A Study of Cross-cultural and Gender Differences in the Experience of Jealousy.

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Unless specifically indicated to the contrary, this thesis is the result of my own work.

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Abstract

Gender differences in the experience of jealousy have been the subject of research interest since the work of Freud. Recent research seems to indicate that males may be more distressed by their partners' sexual infidelity, whereas females are possibly more upset by emotional infidelity. Evolutionary psychologists believe these gender differences are the result of different adaptive problems faced by males and females over the course of evolutionary history. This view has been criticised by social psychologists and feminist theorists, who assert that gender differences in the experience of jealousy are the result of socialisation practices and power imbalances in society. This study examined gender differences in the experience of jealousy in a cross-cultural sample. The results provided only partial support for the evolutionary model. Strongly significant gender differences were found, but the difference was driven mostly by a large majority female dislike of emotional infidelity. Males across the sample were ambivalent, selecting sexual and emotional infidelity as approximately equally distressing. Significant cultural differences were found, suggesting that cultural factors may play a part in the experience of jealousy.

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2 Literature Review

2.1 Definitions of Jealousy

Pines (1998) defines jealousy as a complex reaction to a perceived threat to a valued relationship or to its quality, which occurs in response to the presence of a rival. White and Mullen (1989) extend this definition somewhat, when they define jealousy as a pattern of thoughts, feelings and behaviours which occur when self-esteem and/or a romantic relationship is threatened.

2.1.1 Jealousy as a complex response

Both these definitions emphasise the complexity of jealousy. Jealousy is described, not as a single emotion, but as a complex reaction composed of various intrapsychic and behavioural elements.

Many different emotions appear to form part of the jealousy experience. These include pain, distress, self-blame, oppression, anxiety, loss, sadness, apprehension, anger, restless distress, humiliation, shame, agitation, sexual arousal toward the partner, fear, depression and betrayal (Buss, 2000; Pines, 1998; White & Mullen, 1989). This complexity of different feelings led Sharpsteen (1991) to describe jealousy as a blended emotion. A blended emotion is constructed of many emotions, all directed to the same object, but aroused by various and often conflicting aspects of the object or situation (Arnold, 1960, in Sharpsteen, 1991). According to this definition, several emotions may appear over the course of a jealous epiosode as the jealous

person reappraises the situation with regard to his or her partner, rival, or relationship. Hupka, (1991) acknowledges the complexity of the jealous experience when he describes it as the "jealousy grieving process" which has stages of shock, recrimination, anguish, accommodation and finally recovery. These phases may recur, and the entire process may last for months.

In addition jealousy tends to evoke thoughts which may include resentment, self-blame, comparison with the rival, concern for one's public image, or self pity. There may also be physical symptoms associated with heightened arousal such as shortness of breath or insomnia. And finally jealousy almost always includes behaviours which are usually (although not always) aimed at protecting the relationship or the self from further harm (Buss, 2000).

The second point emphasised by the definitions above, is that jealousy appears to be incurred when a valued relationship is threatened by the presence of a rival. A loss which does not involve the partner's developing an analogous relationship with a rival does not usually produce jealousy (Parrott, 1991). Jealousy tends not to occur if the partner dies, or rejects the person without beginning another relationship. Jealousy is therefore believed to involve a triangle of relations, and to involve the potential loss of a romantic relationship to a rival, who may be real, potential, or imaginary (Parrott, 1991). Some authors such as Hansen (1991) point out that the rival may not even be human. A partner's involvement with work, a pet or a hobby, for example, may also incur jealousy in some people, if this involvement is perceived to threaten the relationship in some way.

2.1.2 Normal, pathological and delusional jealousy

Jealousy as an emotional and behavioural response appears to vary along a continuum from a normal, functional reaction to a real threat to a relationship, where the jealous behaviours are designed to protect the relationship, to pathological reactions, which may involve psychotic delusions, spousal abuse and murder. It needs to be recognised, however, that such is the power of the jealous experience that it has the ability to make otherwise functional people feel "insane" and to behave in ways which feel out of control and out of character (Pines, 1998).

Most authors emphasise that jealousy is a normal part of romantic relationships, and in some cultures jealousy is considered to be evidence of love (Pines, 1998). St Augustine noted this link when he stated that "He that is not jealous, is not in love" (Buss, 2000). Buss (2000), takes the argument further when he describes jealousy as "emotional wisdom", or an adaptive behaviour, which has evolved through the generations as a means of alerting individuals to threats to their relationships. Buss (2000) believes that jealousy triggers behaviours which are designed to combat threats to a relationship, thereby protecting the pair bond between people and ensuring both their survival and the survival of their offspring. Jealousy, he notes, is an exquisitely tailored adaptive mechanism which served our ancestors well, and is likely to continue to serve the interests of mankind to this day. Most often, therefore, jealousy is considered a normal emotion, experienced by most people when they perceive a genuine threat to their primary romantic relationship, and which stimulates behaviours designed to protect the pair bond between males and females.

Some individuals, however, are more disposed to experience jealousy than others. These individuals, due to personality variables or to strong sensitising experiences may be quicker to perceive threat to their relationships than others, and may respond more intensely. Moi (1982), describes this sensitivity as neurotic jealousy, and White (1991) as pathological jealousy. According to White and Mullen (1989) pathological jealousy differs from normal jealousy both in the intensity of the jealous response and in the presence of an underlying predisposition created by personality or mental disorder.

The most common disturbance of mental state that predisposes individuals to a jealous reaction is a depressed mood (White & Mullen, 1989). Depression frequently leads to a lowering of self esteem, often combined with an increase in sensitivity to rejection, as well as loss of libido and reduced sexual performance. These factors may fuel fears that the partner will seek satisfaction elsewhere (White & Mullen, 1989).

Certain personality traits have also been associated with increased levels of jealousy. Kretschmer (1918; 1952, in White & Mullen, 1989), Kretschmer (1974, in White & Mullen, 1989), and Vauhkonen (1968, in White & Mullen, 1989) note heightened levels of jealousy among sensitive, narcissistic individuals, who combine deeply felt sensibilities with a touchy self willed arrogance. Narcissistic individuals are the most likely to be unfaithful themselves, but in addition they also suffer from precarious self esteem, are quick to take offence, and may be painfully aware of their own vulnerabilities (White & Mullen, 1989). Vauhkonen (1968, in White & Mullen, 1989) believed that narcissistic characters need to regard their partners as worthless and unfaithful in order to bolster their own vulnerable self esteem.

It is not these personality traits in themselves which "cause" jealousy. Rather, as White and Mullen (1989) point out, it is the interaction between these personality traits and the experience of a threat to a relationship which lead to exaggerated responses. These authors indicate that it is the disparity between the level of the threat and the individual's response that raises the question of a pathological reaction.

Still further along the continuum are individuals suffering from major mental illnesses such as paranoid personality disorders, schizophrenia, substance abuse, or organic disorders. These disorders may magnify jealousy, or cause people to see threat where it doesn't exist. Some individuals are frankly delusional, and base their jealous beliefs on trivial or circumstantial evidence. Delusional jealousy is described in DSM IV as a subtype of a delusional disorder, and is also mentioned as one of the seven criteria for a diagnosis of Paranoid Personality Disorder (Kaplan & Sadock, 1998). The central theme of both of these disorders is that the individual suspects his or her spouse of infidelity without adequate justification. The jealous type of delusional disorder is extremely rare, however, and affects less than 0.2% of psychiatric patients. The schizophrenias are the most common disorders in which delusions may be prominent (White & Mullen, 1989). The jealousy complex may emerge as part of the schizophrenic process, either as a central theme, or as one element among a number of disturbances. Delusional jealousy is usually encountered in the clinical subtype of paranoid schizophrenia. Severe (psychotic) depressions and the manic phases of bipolar disorders have also been known to produce jealous delusions. Jealousy may also be produced by organic impairment, and may be the first indication of an emerging cerebral disorder (White & Mullen, 1989).

Jealousy has also been noted to occur at elevated levels among alchoholics and drug abusers. The association between alchoholism and pathological jealousy was first documented by Krafft Ebing in 1905, when he reported that 80% of the male alchoholics he studied who still had sexual relationships were afflicted by delusions of jealousy (White & Mullen, 1989). More recent studies show a more modest but still significant correlation between alchohol consumption and jealousy, with 35% of alchoholics diagnosed as being extremely jealous, and 27% presumed to be suffering from delusional jealousy (Shrestha, Rees, Rix, Hore & Faragher, 1985, in Buss, 2000). Cocaine and amphetamine abuse is also likely to produce delusional jealousy. Both of these drugs can produce a state indistinguishable from paranoid schizophrenia, in which delusions of infidelity may occur (White & Mullen, 1989).

It is also important to note that while some people are truly delusional and accuse their spouses of infidelity without valid grounds, there are also many individuals who have been treated for delusional jealousy, and who have later been shown to be of sound mental health, and perfectly accurate in their inferences about their partner's infidelity (Buss, 2000). This has also been shown to be true in the case of some individuals who have met other criteria for DSM IV diagnosis of pathology. Apparently these people, concurrently with their mental illness, have accurately responded to subtle signs of betrayal in their spouses, and correctly assumed a threat to the relationship (Buss, 2000). It is therefore obviously possible for mental illness to occur together with an accurate perception of a partner's actual or potential infidelity. It also seems possible that the difficulties of living with someone who suffers from a severe mental illness may make some individuals ambivalent about their partners and thus to have the desire to stray, even

if they are not actually physically unfaithful. It is possible that this ambivalence is correctly observed by the jealous partner (Buss, 2000; White & Mullen, 1989).

2.1 Behavioural responses to jealousy

Just as jealousy itself functions on a mental health continuum which ranges from a normal adaptive response produced by a genuine threat to a cherished relationship, to delusional fantasies, it may have consequences and produce coping mechanisms and behavioural responses which range from healthy and adaptive to pathological in the extreme.

As Buss (1994) states, there are numerous benefits to couples who remain committed. These include the complementarity of skills, division of labour, sharing of resources, a stable home environment for rearing children and a more extended kin network. On the other hand, people who fail to stay together incur severe costs. These costs include loss of resources, the loss of a stable environment for children, severed bonds between extended kin and loss of social support. Jealousy is most functional, therefore, when it generates behaviours aimed at protecting the pair bond.

At the most positive end of the continuum, jealousy can benefit a relationship. In many cultures jealousy is interpreted as love, and may therefore strengthen the bonds between individuals (Pines, 1998). It has the benefit of increasing the value of a mate in the eyes of the threatened partner (Buss, 1998; 2000; Pines, 1998). It has been shown to heighten sexual arousal between partners (Buss, 2000; Orbach; 1999; Pines, 1998), and may cause individuals to re-examine and

strengthen relationships (Pines, 1998). At its most benign level, therefore, jealousy can protect a threatened relationship.

Similarly, jealousy may stimulate behaviours which range from benign (talking through the jealousy crisis with a mate) to pathological (spousal abuse and murder). Adaptive behaviours include a variety of tactics designed to keep a mate. The first of these tactics is usually heightened vigilance which involves the close observation of the partner's movements and activities (Buss, 2000). Another commonly used technique is self enhancement (Buss, 2000). Studies conducted by Shettel-Neuber, Bryson and Young (1978, in Buss, 2000) as well as by Buss (1988, in Buss, 2000) and Buss and Shackelford (1997, in Buss, 2000) indicate that women may attempt to enhance their appearance as a coping mechanism when threatened with a rival, whereas men increase their displays of love in various ways. Other techniques observed include emotional manipulation which involves inducing guilt in the partner, and denigrating the rival, which usually involves undermining the rival on the dimensions that they believe the partner values (Buss, 2000). Other psychological techniques such as denial, or bolstering self reliance and self esteem have been observed (Buss, 2000; Pines, 1998; White & Mullen, 1989). Some research focussing on gender differences in behavioural responses to jealousy indicates that women may tend to use behavioural responses aimed at protecting the relationship, whereas men tend to behave in ways aimed at preserving self esteem (Bryson, 1976; 1977; in Nannini & Meyers, 2000).

Most of these techniques are used to protect a relationship even though many of them may be seen as less than optimal behaviours. However, jealousy has a darker side. As Moi (1982, p. 53)

states: "Jealousy, then, is perfectly normal, and murder and madness follow in its wake." Or to quote Buss (2000, p. 7), jealousy can be the "emotional acid that corrodes marriages, undermines self-esteem, triggers battering and leads to the ultimate crime of murder". Worldwide, infidelity is cited as the leading cause of divorce (Betzig, 1989, in Buss, 2000), with adultery cited as the major cause of conjugal dissolution in 86 societies around the world (Buss, 1994). In studies of western cultures half of all divorcees cite a spouse's sexual infidelity as one of the primary reasons for divorce (Hunt, 1974; Kelly & Conley, 1987; Levinger, 1976; in Buss, 2000). Jealousy, therefore, can often lead to the termination of a pair bond, through divorce, and sometimes, as will be discussed, through violence and murder.

2.1.3 Jealousy and Violence

Evidence seems to indicate that jealousy is strongly associated with spousal abuse worldwide (Buss 2000). Specifically there are strong links between male jealousy and spousal battery and violence (Daly & Wilson, 1988, in Buss, 1999). Spinoza (1948, in White & Mullen, 1989), acknowledged the anger and aggression inherent in much jealousy when he defined it as "the hatred towards an object loved" (p. 62). This hatred at times translates into violence, and while the rage stirred up by jealousy has as its object both the rival and the loved one, it is most often acted out on the loved one (Mathes & Verstraete, 1994). Accumulated evidence seems to indicate that jealousy may exceed all other causes of spousal abuse (Church, 1984; Daly, Wilson & Weghorst, 1982; Hilberman & Munson, 1978; Miller, 1980; Rousaville, 1978; in Buss, 2000), with studies showing between 52% and 94% of spousal violence attributed to jealousy. It is also

the most frequently cited factor leading to violence in dating relationships (Sugarman & Hoteling, 1989, in Buss, 2000).

In addition to physical abuse, jealousy is often cited as the leading cause of spousal murder. In the United States of America, 13% of all homicides are described as spousal murders, and jealousy is considered to be the leading cause (Buss, 2000). FBI statistics (1986, in Pines, 1998) indicate that approximately one third of all solved murders in the United States involve spouses, lovers or rivals of the murderer, with either a real or a suspected infidelity as a major cause.

Most spousal abuse and murder is reportedly committed by men, with their female partners as victims, and this appears to be true throughout the world (Buss 1994; 2000; Moi, 1982; Pines, 1998; White & Mullen, 1989). In studies conducted in Northern America, the Sudan, and a variety of African countries, the vast majority of spousal murders appeared to be the consequence of male on female violence, usually in association with jealousy (Buss, 2000). The majority of males who assault and murder their partners seem to be under the age of 40, with a predominance from lower socio-economic classes (Buss, 1999; Hurwitz & Christiansen, 1983; Shaw & McKay, 1969; Short, 1976; in White & Mullen, 1989). The most powerful predictor of domestic violence is a history of previous violence (Monahan, 1981, in White & Mullen, 1989) and alchohol abuse is frequently implicated (White & Mullen, 1989).

While women are far less likely to murder their spouses than men are, they may express aggression as a result of jealous epiosodes (Moi, 1982). The issue of female on male violence has been debated hotly over the past few decades, and is illustrated the work of Strauss and

Gelles (1988, in Buss, 2000). These authors indicate that the frequency of acts of violence in mating relationships is approximately equal for the two sexes, with half perpetrated by men and half by women. Some research on date violence suggests that women may exceed men in some particular acts of violence (Bookwala, Frieze, Smith & Ryan, 1992, in Buss, 2000). Nevertheless, research has shown that men are nine times more likely to be convicted of violent offences than women are, and are more likely to cause physical injury when they do express their aggression (Kaliski, 2002). Work by Stets and Pirog-Good (1987, in Pines, 1998) indicated that jealousy caused men to become violent during a date more often than women. Similarly Paul and Galloway (1994, in Pines, 1998) showed that the men in their study were more inclined to think about aggressive action against a rival than women were. In a study of dangerousness associated with jealousy by Buunk (1984, in Pines, 1998), all the dangerous patients were men. From these studies it seems safe to assume that even if women are as capable of acts of violence as men are, and behave violently with at least the same frequency as men, they are less likely to act violently or lethally as a result of jealousy. There are also indications that in many cases where women behave violently, they may be acting in self defence, or in retaliation to a man who is assaulting them, often as a result of jealousy (Buss, 2000).

Some men, therefore, assault their partners out of jealousy. Women also attack out of jealousy, but more commonly use aggression to defend themselves against a partner who is assaulting them out of jealousy (Buss, 2000). There is a further gender difference in that in men, jealous aggression tends to concentrate on the partner. Women are more inclined to attack the rival (Lagache, 1947, in Moi, 1982). As Moi (1982) drily observes, in the jealous triangle, it is always the woman who gets killed.

2.1.4 Jealousy and Gender

These findings on gender differences form part of a long tradition of research and opinion on gender differences in the jealousy experience. At various points both males and females have been shown to be the more jealous sex. Some authors have assumed that jealousy is predominantly male, based on the premise that women are male sexual property, and that adultery is a violation of the husband's property rights (Darwin, 1901; Kingsley Davis, 1959; Westermarck, 1981, in Moi, 1982). These authors presume that as women do not own sexual property, they do not get jealous. Other authors, such as Lamare, (1967, in Moi, 1982), described women as the more jealous sex, based on the premise that that women are the more "emotional" sex. Still other views have held that women are more frequently jealous, but that men are more likely to become pathologically or delusionally jealous (Moi, 1982). A commonly held theory (Friday, 1985; Moi, 1982; Pines, 1998) is that women become depressed when jealous, and men angry. More recent research reports that both sexes experience romantic jealousy as frequently, and to more or less the same intensity and degree, but that males and females tend to experience jealousy in response to somewhat different triggers (Buss, 2000).

2.1.5 Jealousy and Envy

Jealousy needs to be distinguished from envy, with which it is often confused. Envy comes from the Latin word "invidere" which means to look upon with malice (Buss, 2000). It involves the experience of displeasure, or ill-will caused by the superiority of another person in some area, usually an area the envious person values, such as happiness, success, reputation, or material

possessions. It involves ill feelings directed towards someone who has what the envious person lacks, whereas jealousy implies the fear of losing to a rival a valuable partner who the jealous person already has. Jealousy is triadic, whereas envy usually involves the self and one other person. Studies by Parrott and Smith (1990, in Parrot, 1991) indicate that lay people are clearly able to distinguish between the two processes, identifying envy as characterised by inferiority, longing, resentment, and disapproval of the emotion, and jealousy as consisting of fear of loss, distrust, anxiety and anger. The words also have different connotations. Envy is cited as one of the seven deadly sins, and is prohibited in the ten commandments. Jealousy, on the other hand, is closely associated with love, and is described, in the same ten commandments, as one of the characteristics of God himself (Friday, 1985). Jealousy, thus, possibly has more positive connotations than envy.

Despite the clear definitional differences between the two constructs there is a long history of confusion between them, with authors dating back as far as Aristotle (in Parrot, 1991) emphasising the importance of differentiating between the two. Perhaps, as Friday (1985) points out, the confusion has etymological roots. Jealousy derives from the Greek word "zelos" which means emulation and rivalry, and in the original Hebrew of the Old Testament, the words "Qana" and "Qinah" mean jealousy and envy interchangeably, depending on context. Similarly in Shakespearean English jealousy emerges as a species of envy, which is in turn a species of hatred, the opposite of love, and sometimes arising from love (Campbell, 1960, in Friday, 1985).

A further source of the confusion is that it seems possible that jealousy is rooted in envy, and contains the seeds of envy within it. Individuals who are jealous may well simultaneously be

envious of, for example, the rival's perceived superiority, or the love and happiness which the rival and the unfaithful partner appear to share. It is also possible that there is some overlap in the emotions experienced during envious and jealousy epiosodes. As Parrot (1991) points out, envy involves feelings of inferiority, which may also be evoked in jealousy. And finally, as Friday (1985) indicates, words do not have fixed, absolute meaning. Words change as cultures change. This author points out that the meaning of the two words seem to be blurring, with "jealousy" taking over more of the meaning of "envy", and "envy" softening in connotation and becoming closer in meaning to "covet".

2.2 Epistemological Models of Jealousy

Jealousy has been studied by most of the dominant schools of psychological theory, and many of these schools have put forward etiological theories. This study will concentrate on the Evolutionary, Psychoanalytic, Social Psychological, Feminist and Integrated Models of jealousy. All these schools of thought focus on gender issues, pathology and violence. These models are reviewed briefly below in the order in which they are said to originate, from the molecular genetic level, through individual unconscious factors and finally to the larger social and cultural issues which impact on the relationships and hence the experience of the individual. The integrated model, which attempts to examine jealousy from the combined perspective of all these models, is presented last.

2.1.1 The Evolutionary Model

Gender differences are an important factor in the work of evolutionary psychologists, who focus predominantly on jealousy as a genetically evolved adaptive process. Their work originated with the propositions of Darwin (1965; 1970; 1981; 1988; in Pines, 1998). He believed that jealousy evolved in order to protect the pair bond between mating partners, to increase the likelihood that they would stay together, reproduce, and raise their offspring to maturity, thereby successfully replicating their genes (Pines, 1998).

Darwin's work was furthered by Lovejoy (1981, in Hupka, 1991) who proposed that human evolution was driven by the unique sexual and reproductive behaviour of early hominids. According to this view, over the centuries of evolution, it is the most adaptive human beings who have successfully given birth to, and reared their young.

