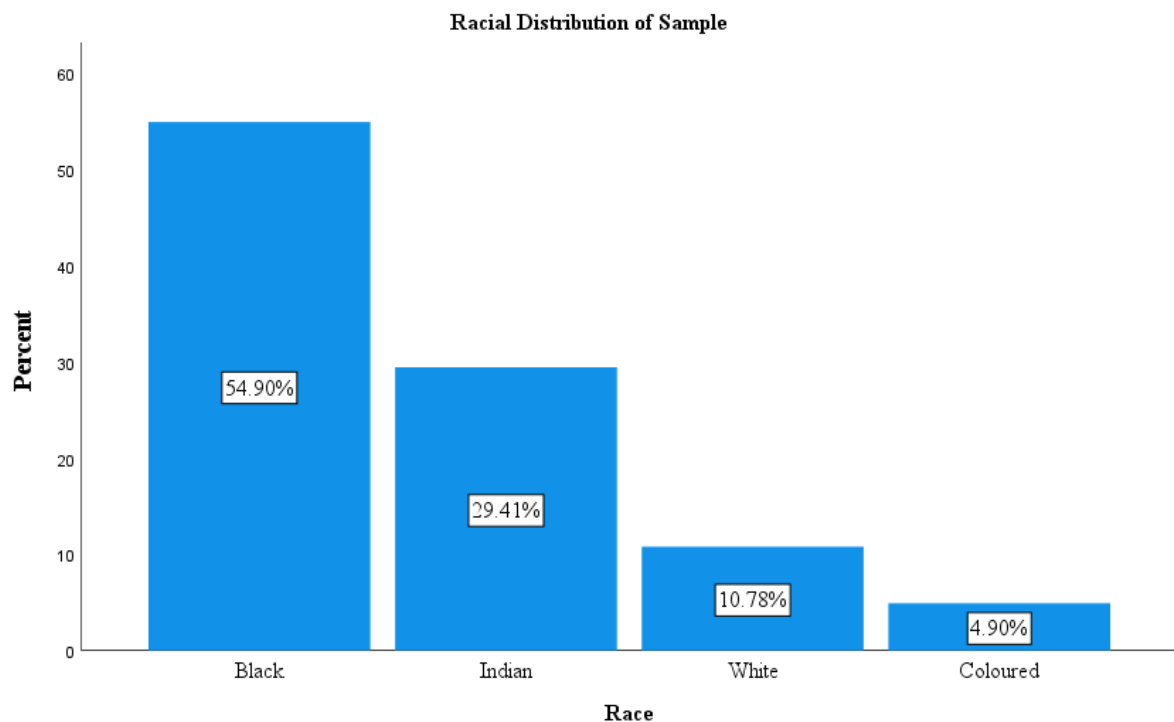
Figure 4.1*Histogram of the Age Distribution*

4.1.3 Race and Religion: Frequency Distribution

According to figure 4.2, the racial profile of the sample ($n = 204$) shows that 54.9%, the largest representation, are blacks ($n = 112$); the second largest (29.4%), being Indians ($n = 60$); the third largest (10.8%), being Whites ($n = 22$); and the smallest representation (4.9%), are Coloureds ($n = 10$).

Figure 4.2

Bar Graph of the Racial Distribution

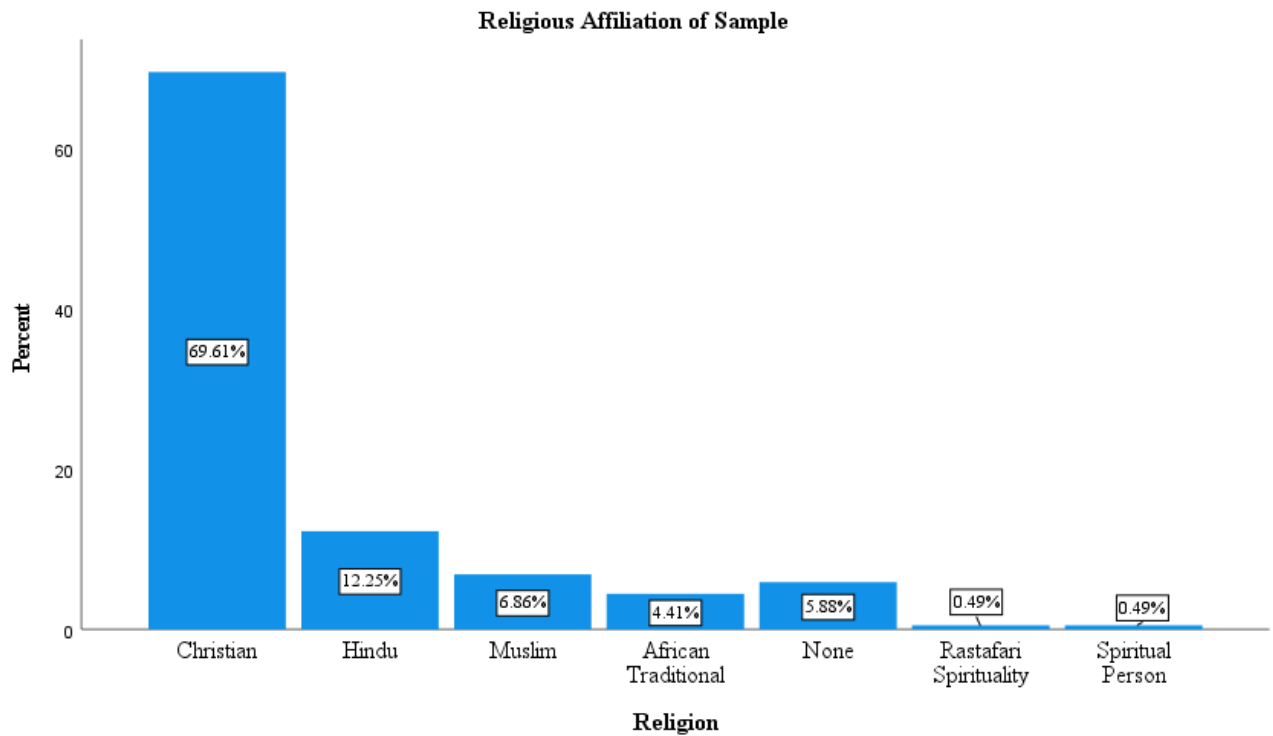


With respect to religious affiliation, figure 4.3 indicates that the majority (69.6%) of the sample is Christian ($n = 142$); followed by 12.3% Hindu being the second largest ($n = 25$); then 6.9% of Islamic faith ($n = 14$); and 4.4% who are African Traditional ($n = 9$). Participants of the smallest representation (5.9%) had no religious affiliation ($n = 12$).

Although the parent study did not report any diversity characteristics, it is important in this study given its theoretical underpinnings.

Figure 4.3

Bar Graph of Religious Affiliation



4.1.4 Relationship Status: Frequency Distribution

The frequency distribution in table 4.2 shows a fairly negligible difference in participants involvement in a relationship in that 49.75% (n=101) of the participants were involved in a romantic relationship whereas 50.24% (n=102) were not involved in a romantic relationship.

Table 4.2*Frequency Distribution of Relationship Status*

		Percentage	Frequency
Relational Status	In a Relationship	49.75	101
	Not in a Relationship	50.24	102
Total		100	203

The participants' experience of infidelity is displayed in table 4.3. The notable trend is that a larger proportion have experienced or engaged in emotional infidelity, in comparison to sexual infidelity.

Overall, 29.92% (n=41) of the participants have experienced sexual infidelity, with a larger percentage 45.73% (n=91) experiencing emotional infidelity.

With respect to being unfaithful, 21% (n=42) of the participants have been sexually unfaithful whereas a larger percentage 41.70% (n=83) having been emotionally unfaithful.

Table 4.3*Distribution of Participants Experience of Infidelity*

Infidelity Type		Percentage	Frequency
Experienced Sexual Infidelity	No	79.08	155
	Yes	20.92	41
Total		100	196
Experienced Emotional Infidelity	No	54.27	108
	Yes	45.73	91
Total		100	199

Infidelity Type		Percentage	Frequency
Have been Sexually Unfaithful	No	79	158
	Yes	21	42
Total		100	200
Have been Emotionally Unfaithful	No	58.29	116
	Yes	41.71	83
Total		100	199

4.2 Bivariate Analyses

The bivariate analyses specifically focus on the central variables under study to determine possible associations in this regard.

4.2.1 Associations between Intentional Object of Romantic Jealousy and Sexual Infidelity

In table 4.4, males and females intentional object of romantic jealousy under the condition of sexual infidelity are presented. In this regard, 79.3% of females (n = 69) indicated that they would direct their jealousy toward the rival whereas 20.7% of the males (n=18) who would direct their jealousy toward the rival. With respect to directing their jealousy toward the partner, a similar trend prevails in that 65.2% of the females (n=75) would direct their jealousy accordingly, whereas 34.8% of the males (n=40) would direct their jealousy toward their partner.

Comparing sex and the intentional object, it can be noted that under the conditions of sexual infidelity, 34.8% of males (n=40) directed their jealousy toward their partner more so than the rival which was 20.7% (n=18). On the other hand, 79.3% (n=69) of females directed

their anger toward the rival as opposed to the 65.2% ($n=75$) who directed their jealousy toward their partner.

These frequencies indicate that more males hold their partner as the intentional object of their romantic jealousy, whereas more females hold the rival as the intentional object of their romantic jealousy, under the condition that their partner is sexually unfaithful to them.

Table 4.4

Sex Distribution of the Intentional Object of Sexual Infidelity

		Intentional Object of Sexual Infidelity					
		Rival		Partner		Total	
		N	%	N	%	N	%
Sex	Male	18	20.7%	40	34.8%	58	28.7%
	Female	69	79.3%	75	65.2%	144	71.3%
Total		87	100.0%	115	100.0%	202	100.0%

As shown on table 4.5, the Chi-Square for independence ($\chi^2 = 4.806$; $df = 1$; $n = 202$) is significant ($p < 0.05$). Thus, the null hypothesis is rejected in favour of the alternative hypothesis (H_1) indicating that there is a sex difference in the intentional object of romantic jealousy when an individual experiences their partner being sexually unfaithful to them. The result is significant as in the parent study. The Fisher's exact test is significant at $p < 0.05$.

Table 4.5

Chi-Square Test for Independence between Sex and the Intentional Object of Romantic Jealousy in Response to Sexual Infidelity

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)
Pearson Chi-Square	4.806 ^a	1	.028		
Continuity Correction	4.142	1	.042		
Likelihood Ratio	4.914	1	.027		
Fisher's Exact Test				.041	.020
Linear-by-Linear Association	4.782	1	.029		
N of Valid Cases	202				

4.2.2 Associations between the Intentional Object of Romantic Jealousy and Emotional Infidelity

In response to the scenario toward whom a male and female would direct their romantic jealousy under the circumstances of their partner being emotionally unfaithful, table 4.6 presents the frequency counts. With respect to the intentional object, more females 81.4% (n=79) direct their romantic jealousy toward the rival than males 8.6% (n=18). Furthermore, 62.7% (n=64) females direct their romantic jealousy toward their partner as opposed to the 37.3% (n=38) males who do so. A similar trend with respect to the magnitude of the difference between the male and female responses can be noted in relation to the response to sexual infidelity.

Between the category of the intentional object and sex, it can be noted that more males 37.3% (n=38) direct their jealousy toward their partner as opposed to the 18.6% (n=18) who direct the same toward the rival. With respect to females however, 81.4% (n = 79) direct

their romantic jealousy toward the rival as opposed to the 62.7% ($n = 64$) directed toward their partner.

Interestingly, these frequencies show more males would select their partner as the intentional object of their romantic jealousy, whereas more females with select the rival as the intentional object of their romantic jealousy, under the condition that their partner is emotionally unfaithful to them.

Table 4.6

Male and Female Frequency Counts of the Intentional Object of Emotional Infidelity

		Intentional Object of Emotional Infidelity					
		Rival		Partner		Total	
		N	%	N	%	N	%
Sex	Male	18	18.6%	38	37.3%	56	28.1%
	Female	79	81.4%	64	62.7%	143	71.9%
Total		97	100.0%	102	100.0%	199	100.0%

Turning to the Chi-Square analysis presented in table 4.7, the test statistic ($\chi^2 = 8.596$; $df = 1$), ($p < 0.05$), which is significant. Thus, the null hypothesis is rejected in favour of the alternative hypothesis (H_2). The Fisher's exact test is significant at $p < 0.05$. Therefore, there is a sex difference in the intentional object of romantic jealousy when an individual experiences their partner being emotionally unfaithful. This result is consistent with the parent study.

Table 4.7

Chi-Square Test for Independence of Sex Differences in the Intentional Object of Romantic Jealousy in Response to Emotional Infidelity

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)
Pearson Chi-Square	8.596 ^a	1	.003		
Continuity Correction	7.696	1	.006		
Likelihood Ratio	8.754	1	.003		
Fisher's Exact Test				.004	.003
Linear-by-Linear Association	8.553	1	.003		
N of Valid Cases	199				

4.2.3 The Intentional Object of Romantic Jealousy and Emotional Infidelity in Females

Analysing the females' intentional object of romantic jealousy in response to emotional infidelity, table 4.8 indicates the observed and expected frequencies. Most notable is that the rival stands out as the intentional object of which the observed frequency is higher than the expected frequency on comparison to the partner being the intentional object. This is in keeping with the parent study.