As one of the primary causes of mortality among infant chimpanzees are injuries caused by falling from the mother, Lovejoy (1981) assumed that any behaviours which allowed the mother to pay close attention to the infant would increase the rate of reproduction and survival. Falling was most likely when the mother was trying to care for the infant while foraging for food for herself. The survival of infants was therefore improved when males provided food for the mother. Males who bonded with females in this way avoided having to compete for food with females and infants, and improved the nutrition of females. Well fed females were able to accommodate greater gestational and lactation loads and devote more time to parenting the offspring of the males who fed them. The genes of males who behaved in this way were more

likely to be passed to the next generation. The pair bond, therefore, evolved over time as the most efficient means of raising children (Hupka, 1991).

Similarly, evolutionary psychologists hold the view that the emotions experienced by modern humans are the emotions which enabled our ancestors historically to succeed, and to breed (Buss, 2000). Emotions such as fear, anxiety, distress or anger evolved because they served to alert our ancestors to dangers, or threats to their survival. Individuals who responded in such a way as to avert these threats were more likely to survive to bring up children (Buss, 2000). According to evolutionary psychology jealousy is one of these adaptive emotions. This theory holds that jealousy evolved because those individuals who felt jealousy were most likely to perceive threats to the pair bond, and to take steps to avert threats. Children were more likely to survive to adulthood in the context of a stable pair bond between two parents. Therefore children of jealous parents were more likely to survive and to raise their own children to adulthood. Because of the nature of gene transference, the children of jealous individuals were more likely to experience jealousy themselves, and as a result were more likely to successfully raise their children, who in turn inherited a tendency towards jealousy. Jealousy, therefore, was an adaptive response which aided the survival of our human ancestors (Buss, 2000).

However, because of the widely divergent roles played by males and females in conception and child rearing, evolutionary psychologists believe that jealousy developed differently in men and women. This school of thought believes that human males differ from most other mammals in that they invest heavily in the rearing of their offspring (Geary, 1998). Unlike females, however, they lack paternity certainty, and live with the possibility that they are investing energy and

resources in children they have not themselves fathered. According to evolutionary theory, therefore, those males who jealousy guarded their mates from other sexual predators were most successful in reproducing their own genes. As a result, the theory holds, males are most likely to experience jealousy in response to the threat or existence of sexual infidelity. To support this view, evolutionary psychologists point to the almost universal male constraint of female sexuality, and an asymmetry in chastity laws in most cultures (Pines, 1998). In most countries in the world, adultery is forbidden for both sexes, but women are penalised far more severely than men. In many cultures in the world women are severely penalised for adultery, to the extent that often the murder of an unfaithful woman is either tolerated, or even legally advocated. The penalties for men are usually far less severe (Buss, 2000; Pines, 1998).

The reproductive success of women, on the other hand, is much less threatened by sexual infidelity on the part of males. Women are always sure that the children they give birth to are their own. However, in most cultures, throughout the world, men control the resources (such as land, food and in modern times, money) which women require in order to successfully raise their children (Buss, 1994). Therefore, although women may not be specifically threatened by sexual infidelity, they are seriously threatened if their male partners start to withdraw the supply of resources they need to bring up their children. It is dangerous for the survival of a woman and her family if a male becomes emotionally involved with another woman, as this raises the possibility that he might withdraw his resources and offer them to the rival and her children. Evolutionary psychologists therefore believe that jealousy in females evolved to protect women and children from the threat of abandonment (Buss, 1994; 2000; Geary, 1998; Pines, 1998). As a

result modern females, like their more primitive ancestors, may tend to become jealous when their partners show signs of emotional infidelity.

Buss and his colleagues also use evolutionary theories to explain why infidelity exists despite the evolutionary disadvantages of straying. Despite the benefits of fidelity, both males and females tend to be unfaithful (McDonald, 1999). Buss (2000) estimates that over the course of a marriage, 20 to 40% of American females and 30 to 50% of American males have at least one affair. Thompson, (1983, in Buss, 2000) estimates that the probability that either the husband or the wife will have an affair may be as high as 76%. Hite (1987, in Buss, 2000) put the figure at 70%, whereas Greeley (1991, in Buss, 2000) asserted that only 5 to 10% of married people cheated. Affairs are known in all cultures, including tribal societies, although prevalence rates vary from culture to culture (Buss, 2000).

However, although both males and females may be unfaithful to their partners, evolutionary psychologists believe they differ in their desire to stray (Buss, 1994; 2000). According to evolutionary theory, males and females pursue different mating strategies, determined to a large degree by differences in physiology. To produce a single child, women undergo nine months of pregnancy, and spend many years rearing a child. Men, to produce the same child, "need only to devote a few hours, a few minutes, or even a few seconds" (Buss, 2000, p 16). Over a period of nine months, men can produce many children, whereas a woman can usually only have one or two. A strategy of casual mating, therefore, is more reproductively successful for men than for women. As a result, it is argued, men have evolved a more powerful desire for sex with a variety of women (Buss, 2000). Women, on the other hand, most effectively bring up their children if

they have a partner to provide support and resources. As a result they are disinclined to have sex out of the context of a committed relationship (Buss, Shackelford, Kirkpatrick, Choe, Lim, Hasegawa, Hasegawa & Bennet, 1999).

On the other hand, in order for men to have affairs, women have to be willing to participate. Buss (2000) provides three clues to an evolutionary history of female infidelity. In the first place, he claims, male jealousy would not have evolved to its current levels of intensity without the presence of threat. Secondly, the fact that women worldwide have affairs points to a genetic predisposition to stray. And thirdly, there are physiological clues which point to a history of sperm competition within a woman's reproductive tract. These include the existence of sperm with coiled tails, whose purpose seems to be to wrap themselves around rival sperm and thereby prevent them from reaching the ovum (Buss, 2000). Buss (2000) believes this is due to a history of competition between sperm from different men in the genital tract at the same time.
Clearly, women's infidelity is laden with danger. It can lead to divorce, which often means the loss of the resources a woman needs to support her children, as well as other consequences such as social ostracism, banishment, physical abuse, mutilation and death (Friday, 1985), much of which is socially condoned in many cultures throughout the world. Society severely penalises adulterous women, and always has done. According to evolutionary psychologists, affairs must therefore have historically had benefits for women which outweighed these dangers. These include the direct resources an affair partner can provide, and which could dramatically improve a woman and her children's chances of survival, particularly during times of hardship (Buss, 1994; 2000). Another important benefit is what Buss (2000) describes as "mate insurance". During ancestral times, the danger of losing a partner to disease, famine or injury was

considerable (Diamond, 1992; 1998; Nesse & Williams, 1994; Tooby & DeVore, 1987; Williams & Ness, 1991; in Buss, 2000). Paleontological and cross cultural records show that males were more likely to succumb to injury than women (Walker, 1995, in Buss, 2000). Women who had potential replacement partners were likely to fare better in the event of the loss of a partner than women who did not (Buss, 1994).

The prevalence of infidelity throughout history (Buss, 1994; 2000; Pines, 1998) has led to humans developing an exquisite sensitivity to the signs of a potential or actual infidelity. According to evolutionary psychologists it is this sensitivity which may give rise to pathological or delusional jealousy. Buss (2000) has developed what he describes as "Error Management Theory". To illustrate his theory he uses the example of two individuals who had been treated for delusional jealousy, and who, it later transpired, had been correct in assuming that their partner had been unfaithful. The first was a woman who was thought to be delusional because she suspected her husband of infidelity on the grounds that he had bought a new coat, and the second was diagnosed delusional because his suspicions were based on the fact that his wife's Christmas lights, and those of the neighbour, were flashing synchronously. In both cases the erring spouses vehemently denied the accusations of infidelity, and in both cases the allegations were eventually found to be true. According to Buss (2000), these jealous individuals had picked up clues, many of which they were not able to articulate, had processed these, and had arrived at a correct conclusion. His theory holds that over the course of history, individuals who were more sensitive to the subtle signs of real infidelity were more likely to succeed than those individuals who were not. Individuals who were more sensitive were likely to be wrong at times, but the error of failing to perceive infidelity where it actually existed was more costly. Therefore

the individuals who successfully reproduced were those individuals who made the adaptive error of assuming infidelity where it did not exist. This evolutionary tendency explains some elements of the so-called "Othello syndrome" (Buss, 2000), such as hair trigger sensitivity to jealousy and jealous delusions.

In some individuals the sensitivity to the signs of betrayal may be extreme, and their mate guarding behaviour excessive. Da Silva and Da Silva (1999) noted that despite the apparently irrational nature of delusional jealousy behaviours, these are frequently tolerated by partners. In Da Silva and Da Silvas' study many partners of apparently delusional spouses gave reassurance repeatedly, and either accepted, or voluntarily imposed on themselves, restrictions on their behaviour and activities. It can therefore be argued that even at its delusional extreme, jealous behaviour may be functional in that it may have the consequence of controlling a spouse's potentially unfaithful behaviour.

However, although Buss (2000) acknowledges that jealousy can be pathological, he believes it is seldom truly delusional. His view is that often in "pathological" cases, the jealousy is a response to real signs of potential infidelity. Here, he believes, factors such as aging, mental health difficulties, sexual dysfunction or a widening difference between partners in desirability, may be prompting a partner to stray, or simply to consider straying. Such is the evolved sensitivity of humans to the signs of straying, that their partners, including those individuals who are seriously mentally ill, may accurately perceive these signs.

Evolutionary theorists also address the issue of spousal violence and murder. Darwin (1970; 1981 in Pines, 1998) and his adherents state that in the first place males are naturally more aggressive. Darwin argued that in the competition for food and mates, males were obliged to fight each other. Inevitably it was the physically larger, stronger and more aggressive males who survived, successfully mated, and who passed on these characteristics to the next generation. According to evolutionary theorists, therefore, males are simply more aggressive than females from the outset.

Buss (2000) and his colleagues Wilson and Daly (1993, in Buss, 2000) take this argument one step further and theorise that domestic violence may be adaptive. Men's use of violence, or the threat of violence, they speculate, conveys an important message to the spouse: acts of infidelity come at a steep price. Spousal violence therefore performs the function of deterrence and control. Moreover, these authors allege, it works. As evidence, Buss (2000) cites a study conducted by Wilson and Daly (1996), similar to that of Da Silva and Da Silva (1999), cited above, which indicates that a majority of women who have been battered attempt to allay their partner's fears by cutting contacts with male friends, wearing less revealing clothing, becoming more attentive of their male partner's needs, and generally reducing signs of potential infidelity. Violence, therefore, may force women to behave more faithfully.

Buss (1999) also indicates that violence may serve as a mate retention tactic, and may prevent women from leaving their jealous husbands. Women who have left their husbands are reportedly at a substantially higher risk of being killed than women who remain with their husbands, and

similarly, women who have left their husbands due to assault, frequently return because they fear they will be killed if they do not (Wilson & Daly, 1996, in Buss, 1999).

Finally, Buss claims, infidelity may predict violence. Shields and Hanneke (1983, in Buss, 2000) showed that 47% of battered women confessed to adultery as opposed to 10% of women who were not battered.

Buss draws two major conclusions from this work. In the first place, men's violence against their partners may serve the function of deterrence and control. Women who are afraid of their husbands are reportedly less likely to be unfaithful, and may be too afraid to leave. And secondly, women's infidelity may increase the likelihood that men will be violent.

As previously indicated, jealousy is cited as the primary motive in spousal murder. It cannot rationally be assumed that spousal murder is adaptive, as it means that children lose their mothers, which significantly reduces their chance of survival (Geary, 1998). It also means that the jealous husband loses his access to a woman's future reproductive resources. Daly and Wilson (1988, in Buss 2000) believe that because men use violence to control their women they sometimes take violence too far and accidentally kill their partners. However, many spouse murders are premeditated, and therefore are deliberate, rather than accidental. Buss (1994; 2000) speculates that there may have been times over the course of history when spousal murder was adaptive. In the first place, in a polygamous mating context, it may have deterred other wives from cheating. Secondly, in many cultures a wife's infidelity is highly damaging to a man's reputation. Men who lose status and reputation are impaired in their ability to attract other mates

and may be socially ostracised. Killing an unfaithful wife is sometimes a means of salvaging a man's lost honour, and therefore his own survival in the group as well as the survival of his genes. Thirdly, murdering a woman who may be pregnant with another man's child may be a viable way of stanching the costs as it hurts the rival's reproductive success. And finally, as a significant proportion of spousal murders occur when the erring wife has decided to leave, it could be reproductively advantageous for men to kill their spouses because it prevents complete loss of her reproductive resources to someone else.

2.2.1.1 Criticism of the evolutionary model

The evolutionary model has had mixed, and controversial research support. Buss's own research supports the model (Buss, Larsen, Westen & Semelroth, 1992; Buss, Shackelford, Kirkpatrick, Choe, Lim, Hasegawa, Hasegawa & Bennet, 1999), as does the work of Geary, Rumsey, Bow-Thomas & Hoard (1995) and Wiederman & Kendall, (1999). Other studies have given mixed or partial support. Several cross-cultural studies have shown that while there are gender differences in response to jealousy triggers, cultural factors are equally if not more important. Buunk, Angleitner, Oubaid and Buss (1996) studied gender differences in jealousy in the Netherlands, Germany, and the United States of America, and found that while men showed greater psychological and physiological distress to sexual infidelity, and women showed greater distress to emotional infidelity, as predicted by evolutionists, the magnitude of these gender differences varied somewhat across cultures. The difference was much larger for the United States than for Germany and the Netherlands. These findings are echoed by the prior work of Bryson (1991), in his study of jealousy responses in the United States, France, Germany, Holland and Italy.

Bryson (1991) found that each country had a distinct characteristic profile of responses different from the response pattern found in other cultures. This author noted a similar profile of responses for males and females within cultures. The only notable exception to the pattern was the United States, where the male and female profiles differed significantly. Geary, Rumsey, Bow and Hoards' study of gender differences in jealousy in the United States of America and China (1995, in Pines, 1998), supported the evolutionary perspective, but also found that a much higher proportion of American men and women reported more distress in response to sexual infidelity than their same-sex Chinese peers. These results suggest that the predisposition to jealousy may be influenced by a culture's stance towards sexual permissiveness. It is possible, therefore, that the gender differences reported by evolutionary psychologists apply predominantly to the United States of America and that their results are not fully generalisable world wide. This also implies that the gender differences reported by evolutionary psychologists may be to some degree a cultural artifact rather than a genetic legacy.

One of the major criticisms of the evolutionary theory on jealousy has been proposed by Harris and Christenfeld (1996a; 1996b) and De Steno & Salovey (1996a; 1996b). These authors proposed the double-shot hypothesis, which works on the assumption that sexual and emotional infidelity are often correlated. In other words, people tend to get emotionally involved with those with whom they have sex, and vice versa. These authors also propose that men and women may differ in their beliefs about the correlation. Women, for example, may become more upset about their partner's emotional involvement with a rival because they assume it implies their partner will also become sexually involved. Men's beliefs may differ in that they believe that women easily become emotionally involved without having sex, and that they are

unlikely to have sex without a strong emotional involvement. This hypothesis proposes that people become more upset about the type of infidelity which they believe implies the other. Studies conducted by Harris and Christenfeld (1996a; 1996b), and De Steno and Salovey (1996a; 1996b) supported this so-called double-shot belief hypothesis, and in addition found that the beliefs held by males and females were a stronger predictor of infidelity choice than gender.

Buss et al. (1999) addressed this criticism with the proposal that the differing beliefs of males and females are grounded in reality. According to his theory both males and females are aware that males have evolved a casual mating strategy, and therefore find it easier than women to have sex without emotional involvement. As a result women are not especially threatened by sexual infidelity alone. Males, on the other hand, are not especially threatened if their partner forms an emotional commitment, because males believe that females are easily able to form an emotional attachment without becoming sexually involved. Buss and his colleagues propose, therefore, that the differences in beliefs proposed by Harris and Christenfeld (1996a; 1996b) and De Steno and Salovey (1996a; 1996b) are anchored in accurately appraised gender differences in mating strategies, and that these differences also have a genetic basis.

Harris (1999) raised further criticism for the evolutionary model. Her study found that when some of the implications of sexual infidelity were controlled, both genders rated sexual infidelity as more upsetting than emotional infidelity. However, when recounting epiosodes of actual infidelity both genders focussed significantly more on the emotional than the sexual aspects of a mate's infidelity. Three further studies by Harris (2000) measured psychophysiological reactivity to jealousy situations and failed to support the evolutionary model. The first indicated that males

showed a greater physical reaction to sexual infidelity, whereas women reacted similarly to both sexual and emotional infidelity. Her second and third studies indicated that males responded more strongly to any stimuli containing sexual material, and that women's physiological responses to both scenarios were the same. However, women with experience in committed relationships showed reactivity patterns similar to those of men. Harris's work therefore seems to indicate that males and females have similar patterns of response to jealousy triggers, and that the higher male response to sexual jealousy stimuli found in previous studies may be due to a higher response to sexual cues in general.

Harris's work is supported by Nannini and Meyers (2000), who found that women experience more emotional distress over all conditions of infidelity, and that for both men and women, infidelity containing a sexual element, alone or together with an emotional element, was more distressing than infidelity involving only an emotional component. Yarab's (2000) study similarly found only modest support for the evolutionary model. In his study male and female responses were quite similar. Results of Grice and Seeley's (2000) study failed to support the evolutionary hypothesis.

Empirical research has therefore failed to fully substantiate the evolutionary model. The model has also been criticised on methodological grounds. Much of the research is based on primate studies (for example Geary, 1998) and cross species generalisations are unreliable (White & Mullen, 1989). There is no empirical research which directly links jealousy with a particular gene or set of genes (Pines, 1998; White & Mullen, 1989). The model has also received considerable criticism for using circular reasoning and explanations which are difficult to refute

or substantiate. It tends to examine existing phenomena, such as gender differences in jealousy, and argue that because such behaviour exists, and has apparently always existed, there must be an evolutionary reason (Pines, 1998).

An additional criticism of the evolutionary model is that the assertion that gender differences and jealousy induced violence are "natural" and "adaptive" can be used to justify dangerous behaviours and perpetuate unacceptable gender inequities. The history of jealousy research is rife with sexist beliefs, and the premises upon which evolutionary theory is based are sexist in the extreme. Evolutionary beliefs imply, for example, that male violence towards adulterous wives is provoked, and may be adaptive. Similarly, that male infidelity is to be expected, given their innate genetic casual mating strategy. Female jealousy is seen as a consequence of the fact that females are dependent on males for survival, and their bond with males is based on a need for resources. This implies that they are essentially dependent beings who are unable to survive without male support. In addition, the theory implies, females are genetically adapted to have sex within the context of committed relationships, therefore infidelity on the part of wives is unnatural. Moreover, it violates male rights to paternity certainty. Infidelity on the part of a wife, therefore, is unacceptable, and violence on the part of jealous males is understandable. It seems likely that evolutionary theory is perpetuating dangerous sexist norms, which serve male interests, and may prolong the existence of norms and laws which promote or condone male on female violence. This danger is exacerbated by the fact that evolutionary theory on jealousy is possibly currently the dominant theory of jealousy, and is widely disseminated in the form of popular psychology books and television documentaries.

Finally, the evolutionary model is flawed in that it makes generalisations about human behaviour without considering the wide range of individual and social variables which impact on it. As Hupka and Bank (1996) point out, if gender differences in jealousy have evolved as proposed by evolutionary psychologists, then the majority of males (i.e. over 50%) should become distressed over sexual infidelity, and the majority of women should become distressed over emotional infidelity. Such substantial support is provided by only one of Buss's studies, which suggests that the effect is not robust. White and Mullen (1989) make the point that human genes control for plasticity rather than specificity. In other words genes provide the potential for a huge range of human behaviours, which are actualised by widely different socialisation and learning experiences. Furthermore, culture has the ability to override heredity. To explain this point, White and Mullen (1989) give the example of corn, in which height is almost 100% heritable within a certain environment. However, depending on the soil in which it is planted, the actual height of the plants which grow can vary within a range of about four feet. Even though the height of corn is controlled for by genetics and is nearly 100% heritable, the environment in which the seeds are planted can override the genetics and powerfully influence the ultimate height of the plant. This example shows that even if there are genetic differences which account for gender differences in the experience of jealousy, it is a mistake to ignore the powerful influence of the environment, both individual and social, in which humans develop and interact.

2.2.2 The Psychoanalytic Model

The psychoanalytic perspective on jealousy, like the evolutionary perspective, focuses on gender differences, normal versus pathological jealousy, and issues of violence. The two perspectives

differ profoundly, however, in that while evolutionary psychologists believe jealousy is universal because it is genetic and therefore innate, psychoanalysts believe it is universal because it is an inevitable consequence of childhood experiences common to all humans.

2.2.2.1 Freud and jealousy as an unconscious conflict

The psychoanalytic perspective on jealousy began with the work of Freud. He believed that jealousy is mostly a normal experience, and that while there are individuals who experience it to pathological extremes, it can also be pathological not to experience it at all. He believed that individuals who do not experience jealousy are repressing it, and that as a result of this repression, jealousy would play an even greater role in his or her unconscious life (Freud, 1922; 1955; in Pines, 1998).