Table 4.8

Observed and Expected Frequency Distribution of the Females Intentional Object of Romantic Jealousy in Response to Emotional Infidelity

	Intentional Object of Emotional Infidelity		
	Observed N	Expected N	Residual
Rival	79	71.5	7.5
Partner	64	71.5	-7.5
Total	143		

Although the frequency distribution shows that more females hold the rival as the intentional object of their romantic jealousy in response to emotional infidelity, the chi test statistic displayed in table 10 does not confirm that this is significant. Thus, the null hypotheses is accepted and alternate hypothesis (H₄) is rejected. Thus, it cannot be concluded that a female's intentional object of romantic jealousy is the rival when their partner is emotionally unfaithful to them ($\chi^2 = 1.573$; $df = 1$, $p > 0.05$, $p = .210$). Thus the finding in the parent study is not replicated.

Table 4.9

Chi-Square Test for Independence of the Females Intentional Object of Romantic Jealousy in Response to Emotional Infidelity

	Test Statistics
	Intentional Object of Emotional Infidelity
Chi-Square	1.573 ^a
df	1
Asymp. Sig.	.210

4.2.4 The Intentional Object of Romantic Jealousy and Sexual Infidelity in Males

Males appear to direct the intentional object of their romantic jealousy toward their partner more so under the conditions of sexual infidelity, as displayed in table 4.10 which shows the observed and expected frequencies.

Table 4.10

Observed and Expected Frequency Distribution of the Males Intentional Object of Romantic Jealousy in Response to Sexual Infidelity

	Intentional Object of Sexual Infidelity		Residual
	Observed N	Expected N	
Rival	18	29.0	-11.0
Partner	40	29.0	11.0
Total	58		

The chi test statistic in table 4.11 indicates that the finding that males direct the intentional object of their romantic jealousy toward their partners under the condition of sexual infidelity is significant ($\chi^2 = 8.345$; $df = 1$, $p < 0.05$, $p = .004$). The directional null hypothesis can also be rejected in favour of alternative hypothesis (H_3), which replicates the parent study findings.

Table 4.11

Chi-Square Test for Independence of the Males Intentional Object of Romantic Jealousy in Response to Sexual Infidelity

	Test Statistics
	Intentional Object of Sexual Infidelity
Chi-Square	8.345 ^a
df	1
Asymp. Sig.	.004

Chapter Five: Discussion

The driving force of the discussion in this chapter is the interpretation and contextualisation of the results of this study. As such, the literature review will be drawn upon as well as the methodology. To commence this discussion, the focus and significance of this study is re-presented as this is the background against which the results of this study is interpreted.

This study was introduced on the impetus that romantic jealousy is a unique emotion which requires a deeper understanding especially considering its impact in areas of a partner's quality of life, relationship quality, and survival. In response, the parent study was positioned as a viable avenue through which a greater understanding of romantic jealousy can be achieved, due to its focus on the intentional object of romantic jealousy.

The literature review referenced prominent conceptualisations of romantic jealousy and showed how these promoted a descriptive understanding. This conceptual position does not clarify how to understand where one's romantic jealousy would be directed or where one's romantic jealousy will be directed. This insight is essential to help comprehend the aforementioned anticipated impact of romantic jealousy.

In addition, the review highlighted that grasping the conceptual uniqueness of romantic jealousy is compromised owing to its conceptual roots in jealousy, which although logical, is a decoy to focusing on the uniqueness of the emotion. A better understanding of the intentional object can enable grasping the uniqueness of romantic jealousy and where the emotion is directed.

Attachment theory was put forth as a theoretical account of romantic jealousy. Its long standing history in psychology positions it well and although a developmental theory it

has been empirically demonstrated suitable to theorising about romantic jealousy (Hazan & Shaver, 1986). The extent of its applicability to understanding romantic jealousy however is questionable, despite the empirical support, when the obvious is considered. Which is, that the shared genes between the parent and child privileges the nature of the attachment bond outside romantic intent. This notably impacts on the understanding of romantic jealousy on a fundamental basis of the attachment bond, which is the crux of attachment theory. The distinction is that in the relation of parental love, the beloved is part of the parent's extended self, whereas in romantic relationships the beloved's happiness is closely connected to the partner or lover (Ben-Ze'ev, 2010). Thus, romantic jealousy understood under attachment theory cannot be equivalent to romantic jealousy which emanates from a romantic relationship.

Alternatively, calling on the theoretical framework of the parent study, evolutionary psychology is touted for its valuable contributions to understanding romantic jealousy, though a stark contrast to the more dominant psychological theories. Evolutionary psychology treats romantic jealousy as a unique emotion and introduced thinking about romantic jealousy along the lines of sex differences; rapidly led the discovery of the trigger to romantic jealousy; and to the intentional object, also along a sex asymmetry. The basis of evolutionary psychology is reproduction and fitness success, which makes it suitable to understanding romantic jealousy, due to its primary focus on human mating and therefore the romantic relationship.

In chapter three, it was stated that this study took a view of replication which deviates from the mere repetition of methods and procedures of a previous study to the "confrontation of existing understanding with new evidence" (Nosek & Errington, 2020, p.1). The present study was designed such that the same methods were applied but with important contextual changes. This was done to test the evolutionary underpinnings of the predictions by studying

a sample which varies genetically and cross-culturally to the parent study. In addition, this contextual change displays features in line with plausible rival explanations that are based on culture and social learning which structures human attachment. Taken together, it was expected that this would provide a discerning test of the evolutionary predictions on which the parent study was based. Ultimately, the objective is to then determine if the results repeat, which would support the conclusion that the findings of the parent study is consistent and therefore reliable, which is the basis on which it can be generalised to a population outside that of the parent study.

The existing understanding is the result of the parent study being a once-off study. A once-off study being “an isolated study remains virtually meaningless and useless in itself” (Lindsay & Ehrenberg, 1993, p. 219). The information it conveys is that it empirically confirms that an observation is worthy of further investigation but says nothing about the conditions under which it will present again.

The confrontation of this understanding with new evidence is the result of a first replication, which the present study is. A first replication compared with an initial isolated finding, indicates “whether or not a wider law like generalisation is possible” (Lindsay & Ehrenberg, 1993, p. 220). This is because the study has not only confirmed the repeatability of findings, but its repeatability under different conditions.