Jealousy is a complex phenomenon for analytic theorists, since the potential or actual infidelity of the partner is acknowledged, and the associated emotions such as rage and anxiety are conscious, whereas psychoanalytic theory tends to focus mostly on unconscious conflicts. Jealousy as a conflict is usually conscious, and is seldom defended against (White & Mullen, 1989). Freud solved this dilemma by assuming that jealousy itself is a defence against even more troubling ideas and affects which are unconscious (Fenichel, 1935; Jones, 1937; in White & Mullen, 1989). These troubling feelings include the homosexual and bisexual fantasies which are thought to be experienced by the preoedipal child, and which are re-evoked (unconsciously) during jealous epiosodes (White & Mullen, 1989). Thus, while jealousy is usually seen as a conscious process, psychoanalytic theorists emphasise the unconscious forces which drive it.

Jealousy, according to Freud, originates in response to the oedipal conflict (Moi, 1982). The oedipal conflict occurs when the child is approximately three years old, during the child's phallic stage, when the sex organ is becoming the child's centre of interest and enjoyment (St Clair, 2000). This is also the phase when sexual differentiation occurs. As the sex organs of males and females are different, they have to work through different issues. Children spend most of their time with family members, and consequently their first sexual feelings are directed towards their parents (Freud, 1922; 1955, in Pines, 1998).

Up until the oedipal phase the main love object for both boys and girls is the primary caretaker who is usually the mother. When children reach the oedipal phase little girls are obliged to change their main love object from mother to father to satisfy their heterosexual needs. As part of the process of object change the little girl develops feelings of hostility towards the mother, who is now her rival. This change of love object is not easy to carry out, and causes intense conflict. The process needs to happen pre-oedipally, and as a result, jealousy in women is thought to have pre-oedipal elements. Because it is preoedipal, the tendency to homosexuality is argued to be stronger and less repressed in women, and women's later experiences, including jealousy, are thought to be influenced by their ambivalent, preoedipal feelings towards their mother. According to psychoanalytic reasoning the most dominant of these feelings, and a powerful force in the female psyche, is the fear of loss of love, which permeates the jealous experience for women (Moi, 1982).

Little boys are seen to have a different experience, since their love object is thought to remain the mother. Pscychoanalytic theory holds that because they begin to desire the mother sexually, they fear punishment (castration) at the hands of their rival, who is the powerful, adult father. To resolve this conflict the little boy relinquishes his sexual feelings for his mother, and identifies with his father. He is left, however, with an enduring impression of suffering and anxiety experienced as a result of his rivalry with his powerful father, and these feelings are thought to provide the oedipal basis for masculine jealousy (Moi, 1982).

For both males and females, the feelings of grief, pain, loss and powerlessness which children experience when they realise that they can't have what they desire, together with the enmity they feel towards the successful rival when they "lose" in this original oedipal triangle, are said to be reactivated in adulthood when similar triangles arise (Pines, 1998).

Freud distinguished between "normal", "projected" and "delusional" jealousy. Normal jealousy, according to Freud (1922;1955, in Moi, 1982), is:

> ...compounded of grief, the pain caused by the thought of losing the love object, and of the narcissistic wound; further, of feelings of enmity against the successful rival, and of a greater or lesser amount of self-criticism which tries to hold the subject's own ego accountable for his loss (p. 223).

Normal jealousy, according to Freud (Moi, 1982), contains fear of loss, injury to self esteem, hatred towards the rival, and self blame. However, although it is normal, Freud believed

jealousy to be far from rational, and to contain traces of the oedipal conflict with ensuing homosexual or bisexual fantasies (Moi, 1982).

Projected jealousy, according to Freud, is far more defensive than normal jealousy, in that it derives from the jealous person's own unfaithfulness in life, or from impulses to it which have been repressed. Freud stresses that everyone experiences the temptation to stray, and that sometimes these impulses are unacceptable to the person. In order to deal with these impulses they are projected onto the partner, who is then accused of infidelity. The partner's own tendencies to unfaithfulness facilitate the projection. As Moi (1982) states: "The jealous subject is, paradoxically, often not as wrong as he may think he is."

Freud's third layer is delusional jealousy. Delusional jealousy also has its origin in repressed impulses towards unfaithfulness, together with projection, but in delusional jealousy the object is of the same sex as the subject. Delusional jealousy is based on a person's homosexual attraction to a third party of the same sex, and occurs because the subject is required to use exceptional amounts of energy in order to repress these feelings. The attraction for a same sex person experienced by the subject is projected onto the spouse, who is then accused of the infidelity the subject actually desires him or herself. The homosexual fantasy is likely to provoke much more anxiety than the heterosexual impulse in projected jealousy, and the defence against it involves considerably more energy to achieve. The result is a much more serious distortion of reality. For this reason delusional jealousy is most commonly experienced by individuals suffering from the more severe psychiatric disorders such as schizophrenia, and delusional disorders (Freud, 1922; 1955; in Moi, 1982; Pines, 1998).

In short, while normal jealousy is seen to be a response to a genuine threat to a relationship, in both projected and delusional jealousy the jealous person's partner is blamed for an individual's own desire to be unfaithful.

While the conflicts of the oedipal triangle are activated during normal jealousy, there are individuals who, while they are not obviously mentally ill, are nonetheless observed to be involved in adult romantic relationships in which jealousy is a recurring theme (White & Mullen, 1989). The Freudian perspective is that some people sustain long-lasting injuries due to poor resolution of the oedipal conflict. As a result of these injuries the individual may be driven to "repetition compulsion" which is the attempt to master the original conflict in an adult setting. This is never completely successfully achieved because the true conflict remains repressed (Fenichel, 1945; Freud, 1933; 1964; Horney, 1937; Klein & Riviere, 1964, in White & Mullen, 1989).

Freudian theorists have also addressed the issue of why some males reportedly become aggressive during jealous epiosodes, whereas females mostly get depressed. According to Freud, depression is a reaction to the loss of a loved object. The preoedipal process experienced by little girls involves the withdrawal of love from the mother in order to focus sexually on the father. The little girl therefore essentially "loses" the mother, which involves mourning. Individuals who are grieving are required to withdraw their emotional investment in the loved person, and attempt to do so through a process of identification, which involves setting up the beloved object within the grieving person's own ego. The ego itself is then treated as though it is

the abandoned or lost object, and emotions felt towards the lost object are directed towards the ego. Because the child feels ambivalence and even hatred towards the mother, this internalised object becomes the target for strong aggressive impulses. In women, therefore, the aggression felt towards the mother (or the rival) as well as her murderous rage towards her partner, is directed at the self, and presents as depression (Moi, 1981; St Clair, 2000).

Jealousy for males, on the other hand, is seen to originate oedipally rather than preoedipally. For men, the response triggered in the jealous experience does not involve loss, because for little boys the loved object remains the mother. Instead, the jealous response is one of intense anger, directed both towards the rival, who stands in for the castrating father, and towards the female partner, who, like his mother, has betrayed him (Riviere, 1932, in Moi, 1982). According to Vauhkonnen (1968, in Moi, 1982) the little boy is required to repress his anger with his father, because of his fear of violent retribution which could include castration. If he transfers this aggression onto his mother (or his beloved but unfaithful partner) he can give it outlet without danger to himself at the hands of his father (or his powerful rival). Men, therefore, may have a tendency to become violent with their partners when they are jealous.

Since the work of Freud, jealousy has attracted the attention of other psychoanalytic theorists including object relations researchers such as Melanie Klein. Object relations theorists moved away from the formulation of jealousy as a defence against instinctual impulses towards a recognition of its roots in early interpersonal relationships. Most of these authors have focussed on development problems in the earliest years of life which may predispose individuals to

jealousy. Four important developmental lines have emerged, namely envy, abandonment, separation and self esteem (Friday, 1985).

2.2.2.2 Klein and envy

Melanie Klein, while adhering to many of the tenets of Freud's work, expanded on it considerably. In her work, *Envy and Gratitude* (1975) she expanded the locus of developmental importance from the penis to the breast – that is, from the father to the mother (Friday, 1985). Whereas Freud concentrated on the years from age three to about age seven, she focussed on the earliest days and months in a child's life. Klein focussed less on the child's need for sexual gratification, and more on its need for nurturance and for relationship, both of which are provided by the mother, and more specifically by the breast. Like Freud, she accepted that man is instinctual, but believed that for infants, every urge and instinct is bound up with "objects" which essentially means a need for relationship (St Clair, 2000). In short, Klein changed the focus of developmental importance from an oedipal, sexual focus to a focus on the child's early relationship with its mother (Friday, 1985).

Klein (1975) believed that jealousy has its origins in the very earliest months of an infant's life, and evolves from the child's feelings of envy towards the mother. The child in these early months is completely dependent on the mother, and most specifically on her breast, which has the power to gratify the child's needs, and at times, fails to do so. The mother has the power to gratify or deny her child's needs, apparently at whim. She literally holds the child's life and death in her hands, and behind the child's total dependency on the mother, lurks the constant fear

that she may withdraw her resources forever. The child therefore both loves the mother who nurtures it, and hates the mother who deprives it. In short, the child envies its mother's power which it wants for itself. This envy evokes an intense and murderous rage in the infant, which may be expressed by biting the breast. Friday (1985) expresses this dilemma in the following way:

'...whenever Klein uses the word envy, I read it to mean the rage and resentment that the dependent person feels at the power someone else has to make him happy or sad, to give life or take it away. In one of Klein's most significant phrases, 'We bite the hand that feeds us'" (p.112).

According to Klein, some children are constitutionally more inclined to anger and envy than others, and are more inclined to act out aggressively and bite the breast. The constitutional tendency towards rage and aggression as expressed by the biting infant may determine how individuals in later life react to envy and jealousy. Klein also believed that while all people are born with some degree of envy, the predisposition will be intensified by bad mothering and ameliorated by good mothering. Genetic tendencies can be reinforced, or diminished by the quality of attentive parenting a child receives. The tendency to aggressively act out during jealous epiosodes may therefore stem from a combination of a child's genetic predisposition towards envious aggression in combination with its earliest interactions with its mother.

According to Klein, there is a direct link between the envy experienced towards the mother's breast and the development of jealousy. Jealousy is based on rivalry with the father, who is a

competitor for the mother's attention, and who therefore has the potential to take the mother away. Jealousy therefore is based on envy, but includes another person in the scenario; it is concerned with the love and nurturance a child (and later the adult) feels is his due, but which has been taken away, or is in danger of being taken away by the father (or a rival). The child envies his mother's (or his partner's) ability to withdraw her love and give it to his father (or a rival). In this way the jealous triangle is born. The seeds of jealousy therefore evolve in envy, and precede the oedipal conflict, and jealousy, according to Klein, contains envy within it.

In later life, jealousy triangles may trigger the infant's earliest experiences of envy. If the partner on whom an individual depends for the deepest feelings of security and value – if a deeply beloved partner, in other words, threatens to leave the individual for a rival, the primitive, murderous, envious rage of the helpless, dependent infant is evoked. Under these circumstances the betrayed partner may lash out in anger and injure or even murder the adulterous partner he loves. Jealousy, in this case, stems from an individual's envy of their partner's power to give, or to withdraw love, and it is for this reason that jealous aggression tends to focus on the partner, rather than the rival. It is the envy in jealousy that brings murder, and the murderous rage is focussed on the beloved who has withdrawn their love to give to another and therefore is the source of the jealous pain (Friday, 1985).

Klein's theory also explains why many people, especially women, become depressed when they are jealous (Friday, 1985). Jealousy, as has been discussed, contains the envious rage felt by a dependent person towards someone who has the power to give or deny love. In some jealousy situations the intense anger of envy is triggered, but where the jealous person lacks the power to

express his or her anger with the beloved, this anger may be turned against the self. In this case the person becomes depressed, rather than violent or murderous. Depression, according to White (1989, in Friday, 1985) is the resort of individuals who have less power in a relationship. Low-power individuals, realizing that they are unable to influence the feeling or behaviour of others, turn their envious anger against themselves and become depressed. Individuals who hold the majority of the power in a relationship tend to become angry with their erring partner (White, 1989, in Friday, 1985). This may explain why women are presumed to become depressed when they are jealous. Women have historically been in a position of low power with regard to their relationships, and infidelity on the part of males has been widely tolerated in many cultures throughout the world (Buss, 2000; Pines, 1998). Men have historically therefore had the socially sanctioned power to be unfaithful to their partners, whereas women have had little power to retaliate or to alter the behaviour of their mates. Women, as a result, may have historically been more inclined to become depressed, whereas males, who hold the power in relationships, may have a greater tendency to become angry, and possibly violent. Violence towards unfaithful women is often tolerated in many cultures in the world, which perpetuates the imbalance.

2.2.2.3 Bowlby and attachment theory

Another area of research which has attracted considerable attention is attachment, and its relationship to jealousy in later life. It is assumed by attachment theorists that romantic love is an attachment process similar to the attachment that develops between a mother and a child (Bloodworth-Cruz, 2000), and that falling in love activates the thoughts, feelings and behaviours

which stem from the original relationship with the mother (Guerrero, 1998). Attachment theory assumes that individuals whose bonds with primary caretakers have been deficient in some way will be more susceptible to jealousy in adulthood. Recent research has built on the foundations of John Bowlby (1969; 1973; 1980, in Clanton & Kosins, 1991). Bowlby (1973, in Clanton & Kosins, 1991) speculated that ill-formed, or disrupted attachments with early caretakers often result in a condition he described as "anxious attachment". Individuals who are anxiously attached to their mothers remain extremely sensitive to the possibility of separation or loss of love throughout their lifespan, and as a result are very susceptible to adult jealousy.

In other words, Bowlby assumed that a disrupted attachment history, which included real or threatened abandonments of one form or another increases the vulnerability to adult jealousy by heightening the perception of threat (Clanton & Kosins, 1991). There is some research support for the theory that early attachment difficulties influence later sensitivity to loss. Dienstfrey (1983, in Friday, 1985), for example, found that epiosodes of early loss intensify vulnerability to new situations of loss later, at least among children and adolescents. Hazan and Shaver (1987, in White & Mullen, 1989) correlate anxious childhood attachments with anxious attachment in adulthood, and report higher levels of jealousy in this sample of anxiously attached individuals. Recent research has largely supported this position, although there has been some dissent (Clanton & Kosins, 1991). Vincze and Dulls' (1998) study showed that adult attachment style has a strong influence on the quality of the romantic relationship, and a strong influence on the experience and expression of jealousy. Knobloch, Solomon and Cruz, (2001) also demonstrated that attachment anxiety influences emotional jealousy in that levels of jealousy differ significantly between different attachment styles. Powers' (2000) study showed that individuals

with a secure attachment style are less jealous, and show low levels of anger and relationship violence, whereas people who are anxiously attached to their partners show significantly higher levels of jealousy, anger, aggression and relationship violence. These authors assume that individuals who have had troubled early relationships, characterised by the experience or threat of loss or abandonment, are more prone to relationship anxiety in adulthood, and as a result may be more prone to jealousy and in some cases to violent acting out.

2.2.2.4 Self Esteem and narcissism

Self esteem, or most specifically the lack of it, is often linked with a heightened susceptibility to jealousy. Jealousy is frequently defined as in part a threat to self esteem (White & Mullen, 1989). Some studies have shown, however, that people high in self-esteem are not less likely to become jealous than their low self-esteem counterparts. Clanton, for example, (1989, in Pines, 1998) argues that one may have high self-esteem in general but still experience jealousy if a valued relationship is threatened. In fact the evidence for a relationship between global self-esteem and jealousy measures is extremely mixed (White & Mullen, 1989). It is also very plausible that jealousy acts to reduce self-esteem, creating the illusion that insecure people are more jealous (Pines, 1998; White & Mullen, 1989).

More fruitful is the issue of narcissism and jealousy. Freud pointed to the "narcissistic wound" in jealousy, and later object relations theorists have developed this concept. Theorists such as Kohut, (1968, in St Clair 2000), and Kernberg, (1975, in St Clair 2000) describe a type of personality pathology which arises due to repeated maternal empathic failure. In order to build

satisfactory psychological personality structure (or healthy self esteem) infants require devoted parenting. Friday (1985) uses the example of early Christian representations of a Madonna and Child, in which the artists painted a gold beam or ray passing from the eye of the Madonna to the child, representing her adoration for her child. Children whose narcissistic needs are not gratified (or who are overindulged) may develop personality pathology which leaves them chronically needing self-aggrandising love from others and suspicious of rivals. These individuals constantly need admiration from others in order to support a fragile sense of self worth, and at the same time they chronically mistrust and envy others. Such individuals enter into romantic relationships to bolster self-esteem and the self concept, and to defend against self hate. Narcissistic individuals are especially prone to jealousy, and because failure to meet their demands for excessive admiration leads to rage, they may be particularly prone to violent acting out if they suspect their partners of infidelity (Millon, 2000; White & Mullen, 1989). Ironically, however, narcissistic individuals are also very likely to be unfaithful themselves (Buss, 2000). These individuals tend to lack empathy for others, and fail to consider the impact of their behaviour on others. In Shackelford and Buss's (1997, in Buss, 2000) study of the personality traits most likely to predict infidelity, narcissism was the most highly linked with susceptibility to infidelity for both males and females.

2.2.2.5 Adolescent trauma and jealousy

While object relations theorists focus on pre-oedipal and oedipal trauma as predisposing a child to jealousy in later life, there has also been some research focus on adolescence as a vulnerable developmental stage. Several reports have indicated that the discovery of parental infidelity

during adolescence can heighten jealousy in adulthood (Buss, 2000; Pines, 1998). Docherty and Ellis (1976, in Buss, 2000) described three husbands who were being treated for delusional jealousy. Coincidentally, in all three cases the husband had witnessed his mother engaged in extramarital relations during his early adolescence. In each case the husband's accusations more appropriately fitted the behaviour of his mother than his wife. According to Docherty and Ellis early adolescence is a period characterised by an Oedipal resurgence. These authors explain:

> The rage that the son feels for being second best in the Oedipal situation is exacerbated in a more serious, profound and damaging way. Now he is not only second best to his father but to a strange man who has no valid claim on his mother at all. By cuckolding the father, the mother makes him second best. Thus the son is unable to use identification with the father to achieve pre-eminence. He is doomed to second rate status (p. 681).

This type of adolescent trauma may lead to a repetition compulsion in which the adult seeks situations in which the conflict is replicated in an attempt to master it. Such a person may marry a faithful spouse and harass them with groundless accusations, or alternately select an unfaithful partner who provides ample opportunity to constantly attempt to master the childhood trauma (Pines, 1998).

Adult sensitivities may also develop. An individual who is betrayed by a partner may be prone to jealousy in future relationships (Buss, 2000).

2.2.2.6 Criticism of the psychoanalytic model

The psychoanalytic model is useful in that it contributes to the understanding of individual factors in the jealousy experience. It has been criticised, however, on a number of issues. Like evolutionary theory, the psychoanalytic model is difficult to prove or to refute, and relies mostly on case studies for evidence (White & Mullen, 1989). Research on attachment style has been more promising than attempts to prove the suppositions of clinicians such as Freud and Klein. There are indications that anxious, ambivalently attached children are indeed more anxious and ambivalent about their romantic partners in later life and may thus be more susceptible to jealousy (White & Mullen, 1989).

However, one of the major critiques of psychoanalytic theory is its tendency to problematise jealousy. It is based on the assumption that all jealousy is to some degree based on unconscious conflicts, and fails to recognise the reality that may have prompted the jealousy. Little attention is paid to literal infidelity, except sometimes to blame the individual for provoking the infidelity, or for choosing the circumstances which gave rise to the jealousy problem (Pines, 1998). Psychoanalytic theorists seldom recognise the healthy, adaptive nature of jealousy, or the fact that it is most often a response to a real or potential infidelity on the part of a valued partner.

Furthermore, psychoanalytic theory has been criticised for the tendency to locate jealousy as a problem occurring within an individual. In contrast to this, systems theorists locate jealousy within relationships, and claim that while it may be experienced and expressed by one partner, it is part of a relationship and reflects a particular relational disturbance. According to systems

theory, both partners collude to keep jealousy alive in a relationship, and it is a function of the relationship rather than individual pathology.

Psychoanalytic theory also fails to take into account the conscious values and expectations which may influence the experience of jealousy. Like evolutionary theory, psychoanalysts do not, by and large, consider the influence of social and cultural pressures which may influence the experience of jealousy at every stage of the process.

2.2.3 The Social Psychological Model: Jealousy and Culture

The social psychological model emphasises the links between jealousy and culture. According to this model, the evolutionary and psychoanalytic models make a valuable contribution to the understanding of the experience and process of jealousy, but both are limited in that they fail to take into account the influence of culture on the experience and expression of jealousy. Jealousy is believed to be universal (Buunk & Hupka, 1987; Harris et al., 1987, in Pines, 1992) and has been reported even in cultures where it is considered shameful and undesirable (Pines, 1998). There is apparently no known culture in which it doesn't exist (Pines, 1992). Despite this commonality, however, cultures differ greatly in the degree to which jealousy is experienced, the triggers which stimulate it, and the behaviours which are considered appropriate in response to it. The influence of culture on jealousy is such that it has led authors such as Davis, (1936, in Bhugra, 1993) and Pines, (1992) to suggest that jealousy should be described as a quadrangle, rather than a triangle, with culture forming the fourth party.

Social psychological theorists assume that jealousy is universal because it is a natural consequence of the demands of social living.