The results of the parent study have been replicated for 3 hypotheses on a sample which is genetically and culturally diverse in comparison to the sample in the parent study. At this outset, this study confirms the findings of the parent study, that there is a sex difference in the intentional object of romantic jealousy being the rival or partner which is a function of sexual or emotional infidelity (Schutzwohl, 2008). Specifically though, under condition of sexual infidelity, males hold their partner as the intentional object in keeping

with the parent study whereas females don't hold the rival as the intentional object under the condition of emotional infidelity as found by Schützwohl (2008). Although it can be determined that the domain specific psychological mechanisms can be considered non-random in line with Tooby and Cosmides (2005) for the replicated findings, there is the anomaly of the replicated finding to consider carefully. The replicated findings are therefore consistent and can be generalised to a population outside that of the parent study, but not with the un-replicated findings.

This result is quite far reaching when considering the argument by Lindsay and Ehrenberg (1993) that a replication of this nature means the indulgence of looking into the possibility of "law like generalisations" (p. 220). Deliberated on with respect to the implications for the conceptualisation of romantic jealousy, at the outset, it can be seen that as an emotion, its intentional object is fairly clear and unique to the romantic triangle because the objects (rival or partner) are local to the triangle. These are key considerations of ascribing uniqueness to the conceptualisation of romantic jealousy.

Taken further, there is now much stronger evidence to consider that the uniqueness of romantic jealousy is not only about its intentional object, but is about how each sex processes the emotion. This processing is underpinned by the proposed selection pressures that males and females have experienced that have led to romantic jealousy evolving as a mate retention tactic. The sex difference in directing attention to the rival or partner as the primary intentional object of the emotion can be considered valid enough to factor into the unique understanding of romantic jealousy. Ultimately, if this interpretation is accepted, then this becomes the point of departure for understanding toward whom actions are directed in instances of romantic jealousy under the conditions of sexual and emotional infidelity.

Thus, the empirical strength of the findings having replicated on a culturally diverse sample strengthens the evolutionary theoretical underpinnings. Given the significance of these findings for enhancing the understanding of romantic jealousy and initialising rumblings for a unique conceptualisation and empirical support for evolutionary predictions.

A caveat is the temptation to critique this result as not being an identical replication of the parent study, especially when reflecting on the call for replication in order to restore confidence in the findings of psychological science, Cousineau (2014). That this study has not been identical to the parent study in its findings, is of little concern because no study can be an identical or perfect replication (Lindsay & Ehrenberg, 1993). The value of this replication is that it has shown that results repeat under different conditions, which is the makings of a very close replication (Brandt et al., 2014).

Chapter 6: Conclusion

Factoring the evolutionary perspective of the intentional object into enhancing the understanding of romantic jealousy, required an indication of the robustness of the observation made by Schutzwahl (2008), hence the application of replication (Crandall & Sherman, 2016). That the findings of the parent study have replicated in this study, bears out its robustness and therefore inspires confidence in the scientific integrity of the observation. This leaves room for further engagements that promote understanding by framing future research inquiry. Given the outcome of this study, this chapter takes a future outlook by providing recommendations, in conclusion of this dissertation.

Drawing on the fundamental basis of romantic jealousy to motivate the parent study, Schutzwahl (2008) argued that if romantic jealousy is a response to a perceived threat, then it is not useful to simply know that the emotion is elicited thus, but to rather know how an individual will counter the threat, presumably by directing action toward the intentional object. Given the prevailing understanding of the intentional object, a priority area for future research inquiry would be to revisit the conceptualisation of romantic jealousy by integrating the understanding of the intentional object.

The advancement of conceptualisations outside the evolutionary psychological conceptualisation, sees a descriptive conceptualisation with emphasis on it being a complex emotional state as it is a complex of thoughts, feelings, and actions (Bauerle, Amirkhan, & Hupka, 2002). This leaves much latitude for interpretation that has little immediacy in supporting an analysis of toward whom the emotion is directed, knowledge that is important because it gives insight into what to expect as a precursor to deciding on protocols to address issues with romantic jealousy. Integrating the intentional object into the conceptualisation of romantic jealousy will help provide more certainty by better situating the complexity. A

clear delineation of parameters thus can also help foster much needed conceptual consensus, which in turn will have a significant impact on the required coherency of research in this area (Harris, 2004).

Delving in matters of conceptualisation will call on multimethod research designs of qualitative and quantitative paradigms and directed at seeking a convergence of findings. For example, qualitative investigations into how an individual rationalises the intentional object, the key findings of which can be used to inform a quantitative study that is confirmatory, using a conceptual replication approach. Thus, creating the opportunity of diversifying the application of various methods and therefore enabling the identification of appropriate methods to investigate romantic jealousy concomitantly advance. This holds the advantage of developing a more comprehensive understanding of the emotion. Moreover, a conceptual replication may be useful to further investigate the intentional object of romantic jealousy in females under the condition of emotional infidelity. Doing so may promote an understanding of why the results did not replicate or it may actually replicate.

The rationale and significance of this study extended further than conceptual refinement. It motivated that an enhanced understanding of romantic jealousy empowers more responsive applied interventions. Therefore, another key focus area for future research is to investigate the association between the intentional object and a behavioural response. Bear in mind that Schützwohl (2008) said that knowledge of the intentional object will presumably indicate the directing of action toward the intentional object. Thus, looking at the probability and nature of such association is in order. For example, is there an association between the intentional object of jealousy and a particular behavioural response? What is known indicates that a good place to start would be to investigate the possibility of this association under the conditions of sexual and emotional infidelity along a sex asymmetry. Such a study can extend further into looking at the nature of behavioural responses. Recall,

that the evolutionary perspective of romantic jealousy is that it is an adaptive emotion that motivates the engagement of mate retention tactics. This speaks to where these behavioural tactics would be directed.

An area in which knowing the intentional object of romantic jealousy and its behavioural correlate may be very helpful is to better understand gender based violence. For example, in a study conducted in 2004, Mathews, Abrahams, Martin, Vetten, van der Merwe, and Jewkes found that most of the perpetrators of intimate femicide in South Africa are males who were close partners (cohabiting partner, boyfriend, or husband) of the victim. Further on in 2012, Abrahams, Mathews, Jewkes, Martin, and Lombard found that in South Africa, 56% of female homicides are committed by an intimate partner. They found that gender based homicides are particularly resistant to change creating the impetus for increased prevention efforts and a simultaneous response from policy, justice, and health systems to prioritise such cases. Using an evolutionary approach, which aligns to the sex specific findings, to understand the intentional object in instances where the motive is strongly associated with sexual and emotional infidelity could prove immensely helpful as part of the preventative measures at the offset.

The methodological imperative linked to conducting evolutionary investigations was also a salient aspect of this study. This underscores the critical need to develop and use more appropriate methods to study evolutionary predictions and clarity about the type of evidence required to test evolutionary predictions. In this regard, it is still maintained that replication designs are incredibly valuable, but its true value can only be ascertained if it becomes a widespread practice. Not only will this benefit the area under study but also allows engagement over how to use replication to investigate evolutionary psychological questions. There are important aspects to empirically navigate for evolutionary psychology fit better within psychology, for example the critique of post-hoc studies and the identification of

domain specific non-random psychological mechanisms. These are matters that methodology can address. Although this study has delved into this area, by no means however will this study comprehensively address the limitations, even if its strengths outweigh its weaknesses. Instead, it is best treated as a pilot exploration of how studies of this nature can be approached.

References

- Abrahams, N., Mathews, S., Jewkes, R., Martin, L., and Lombard, C. (2012). Every eight hours: intimate femicide in South Africa 10 years later! *Research Brief August 2012*. MRC South Africa, 1-4.
- Agresti, A. & Franklin, C. (2007). *Statistics: the art and science of learning from data* (Instructors Edition.). Upper Saddle River, New Jersey: Pearson Prentice Hall.
- Attridge, M. (2013). Jealousy and relationship closeness: exploring the good (reactive) and the bad (suspicious) sides of romantic jealousy. *SAGE Open*, 1-16.
- Babbie, E., & Mouton, J. (2001). *The practice of social research*. Southern Africa: Oxford University Press.
- Barelds, D. P. H. & Dijkstra, P. B. (2007). Relations between different types of jealousy and self and partner perceptions of relationship quality. *Clinical Psychology and Psychotherapy*, 14, 176-188. doi:10.1002/cpp.532.
- Bauerle, S. Y., Amirkhan, J. H., & Hupka, R. B. (2002). An attribution theory analysis of romantic jealousy. *Motivation and Emotion*, 26 (2), 297-296.
- Batinic, B., Duisin, D., & Barisic, J. (2013). Obsessive versus delusional jealousy. *Psychiatria Danubina*, 25 (3), 334-339.

- Ben-Ze'ev, A. (2010). Jealousy and romantic love. In S. L. Hart & M. Legerstee (Eds.), *Handbook of jealousy: Theory, research, and multidisciplinary approaches* (pp. 40–54). United Kingdom. Blackwell Wiley & Sons: <https://doi.org/10.1002/9781444323542.ch3>
- Bordens, K.S. & Abbott, B.B. (2002). *Research design and methods: a process approach*. United States of America: McGraw-Hill Higher Education.
- Brandt, M.J., Iljerzman, H., Dijksterhuis, A., Farach, F.J., Geller, J., & Giner-Sorolla, J., Veer, A. (2014). The replication recipe: what makes for a convincing replication? *Journal of Experimental Social Psychology*, 50, 217-224.
- Brewer, G. (2009). Height, relationship satisfaction, jealousy, and mate retention. *Evolutionary Psychology*, 7 (3), 477-489. Retrieved from: <http://www.epjournal.net>
- Burman, L.E., Reid, R.W. & Elm, J. (2010). A call for replication studies. *Public Finance Review*. 39 (1).
- Buss, D. M. (1995). Evolutionary psychology: a new paradigm for psychological science. *Psychological Inquiry*, 6, 1-49.
- Buss, D. M., Larsen, R. J., Westen, D., & Semmelroth, J. (1992). Sex differences in jealousy: evolution, physiology, and psychology. *Psychological Science*, 3(4), 251–255.
- Buss, D. M., & Shackelford, T. K. (1997). From vigilance to violence: mate retention tactics in married couples. *Journal of Personality and Social Psychology*, 72 (2), 346-361.

- Buunk, B. P. (1984). Jealousy as related to attributions for the partners behaviour. *Social Psychology Quarterly*, 47, 107-112.
- Buunk, A. P., Angleitner, A., Oubaid, V., & Buss, D. M. (1996). Sex differences in jealousy in evolutionary and cultural perspective: tests from Netherlands, Germany, and the United States. *Psychological Science*, 7 (6), 359-363.
- Buunk, A.P., and Dijkstra, P. (2015). Rival characteristics that provoke jealousy: a study in Iraqi Kurdistan. *Evolutionary Behavioural Sciences*, 9 (2), 116-127.
- Buunk, A.P., Solano, A.C., Zurriaga, R., & Gonzalez, P. (2011). Gender differences in the jealousy-evoking effect of rival characteristics: a study in Spain and Argentina. *Journal of Cross-Cultural Psychology*, 42 (3), 323-339. Doi: 10.1177/0022022111403664.
- Caporael, R.L. (2001). Evolutionary psychology: Toward a unifying theory and hybrid science. *Annual Review of Psychology*, 52, 607-628.
- Cousineau, D. (2014). Restoring confidence in psychological science findings: a call for direct replication studies. *The Quantitative Methods for Psychology*, 10 (2), 77-79.
- Darwin, C. (1859). *The origin of species by means of natural selection or the preservation of favoured races in the struggle for life*. United States of America: Castle Books.
- Dawkins, R. (2006). *The Selfish Gene*. United States of America: Oxford University Press.
- Demirtas-Madran, H. A. (2011). Understanding coping with romantic jealousy: major theoretical approaches. In Trnka, R., Baldcar, K., & Kuska, M. (Eds.), *Reconstructing emotional spaces: from experience to regulation*. Retrieved from:

www.pvsps.cz/en/emotional-spaces/

- Denissen, J.J.A. & Penke, L. (2008). Neuroticism predicts reactions to cues of social inclusion. *European Journal of Personality*, 22, 497-517. Doi: 10.1002/per.682
- Deonna, J.A & Scherer, K. R. (2010). The case of the disappearing intentional object: constraints on a definition of emotion. *Emotion Review*, 2 (1), 44-52.
- DeSteno, D., Valdesolo, P., & Bartlett, M. Y. (2006). Jealousy and the threatened self: getting to the heart of the green-eyed monster. *Journal of Personality and Social Psychology*, 91(4), 626–641.
- Dijkstra, P., & Barelds, D.P.H. (2008). Self and partner personality and responses to relationship threats. *Journal of Research in Personality*, 42, 1500-1511. Doi: 10.1016/j.jrp.2008.06.008
- Dijkstra, P., Barelds, D., & Groothof, H.A.K. (2010). An inventory and update of jealousy-evoking partner behaviours in modern society. *Clinical Psychology and Psychotherapy*, 17, 329-345. Doi: 10.1002/cpp.668
- Dijkstra, P. & Buunk, B. P. (1998). Jealousy as a function of rival characteristics: an evolutionary perspective. *Personality and Social Psychology Bulletin*. 24 (11), 1158 – 1166.
- Dijkstra, P. & Buunk, B. P. (2002). Sex differences in the jealousy evoking effect of rival characteristics. *European Journal of Social Psychology*, 32 (6), 829-852.
- Dunbar, R., Barrett, L. & Lycett, J. (2005). *Evolutionary psychology: a beginners guide*,

human behaviour, evolution, and the mind. England: Oneworld Publications.