White and Mullen (1989), for example, surmise that jealousy exists in all cultures because it is involved in the major existential dilemmas of social life. Lutz and White (1986, in White & Mullen, 1989) suggest five basic problems of social relationship. These are the problems of interpersonal conflict, or others' violations of cultural or personal expectations; intrapersonal conflict or one's own violation of cultural or personal expectations; danger to one's own physical and psychological self (as well as those of significant others); actual or threatened loss of significant relationships, and "positive problems," including rewarding bonds and receipt of valued resources. Jealousy involves all these five basic problems. A jealous person may be involved in interpersonal conflict with the partner and rival, and may experience intrapersonal conflict if the jealous emotion and the behaviour it evokes conflict with his or her values or beliefs about the self. Infidelity and/or jealousy may cause psychological danger to the self or others such as children through, for example, the loss of a marital relationship, or loss of self-esteem. It may also involve physical danger to the self or others. In some situations for example, a partner (or parent) can be crucial to survival (Pines, 1998). However despite these similar basic problems, jealousy differs between cultures because different cultures supply a wide variety of solutions to these dilemmas.

Hupka (1991) agrees that the motive for jealousy is a consequence of human beings living in society, and that aggregate living requires the resolution of common issues. He claims these issues include the selection of an economic unit (such as the nuclear family or the clan) provision

for the sick and elderly, the vesting of property (in either the individual or the clan), and the regulation of sexual behaviour. The manner in which these issues are resolved (and this differs widely between cultures) defines the level of significance that men and women have in each other's lives, which impacts on the experience of jealousy within particular social conditions.

Bhugra (1993) states similarly, that in order to survive, society has to determine how its units function and interact. He believes that jealousy is universal because it has the universal social function of the protection of marriage and other valued relationships such as kinship networks.

These authors agree that jealousy is universal and that it is an inevitable consequence of problems faced by all societies. They also agree that it is manifested differently in different cultures because of wide differences in cultural norms and values.

A definition of culture may assist the understanding of this issue. White and Mullen (1989) describe culture as consisting of three major elements: ideas, beliefs and values; patterns of behaviour; and products of behaviour (such as tools and art). One element of culture is the repeated patterns of intrapersonal or interpersonal chains of thoughts, feelings, and behaviours, which are common to a number of members of a group, because they are the consequence of socialisation practices. More specifically, cultures teach their members certain values, beliefs and ideas which organise the display of thoughts, feelings and behaviours, and allow an individual to choose among different options for intra- and interpersonal behaviour. In other words, cultures train their members to think, feel and behave in certain ways. According to this

definition it can be seen that the experience of jealousy may be powerfully controlled by the social forces operating within a particular group.

According to Hupka (1991) different cultures are similar in that the jealous individual responds to the betrayal of a norm regarding sexual behaviour. In all societies this betrayal involves the loss of something valuable as the result of the interloper's interference. For most individuals cross-culturally this loss or potential loss involves a grieving process involving shock, recriminations, anguish, accommodation and recovery. The emotions experienced in response to a jealousy provoking situation are therefore more or less the same cross culturally (Hupka, 1991).

However, there are major cross-cultural differences in the experience and expression of jealousy. Hupka (1981, in Pines, 1992) identified two main areas of difference.

1. Firstly, by defining, or not defining a particular event as a threat, which includes designating the events which provoke jealousy, specifying the circumstances which are to be perceived to be a threat, and creating the conditions which dispose individuals to jealousy.
2. Secondly the culture provides certain options for responding when an event is defined as a threat and jealousy is aroused.

In the first place culture defines for individuals the events which make them perceive an event as a threat to their marriage or relationship (Pines, 1998). These events differ widely and do not

necessarily involve the fact of one's partner having sex with someone else. In polygamous societies marrying several women is the norm, and women in polygamous marriages are reportedly unjealous of their husband's marriage to other women (Buss, 2000; Pines, 1998; White & Mullen, 1989). Similarly there are many cultures in which one or other form of wife sharing is said to be the norm, and where one's sexual partner may have sex with someone else without posing threat to social standing, self esteem or the marital relationship. The Ammassalik of Greenland, for example, have a tradition whereby a good host is expected to invite his guest to have sex with his wife. A husband who fails to do this is considered inhospitable (Buss, 2000; Pines, 1998; White & Mullen, 1989). On the other hand, jealousy is said to be provoked in polygamous marriages if the husband shows favouritism to one wife or her children which is not in accordance with cultural prescriptions about how attention and rewards should be distributed among wives. Similarly, Ammassalik husbands have been shown to become intensely jealous of guests who have intercourse with their wives if the appropriate ceremonies surrounding the event have not been observed. Interlopers in these cases have been known to be murdered (Pines, 1998). These examples indicate that it is not necessarily the sexual infidelity itself which provokes jealousy, but rather the failure to follow prescribed social norms about the sexual behaviour: cultural norms indicate the circumstances under which jealousy is to be experienced.

Similarly, cultures differ in the value they attach to particular behaviours, and seem to designate certain behaviours as more appropriate for eliciting jealousy than others. In Buunk and Hupka's (1987) study of seven industrialised countries they found striking cross-national differences in the relative value attached to particular behaviours. While in this study the explicit erotic behaviour of a partner such as flirting or sexual involvement evoked a negative emotional

reaction in all the nations studied, the different populations studied differed in terms of their response to activities such as dancing, kissing and indulging in sexual fantasies. Buunk and Hupka concluded that cultures differ in the behaviours that are viewed as a violation of the exclusivity of intimate relationships.

Not all cultures consider extramarital sex to be a threat to the primary relationship. In some cultures, such as the Toda (Rivers, 1906, in White & Mullen, 1989) the desire to have sex with another is apparently considered to be natural, and does not mean that the marriage relationship is under threat. Even in the Western world there are apparently vast cultural differences in the acceptance of extramarital sex. Christensen's study of industrialised countries, (1973, in Buunk & Hupka, 1987) found that opinions ranged from 10% unqualified disapproval in Denmark to 90% disapproval in the American Midwest. Geary, Rumsey, Bow-Thomas & Hoard (1996) found that the culture's attitudes towards sexual permissiveness in general influenced the degree to which its members experienced jealousy. Wiederman (1995) found that expectations of sexual exclusivity were central to the experience of jealousy, and assumed that these expectations were socially scripted.

Buunk, Angleitner, Oubaid and Buss (1996) speculate that jealousy is lower in sexually liberal cultures where promiscuity is more acceptable and there are greater possibilities for sexual gratification, a view which is supported by Bhugra (1993). Buunk et al. (1996) speculate that this may be due to the fact that in more liberal cultures the mating effort is spread over a wider number of partners, which means the investment in any one person is reduced, as is the potential for loss.

Cultures define for their members what is valued and therefore needs to be protected from potential loss, and in this way also define for individuals the situations that trigger jealousy (Hupka, 1991). Cultures seem to differ in terms of what the loss may be. It appears that not all cultures equate love and sexual behaviour. The losses involved in sexual infidelity include loss of honour, loss of intimacy, loss of self esteem, loss of political power, financial losses and so on. Different cultures are thought to be driven by different goals or concerns which define what constitutes a loss. Hupka (1991) gives the example of pre-20th century upper class Nablus in Palestine as an example. In this society marriages were arranged predominantly as a means to further economic and political goals. The motive for jealousy among the Nablus was apparently the prospect of losing the economic and political power forged by marriage. Similarly among the Kabyle tribe of Algeria males are socialised to defend the honour of the family. If a Kabyle man's wife is unfaithful his honour is at stake, and he is apparently obliged to kill his wife in order to regain it regardless of his personal feelings for his wife. That which is threatened by an interloper seems to differ across cultures, even though the jealous response may be similar (Hupka 1991).

Some cultures are reported to predispose their members to jealousy more than others. Hupka and Ryan (1981, in Bhugra, 1993; White & Mullen, 1989) studied 92 cultures and found that the severity of male jealousy increased with the importance of marriage for social status, increased emphasis on personal ownership of property, and the restriction of sexual gratification to marriage. More socially stratified societies where social, racial or religious divisions are upheld tend to be more jealous (Mead, 1977, in Bhugra, 1993). Cultures where the members live in

harsh environmental conditions and where as a result partners depend on each other for basic survival are also said to be more inclined to be jealous than cultures where life is easier. Similarly, cultures where food, shelter and companionship are freely available to all members of a group are reported to be less jealous (Pines, 1992; 1998).

Aune and Comstock (1997) found that ethnic background influenced the perceived appropriateness of both jealousy experience and expression. People from individualistic cultures reported lower perceptions of the appropriateness of jealousy experience than people from collectivist cultures. However, in their study participants from collectivist backgrounds reported lower perceptions of the appropriateness of jealousy expression than individualists. This may be because display rules are more salient than feeling rules in collective cultures because they more directly facilitate group cohesion and harmony (Aune & Comstock, 1997). In many Western cultures, on the other hand, there has been a growing trend in recent years to perceive jealousy as a defect of low self-esteem which needs to be overcome (Pines, 1998). This may account for Aune and Comstock's findings that the experience of jealousy was perceived to be less appropriate in individualistic Western cultures.

A further important point is that the experience, expression and interpretation of jealousy changes as societies or cultures themselves change. Clanton (2001), for example, in his study of popular magazine articles, notes the profound shifts in the conceptualisation of jealousy which have occurred between 1945 and 1985 in the American culture. From the end of World War II until the late 1960s, most articles held the view that jealousy was the natural consequence of love, and that it was good for marriages. Readers (who were predominantly women) were

advised to control their own jealousy, while at the same time interpreting their husband's jealousy as love, and were counselled to take steps to avoid provoking jealousy in their husbands. By the 1970s, magazine articles began to question the appropriateness of jealous feelings, and no longer assumed jealousy to be evidence of love. Jealousy began to be portrayed as evidence of low self-esteem or the inability to trust, and it was seen to be bad for marriages. Stearns (1989), similarly, tracks the development of jealousy in gender terms, from the nineteenth century to the end of the twentieth century. He points out how, in nineteenth century terms, jealousy was viewed with disapproval, and therefore was described as predominantly a female emotion, disclaimed by men, and treated as an infringement of male autonomy. By the 1950s, experts argued that male jealousy was equal to females', but different in kind, reflecting deeper, more possessive instincts, against women's more calculating attempts to use it to manipulate the relationship. The end of the twentieth century sees jealousy treated as evidence of poor self-esteem in both males and females. An interesting point to emerge from Stearn's work is that these conceptualisations of jealousy are expressed by both experts and individuals within the culture. By and large individuals feel what their culture believes they ought to feel, at a given time, and this conceptualisation is fluid and subject to change over time. It is also significant that both studies indicate gender inequalities in that womens' jealousy over the past two centuries has been consistently depicted as undesirable, whereas that experienced by men has been viewed favourably, and has been socially condoned. This sexist perspective seems to be perpetuated in the evolutionary model which is currently dominating jealousy research.

2.2.3.1 Culture and jealous behaviour

The second point raised by Hupka (1981, in White & Mullen, 1989), is that culture may influence the behavioural expression of jealousy. Culturally sanctioned responses to jealousy may range from expressing nothing and doing nothing, to killing both the partner and the interloper. Culture tends to influence how people express jealousy verbally (Zummuner & Fischer, 1995) and may outline appropriate behaviour in response to it (Pines, 1998). Most cultures seem to accept jealous behaviour as legitimate, and most support the betrayed mate and condemn or punish the transgressing mate and the interloper (Buss, 2000). Yet culturally prescribed punishments vary greatly. Options for response tend to reflect the culture's evaluation of the offence and the threat it implies. Some cultures, for example, appear to have a distinct property orientation towards their spouses (Bhugra, 1993; White & Mullen, 1989). Among these cultures it seems to be accepted that the rival male has used the husband's property, and therefore is required to award compensation to the cuckolded husband, in the form of money or valuable property. Some cultures require that the adulterous wife's dowry be returned by her family. The dowry may be demanded even if, as is the case among the Plateau tribes in Africa, the husband also has the right to kill his wife (White & Mullen, 1989).

Options for response also seem to range widely in terms of severity. Among the Hidatsa Indians of North America a laudable response option was reportedly for the betrayed husband to ceremonially present his unfaithful wife to her new lover. Zuni wives are permitted only to refuse to wash their unfaithful husband's laundry. Other cultures appear to permit violent behaviour in varying degrees, ranging from beating to murdering the unfaithful partner, and/or

the rival. Many cultures world-wide seem to permit various forms of specified assault including verbal abuse, beating, rape and various forms of mutilation or ritual murder. In many cultures it is not necessarily the jealous spouse who has the right to assault or to kill the adulterous spouse or rival; friends, relatives, or officials may be required to take part. For example, the ancient Hebrews as a community would stone to death a married woman and her lover (Pines, 1998; White & Mullen, 1989).

There are many examples of justifiable homicide world wide, but apparently without exception these involve the male as the justified party (Buss, 2000; Friday, 1985; Pines, 1998; White & Mullen, 1989). While female aggression towards a rival is sometimes tolerated (Hupka, 1991), it seems to be relatively rare for groups to condone a jealousy female's aggression towards a guilty husband (Clanton & Smith, 1986 in White & Mullen, 1989). Many cultures in fact tolerate male infidelity while imposing severe penalties on females who transgress (Friday, 1985; White & Mullen, 1989).

2.2.3.2 Jealousy, power and gender

These sexual inequities raise the issue of jealousy, gender and power. According to social psychologists, the differences in jealousy between males and females do not arise from an evolutionary process, but are primarily the result of social processes. A crucial social condition which impacts on the jealous experience is power, and specifically power differences between males and females. Buss (2000) expresses the issue succinctly when he states that when it comes to socially sanctioned jealous behaviour "the Golden Rule applies: those who have the gold

make the rule" (p. 187). Buss holds the view that throughout human recorded history, most social rules have been written and legislated by men, and therefore protect the rights of men rather than women. This view is supported by Paul, Foss and Baenninger (1996), who showed that the double standard inherent in sexual morality tends to represent a manipulative morality serving male interests. Across most cultures over recorded human history an infidelity by the wife is considered to be analogous to a property violation against the husband, and is therefore punishable in some form or another. In societies where there are written rules, social norms about infidelity and the appropriate punishment of offenders tend to be part of official legislation (Buss, 2000).

Laws or social customs about infidelity are usually designed to control the sexual behaviour of females and tend to function in two ways. In the first place these norms place restrictions on female sexual behaviour in order to protect males from jealousy, and secondly they allow males to extract revenge if their partners are unfaithful. Over the generations women have been subjected to customs such as genital mutilation and foot binding, and their behaviour has been controlled by, for example laws about clothing and restrictions on freedom of movement. The harem is a famous example of a method used to protect males from jealousy by controlling the behaviour of females (White & Mullen, 1989). In addition, women may be punished, often by law, for infidelity, and the prescribed punishments include violent assault, mutilation and murder (Buss, 2000; Pines, 1998). This gives males the option of revenge should their wives transgress.

Not all countries and cultures actively advocate violence towards erring wives. However, in many countries, the law seems to be tolerant of husbands who assault and murder their

adulterous wives (Buss, 2000). For example, in Texas, and Utah, until the 1970s, a husband who discovered his wife having an affair and killed her and her partner would be acquitted, since in the eyes of the court, no crime had been committed. Similarly, in English law the killing of an adulterous wife used to be exempt from the usual charge of murder, and the charge would be reduced to the lowest form of manslaughter, on the grounds that there could be no greater provocation. In the USA today, killing a wife or her lover is considered a criminal act, but the penalties levied against such killers tend to be more lenient than for other types of murder (Buss, 2000).

Double standards apply world wide in that the same protection does not appear to be accorded to women. In many cultures, men are permitted, or even encouraged to indulge in extramarital sex, whereas women's sexuality is frequently controlled (Buss, 1994; 2000; Pines, 1998; White & Mullen, 1989). Women seem to be punished far more severely than males for sexual misdemeanour. Today most industrialised countries have laws that approach a single standard for infidelity, applicable to both sexes, but this is far from universal. It was not until 1952 that Austria made male and female infidelity equal criminal acts, and it was apparently the first country in the world to do so. In many countries in the world today, infidelity is seen as a crime against the husband, and the laws permit or tolerate recompense or revenge by the victim (Buss, 2000).

White and Mullen (1989) also hold the view that discrimatory laws have arisen because males traditionally hold economic and political power and therefore promulgate laws which protect their interests rather than those of women. These authors cite as evidence Schlegel's (1972)

study of jealousy in 66 societies where women held legal or economic independence. In these countries infidelity was considered a crime whether it was committed by men or by women. Also, in those countries where males exerted little authority over women, women were less likely to punished for adultery (Schlegel, 1972, in White & Mullen, 1989). Kurland, similarly, (1979, in White & Mullen, 1989) found that matrilineal societies where women were relatively powerful, tended to allow women greater sexual freedom, and in these societies, both male and female jealousy appeared to be relatively low. Patrilineal societies, on the other hand tended to strongly sanction and punish extramarital sex. In other words, in countries where women had economic power, they had more sexual freedom, and in these societies adultery was less likely to be defined as a crime exclusively against husbands (Kurland, 1979, in White & Mullen, 1989).

Power also influences the experience of jealousy at the relationship level. As Klein has pointed out, power involves dependency. Individuals who have the least power in a relationship are the most dependent, and dependency limits an individual's options when it comes to jealous behaviour (Friday, 1985; Pines, 1998). White and Mullen (1989) found that the more powerful person in a relationship, regardless of gender, tended to respond to jealousy triggers with anger, violence, and leaving the relationship. People with less power tended to react with depressive responses and tended to stay in the relationship. The more powerful person in the marriage was also more inclined to be unfaithful than the more dependent partner (White, 1977; 1980, in Pines, 1998; White & Mullen, 1989). Women, traditionally, have had less power in relationships. They may therefore be less inclined to be unfaithful, more likely to tolerate an unfaithful spouse without leaving the relationship, and may be more inclined to respond to a spouse's infidelity with depression. Males, who have more power, may be more inclined to be unfaithful, will leave

an unfaithful partner, and may be inclined to respond to infidelity with anger which sometimes includes violence. White (1985, in Friday, 1985) found that gender differences in the jealousy experience disappeared once the power balance in a relationship has been taken into account.

This view is supported by Schlegel (1972, in White & Mullen, 1989), whose study of 66 matrilineal societies found that aggression by husbands against wives was associated with the source of domestic authority. When power lay with men, aggression was far more likely to occur. Moreover, she found that where a husband was required to pay a substantial bride price to obtain a wife, aggression was more likely to occur in the marriage. Schlegel holds the view that bridewealth buys rights (or power) over a woman, and power in a relationship is more likely to lead to violent behaviour, whatever the provocation. It may therefore be assumed that economic power in a relationship leads to a perceived right to control the behaviour of the more dependent partner, and for some people from some cultures this includes the right to enforce that control by means of aggression. As males have traditionally held power both in relationships and in society, it seems fair to assume that this right to the control of female sexuality may have been institutionalised in the customs and laws of many societies world-wide.

The research of authors such as Schlegel (1972, in White & Mullen, 1989), White (1985, in Friday, 1985) and White and Mullen (1989) indicate quite clearly the links between power and jealousy, and specifically the degree to which male dominance may influence jealousy.

Culture and power also appear to have the capacity to influence the experience of jealousy at the individual level, through the control of intrapsychic processes. The social constuctionist model

provides useful insight into this perspective. Sampson (1993) argues that societies create the types of character essential to societal reproduction, and the ideologies necessary so that these characters function to achieve this reproduction. Power is deeply embedded in the process in that power involves the ability to create the identity of others. Most specifically, powerful groups in society are able to create the identity of less dominant groups, and are also in a position to shape material reality to fit the images of others which they create (Sampson, 1993). This identity is described by social constructionists as a "subject position" (Stenner, 1990). According to this view people are assigned positions in society which are structured by factors such as age, gender and status. Subject positions afford individuals certain experiences and perspectives and thereby train people to respond in particular ways (Bhugra, 1993). It seems possible that the double standards inherent in beliefs about male and female sexuality, and discriminatory infidelity norms and laws, may be a manifestation of both the different social positions accorded to males and females, and the way material reality may be shaped in order to enforce these subject positions.

As Walster and Walster (1977, in Bhugra, 1993) point out, jealousy in itself is a somewhat neutral emotion, which is given direction by an individual's values, beliefs and expectations, which in turn are formed by his or her personal history of enacting social roles. Billig (1998) argues that caretakers tell infants from an early age what they, the infants are feeling. Children therefore learn, from the earliest age, how to interpret their own states in accordance with what they are taught. In the same way children are taught morality. Parents routinely teach children the moral order of the society in which they live, and the norms surrounding the roles which they are destined to fill. These norms include appropriate ways of thinking, feeling and behaving.

Social constructionism holds that gender itself is taught in this way, and that men and women act in agreement with the concepts of masculinity and femininity prevalent in their culture at a given time. For example, generally across cultures males are trained to be more aggressive, and self reliant, whereas women are trained to be dependent, obedient and sexually restrained (Low, 1989, in Bhugra, 1993).

It may be argued, therefore, that a person's position in society has the capacity to inform him or her how to feel in a given situation, and that males and females are taught to feel and behave differently in response to different jealousy triggers. Culture and power (or the lack thereof) thus have the ability to govern not merely how an individual behaves in response to certain socially determined triggers, but also how he or she feels.

Hupka and Bank illustrate this point in their 1996 study. Their study replicates the work of evolutionary psychologists in finding that women tend to become more distressed over a partner's emotional infidelity whereas males have a greater dislike for sexual infidelity. In addition, however, they found that both men and women are more distressed over sexual than emotional infidelity if they favoured traditional gender norms. Specifically, both males and females who prefer gender based separation of duties and social roles tended to get upset over sexual rather than emotional infidelity. These authors concluded that men and women respond to jealousy triggers according to the norms and values which they have learned from their culture. Culture, therefore, has the capacity to generate different emotional experiences in different groups of people.

To summarise therefore, therefore, individuals may be assigned different roles in society. These roles (or identities) are created by powerful groups. People may be socialised or trained to think, feel and behave in accordance with these roles thereby maintaining existing social structures. Dominant groups may also able to mould material reality (though, for example, laws and customs) in such a way that these roles are perpetuated.

It is therefore simplistic to state that jealousy is either the product of the mind of an isolated individual, or the result of an innate genetic tendency. It is possibly more appropriately seen as social phenomenon, the function of a culturally defined event, and the result of growing up in a certain role, in a particular culture. The culture defines what is valued, and therefore what is to be protected. It defines for the individual the situations in which jealousy is triggered, and how he or she should feel, think and behave once jealousy has been triggered. It is also a socially constructed emotion, which functions to control the sexual behaviour of individuals in society. Jealousy is inextricably bound up in the power dynamics of a society, and is used to perpetuate gender imbalances. (Bhugra, 1993; Pines, 1998).

2.2.3.4 Criticism for the social psychological model

The social psychological model has been criticised for underestimating the importance of unconscious and other individual and relationship factors which impact on the jealous experience. Social psychologists acknowledge a possible genetic basis to jealousy, but tend not to take into account individual factors such as attachment history and the unique individual experiences which have been shown to influence the jealousy experience (Pines, 1998).

2.2.4 An Integrative Model

The different models of jealousy appear to be similar in that they emphasise a common universal process which humans world wide experience when a valuable romantic relationship is threatened by an interloper. All these models discuss gender differences in the experience of jealousy, and attempt to explain these. The models differ, however, in the reasons they give for the origins of jealousy and gender differences. To summarise, evolutionary psychologists assume that the motives for jealousy and gender differences in the jealousy experience are genetic. Psychoanalytic theorists place the origins of jealousy in universal childhood traumas, and assume that gender differences are due to different childhood experiences during psychosexual development. The cultural model assumes that the arousal of jealousy and jealous behaviours are learned, whereas social constructionists and feminist writers believe that emotions such as jealousy are socially constructed, and that gender differences are the result of power imbalances and subject positioning in society. None of these models is complete, and none has escaped considerable criticism at the hands of the other models. Yet each model contributes substantially to the understanding of the complexity of the jealousy experience. At this stage in the research it seems that an integrative model which combines all these theories is likely to be the most helpful.

As Pines (1992) points out, jealousy is the result of an interaction between a certain predisposition and a triggering event. A predisposition to jealousy may be caused by a number of factors, including genetic tendencies, personal experiences in relationships during childhood

and adulthood, mental health, and social and cultural factors which define for the person how he or she is to feel in certain circumstances. Thus a triggering event may evoke different responses in different individuals. Some individuals may, for example, be more sensitive to triggers due to childhood and adolescent traumas, and adults who have experienced an unfaithful partner may also become more prone to jealousy. Additionally, an individual's gender, culture and expectations are crucial, in that these determine whether a trigger is appropriately perceived as a threat to a relationship, and thereafter how the individual is entitled to behave. Different individuals may therefore become jealous in response to different triggers. Clearly none of the models exclusively can cover the complexity of the jealous experience adequately. When they are integrated, however, each of the models has a valuable contribution to make to the overall understanding of jealousy.

Pines (1992) proposes an integrative model as a series of concentric circles with the individual at the centre. This individual has a genetic predisposition, which provides the potential for the experience of jealousy, and possibly leads to innate gender differences in susceptibility to the triggers which lead to the experience of jealousy. The individual's predisposition to experience jealousy will be further influenced by his or her childhood experiences and relationship history. The second circle is comprised of the individual's relationship with his or her partner. Here relationship factors, which may include issues of dependency and power, influence the experience of jealousy. Thirdly, the culture in which they live influences what determines a threat to the relationship, and how jealousy is to be experienced and expressed. Included in culture are gender roles and power factors which teach individuals the meaning of gender, and provide for people the blueprints for how they are to think, feel and behave in relationships.

The integrative model proposed by Pines (1992; 1998), is largely undeveloped and still requires reseach support. However, it may provide a more comprehensive understanding of jealousy than is currently available in the literature.

2.3 Aims of the Study

This study is part of a cross-cultural international study which is currently in the process of investigating gender and cross-cultural differences in the triggers to jealousy. Specifically it set out to examine the view that males and females differ in the experience of jealousy. In particular the study aimed to investigate the evolutionary psychology proposition that men and women respond to different jealousy triggers. The model predicts that males, cross-culturally, will find the prospect of sexual infidelity most distressing, and that females, cross-culturally, will be more responsive to emotional infidelity. In addition, the study aimed to investigate differences in mating strategy, and in particular the commonly held supposition that males are naturally more inclined to indulge in casual sex, without an emotional involvement, than females are. The study also aimed to assess whether these beliefs impacted on the form of infidelity males and females found more distressing. In summary, therefore, the study had five major goals.

- Firstly, to examine the hypothesis that males find sexual infidelity more distressing and that females are more distressed by emotional infidelity.
- Secondly, the study aimed to ascertain whether these gender differences persisted cross culturally.

- In the third place, the study aimed to examine differences in response patterns to the two types of infidelity between the different race groups.
- In the fourth place, the study aimed to investigate whether both males and females believe males to be more capable of casual sex than females, and whether these beliefs are common to both monogamous and polygamous cultures in South Africa.
- Finally the study aimed to investigate whether beliefs about differences in mating strategy impacted on which form of infidelity was chosen as most distressing by South African males and females.

At the same time the study planned to investigate whether the alternate double-shot hypothesis, proposed by Harris and Christenfeld (1996a; 1996b) and De Steno and Salovey (1996a; 1996b), provided a convincing alternative hypothesis to infidelity choice.

Chapter Three

3 Method

3.1 Design

This research was conducted as a hypothesis-testing field study, which means that the data was collected from a community, rather than generated in a controlled laboratory situation (Kerlinger, 1985). The goal of the study was to examine the relationships between gender, race, the conditional probabilities of sexual and emotional involvement, and the experience of romantic jealousy, in the field situation.

As a field study it has the advantage of realism, strength and significance (Kerlinger, 1985). It also has the weaknesses of field studies in that it was non-experimental. For this reason statements of relations are weaker than they may have been in an experimental study. In addition the use of a field study means that it was not possible to control the variables fully, and the possibility of unsuspected extraneous independent variables should not be underestimated (Kerlinger, 1985). However, as Kerlinger (1985) also points out, hypothesis testing field studies are indispensable to scientific research, and may be the only way of measuring constructs such as jealousy in the social circumstances in which they arise.

This study had three independent variables. These were gender, culture, and the conditional probability of sexual and emotional involvement, as perceived by males and females for their

own, and the opposite gender. The dependent variables were the choices made by individuals in terms of whether they found sexual or emotional infidelity to be more distressing.

3.2 Hypotheses

The project examined five main hypotheses.

- H_1 : There are gender differences in the triggers which cause jealousy. Women tend to be more distressed by emotional infidelity, and males are more distressed by sexual infidelity.
- H_2 : These gender differences occur cross culturally.
- H_3 : Notwithstanding H_2, there are also significant cross cultural differences in the experience of jealousy.
- H_4 : Both males and females, cross culturally, believe that males are more likely to indulge in sex without emotional involvement than females are.
- H_5 : These beliefs influence infidelity choice, in that they lead women to be more distressed by emotional than sexual infidelity, and lead males to be more distressed by sexual than emotional infidelity.

3.3 Participants

The sample for this study was a convenience sample of first, second and third year university students from a variety of academic disciplines. The technique used was non-probability

purposive quota sampling (Kerlinger, 1985). This form of sampling was used in an attempt to get a sample in which a reasonable balance of males and females from each race group was included. The plan was to distribute questionnaires to 50 males and 50 females from each race group (Black, White, Indian and Coloured) with a total of 400 questionnaires.

Sampling resulted in a total of 419 questionnaires. Twenty-one of these were not included in the final data analysis. Sixteen questionnaires were excluded because more than a third of the questions were unanswered. Of these 16, 13 were from Black participants, and the remaining three incomplete questionnaires were obtained from Indian participants. In addition, two questionnaires were not included because ethnic group was not filled in, and three were omitted because most of the forced choice questions were double ticked.

The result was a sample of 398, although they were not as numerically balanced as hoped. 193 of the sample were males, and 205 were females. As shown in Table A, of these respondents, 123 described themselves as Black, 189 White, 68 Indian and 18 Coloured. Of the Black respondents, there were 59 males and 64 females. The white students were composed of 92 males and 97 females, the Indians consisted of 31 males and 37 females, and there were 11 Coloured male and 7 Coloured female respondents.

		Ethnic Group				
		Black	White	Indian	Coloured	Total
Gender	Male	59	92	31	11	193
	Female	64	97	37	7	205
Total		123	189	68	18	398

Table A: Gender and race of respondents

3.4 Equipment and Measures

The questionnaire used in this study was a compilation of questions used by Buss et al. in their 1992, 1996 and 1999 research, and De Steno and Salovey and Harris and Christenfeld in their 1996 studies. The questionnaire was compiled by Voracek, and is currently being used in the international study of which this study is a collaborative component. Two versions of the questionnaire were distributed, Form A and Form B, copies of which are attached (see Appendix A). The questionnaires are identical in content. However, Hupka and Bank (1996) found a significant order effect when they administered the forced choice questions to their sample, with more subjects reporting a dislike for the second scenario, regardless of which infidelity scenario was presented first. To control for this the two questionnaires offer the two scenarios in reverse order.

The purpose of the questionnaire is to explore the nature of gender differences in response to jealousy triggers. To achieve this the questionnaire has three major goals. The first goal is to test the gender difference hypothesis, the second to test the belief hypothesis, and the third is to examine the impact of beliefs on infidelity choice.

The questionnaire is divided into five major sections.

The first section requests demographic information. Information requested includes: sex of respondent, age, home language, ethnic group, birth order, educational level, parents'

occupational group, participant's occupational group, relationship status, length of relationship, sex of partner, age of partner, age difference between respondent and partner, number of children, marital status and size of the community in which the respondent lives. The respondents were not asked to provide their names.

The second section is based on Buss et al.'s 1992 and 1996 studies, and presents three dilemmas, designed to ascertain whether respondents find sexual or emotional fidelity more distressing. Due to reliability problems only questions one and two were included in the final data analysis.

Part three of the questionnaire involves two questions designed by Harris and Christenfeld (1996a), and asks respondents to evaluate the likelihood that their partner will become emotionally attached to someone they have had sex with, and vice versa.

The fourth part of the questionnaire is composed of four dilemmas used in Buss et al.'s (1999) research. These are designed to examine the strength of the gender difference hypothesis by rendering the infidelity types mutually exclusive to eliminate the probability that the one form of infidelity implies the other. In these dilemmas, beliefs about the conditional probabilities of the two events are irrelevant, because both have occurred, or because the respondent is assured in each case that the other form of infidelity will not occur. If the sex difference disappears for these dilemmas, then the double-shot belief hypothesis proposed by De Steno and Salovey (1996a; 1996b) and Harris and Christenfeld (1996a;1996b) would be supported. If the sex difference persists, even when conditional probabilities are accounted for, the evolutionary hypothesis would be supported (Buss et al., 1999).

The last section of the questionnaire involves 6 questions. The first four ask about the conditional probabilities of sexual and emotional involvement for a "typical man" and a "typical woman", and are based on the questions used by De Steno and Salovey (1996a), and by Buss et al. (1999). These questions are designed to assess beliefs about the different mating strategies of males and females. In these questions men and women are asked to evaluate the conditional probabilities of sexual involvement given emotional involvement and emotional involvement given sexual involvement for both males and females. The last two questions of the questionnaire ask about the personal conditional probabilities of sexual involvement given emotional involvement, and of emotional involvement given sexual involvement for the respondent him or herself. A nine point Likert-type rating scale is used for each of these evaluations.

The reliability and validity of this questionnaire requires more research. Reliability assessments (Coefficient alpha) were obtained, using SSPS, for questions one and two, six to nine, and the total of 1, 2, and 6 to 9 for scales consisting of both the sexual and the emotional infidelity scenarios. For the sexual infidelity scenarios reliability coefficients were were .62 for questions 1 and 2; .59 for questions 6 to 9; and .69 for the total of questions 1,2 and 6 to 9. For the emotional infidelity scenarios, reliability coefficients were .59 for questions 1 and 2; .59 for questions 6 to 9; and .68 for the total of questions 1, 2 and 6 to 9. These reliability coefficients are respectable given the relatively small number of items included in each scale. Reliability of the second part of the questionnaire could not be obtained as each question forms a separate scale.

The validity of the questionnaire has not yet been ascertained (M.Voracek, personal communication, October, 4, 2002), and requires further research.

3.5 Procedure

3.5.1 The University of Natal, Pietermaritzburg was approached by Dr Martin Voracek, a researcher from the University of Vienna, Austria, who emailed a number of sites worldwide, in search of collaborators. Once interest had been expressed in the project, the questionnaire was emailed to the university. As discussed, two forms were received, Forms A and B. In terms of the requirements of the international study the body of the questionnaire was duplicated in its exact format. However, some changes were made to the demographic section. Students were asked for their home language and ethnic group, which did not appear on the original questionnaire. In addition, the word "mate" was changed to "partner" as it was felt that the former word is not in common use in South Africa, particularly among the students for whom English is not the home language.

3.5.2 The questionnaire was distributed to several groups of university students. In order to get a sample which was as heterogeneous as possible, an attempt was made to draw subjects from a number of academic disciplines. The subjects from which students were drawn were first and second year psychology, first year media studies, first, second and third year agriculture, introduction to South African law and first year

management. Psychology, management, introduction to South African law and media studies were selected because the research assistant was doing these courses, and her lecturers were prepared to let her use the time to administer the questionnaire. Agriculture was specifically selected in order to obtain responses from male students, and in particular Black male students, when it became apparent that this group was underrepresented in the sample. Unfortunately no record was kept of the number of respondents drawn from each subject. However, approximately equal numbers of respondents were drawn from psychology, management, law and agriculture, with the smallest number of respondents being drawn from media studies. Questionnaires were distributed at the end of a lecture, after first asking for permission from the lecturers.

3.5.3 Students were told that the questionnaire was for psychological research purposes, and they were given 5 – 10 minutes at the end of the lecture to fill it in. Participation was voluntary and students were told that they were free to leave the lecture theatre if they chose not to participate. Forms A and B were distributed to the students who remained, sequentially, as they sat in rows in the various lecture theatres. The lecturer and the research assistant who collected the data remained in the lecture theatre while the questionnaire was being filled in, to ensure that confidentiality was observed as far as possible, and questionnaires were collected by the research assistant once they were completed.

3.5.4 Data from the questionnaires was entered into the SSPS 9.0 (2001) data analytic program, and was analysed using a number of statistical procedures including repeated measures analysis of variance, and logistic regression.

Chapter Four

4. Results

This chapter will summarise the descriptive and inferential statistics obtained through the analysis of data described above

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4.1 Descriptive Statistics

4.1.1 Age Range of Sample

The age range of the sample was between 16 and 36. The average age was 19.98 (*SD* = 2.86), with 20.52 as the average age for males (*SD* = 2.73), and 19.47 the average for females (*SD* = 2.90). The mean age for Black people was 20.52 (*SD* = 3.82) for White people was 19.80 (*SD* = 2.33); for Indians was 19.44 (*SD* = 1.9) and for Coloured respondents was 20.33 (*SD* = 3.00). As Table 4.1 indicates, 98.3% of the sample was between the ages of 16 and 27.

Age	Frequency	Percent	Cumulative Percent
16	1	.2	.3
17	7	1.7	2.0
18	91	22.6	24.8
19	95	23.6	24.8
20	84	20.9	69.5
21	52	12.9	82.5
22	25	6.2	88.8
23	13	3.2	92.0
24	13	3.2	95.3
25	6	1.5	96.8
26	2	.5	97.3
27	3	.7	98.0
28	1	.2	98.3
30	3	.7	99.0
31	1	.2	99.3
33	2	.5	99.8
36	1	.2	100.0
Missing	1	.5	
Total	398	100.0	

Table.1: Age range of participants

4.1.2 Relationship Status

Three hundred and ninety-five (98%) of the possible 398 respondents answered the question "Do you have a committed relationship?" Two hundred and thirteen (53%) stated that they were currently in a relationship, and 182 (45%) said they were not. Fifty-nine percent (59%)of the total number of female respondents were in a relationship compared to 47% of males. Fifty-eight percent (58%) of Black respondents were in a relationship compared with 49% of White, 54% of Indian, and 61% of Coloured respondents. Four people (1%) stated that they were married, and 2 (.5%) were widowed. There were no significant gender or race differences in terms of whether the respondents were in a relationship or not, $F(1, 392) = 1.83$, $p = .176$ for gender, and $F(3, 392) = .83$, $p = .478$, for race.

To summarise, just over half of the respondents were in a committed dating relationship when this questionnaire was administered. Slightly more females than males were in a relationship, but overall there were no significant differences between males and females or between the different race groups in relationship status.

4.1.3 Length of Relationship

The length of relationship varied between one month and 632 months, with a mean relationship length of 21.24 months. Of the 53% of respondents who stated that they were currently in a relationship, there was no significant difference between males and females, or between the

The average length of relationship for this sample was just under two years, and there was no difference between the genders or race groups in terms of how long their current relationship had endured.

4.1.4 Number of Respondents with Children

Twenty four (6%) of the sample stated that they had children.

4.2 Inferential Statistics

For the purposes of data analysis, the questionnaire was divided into two main sections, the first examining gender and race differences in the dislike of sexual or emotional infidelity, and the second examining the respondents' beliefs about the conditional probability of sexual and emotional involvement, and how these impact on whether individuals choose emotional or sexual infidelity to be more distressing. The first section covered the first, second and third hypotheses, and the second section addressed hypotheses four and five.

Hypotheses one, two and three examined gender and race differences in infidelity choice and were tested by questions 1, 2, 6, 7, 8 and 9 of the questionnaire. Questions 1 and 2 were designed to ascertain whether respondents find sexual or emotional fidelity more distressing generally. Questions 6 to 9 also examine infidelity choice, but in order to eliminate the possibility that respondents choose the infidelity type which most implies that the other has occurred, the questions are posed in such a way that each infidelity scenario precludes the

possibility that the other has occurred. The results of these two sets of questions, questions 1 and 2, and questions 6 to 9 were summed to form separate sets of scales which were analysed separately, using repeated measures analysis of variance, and then the results for all six questions were summed to form total scores for sexual and emotional infidelity choice which were also analysed using repeated measures analysis of variance.

The results of the sum of questions 1 and 2 were combined to form two scales, which consisted of the number of times each individual selected the sexual infidelity scenario as more distressing and the number of times they chose the emotional scenario, with each respondent obtaining a potential total score out of two for each scale, and a total number out of 2 for the sum of their scores for both scales. The same procedure was followed for questions 6 to 9. The results for these questions were summed to form sexual and emotional scales as for questions one and two, with a score range of 0 to 4 for each scale, and a total sum of 4 for the sum of their scores for both scales. Two final scales were then constructed, consisting of individuals' total number of sexual and emotional infidelity choices over all six questions, yielding a possible total score out of 6 for each scale and a total score out of 6 for the sum of their scores for both scales.

These three sets of scales were then analysed separately, using two-way analysis of variance. An alpha level of .05 was used for all statistical tests.

4.2.1 Hypothesis 1: Gender differences in infidelity choice

In line with evolutionary theory, hypothesis one held that there would be significant gender differences in the selection of sexual or emotional infidelity as more upsetting. Specifically, it was predicted that males would find the sexual scenarios more upsetting and the females the emotional. The first statistical analysis examined this hypothesis for the sample as a whole.

The hypothesis was supported by the two-way analysis of variance conducted on all three sets of scales.

For questions one and two, there was a strongly significant gender effect on the selection of infidelity type $F(1, 379) = 76.88$, $p = .000$. $\eta^2 = .16$, indicating that 16% of the variance of respondents' combined scores for questions one and two may be accounted for by gender.

There was also a strongly significant interaction $F(1, 379) = 58.20$, $p = .000$. The means for males for sexual versus emotional infidelity choice were .98 and 1.07 respectively, ($SD = .89$) and for females were .37 and 1.62, ($SD = .62$). The difference in means was therefore far larger for women than for men, indicating that whereas male respondents disliked both infidelity scenarios to an almost equal degree, a large majority of female respondents selected the emotional scenario as more distressing. An examination of percentages may clarify this issue. For question 1, 53% of the male respondents selected the sexual scenario as most distressing compared with 47% who chose the emotional scenario. There is only a 5% difference between these scores. For females, however, 75% selected the emotional scenario as more distressing,

compared with 25% who selected the sexual infidelity scenario. This is a 51% difference. Similarly for question 2, 58% of males who answered the questionnaire selected the sexual scenario and 42% chose the emotional scenario. There is a 15% difference between these scores. 87% of female respondents selected the emotional scenario compared with 13% who selected the sexual infidelity scenario, which is a 74% difference. The difference in patterns of responding is pictorially shown by Figure 1.