Easley, R.W., Madden, C.S., & Dunn, M.G. (2000). Conducting Marketing Science: the role of replication in the research process. *Journal of Business Research*, 48, 83-92.

Edlund, J. E., & Sagarin, B. J. (2009). Sex differences in jealousy: misinterpretation of non-significant results as refuting the theory. *Personal Relationships*, 16(1), 67–78.

Engel, R. J., & Schutt, R. K. (2009). *The practice of research in social work* (2nd ed.). Thousand Oaks, California: Sage Publications, Inc.

Felson, R.B. (1997). Anger, aggression, and violence in love triangles. *Violence and Victims*, 12 (4), 345-362.

Fitzgerald, C. J. (2010). Examining the acceptance of and resistance to evolutionary psychology. *Evolutionary Psychology*, 8 (2), 284-296. Retrieved from <http://www.epjournal.net>

Feeney, J. A., & Noller, P. (1990). Attachment style as a predictor of adult romantic relationships. *Journal of Personality and Social Psychology*, 58(2), 281–291.

Fleischmann, A. A., Spitzberg, B. H., Andersen, P. A., & Roesch, S. C. (2005). Tickling the monster: Jealousy induction in relationships. *Journal of Social and Personal Relationships*, 22(1), 49–73.

Fussell, N. J., & Stollery, B. J. (2012). Between-sex differences in romantic jealousy: Substance or spin? *Evolutionary Psychology*, 10 (1), 136-172. Retrieved from <http://www.epjournal.net>

Franzoi, S.L. (2003). *Social Psychology* (3rd ed.). McGraw-Hill

Guadagno, R. E., & Sagarin, J. B. (2010). Sex differences in jealousy: an evolutionary perspective on on-line infidelity. *Journal of Applied Social Psychology*, 40 (10), 2636-2655.

Harris, C. R. (2004). The evolution of jealousy: did men and women facing different selective pressures, evolve different brands of jealousy? Recent evidence suggests not. *American Scientist*, 92, 62-71. Retrieved from <http://www.americanscientist.org>

Harris, C. R. & Darby, R.S. (2010). Jealousy in Adulthood. In S. L. Hart & M. Legerstee (Eds.), *Handbook of Jealousy: Handbook of jealousy: Theory, research, and multidisciplinary approaches* (pp. 547 – 571). United Kingdom: Blackwell Wiley & Sons.

Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, 52(3), 511–524.

IBM Corp. Released 2020. IBM SPSS Statistics for Windows, Version 27.0. Armonk, NY:

IBM. Retrieved from <https://www.ibm.com/support/pages/how-cite-ibm-spss-statistics-or-earlier-versions-spss>

Jones, K. S., Derby, P. L., & Schmidlin, E. A. (2010). An investigation of the prevalence of replication research in human factors. *Human Factors*, 52(5), 586–595.

Larson, R & Farber, B. (2006). *Elementary statistics: picturing the world*. Upper Saddle River New Jersey: Pearson Prentice Hall.

Lindsay, R.M., & Ehrenberg, A.S.C. (1993). The design of replicated studies. *The American*

Statistician, 47 (3), 217-228.

- Markova, G., Stieben, J., & Legerstee, M. (2010). Neural structures of jealousy: Infants' experience of social exclusion with caregivers and peers. *Handbook of jealousy: Theory, research, and multidisciplinary approaches* (pp. 83–100). United Kingdom: Blackwell Wiley & Sons. <https://doi.org/10.1002/9781444323542.ch5>
- Mathews, S., Abrahams, N., Martin, L., Vetten, L., van der Merwe, L., and Jewkes, R. (2004). Every six hours a woman is killed by her intimate partner: a national study of female homicide in South Africa. *MRC Policy Brief*, 5, 1-4.
- Mikulciner, M & Shaver, P.R. (2005). Attachment theory and emotions in close relationships: Exploring the attachment-related dynamics of emotional reactions to relational events. *Personal Relationships*, 12, 149-168.
- Morrison, R., Matuszek, T., & Self, D. (2010). Preparing and replication or update study in the business disciplines. *European Journal of Scientific Research*, 47 (2), 278-287.
- Neuman, W.L. (2006). Social research methods: quantitative and qualitative approaches (6th ed.). United States of America: Pearson Education Inc.
- Nosek, B & Errington, T.M. (2020). What is replication? *PLoS Biology*, 18 (3), 1-8.
- Oatley, K & Johnson-Laird (2014). Cognitive Approaches to Emotion. *Trends in Cognitive Science*, 18 (3), 134-140.
- Ortony, A, Clore, G.L, & Collins, A. (1990). *The cognitive structure of emotions*. New York, United States of America: Cambridge University Press.
- Parrott, W. G. (2001). Implications of dysfunctional emotions for understanding how

- emotions function. *Review of General Psychology*, 5(3), 180–186.
- Pines, A & Aronson, E. (1983). Antecedents, correlates, and consequences of sexual jealousy. *Journal of Personality*, 51 (1), 108-136.
- Pittenger, D.J. (2003). *Behavioural research: design and analysis*. New York, United States of America: McGraw-Hill Higher Education.
- Ploeger, A. (2010). Evolutionary psychology as a metatheory for the social sciences. *Integral Review*, 6(3), 164-174.
- Price, C. (2006). Affect without object: moods and objectless emotions. *European Journal of Analytic Philosophy*, 2, 49–68.
- Ridley, M. (Ed.), (1997). *Evolution (3rd ed.)*. New York, United States of America: Oxford University Press.
- Rosenthal, R. & Rosnow, R.L. (1991). *Essentials of behavioral research: methods and data analysis (2nd ed.)*. United States of America: McGraw-Hill.
- Rydell, R.J., McConnell, A.R., & Bringle, R.G. (2004). Jealousy and commitment: perceived threat and the effect of relationship alternatives. *Personal Relationships*, 11, 451-468.
- Salovey, P. & Rodin, J. (1986). The differentiation of social-comparison jealousy and romantic jealousy. *Journal of Personality and Social Psychology*. 50 (60), 1100-1112.
- Schmidt, S. (2009). Shall we really do it again? The powerful concept of replication is neglected in the social sciences. *Review of General Psychology*, 13 (2), 90-100.