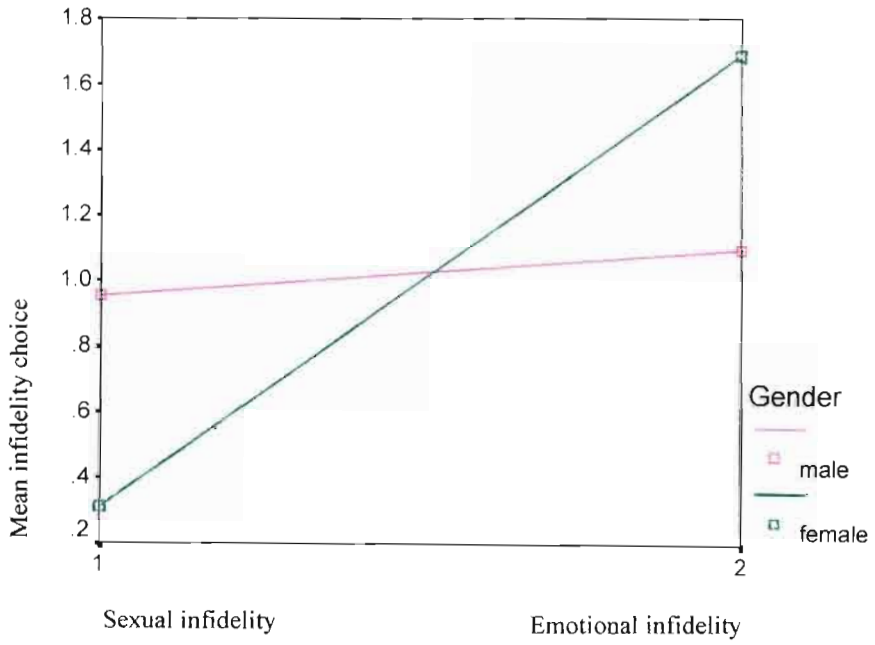

Figure 1. Mean number of sexual and emotional infidelity choices for males and females for questions 1 and 2.

Analysis of variance is based on an assumption of normality, and the range of a total of 2 for questions 1 and 2 was too coarse to satisfy this assumption. To test the interaction without the limitations of ANOVA's normality assumptions, an idea from Bradley (1968) was used. Respondents' scores for emotional infidelity were subtracted from their scores for sexual

infidelity to form a new scale, and the resulting difference was tested with a Mann-Whitney test. Mann-Whitney tests are sensitive to sample differences in central tendency, and as they are distribution free they have the advantage of freedom of assumptions (Howell, 1985). The results of the Mann-Whitney test were strongly significant $U(1, 379) = 112.18$, $p = .000$. This result supports the strong interaction found using analysis of variance.

An examination of respondents' mean scores for sexual and emotional infidelity choice indicates that the total mean for emotional infidelity ($M = 1.35$, $SD = .81$) was higher than for sexual infidelity ($M = .67$, $SD = .82$), indicating that as a group, for questions one and two, respondents disliked the emotional infidelity scenarios more than the scenario describing sexual infidelity. The means for the sexual and emotional infidelity scales for questions 1 and 2 are illustrated in Table 2.

Gender		Sexual infidelity	Emotional infidelity
Males	Mean	.98	1.07
	Number	184	184
	Standard Deviation	.89	.88
Females	Mean	.37	1.62
	Number	195	195
	Standard Deviation	.62	.62
Total	Mean	.67	1.35
	Number	379	379
	Standard Deviation	.82	.81

Table 2: Mean scores for males and females for sexual and emotional infidelity for questions 1 and 2.

These results indicate that as a group the sample found emotional infidelity more distressing than sexual infidelity. There were gender differences, in that the majority of females found the emotional infidelity scenarios more distressing, and the majority of males selected the sexual infidelity scenarios as more distressing. However, whereas males were fairly ambivalent, selecting emotional infidelity as more distressing almost as often as sexual infidelity, a large majority of females selected emotional infidelity as more distressing. This suggests that the strong gender effect on infidelity choice may have been caused largely by the intense dislike for emotional infidelity shown by the majority of female respondents in this sample.

Similar statistics were conducted for questions 6 to 9. These questions also offered respondents a choice of the two infidelity scenarios for each question, but in order to isolate gender effects from potential effects caused by respondents' belief that one form of infidelity implies the other, the two infidelity scenarios were posed in such a way that the existence of one form of infidelity excluded the possibility of the other occurring.

Again, repeated measures analysis of variance indicated a strongly significant gender effect $F(1, 366) = 46.71$, $p = .000$. $\eta^2 = .03$ indicating that 3% of the variance for these questions may be attributed to gender effects. This effect is not as large as for questions one and two, indicating that beliefs may have contributed to some degree to the large effect size for questions one and two.

There was again a strong interaction $F(1, 366) = 32.08$, $p = .000$, $\eta^2 = .08$. Males' scores for sexual infidelity choice ($M = 2.12$, $SD = 1.26$) and emotional infidelity ($M = 1.87$, $SD = 1.26$) were once again fairly similar, whereas the difference in means for female respondents was much greater, with a mean of 2.62 ($SD = 1.27$) for emotional infidelity and 1.37 ($SD = 1.27$) for sexual infidelity. For questions 6 to 9, therefore, the large gender effect on infidelity choice can be attributed to a considerable degree to a high female dislike for emotional infidelity, rather than the male dislike for sexual infidelity versus female dislike for emotional infidelity which is proposed by the evolutionary model.

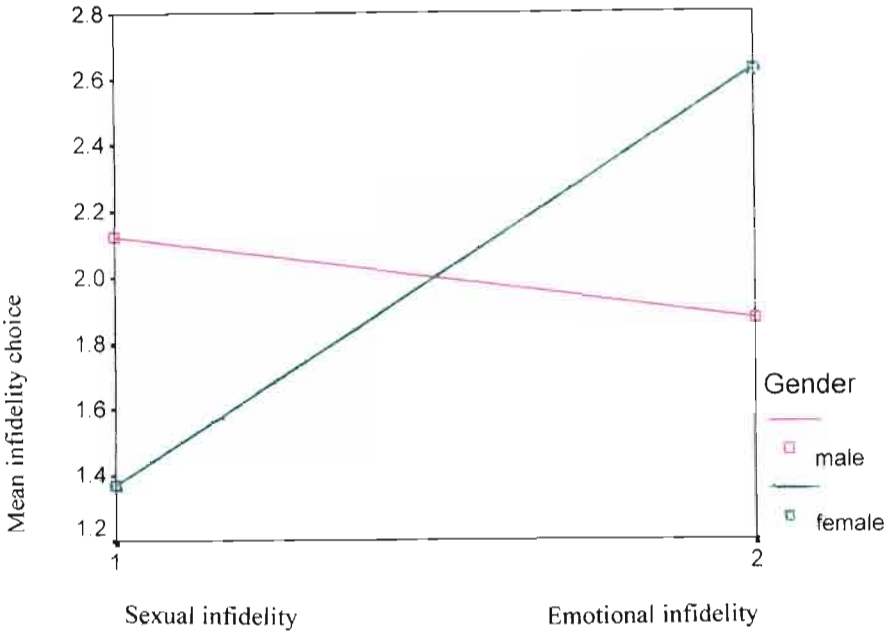

Figure 2: Mean number of sexual and emotional infidelity choices for males and females for questions 6 - 9

This point may be emphasized by an examination of the percentage of males and females who selected the different scenarios for questions 6 to 9. For question 6, 51% of males selected sexual infidelity as more distressing, compared with 78% of females who selected the emotional infidelity scenario. For question 7, 52% of males chose the sexual infidelity scenario, whereas 62% of females chose the emotional infidelity scenario. For question 8, 52% of males chose the sexual infidelity scenario compared with 63% of females who chose the emotional infidelity scenario. For question 9, 60% of males chose the sexual infidelity scenario, and 54% of females chose the emotional scenario, indicating that for this question the trend of a strong majority female selection of emotional infidelity compared with a more ambivalent male response was reversed.

The pattern of response was similar for questions 1 and 2 in that the mean dislike for the whole sample was highest for emotional infidelity over questions 6 to 9 ($M = 2.26$, $SD = 1.32$).

Gender		Sexual infidelity	Emotional Infidelity
Male	Mean	2.12	1.87
	Number	179	179
	Standard deviation	1.26	1.26
Female	Mean	1.37	2.62
	Number	190	190
	Standard deviation	1.27	1.27
Total	Mean	1.73	2.26
	Number	369	369
	Standard deviation	1.32	1.32

Table 3: Mean scores for males and females for sexual and emotional infidelity for questions 6 to 9.

To summarise therefore, in a pattern of results similar to the results for questions 1 and 2, both males and females disliked both sexual and emotional infidelity. Once again, the sample as a whole disliked emotional infidelity more than sexual infidelity, males were somewhat ambivalent in their choice, and the large gender effect was driven by a strong majority female dislike for emotional infidelity.

Results of a two-way analysis of variance of the gender effect on the total sum of sexual and emotional infidelity scores for each respondent for questions 1, 2 and 6 to 9 were also significant. There was a strongly significant gender effect on infidelity choice $F(1, 354) = 44.28$, $p = .000$, $\eta^2 = .11$ indicating that 11% of the variance of infidelity choice across the six questions can be attributed to gender. There was a strongly significant interaction $F(1, 354) = 52.26$, $p = .000$, $\eta^2 = .12$. Again, the mean for male responding was fairly even for sexual infidelity ($M = 3.08$, $SD = 1.77$) and emotional infidelity ($M = 2.97$, $SD = 1.80$), and the large gender difference in means could be attributed to a large majority female selection of emotional infidelity ($M = 4.25$, $SD = 1.64$) as more distressing than sexual ($M = 1.74$, $SD = 1.64$). Similar to the pattern of response to questions 1 and 2 and 6 to 9, the total mean response for the whole group was highest for emotional infidelity ($M = 3.63$, $SD = 1.83$).

Gender		Sexual infidelity	Emotional infidelity
Males	Mean	3.08	2.97
	Number	173	173
	Standard deviation	1.77	1.80
Females	Mean	1.74	4.25
	Number	183	183
	Standard deviation	1.64	1.64
Total	Mean	2.39	3.63
	Number	356	356
	Standard deviation	1.83	1.83

Table 4: Mean scores for males and females for total number of sexual and emotional infidelity choices for questions 1, 2 and 6 to 9.

In summary, there were strongly significant gender differences in infidelity choice, with males choosing sexual infidelity as more distressing slightly more often than emotional infidelity, and the majority of females choosing emotional infidelity as more distressing than sexual infidelity. However, across all six questions, males were shown to be fairly ambivalent, achieving similar scores for sexual and emotional infidelity, whereas a large majority of females chose emotional infidelity as more distressing. As a group, the sample means for emotional infidelity were

higher, indicating that overall the sample found the prospect of emotional infidelity to be more distressing than sexual infidelity.

4.2.2 Hypothesis 2: gender differences in infidelity choice across race groups

Hypothesis two predicted that gender differences in the selection of infidelity type would be consistent cross-culturally, and to test this hypothesis gender differences were examined separately for the different race groups participating in the study. Because of the very small sample size the gender differences were not analysed for Coloured respondents, on the assumption that the results were not likely to be representative.

In order to examine the gender differences within each race group, separate scales were formed for each race group, consisting of each individual from that race group's total number of sexual infidelity choices and total number of emotional infidelity choices out of a total number of 6 options. Repeated measures analysis of variance were conducted to examine within-race gender differences for each race group, using these scales.

The mean for Black male respondents was higher for sexual infidelity ($M = 3.30$, $SD = 1.82$). Black males selected sexual infidelity as more distressing 55% of the time. The mean for Black female respondents was higher for emotional infidelity ($M = 3.61$, $SD = 1.66$). Black females selected emotional infidelity 60% of the time. However, the difference between the means for Black males and females was not significant $F(1, 207) = 1.16$, $p = .284$, $\eta^2 = .01$. Mean scores for Black males and females can be seen in Table 5.

Gender		Sexual infidelity		Emotional infidelity	
Males	Mean	3.30	(55%)	2.70	(45%)
	Number	52		52	
	Standard deviation	1.80		1.82	
Females	Mean	2.38	(40%)	3.61	(60%)
	Number	55		55	
	Standard deviation	1.66		1.66	
Total	Mean	2.83	(47%)	3.21	(53%)
	Number	107		107	
	Standard deviation	1.79		1.77	

Table 5: Mean scores for sexual and emotional infidelity choices for Black respondents

There was, however, a significant interaction $F(1, 107) = 6.96$, $p = 0.010$, $\eta^2 = .06$, indicating that Black male respondents were more ambivalent about infidelity choice than Black females were. This trend is similar to the pattern of the sample as a whole.

ForWhite respondents there were very strong gender differences in response pattern $F(1, 177) = 30.20$ $p = .000$, $\eta^2 = .14$. 14% of the variance of infidelity choice for White respondents can be associated with gender. As is indicated in Table 6, the mean for White males for sexual infidelity was 3.12 ($SD = 1.70$), and the mean for White females for emotional infidelity was 4.51 ($SD = 1.64$). This represents a strongly significant interaction $F(1, 177) = 42.57$, $p = .000$, $\eta^2 = .19$. For White respondents, therefore, males were shown to be fairly ambivalent about

infidelity choice, selecting sexual infidelity 52% of the time, whereas White females chose emotional infidelity as more distressing 75% of the time.

Gender		Sexual infidelity		Emotional infidelity	
Males	Mean	3.12	(52%)	2.78	(48%)
	Number	52		52	
	Standard deviation	1.80		1.82	
Females	Mean	2.38	(25%)	3.61	(75%)
	Number	55		55	
	Standard deviation	1.66		1.66	
Total	Mean	2.83	(47%)	3.21	(53%)
	Number	107		107	
	Standard deviation	1.79		1.77	

Table 6: Mean scores for sexual and emotional infidelity choices for White respondents

For Indian respondents, both males and females disliked emotional infidelity more than sexual infidelity. Indian males selected the emotional infidelity scenario as more distressing 53% of the time ($M = 3.15$, $SD = 2.07$), whereas Indian females selected the emotional infidelity scenario as more distressing 73% of the time *($M = 4.39$, $SD = 1.49$)*. Even though both Indian males and Indian females selected emotional infidelity as distressing the majority of the time, the difference between the means for males and females was significant $F(1, 54) = 9.97$, $p = .003$, $\eta^2 = .16$. There was also a significant interaction $F(1, 54)$ $p = .014$, $\eta^2 = .11$. A similar pattern of

response to that of White and Black respondents was observed, in that Indian males tended to be ambivalent, whereas a strong majority of Indian females selected emotional infidelity as more distressing. The means for Indian respondents are shown in Table 7.

Gender		Sexual infidelity		Emotional infidelity	
Males	Mean	2.84	(47%)	3.15	(53%)
	Number	26		26	
	Standard deviation	2.07		2.07	
Females	Mean	1.60	(27%)	4.39	(73)
	Number	28		28	
	Standard deviation	1.49		1.49	
	Total	2.20	(37%)	3.79	(63%)
	Number	54		54	
	Standard deviation	1.88		1.88	

Table 7: Mean scores for sexual and emotional infidelity for Indian respondents

There were therefore strongly significant differences in the means for White and Indian male and female respondents, even though Indian males disliked emotional infidelity more than sexual infidelity. The infidelity choices made by Black males and females were in the hypothesized direction, but for this group the differences in mean scores for males and females were not significant.

4.2.3 Hypothesis 3: Differences in Between-Race Response Patterns

In line with social psychological theory, hypothesis three held that there would be differences in the patterns of response between the different race groups.

An examination of the means for the different races groups supported this hypothesis.

Black males had the highest mean scores for dislike of sexual infidelity of all groups ($M = 3.30$, $SD = 1.80$). Black females were higher than any other groups of females for dislike of sexual infidelity ($M = 2.78$, $SD = 1.80$). Of all groups, Black male and female respondents had the highest total mean score for dislike of sexual infidelity ($M = 2.83$, $SD = 1.79$), and correspondingly, the lowest mean dislike for emotional infidelity of all the race groups ($M = 3.21$, $SD = 1.77$). Nevertheless, as a group, for Black respondents the total mean score for emotional infidelity ($M = 3.21$, $SD = 1.77$) was higher than their total mean score for sexual infidelity.

Indian respondents, as a group, showed the highest mean dislike of all race groups for emotional infidelity ($M = 3.79$, $SD = 1.88$). This was the only group in which the mean score for males was higher for emotional infidelity ($M = 3.15$, $SD = 2.07$) than for sexual infidelity, although the difference between the Indian males' scores for sexual and emotional infidelity only amounted to 4%.

White respondents as a group showed the biggest gender difference between males and females, with a mean for males for sexual infidelity choice of 1.48 (SD = 1.64), and a mean female score of 4.51 (SD = 1.64) for emotional infidelity. White females showed the highest dislike for emotional infidelity of all genders and race groups in the sample.

The difference between the means of the different race groups were strongly significant $F(3,354) = 34.25$, $p = .000$. $\eta^2 = .08$, indicating an 8% contribution of race to the variance in sexual and emotional infidelity choice over the six questions. There was also a significant interaction $F(3, 354) = 3.77$, $p = .011$, $\eta^2 = .03$.

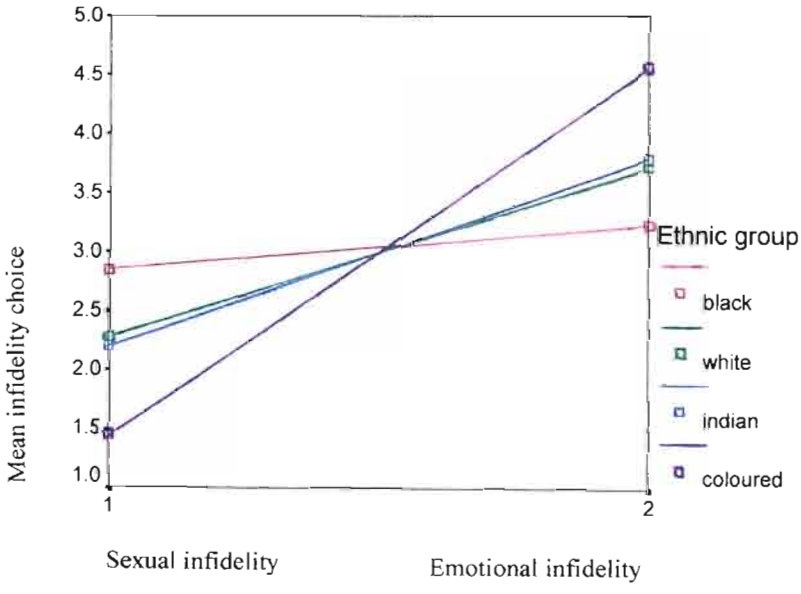

Figure 3. Mean number of sexual and emotional infidelity choices for Black, White, Indian and coloured respondents.

To summarise, therefore, there were strongly significant differences in the patterns of response to the infidelity choice scenarios shown by the different race groups. Black male respondents

showed the highest mean dislike of all groups for sexual infidelity, and White females the highest dislike of all groups for emotional infidelity. As a group, Black male and female respondents had the highest mean dislike for sexual infidelity, and Indian respondents the highest mean dislike for emotional infidelity. The biggest gender difference was shown by White respondents, and the smallest by Black participants. All race groups disliked emotional infidelity more than sexual infidelity.

4.2.4 Hypothesis 4: Gender Differences in mating strategy

Hypothesis four examined the conditional probabilities of sexual and emotional involvement, and more specifically, tests the proposition that both males and females, cross-culturally, believe that males are more likely to have sex without emotional involvement than females are.

This hypothesis was covered by questions 4, 5, and 10 to 15. These questions examined the conditional probability of sexual and emotional infidelity for the partner, the self, for males, and for females. Questions 4 and 5 asked participants to assess the likelihood that their partner would fall in love with someone with whom he or she had had sex, and become sexually involved with someone with whom he or she has become emotionally involved. Questions 10 and 11 ask respondents to assess the likelihood that a man will fall in love with a woman with whom he has had sex, and that he will become sexually involved with a woman with whom he has fallen in love. Question 12 and 13 ask about the conditional probability of sex and love for women, and questions 14 and 15 the conditional probability of sex and love for the self. Each question forms a Likert-type scale.

Repeated measures analysis of variance found no significant gender or race differences in the means for any of these questions, and no significant interaction. For race, $F(3, 361) = .67$, $p = .566$, $\eta^2 = .00$. For gender, $F(1, 361) = .04$, $p = .827$, $\eta^2 = .00$. For interaction $F(3, 361) = .26$, $p = .848$, $\eta^2 = .00$.

These results indicate that for this sample there were no significant differences between the beliefs of the different race groups, or the two genders, about the conditional probabilities of sexual and emotional involvement for their partners, women generally, men generally, or themselves.

Repeated-measures multivariate analyses of variance were then conducted on beliefs about the conditional probabilities of emotional involvement given sexual involvement, and sexual involvement given emotional involvement, with sex and race of believer entered as a between-subjects variable and sex of target entered as a within-subjects variable. The purpose of this exercise was to ascertain whether males and females have similar or different beliefs about the conditional probabilities for their own gender, and the opposite gender. The analytic procedures used duplicated those used by Buss et al. (1999).

The first analysis compared the likelihood of emotional involvement given an existing sexual involvement if the target is a man or a woman, and therefore was conducted on questions 11 and 13. No significant within, or between effects were found for gender or race of believer, or of target. For gender of believer, $F(1, 389) = 0.50$, $p = .823$, $\eta^2 = .00$, and for race of believer, $F(3, 389) = 1.15$, $p = .329$, $\eta^2 = .09$. For gender of target, $F(1, 389) = .01$, $p = .891$, $\eta^2 = .00$. Males

and females from all four race groups in this sample therefore believe males and females are likely to form an emotional attachment to someone with whom they have had sex, to a very similar (average) degree. An examination of the means for these different groups illustrates this point (see Table 7). With a mean of 5.08 (SD = 2.44), White women were the most likely to believe that a woman would fall in love if she had had sex with a man, whereas Indian women, with a mean of 3.93 (SD = 2.12) were the least likely to believe that love would follow a sexual encounter for a woman. However, neither of these means differed significantly from the total mean for all groups of 4.67 (SD = 2.51).

Question	Gender	Race	M	SD	N
If a man has slept with a woman how likely are they to fall in love? (question 11)	Male	Black	4.64	2.43	57
		White	4.44	1.66	89
		Indian	4.19	2.07	31
		Coloured	4.54	1.96	11
		Total	4.47	2.00	188
	Female	Black	4.43	2.94	60
		White	4.47	1.89	97
		Indian	4.56	2.16	37
		Coloured	4.00	2.16	7
		Total	4.46	2.33	201
	Total	Black	4.53	2.70	117
		White	4.46	1.78	186
		Indian	4.39	2.21	68
		Coloured	4.33	2.00	18
		Total	4.46	2.17	389
If a woman has slept with a man How likely are they to fall in love? (question 13)	Male	Black	4.64	2.47	57
		White	3.47	2.29	89
		Indian	3.39	2.12	31
		Coloured	4.90	1.97	11
		Total	4.59	2.30	188
	Female	Black	4.61	3.07	60
		White	5.08	2.44	97
		Indian	4.13	2.57	37
		Coloured	4.28	2.92	7
		Total	4.74	2.68	201
	Total	Black	4.63	2.78	117
		White	2.92	2.37	186
		Indian	4.04	2.36	68
		Coloured	4.66	2.32	18
		Total	4.67	2.51	389

Table 8: Mean likelihood of forming an emotional attachment, given an existing sexual relationship, for males and females, as assessed by males and females of all four race groups.

The second repeated measures analysis of variance was conducted on questions 10 and 12, and was used to compare the likelihood of sexual involvement given an existing emotional bond for males and females. Again sex and race of believer were entered as between-subjects variables, with sex of target as a within-subjects variable. There were no significant between-subjects effects for gender, $F(1, 376) = 1.30$, $p = .254$, $\eta^2 = .00$, or for race, $F(3, 376) = .26$, $p = .854$, $\eta^2 = .00$. Similarly, there were no significant effects for sex of target, $F(1, 376) = .09$, $p = .756$, $\eta^2 = .00$. Again there was no significant difference between males and females, or between the different race groups as to their beliefs about the conditional probability of a sexual relationship developing from an emotional bond for males or females. The means and standard deviations for these questions can be seen in Table 10. With a mean of 3.85 ($SD = 3.13$) Coloured female respondents were the least likely to believe that a man and a woman would soon be having sex if the man had become emotionally attached to the woman, and correspondingly, Coloured male respondents were the most likely to believe that a woman would soon be having sex with a man with whom she had fallen in love ($M = 5.27$, $SD = 1.42$). However these means did not differ significantly from the means of other groups, and given the very small sample size for Coloured respondents (7 females and 11 males) these results may not be representative of the Coloured population in general.

Question	Gender	Race	M	SD	N
If a man is in love with a woman how likely is it they will soon be having sex? (question 10)	Male	Black	4.26	2.51	57
		White	4.80	2.11	89
		Indian	4.73	2.25	30
		Coloured	4.54	2.24	11
		Total	4.61	2.24	187
	Female	Black	4.44	3.05	58
		White	4.48	2.58	95
		Indian	4.32	2.92	37
		Coloured	3.85	3.13	7
		Total	4.42	2.79	197
	Total	Black	4.35	2.79	115
		White	4.64	2.36	184
		Indian	4.50	2.63	67
		Coloured	4.27	2.29	18
		Total	4.51	2.53	384
If a woman is in love with a man how likely is it they will soon be having sex? (question 12)	Male	Black	4.75	2.60	57
		White	4.53	2.04	89
		Indian	4.90	2.52	30
		Coloured	5.27	1.42	11
		Total	4.70	2.27	187
	Female	Black	4.43	2.73	58
		White	4.92	3.70	95
		Indian	4.32	2.67	37
		Coloured	4.00	2.30	7
		Total	4.63	3.21	197
	Total	Black	4.59	2.66	115
		White	4.73	3.01	184
		Indian	4.58	2.60	67
		Coloured	4.77	1.86	18
		Total	4.66	2.79	384

Table 9: Mean likelihood of developing a sexual relationship, given an emotional attachment, for males and females, as assessed by males and females of all four race groups.

These results indicate that, contrary to the fourth hypothesis, South African males and females of all four race groups studied do not appear to believe that males are more likely to indulge in sex without emotional commitment than females are.

4.2.5 Hypothesis 5: The Influence of Beliefs about Mating Strategy on Infidelity Choice

It was not expected at this stage that further analysis would yield any significant effects. However, in the interests of thoroughness a further analysis was conducted, using the same procedures followed by Harris and Christenfeld (1996a), De Steno and Salovey (1996a), and Buss et al. (1999). This analysis endeavoured to ascertain whether there was a relationship between beliefs about conditional probabilities and selection of infidelity choice, and if so, what proportion of the variance of infidelity choice was contributed by these beliefs. To achieve this goal four scales were constructed.

The first scale, entitled Differential Involvement Implication – 0pposite sex (DII0) reflects men's estimates of the differential conditional probabilities of women's sexual and emotional involvement, and women's estimates of the differential conditional probabilities of men's sexual and emotional involvement. This scale was constructed by subtracting estimates of the probability of sexual given emotional involvement from estimates of the probability of emotional given sexual involvement. To obtain scores for female respondents, scores for question 10 were subtracted from scores for question 11, and to obtain scores for male respondents, scores for questions 12 were subtracted from scores for question 13.

The second scale, Differential Involvement Implication-Same sex (DIIS) reflects men's estimates of the differential conditional probabilities of men's sexual and emotional involvement, and women's estimates of the differential conditional probabilities of women's sexual and emotional involvement. This scale was created by subtracting question 10 from question 11 for male subjects, and question 12 from question 13 for female subjects.

Two further scales were formed, Differential Involvement Implication-Self (DIISelf) and Differential Involvement Implication-Partner (DIIPart), by subtracting question 14 from question 15 for all cases to form DIISelf, and question 5 from question 4 for all cases to form DIIPart.

Question 1 and question 2 were then regressed onto these scales, using logistic regression. Logistic regression is useful, in that it allows for the examination of incremental variance (Buss, 1999). In this study it was used to examine the incremental variance accounted for by gender, and by beliefs, after each had been controlled for statistically. To do so, the scales were entered first, to ascertain any significant predictive value, and then were entered together with gender.

The result of the regression of question 1 on DII0 was not significant, $\chi^2(1, 378) = 2.69$, $p = .100$. When gender was added to the equation, DII0 remained non-predictive of infidelity choice, whereas gender proved strongly predictive, $\chi^2(2, 378) = 36.76$, $p = .000$. When question 2 was regressed on DII0 and gender in the same way, similar results were obtained. DII0 was not significantly predictive of infidelity choice, $\chi^2(1, 381) = .73$, $p = .391$, whereas gender was, $\chi^2(2, 381) = 42.11$, $p = .000$.

Similar results were found when questions 1 and 2 were regressed on DIIS, DIISelf, and DIIPart. Gender remained strongly predictive of infidelity choice, whereas the conditional probability scales were not. These results indicate that, for this sample, beliefs about the conditional probability of sexual given emotional involvement, and emotional involvement given sexual, did not contribute significantly to the prediction of infidelity choice. This analysis did, however, confirm the findings of the first hypothesis, namely that gender exerted a strong effect on selection of infidelity choice.

4.2 Summary of Results

4.2.1 Gender differences in Infidelity choice

The results gathered from the sample as a whole indicated strongly significant differences between males and females in their selection of infidelity type, with a majority of females expressing a stronger dislike for emotional infidelity, and a majority of males selecting sexual infidelity as more distressing. This difference persisted even when the two types of infidelity were rendered mutually exclusive as in questions 4 to 6. If the double-shot hypothesis proposed by De Steno and Salovey (1996a; 1996b) and Harris and Christenfeld (1996a; 1996b) was true, the gender difference should have disappeared over these questions, and while it was somewhat attenuated, the gender difference was still strongly significant. These results provide support for the gender differences model while largely refuting the double-shot belief model.

However, an examination of the percentages of female respondents who chose emotional infidelity (70%) compared with sexual infidelity (30%) and males who chose sexual infidelity (51%) compared with emotional infidelity (49%) indicates that males in this sample were more evenly divided on the issue than females were. Similarly, the mean for female dislike of emotional infidelity (4.25) was much higher than the mean for male dislike of sexual infidelity (3.08). Both males and females dislike both forms of infidelity, but women tend to be more polarized than men are. The gender difference, therefore, seems to be driven more by an intense female dislike for emotional infidelity than by the sexual versus emotional infidelity division proposed by evolutionary theory.

4.2.2 Gender Differences across Race Groups

As predicted by hypothesis two, the gender differences held across race groups in that females from all race groups disliked emotional infidelity more than males did, and for White and Indian respondents, the difference in means for males and females was strongly significant. However, Black respondents were shown to be much more ambivalent than other race groups. Although Black females disliked emotional infidelity more than Black males did, for this group the gender difference was not significant.

4.2.3 Racial differences in infidelity choice

Similarly, as predicted by the third hypothesis, the means for the different race groups differed significantly from each other on the sexual and emotional infidelity scales.

An examination of these means indicates that Black respondents of both genders expressed the highest dislike for sexual infidelity of the sample, and therefore the lowest mean scores for emotional infidelity. Black male respondents expressed the strongest dislike of all groups for sexual infidelity, and black females showed greater dislike for sexual infidelity than White, Indian or Coloured female respondents. Black females' mean dislike for sexual infidelity was equal to that of Indian males, although lower than the mean for Black or White males.

Indian respondents showed the greatest dislike of all groups for emotional infidelity. It was the only group of males who disliked emotional infidelity more than sexual.

The biggest gender difference in this sample was shown for White respondents.

4.2.4 The effect of beliefs about the different mating strategy of males and females on infidelity choice

Hypotheses 4 and 5 held that males and females of the race groups studied in the sample would express the belief that males find it easier to become sexually involved without an emotional commitment than females do, and that these beliefs would impact on infidelity choice. Neither hypothesis held for this sample. This sample believed that males and females are approximately equal in their capacity to have sex without emotional involvement, and that both males and females are able to become emotionally involved without an ensuing sexual involvement. These beliefs did not differ across gender or race group. Moreover, logistic regressions indicated that beliefs did not contribute to infidelity choice, whereas gender remained strongly predictive.

Chapter Five

5. Discussion

This study had two major goals. The first of these was to explore potential gender differences in response to jealousy triggers, in the South African context. Three reasons for the apparent existence of gender differences in the selection of infidelity choice are currently under debate. The first of these is the paternity confidence threat versus the loss of resources theory put forward by evolutionary psychologists such as Buss (1994; 2000). The second theory was developed Harris and Christenfeld (1996a; 1996b) and De Steno and Salovey (1996a;1996b), who refute the evolutionary position, and claim that males and females may be inclined to select the infidelity type which most implies the other has occurred. Buss et al. (1999) concede that this view may have relevance, but state that this tendency is based on a commonly held belief that males are more inclined to have casual sex than females are, and that this belief in turn is based on a realistic appraisal of a genetically evolved difference in mating strategy between males and females.

Gender differences need to be shown to exist universally and therefore cross culturally if the evolutionary model is to be considered relevant. At the same time, however, the sociocultural view holds that while there may be an evolutionary basis to gender differences, culture also has an influence. The second goal of the study was therefore to study cross-cultural differences and similarities in patterns of response to jealousy triggers.

The results of this study partially support research which has indicated a cross-culturally consistent gender difference in the experience of romantic jealousy. However, it also indicated that the gender difference may be largely driven by a strong majority female dislike for emotional infidelity, rather than the polarisation suggested by the evolutionary model hypothesis. It provided little support for the double-shot belief hypothesis proposed by Harris and Christenfeld (1996a; 1996b) and De Steno and Salovey (1996a; 1996b), and did not support the hypothesis that both males and females believe males to have a genetically evolved greater capacity to have sex without love than females do, or the hypothesis that this belief impacts on infidelity choice for males and females. The study showed support for the view of social psychologists which indicates that culture may be associated with the jealousy experience.

There are several possible reasons for these findings.

5.1 Gender differences in infidelity choice

The finding that gender differences occur cross-culturally, in the direction hypothesized by the evolutionary model, provides superficial support for the belief that gender differences in response to jealousy triggers may have a genetic base. However, full support for this perspective would require a stronger polarization of results than was indicated by this study (Hupka & Bank, 1996). These results show males to be somewhat ambivalent about infidelity triggers, with Black and White males finding emotional infidelity more distressing almost as often as sexual infidelity, and Indian males disliking emotional infidelity marginally more often than sexual infidelity. On the other hand, a large majority of females from all race groups found emotional

infidelity to be most distressing. The gender differences of this sample therefore seem to be driven more by a strong female dislike for emotional infidelity than the sexual versus emotional infidelity polarization suggested by evolutionary psychologists.

The fact that the sample as a whole showed higher female dislike for emotional infidelity and a more equivocal male response is in line with other recent research findings. The equivocal nature of men's infidelity choice is supported by findings by Harris and Christenfeld (1996a), Buunk, Angleitner, Oubaid and Buss, (1996) and De Steno and Salovey (1996a). In Harris and Christenfeld's (1996a) study, men chose emotional infidelity to be more distressing more often than sexual infidelity, and in Buunk et al. (1996), less than 50% of men chose sexual infidelity as more distressing in four of six trials. Similarly, in de Steno and Salovey's (1996) studies, men were more evenly split between sexual and emotional infidelity whereas women showed a sizable difference in choosing between the two infidelity types.

These results do not necessarily refute an evolutionary origin to gender differences in jealousy. The fact that gender differences persist across cultures indicates that there is possibility that the gender difference has some origin in genetically evolved differences. However, the findings of this study, in addition to the findings of other researchers, indicate that the reasons put forward by evolutionists for these differences may not be the correct ones. Evolutionary theory holds that the gender division is driven by a male desire for paternity confidence versus a female need to secure resources together with a belief on the part of both males and females that males are more easily capable of casual sex than females are. This study indicates that all three of these presumptions may be questioned.

Buss (1994; 2000) may be partially correct in his assumption that jealousy evolved in males in order to assure paternity confidence, as males, on average, do appear to dislike sexual infidelity more than females do. However, this assumption does not explain why males seem to dislike emotional infidelity almost as much as they dislike sexual infidelity, and why in some samples, including this sample of Indian males, they have been shown to dislike it more. Paternity confidence can therefore only provide a partial explanation for male jealousy. Moreover, the evolution of a dislike for sexual infidelity as a defence against cuckoldry does not explain the finding that females also dislike sexual infidelity, especially as in some groups, such as the sample of Black females who formed part of this study, they dislike it almost as much as they dislike emotional infidelity, and dislike it more than some groups of males.

Similarly, if emotional infidelity is driven by a fear of loss of resources, the theory does not explain male dislike for emotional infidelity unless males over the course of history were also dependent on the resources provided by females. If emotional infidelity is driven by a fear of loss of the resources required for survival as evolutionary psychologists assume, it seems reasonable to assume that males also depend on females for resources.

This may be the case. Buss, (1994; 2000) states the view that over the course of evolution females reportedly have seldom, if ever, significantly controlled resources and have therefore always depended on males to supply them. This perspective is critically flawed. In the first place his view that females prefer mates who can provide them with resources is based on research gathered over the twentieth century. His findings can therefore not be applied with confidence to any other period in history. Most human evolution occurred before the time of recorded

history, and there is no evidence beyond bone fragments which provides evidence of this time period (White & Mullen, 1989). All arguments based on this period of history are therefore speculative at best.

However, it is generally believed that approximately 95% of human evolution occurred before the development of agricultural and industrial societies when hunter-gatherer communities were the norm (Leacock, 1980; Wilson, 1975; in White & Mullen, 1989). During this period nobody "owned" the land or the resources required for survival. It seems probable that during this period both males and females hunted and foraged for food (Buss, 1999). Over the millennia of human evolution, both males and females probably both provided resources, and were therefore mutually dependent for the supply of essential food. It is only in recent recorded history that "resources" took the form of money and land ownership, and came under the control of males. If jealousy has an evolutionary origin, and given the fact that occurs universally, and has been documented for thousands of years, it probably does have genetic roots, the fact that it evolved in both males and females is probably due to the fact that over the course of history both males and females were dependent on the pair bond for survival, and that abandonment posed a significant threat to both males and females, and to their offspring. This view is to a degree supported by findings that in harsh environmental conditions males and females are highly dependent on each other for survival, and are reportedly more jealous (Pines, 1992; 1998). Pines (1998) also cites evidence from Inuit communities where a wife was considered so important to the survival of a male, that men who lost their wives were permitted to attempt to steal a wife from another man.

It is therefore possible that the origin of a dislike for emotional infidelity arose from a fear of abandonment and hence a loss of resources both males and females required to sustain life. However, there is no real evidence to support the belief that the potential loss of resources is in fact the source of a dislike for emotional infidelity. Buss (1994) based his premise on several studies conducted over the Twentieth Century which indicate that females value financial resources in a mate significantly more than males do. At the same time he quotes data from cultures such as South African Zulus, the Netherlands and Finland, where women do not specifically value good financial prospects in a mate. It seems likely that in cultures where males control financial resources, women desire them in a partner as resources are essential to survival. However, this does not imply that males have controlled resources over the entire course of evolutionary history or that a dislike of emotional infidelity is necessarily based on a fear of loss of resources.

Therefore, although the findings of this study provide considerable support for the theory that males and females respond differently to different infidelity triggers, the evolutionary theory which attempts to explain the difference does not provide a wholly satisfactory explanation. At best the explanations put forward by evolutionary theorists provide only a partial explanation, and it appears that the evolutionary basis for jealous behaviour is considerably more complex than current theories suggest.

The dominant research question raised by the results of this study (as well as other cross- cultural studies which have found similar results), is not so much the existence of a gender polarization on sexual versus emotional infidelity, as it has been shown that males, cross-culturally, dislike

both to an almost equal degree. The research finding which still requires elucidation is the strong majority dislike shown by females for emotional infidelity.

There are a number of possible explanations for this phenomenon, all of which still require research to be validated.

The first of these is the possibility that it is emotional infidelity which poses the most serious threat to a relationship, and that as a result it is disliked by both males and females. This possibility is supported by findings by Hupka and Bank (1996), who found that both males and females view emotional infidelity as more a more serious threat to the continued existence of a relationship than pure sexual infidelity, which was perceived as a temporary fling which could be largely overlooked and forgiven. The finding that males and females in this sample consider both males and females equally capable of casual sex supports this view. Casual sex implies having sex with another with little emotional attachment developing. Casual sex for either gender may be just that – casual - and a sexual infidelity on the part of either males or females may not necessarily pose a threat to a primary relationship for either gender. On the other hand, an emotional commitment to a rival involves a significant diversion of time and energy and, for both males and females it may raise the threat of abandonment. For both males and females it may be emotional infidelity which signals a danger to the relationship. In this case it is higher levels of dislike for sexual infidelity on the part of males which requires explanation, rather than elevated levels of female dislike for emotional infidelity.

As has been discussed, there is some evidence to indicate that males are more responsive to sexual triggers generally, and this heightened sensitivity to sexual cues may serve to artificially inflate the scores obtained by males on sexual infidelity measures. It has been proposed that sexual activity may be more salient to men than women in general. It has been shown that, compared to women, men report more frequent sexual urges (Jones & Barlow, 1990, in Wiederman & Allgeier, 1993), sexual arousal (Knoth, Boyd & Singer, 1988, in Wiederman & Allgeier, 1993) and sexual desire (Beck, Bozman & Qualtrough, 1991, in Wiederman & Allgeier, 1993). Indeed it has been shown that men masturbate more often than women (Hyde & Oliver, 2000). In Harris's (2000) study of the physiological responses of males and females in jealousy scenarios, sexual imagery elicited greater reactivity in males even when infidelity was not involved, suggesting that the differential reactivity may be due to the presence of sexual imagery in general, and that it may not necessarily index greater jealousy in response to sexual infidelity in particular. The more significant responses of males to sexual infidelity cues may therefore be a measure of a generally higher response to sexual cues in general.

A further, related explanation for these differences was proposed by Wiederman and Allgeier (1992), who suggested that males and females may be socialized to value relationships for different reasons, and may dislike the form of infidelity which threatens the loss of the element in a relationship which they have been taught to value. These authors propose that males may place a higher value on sex in relationships than women do, and therefore dislike sexual infidelity more than women do. Similarly females may value intimacy more than males do, which may account for elevated levels of dislike for emotional infidelity in females. Wiederman and Allgeier's (1992) study found support for the proposal that males value sex in relationships

more than females and that females place a higher value on emotional intimacy, but the study did not find that these differential values affected infidelity choice. Nevertheless, the hypothesis may be worth exploring in other samples.