- Schutzwohl, A. (2008). The intentional object of romantic jealousy. *Evolution and Human Behaviour*, 29, 92-99. doi:10.1016/j.evohumbehav.2007.10.002
- Shackelford, T. K., LeBlanc, G. J., & Drass, E. (2000). Emotional reactions to infidelity. *Cognition and Emotion*, 14 (5), 643-659.
- Sharpsteen, D. J., & Kirkpatrick, L. A. (1997). Romantic jealousy and adult romantic attachment. *Journal of Personality and Social Psychology*, 72(3), 627–640.
- Smith, R.H and Kim S.H. (2007). Comprehending Envy. *Psychological Bulletin*, 133 (1), 46-64.
- Stangor, C. (2004). *Research methods for the behavioural sciences* (2nd ed.). Boston, New York: Houghton Mifflin Company.
- Tooby, J. & Cosmides, L. (1992). Conceptual foundations of evolutionary psychology. In Barkov, J.H., Cosmides, L., & Tooby, J (Eds.), *The Adapted Mind* (pp. 5-66). New York: Oxford University Press.
- Tooby, J., & Cosmides, L. (2005). Conceptual Foundations of Evolutionary Psychology. In D. M. Buss (Ed.), *The handbook of evolutionary psychology* (pp. 5–67). New Jersey: John Wiley & Sons.
- Volling, B.L., McElwain, N.L., & Miller, A.L. (2002). Emotion regulation in context: the jealousy complex between young siblings and its relations with child and family characteristics. *Child Development*, 73 (2), 581-600.

Whitely, B.E. (2002). *Principles of research in behavioral science* (2nd ed.). United States of America: McGraw-Hill Higher Education.

Appendix One: Turnitin Originality Report

972152516_RSookdew_Masters Dissertation_Intentional
Object of Romantic Jealousy_Final

ORIGINALITY REPORT

2 %	1 %	4 %	1 %
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Achim Schützwohl. "The intentional object of romantic jealousy☆", Evolution and Human Behavior, 2008 Publication	1 %
2	cardinalscholar.bsu.edu Internet Source	1 %

Exclude quotes ☒ On
Exclude bibliography ☐ Off

Exclude matches ☐ < 1%

Appendix Two: Questionnaires

F1

About this study: This study is about someone who might be the object of your romantic jealousy, say if s/he has been sexually or emotionally unfaithful to you. This study also fulfils the requirement of a dissertation component for a degree.

Ethical matters: This study does not involve deception. It might help you reflect on aspects of your experience. If you feel troubled, or experience any adverse effects from participating, please seek counselling services. It is important to note that this study has been approved by the university Ethics Committee. Your responses are confidential and anonymous. Should you desire, you can discontinue this questionnaire at any point in time. Student Counselling Services are available to assist, should you require their services (e.g. if you find that participation raised issues, or affects you negatively in some way). This study is closely supervised by Dr.Munro, from the School of Psychology. A summary of the findings of this study will be made available upon its completion.

Consent: If you want to participate in this study, please consent by signing below.

I hereby consent to participate in this study. I acknowledge that my participation is voluntary and that I was in no way coerced or induced to participate. I declare that all information provided is true.

Signature of Participant

Signature of Researcher

Please respond to the following questions with an “X” in the box beneath the appropriate option

1. How old are you?

Age in years	<19	19	20	21	22	23	24	25	26	27	28	29	30	>30

2. You are?

Sex	Male	Female
	<input type="checkbox"/>	<input type="checkbox"/>

3. Your sexual orientation is?

	Heterosexual	Homosexual	Bisexual
Sexual Orientation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Attracted to the opposite sex e.g. male attracted to female

Attracted to the same sex as you e.g. male attracted to male

Attracted to both sexes i.e. both male and females

4. Your nationality and “race” group is?

Race Group	Black South African	Indian South African	White South African	Coloured South African
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If other, please state:				

5. Your religion is:

Religion	Christianity	Hinduism	Islam	African Traditional	None
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If other, please state:					

PLEASE READ THE FOLLOWING SCENARIOS AND ANSWER THE RELATED QUESTIONS BY MARKING AN “X” IN THE APPROPRIATE BOX.

SCENARIO A

Think of a serious committed romantic relationship that you have had in the past, that you currently have, or that you would like to have. Imagine that you discover that the person with whom you have been seriously involved has fallen in love with another woman.	
Towards which person would your jealousy be primarily directed?	Toward the Rival or Toward your partner <input type="checkbox"/> <input type="checkbox"/>

SCENARIO B

Think of a serious committed romantic relationship that you have had in the past, that you currently have, or that you would like to have. Imagine that you discover that the person with whom you have been seriously involved has sexual intercourse with another woman.	
Towards which person would your jealousy be primarily directed?	Toward the Rival or Toward your partner <input type="checkbox"/> <input type="checkbox"/>

QUESTION	YES	NO
Are you currently in a serious committed romantic relationship?		
Has your partner been sexually unfaithful?		
Has your partner ever been emotionally unfaithful?		
Have you been sexually unfaithful?		
Have you been emotionally unfaithful?		

THANK YOU VERY MUCH FOR PARTICIPATING IN THIS STUDY

F2

About this study: This study is about someone who might be the object of your romantic jealousy, say if s/he has been sexually or emotionally unfaithful to you. This study also fulfils the requirement of a dissertation component for a degree.

Ethical matters: This study does not involve deception. It might help you reflect on aspects of your experience. If you feel troubled, or experience any adverse effects from participating, please seek counselling services. It is important to note that this study has been approved by the university Ethics Committee. Your responses are confidential and anonymous. Should you desire, you can discontinue this questionnaire at any point in time. Student Counselling Services are available to assist, should you require their services (e.g. if you find that participation raised issues, or affects you negatively in some way). This study is closely supervised by Dr.Munro, from the School of Psychology. A summary of the findings of this study will be made available upon its completion.

Consent: If you want to participate in this study, please consent by signing below.

I hereby consent to participate in this study. I acknowledge that my participation is voluntary and that I was in no way coerced or induced to participate. I declare that all information provided is true.

Signature of Participant

Signature of Researcher

Please respond to the following questions with an "X" in the box beneath the appropriate option

1. How old are you?

Age in years	<19	19	20	21	22	23	24	25	26	27	28	29	30	>30

2. You are?

Sex	Male	Female
	<input type="checkbox"/>	<input type="checkbox"/>

3. Your sexual orientation is?

	Attracted to the opposite sex e.g male attracted to female	Attracted to the same sex as you e.g male attracted to male	Attracted to both sexes i.e. both male and females
	Heterosexual	Homosexual	Bisexual
Sexual Orientation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Your nationality and “race” group is?

Race Group	Black South African	Indian South African	White South African	Coloured South African
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If other, please state:				

5. Your religion is:

Religion	Christianity	Hinduism	Islam	African Traditional	None
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If other, please state:					

PLEASE READ THE FOLLOWING SCENARIOS AND ANSWER THE RELATED QUESTIONS BY MARKING AN “X” IN THE APPROPRIATE BOX.

SCENARIO A

Think of a serious committed romantic relationship that you have had in the past, that you currently have, or that you would like to have. Imagine that you discover that the person with whom you have been seriously involved has sexual intercourse with another woman.	
Towards which person would your jealousy be primarily directed?	Toward the Rival or Toward your partner <input type="checkbox"/> <input type="checkbox"/>

SCENARIO B

Think of a serious committed romantic relationship that you have had in the past, that you currently have, or that you would like to have. Imagine that you discover that the person with whom you have been seriously involved has fallen in love with another woman.	
Towards which person would your jealousy be primarily directed?	Toward the Rival or Toward your partner <input type="checkbox"/> <input type="checkbox"/>

QUESTION	YES	NO
Are you currently in a serious committed romantic relationship?		
Has your partner been sexually unfaithful?		
Has your partner ever been emotionally unfaithful?		
Have you been sexually unfaithful?		
Have you been emotionally unfaithful?		

M1

About this study: This study is about someone who might be the object of your romantic jealousy, say if s/he has been sexually or emotionally unfaithful to you. This study also fulfils the requirement of a dissertation component for a degree.

Ethical matters: This study does not involve deception. It might help you reflect on aspects of your experience. If you feel troubled, or experience any adverse effects from participating, please seek counselling services. It is important to note that this study has been approved by the university Ethics Committee. Your responses are confidential and anonymous. Should you desire, you can discontinue this questionnaire at any point in time. Student Counselling Services are available to assist, should you require their services (e.g. if you find that participation raised issues, or affects you negatively in some way). This study is closely supervised by Dr.Munro, from the School of Psychology. A summary of the findings of this study will be made available upon its completion.

Consent: If you want to participate in this study, please consent by signing below.

I hereby consent to participate in this study. I acknowledge that my participation is voluntary and that I was in no way coerced or induced to participate. I declare that all information provided is true.

Signature of Participant

Signature of Researcher

Please respond to the following questions with an “X” in the box beneath the appropriate option

1. How old are you?

Age in years	<19	19	20	21	22	23	24	25	26	27	28	29	30	>30

2. You are?

Sex	Male	Female
	<input type="checkbox"/>	<input type="checkbox"/>

3. Your sexual orientation is?

Sexual Orientation	Heterosexual	Homosexual	Bisexual
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Attracted to the opposite sex e.g male attracted to female

Attracted to the same sex as you e.g male attracted to male

Attracted to both sexes i.e. both male and females

4. Your nationality and “race” group is?

Race Group	Black South African	Indian South African	White South African	Coloured South African

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If other, please state:				

5. Your religion is:

Religion	Christianity	Hinduism	Islam	African Traditional	None
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If other, please state:					

PLEASE READ THE FOLLOWING SCENARIOS AND ANSWER THE RELATED QUESTIONS BY MARKING AN "X" IN THE APPROPRIATE BOX.

SCENARIO A

Think of a serious committed romantic relationship that you have had in the past, that you currently have, or that you would like to have. Imagine that you discover that the person with whom you have been seriously involved has fallen in love with another man.	
Towards which person would your jealousy be primarily directed?	Toward the Rival or Toward your partner <input type="checkbox"/> <input type="checkbox"/>

SCENARIO B

Think of a serious committed romantic relationship that you have had in the past, that you currently have, or that you would like to have. Imagine that you discover that the person with whom you have been seriously involved has sexual intercourse with another man.	
Towards which person would your jealousy be primarily directed?	Toward the Rival or Toward your partner <input type="checkbox"/> <input type="checkbox"/>

QUESTION	YES	NO
Are you currently in a serious committed romantic relationship?		
Has your partner been sexually unfaithful?		
Has your partner ever been emotionally unfaithful?		
Have you been sexually unfaithful?		
Have you been emotionally unfaithful?		

M2

About this study: This study is about someone who might be the object of your romantic jealousy, say if s/he has been sexually or emotionally unfaithful to you. This study also fulfils the requirement of a dissertation component for a degree.

Ethical matters: This study does not involve deception. It might help you reflect on aspects of your experience. If you feel troubled, or experience any adverse effects from participating, please seek counselling services. It is important to note that this study has been approved by the university Ethics Committee. Your responses are confidential and anonymous. Should you desire, you can discontinue this questionnaire at any point in time. Student Counselling Services are available to assist, should you require their services (e.g. if you find that participation raised issues, or affects you negatively in some way). This study is closely supervised by Dr.Munro, from the School of Psychology. A summary of the findings of this study will be made available upon its completion.

Consent: If you want to participate in this study, please consent by signing below.

I hereby consent to participate in this study. I acknowledge that my participation is voluntary and that I was in no way coerced or induced to participate. I declare that all information provided is true.

Signature of Participant

Signature of Researcher

Please respond to the following questions with an "X" in the box beneath the appropriate option

1. How old are you?

Age in years	<19	19	20	21	22	23	24	25	26	27	28	29	30	>30

2. You are?

Sex	Male	Female
	<input type="checkbox"/>	<input type="checkbox"/>

3. Your sexual orientation is?

	Attracted to the opposite sex e.g male attracted to female	Attracted to the same sex as you e.g male attracted to male	Attracted to both sexes i.e. both male and females
	Heterosexual	Homosexual	Bisexual
Sexual Orientation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Your nationality and “race” group is?

Race Group	Black South African	Indian South African	White South African	Coloured South African
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If other, please state:				

5. Your religion is:

Religion	Christianity	Hinduism	Islam	African Traditional	None
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If other, please state:					

PLEASE READ THE FOLLOWING SCENARIOS AND ANSWER THE RELATED QUESTIONS BY MARKING AN “X” IN THE APPROPRIATE BOX.

SCENARIO A

Think of a serious committed romantic relationship that you have had in the past, that you currently have, or that you would like to have. Imagine that you discover that the person with whom you have been seriously involved has sexual intercourse with another man.	
Towards which person would your jealousy be primarily directed?	Toward the Rival or Toward your partner <input type="checkbox"/> <input type="checkbox"/>

SCENARIO B

Think of a serious committed romantic relationship that you have had in the past, that you currently have, or that you would like to have. Imagine that you discover that the person with whom you have been seriously involved has fallen in love with another man.	
Towards which person would your jealousy be primarily directed?	Toward the Rival or Toward your partner <input type="checkbox"/> <input type="checkbox"/>

QUESTION	YES	NO
Are you currently in a serious committed romantic relationship?		
Has your partner been sexually unfaithful?		
Has your partner ever been emotionally unfaithful?		
Have you been sexually unfaithful?		
Have you been emotionally unfaithful?		