It is also possible that elevated levels of male dislike for sexual infidelity across cultures is a reflection of power imbalances in gender relationships. Males, almost universally, have placed constraints on the sexual behaviour of females (Buss, 2000; Wiederman & Allgeier, 1992). In the first place it is worth considering that they would not be obliged to control the sexual behaviour of females if females were not readily capable of sex outside the boundaries of committed relationships. Secondly, these constraints often involve penalties for females who transgress cultural infidelity rules. Sexual infidelity in women can involve serious risks to the women involved. These risks range from assault and murder to social stigma and ostracisation. It seems possible, therefore, that women do not easily take the risks involved in sexual infidelity due to fear of reprisals, and that those who do, do so because the primary relationship is unsatisfactory in some way, or because they are seriously committed to the rival. It may therefore be possible that sexual infidelity on the part of a woman is a far greater indication that the primary relationship is in danger than it is for men, for whom casual sex is socially condoned, and may be undertaken lightly. This hypothesis may be supported by divorce figures. Divorce is reportedly more common for couples where the wife has been unfaithful than where the husband is the guilty party (Buss, 2000; Wiederman & Allgeier, 1992; White & Mullen, 1989). This statistic is usually attributed to men's intolerance for infidelity on the part of their wives. It may be interpreted differently, however. It is also possible that women who are sexually unfaithful are serious about terminating the primary relationship, and that the higher

divorce rates for unfaithful wives may be a reflection of a greater desire on the part of unfaithful wives to divorce their primary partner. Men may therefore be more threatened by sexual infidelity on the part of their wives than women are, because sexual infidelity on the part of women is a stronger indication that the relationship is under threat.

Similarly, these power imbalances may impact on the high scores women seem to obtain on measures of dislike for emotional infidelity. In many cultures world-wide, despite restrictions on female sexual behaviour, society condones and sometimes even encourages promiscuous casual sex on the part of males (White & Mullen, 1989). An example of this tendency is described in the work of Gupta (2002) and Strebel and Lindegger (1998) who indicate that in Sub-Saharan Africa, Black males are often encouraged to have multiple sexual partners in order to prove their masculinity, to the degree that men who are faithful to one woman would be a "laughing stock" among other men (Strebel & Lindegger, 1998). Women may therefore be inclined to interpret sexual infidelity as a part of socially condoned male machismo, and may assume that it does not necessarily imply a threat of abandonment. On the other hand, the development of a strong emotional bond with another woman may pose a serious threat to the relationship, and may therefore be disliked more.

It is also possible that emotional infidelity poses a greater threat to women than to men because abandonment may present a more serious threat to women than to men. At the current point in history males world-wide reportedly do control the resources women require for survival. For this reason women may be more threatened by abandonment than males, and may therefore fear emotional infidelity more than males do. However, this possibility has not received research

support. Mullen and Martin (1994) found that women were not concerned about the future financial implications of infidelity, and that men were slightly more apprehensive about abandonment than women.

The fact that in many cultures men are more promiscuous than women does not necessarily imply evolved gender differences in mating strategy however, nor does it imply that infidelity choice is a reflection of evolved gender differences in mating strategy. This sample did not believe that males are innately more capable of casual sex than women. This view is supported by the work of McDonald (2002) who found that both males and females are inclined to infidelity. Similarly, the women interviewed in Strebel and Lindeggers' (1998) study believed that promiscuous male sexual behaviour was the result of socialization practices. However, differences in the types of sexual behaviour different cultures permit males and females may well impact on the types of infidelity males and females interpret as threatening, and as power imbalances in gender relations have been observed to occur cross culturally (Buss, 1999), it is likely that that similar tendencies in males and females will be found cross-culturally. Response patterns in infidelity choice may therefore be seen as adaptations to current environmental demands rather than inherited genetic tendencies.

A final observation which may be made is that the elevated levels of female dislike for emotional infidelity, found in this sample as well as others in other countries, supports the view held by psychoanalytic theory that jealousy in females represents a fear of loss of love (Friday, 1985; Moi, 1982). Psychoanalytic theory holds that jealousy in females emerges preoedipally, and involves rivalry and ambivalent feelings towards the mother who is the primary love object. As

a result, jealousy in a little girl involves the fear of the loss of this valued relationship, and hence loss of her mother's love. In later life if a woman's partner becomes emotionally attached to a rival, there is a risk that she will lose his love. The childhood oedipal trauma is re-evoked, and the adult woman, fearing she will lose the love of her partner, may be more traumatized by the emotional betrayal than the sexual infidelity. Little boys, however, are not threatened with the loss of the love of the mother, because in the oedipal phase the mother remains the love-object for boys. Jealousy evolves in little boys because they become aware that the mother is sexually involved with another man (the father). In other words, a little boy becomes jealous because the woman he sexually desires himself is sexually involved with another man. In later life triangles, therefore, when the original oedipal trauma is re-evoked, it may be the sexual involvement which males find most distressing. Thus, the logic of psychoanalytic theory holds that jealousy in females would involve the fear of the loss of love which would accompany an emotional infidelity, whereas for males, jealousy would involve the fact that their partner is having sex with a rival. The results of this study therefore, are in line with the predictions made by the psychoanalytic model.

5.2 Cross cultural variation in infidelity choice

A further trend predicted by previous research, and replicated in this study, was considerable cross-cultural variability in response patterns. Specifically, the gender division between males and females was most significant for White respondents, Black women were more ambivalent than women from other groups, and Indian males differed from males from other groups in disliking emotional infidelity more than sexual. The differences in the means for the different

race groups who took part in this study were strongly significant. This finding is in line with previous jealousy research, which indicates that cultural factors may be associated with the experience of jealousy and that jealousy is at least in part a culturally mediated experience.

A significant difference from the trends found for White and Indian respondents in this sample, as well as the samples examined by Christenfeld and Harris (1996a), De Steno and Salovey (1996a) and by Buss et al. (1999), is the pattern of response shown by Black South African male and female respondents.

The group of Black respondents showed the highest mean dislike for sexual infidelity of the sample as a whole. Black male respondents showed the highest level of dislike for sexual infidelity in the sample, and Black female respondents' dislike for sexual infidelity was almost as high as their dislike for emotional infidelity, and higher than the mean for Indian males. There was no significant difference between Black males and females in their mean infidelity choice. The total mean dislike for Black respondents was higher for emotional than sexual infidelity, and in this way they were similar to respondents from other groups, but as a group Black respondents disliked sexual infidelity more than any other group.

This finding was unexpected. The Black cultures in Southern Africa are traditionally polygamous, and multiple sexual relationships are reputedly the norm, at least for males (Evans, 2002; Mbanjwa, 2002; Ntombela-Nzimande, 2002; Strebel & Lindegger, 1998).

High levels of male dislike for sexual infidelity could possibly have been expected, given the findings of Lindegger (1996), and Strebel and Lindegger (1998), which note that Black women

are not permitted the same degree of sexual freedom to which Black men are entitled. However, it is commonly asserted in the literature (Buss, 1994; 2000; White & Mullen, 1989) that women from polygamous cultures do not experience significant jealousy when their partners become sexually involved with other women, as this response would not be adaptive. Furthermore, it may be assumed that as multiple sexual relationships are the norm for males in polygamous cultures, relationships between men and women are not necessarily threatened if the male in the relationship has sex with other women.

Nevertheless, Black South African women in this sample disliked sexual infidelity very much, almost as much as they disliked emotional infidelity, almost as much as Black males did, and to the same degree showed by Indian males.

There are a number of possible reasons for this finding. In the first place, a finding by Wiedermann and Allgeier (1993) indicates that when individuals have actually experienced a sexually unfaithful partner, the gender difference falls away, and women are shown to dislike the sexual infidelity as much as males do. There is also some evidence that individuals who have been the victim of infidelity in the past may become sensitized to the signs of infidelity, and experience it more easily than people who have not experienced an unfaithful partner (Buss, 2000). Black women from a traditionally polygamous culture may be more likely to have experienced sexual infidelity than their Indian and White counterparts, and therefore may be more reactive to cues of sexual infidelity.

Secondly, it is possible that research suppositions about women in polygamous cultures are incorrect. It is possible that women in polygamous relationships dislike their partner's liaisons with other women, but may lack the power to alter the status quo. Gupta (2002) indicates that sub-Saharan African women in her sample were subjected to extreme gender imbalances, and that the Black females she studied lacked the power to negotiate fidelity, or to terminate undesired relationships. This possibility is supported to some degree by the studies conducted by Evans (2002), and Lindegger and Strebel (1998). In these studies Black females reported that they strongly disliked polygamy, but that it was culturally endorsed, and that Black males would simply refuse to give up polygamous practices if asked to do so by the women with whom they were involved.

Finally, it is possible that the high levels of dislike for sexual infidelity may be a reflection of a growing awareness of the dangers of sexual infidelity due to the current AIDs crisis in South Africa. Lindegger (1996) showed that Black men and women from the KwaZulu Natal region regard monogamy (together with the use of condoms) as the most important source of self-protection against HIV. Black women in particular saw AIDS to be a functional effect of multiple partners, and considered themselves to be personally at risk of contracting it. An elevated dislike for sexual infidelity may therefore be a reflection of a fear of contracting AIDS.

Another finding of interest was the elevated level of dislike for emotional infidelity shown by the Indian sample in general, together with the slightly higher dislike shown by Indian males for emotional infidelity. As yet research does not appear to have been conducted which might indicate possible reasons for these findings. It may be speculated, however, that the elevated

responses to emotional infidelity among Indian respondents in general, and Indian males in particular may be due to cultural influences which value the exclusivity of emotional bonds among Indian males and females. Further research, possibly using qualitative methods in order to generate hypotheses, would be beneficial here.

The strong gender polarization among White males and females is also of interest. White female respondents obtained the highest scores of the sample on emotional infidelity indices. Mullen and Martin (1996) found that the biggest concern of women in their (New Zealand) sample was the effect on infidelity of the future closeness, intimacy and trust within the relationship. This supports the findings of Wiederman and Allgeier (1993), that women in their (USA) sample value emotional intimacy most in a marriage. A common response among Western women threatened by infidelity is to attempt to maintain the relationship (Nannini & Meyers, 2000), whereas males seem more concerned about maintaining self-esteem. It may be possible that Western and Westernised women are socialized to value and protect emotional intimacy and exclusivity in a marriage, to a greater degree than males are, and that as a result they are more threatened by emotional infidelity than males are.

However, as the means for Indian women on emotional infidelity were not much lower than the means for White women, it may be questioned whether this is a genetically evolved characteristic, a response to the unique childhood experience of women generally, or whether it is socialized in many cultures. Nevertheless, reasons for the fairly universal female dislike for emotional infidelity still need to be found as well as reasons why females from some cultures dislike it more than others.

A possible reason for the differences in the means of the different groups may be derived from the study conducted by Hupka and Bank (1996). These authors pointed out that cultures differ widely in the norms that underlie interpersonal relationships. These authors found that individuals who saw relationships to be founded on a strong emotional attachment, which they described as the "love norm", found emotional infidelity more distressing, whereas individuals who viewed the primary basis of relationships between males and females to be sexual, found sexual infidelity more distressing. It is possible that cultures may differ in the relative value they place on emotional and sexual bonds in relationships between males and females, and that this impacts on the type of infidelity different cultures perceive to be more distressing. It is possible, therefore, that Indian respondents value the emotional attachment between males and females more than Black respondents, and that Black respondents value the sexual bond more than other groups. It is also possible that White female respondents value the emotional bond more than White males, who, for centuries, have been socialized to be free of emotional dependence on others (Rotunda, 1987, in Hupka & Bank, 1996).

Hupka and Bank (1996) also found that individuals who favour traditional gender norms, with traditional gender based separation of duties and social roles, were more likely to be distressed by sexual infidelity, whereas individuals who espoused a more egalitarian view of gender roles found emotional infidelity more distressing. Further research might reveal whether norms such as these described by Hupka and Bank (1996) may influence the infidelity choices of South African samples.

5.3 Implications of the Study

This study has a number of interesting implications.

In the first place it supports the long-held belief that males and females differ in the experience of jealousy. However, there was little support for the currently dominant evolutionary psychology hypothesis, which holds that jealousy is largely a response to evolved genetic differences, in particular a male need to avoid cuckoldry and to secure paternity confidence, and a female need to protect herself and her children against abandonment. Similarly, there was little support for the theory that males and females have evolved different mating strategies, and that these differences impact on the type of infidelity they find most distressing. Reasons for the apparent gender differences still need to be researched, and in particular, the reasons for the strongly elevated female dislike for emotional infidelity.

The significant differences in the patterns of response showed by the different race groups provides considerable support for the social psychological model, which holds that culture exerts an influence on the experience of jealousy. Cultural differences were apparent in this sample and have been measured in other studies across the world, but there is little research to indicate the particular norms and socialization practices within each culture which may have led to these differences, and this is also an area which would benefit from further research.

Another currently under-researched area is the stability of cross-gender and cross-cultural responses to jealousy over time. Stearns (1989) and (Clanton, 2000), point out that the

experience, expression and interpretation of jealousy change as society and culture change, indicating considerable flexibility in the experience and expression of this complex response. If the elevated levels of sexual jealousy among Black respondents are a response to the risks of HIV, it is possible that environmental pressures may exert a stronger influence on jealousy than genetic and cultural factors. Longitudinal studies of changing patterns of cross-gender and cross-cultural patterns of jealousy response need to be conducted before firm etiological views can be fully accepted.

5.4 Limitations of the Study

This study has several limitations, one of which is generalisability. The generalisability of this sample is questionable on several counts.

In the first place it was not a random sample, which immediately reduces the likelihood that the sample is representative of the South African population (Howell, 1989; Kerlinger, 1985). In addition, while the total sample size of 398 is considerable, the sample was subdivided into smaller numbers of individuals belonging to each ethnic group which increases the probability that the samples were not representative, particularly as these samples were then further subdivided by gender. Whereas the samples of 123 Black, 189 White and 68 Indian respondents far surpassed Kerlinger's (1985) recommended minimum of 30 respondents, the sample of 18 Coloured individuals was particularly small, and the results from this sample are unlikely to represent the Coloured population as a group.

Secondly, the sample was largely composed of unmarried students. Research has shown fairly consistently that jealousy is influenced by relationship stage, and marital status. Voracek (2001) found that marital status was a stronger predictor of sexual jealousy than gender. Aune and Comstock, (1997) found that jealousy experience, expression, and the perceived appropriateness of jealousy expression increased with the length of a relationship. Buss, Larsen, Westen and Semmelroth (1993) found that males tended to respond more intensely to sexual infidelity if they had been in a committed sexual relationship. On the other hand, Mullen and Martin's (1994) study found that young people in their sample were more prone to jealousy than older people, and that students were more jealous than other occupational groups. These authors also found that individuals currently not in a relationship expressed higher jealousy concerns than those in a relationship, and that for males an existing relationship is the strongest buffer against high levels of jealousy. Similarly, Aune and Comstock (1997) found that the perceived appropriateness of the jealousy experience did not vary significantly across relationship levels. This is backed up by the work of Yarab, Allgeier and Sensibaughs' (1999) study of extradyadic behaviours among college students. This study asked 218 college students to rate a wide range of extradyadic behaviours in the context of hypothetical dating relationships. These students rated any extradyadic behaviour other than group activities, involving a member of the opposite sex, to be unfaithful, and jealousy provoking. This study therefore indicates fairly strong exclusivity norms as well as the expectation of jealousy should these norms be violated, among this group of students at least.

The research on jealousy across age and relationship stage is somewhat inconclusive. It does, however, seem to indicate that students who are dating are also subject to jealousy, and that

expectations of exclusivity apply to dating relationships as well as marriage. It may therefore be assumed that the attitudes of students may be at least partially generalisable to older married people.

A further problem with student samples is that very few students have children. Only 6% (24) of this sample admitted to having children. According to evolutionary psychological theory the survival and genetic heritage of children is key to the jealousy experience, and it seems probable that the existence of children in a relationship will influence the jealousy experiences and behaviours of partners.

In summary, the generalisability of the results of data drawn from student samples is in question. Therefore it needs to born in mind that at best, the results of this study, and other studies based on student samples, can only be confidently applied to the sexual beliefs, exclusivity expectations and jealous experiences of students. More research is required to establish whether the jealousy experiences of students in dating relationships are comparable with those of individuals with formalized relationships, and who have children with their partners. Despite these limitations, however, it seems that jealousy is a part of dating relationships as well as more formal relationships, and the results can therefore be assumed to be at least partially generalisable. Also, much of the research on jealousy, including that of Buss et al. (1999) as well as most of the samples in Voracek's (2002) study, is based on student samples, which makes the results of this study at least comparable with other data in existence, especially insofar as cross-cultural studies are concerned.

A further limitation of the data is the division of the sample into four cultural groups. This division is an artificial one, as each race group in the sample consists of several other cultural groups. The White sample, for example, is composed of individuals from English, Afrikaans, German, Portuguese and Greek origin, the Black sample is composed of people from Zulu, Xhosa, Tswana, and North and South Sotho groups, and the Indian sample consists of both Hindus and Muslims. Each of these groups is likely to have cultural differences which make it distinct from other groups. In particular, it is anticipated that Hindus and Muslims, who have different religious beliefs, may differ in terms of the jealousy experience. In addition, Muslims are polygamous, and this may have influenced response patterns. These within-group differences were not measured by this study.

Other limitations of this study involve the reliability and validity of the questionnaire. The reliability of the first set of six questions is respectable. However, the validity of this questionnaire has not yet been ascertained, and until validity data has been obtained, the questionnaire will remain of questionable value. Of particular concern is the second part of the questionnaire, which questions beliefs about the conditional probability of sexual and emotional involvement. No reliability nor validity data is available for this section of the questionnaire. In particular, the construct validity of these eight questions is questionable. The wording of the questions may not have been easy to understand for people for whom English is a second language. Allied to this is a further difficulty. The questions ask respondents to assess the likelihood of a man and a woman forming a deep emotional attachment if a man has had sex with a woman, and vice versa. This therefore involves a process involving two people, not just the man or woman in question. It may not, therefore, be clear that the questions are attempting to

measure the likelihood of the man forming an emotional attachment if he has had sex, or the woman of falling in love if she has had sex. Similarly, the questions ask whether a man and woman will have sex once the man (or the woman) have formed a deep emotional attachment, and again this involves decisions involving two people rather than the man or woman in question. It is therefore by no means certain that respondents understood clearly what they were being asked to assess. The fact that the means for all groups on these questions hovered around a mean of 4, points to a possible error of central tendency, which may have been caused in part by the slightly confusing wording of the questions.

A further possible reason for the failure of these questions to show gender or race differences is the fact that, because they are sexual in nature, some groups may have found these questions offensive, and therefore failed to answer them accurately. Social desirability factors may therefore have played a part in the non-significant findings for the second part of the questionnaire. However, in support of the questionnaire is the fact that the questions have been used by several other researchers, and have yielded significant data.

The study therefore has a number of severe limitations, resulting from the lack of random sampling, and possible validity problems.

A further, significant limitation of the study is that it is based on sexist assumptions. As has been discussed, jealousy research has been based on sexist assumptions from the outset, and the views of evolutionary psychology perpetuate this tendency. There is a danger involved in any research where the results may prejudice any group, and any research which investigates cross-gender and

cross-cultural differences runs this risk. As this study investigated both gender and cross-cultural differences, the results should be treated with caution, and interpreted carefully to ensure that gender and race myths are not perpetuated, or publically disseminated.

5.5 Recommendations for future research

As has been indicated, there are a number of areas which would benefit from further research. As yet, no fully satisfactory theories have been developed to account for the elevated levels of dislike for emotional infidelity which have been shown to exist among females cross-culturally. Similarly, although cross-cultural variation has been reported in this study as well as by other researchers, the norms and socialisation practices which may account for the differences within particular cultures are largely unexplored. Additionally, although this study indicated that the different cultures in South Africa may respond differently to different infidelity triggers, it may be useful to explore whether they also tend to behave differently once jealousy has been triggered. For example, levels of male on female violence are reportedly very high in South African society (Mbanjwa, 2002), and the links between male jealousy and violent assault could benefit from exploration. A further area which could benefit from research in South Africa as well as globally, are the attitudes of females in polygamous relationships. Contrary to the view reported by researchers such as Buss (2000) and White and Mullen (1989), this study, together with work conducted by Evans (2002) and Strebel and Lindegger (1998), has indicated that South African Black females may strongly dislike their partners' polygamous behaviour. If this is the case, the continued cultural and institutionalised support for polygamous behaviour in South Africa and in other countries may constitute a violation of the rights of females in South

Africa as well as other polygamous cultures. This is an area in which research clarification could be beneficial.

A further question raised by this study is the issue of the potentially different mating strategies of male and females which has been reported in some samples by authors such as Buss et al. (1999), and De Steno and Salovey (1996a). Contrary to the findings of these researchers, this study did not support the evolutionary proposition that males may be more likely to have sex without emotional involvement than females. However, it seems possible that this finding may be due to factors such as social desirability, or alternately, may be the consequence of poorly worded questions. The finding should possibly be replicated before it is accepted as a valid reflection of the beliefs of South Africans. In addition, the validity of the section of the questionnaire which deals with beliefs about mating strategy still needs to be ascertained.

Finally, much of the research on jealousy has been conducted using student samples. The majority of students are unmarried, and tend not to be parents. It needs to be established whether the findings of student samples can be generalised to people who are in formalised relationships, and who have children.

Although jealousy is a universal experience which has clinical as well as human rights implications, it is clearly still fairly under-researched, and would benefit from further study in a number of areas.

Chapter Six

6. Conclusion

In summary, the findings of this study support the long-held belief that males and females differ in their response to jealousy triggers. Males in this sample generally found sexual infidelity more distressing than females did, and a large majority of females were significantly more distressed by emotional infidelity. However, there was considerable cross-cultural variation in response patterns, with Black males and females expressing greater dislike for sexual infidelity than other groups, and Indian males and females expressing the greatest dislike for emotional infidelity. Similarly, the gender difference varied between the race groups. The greatest gender difference was shown for White respondents, and the smallest for Black respondents. There was a strongly significant difference between the response patterns for White and Indian males and females, but the difference between Black males and females was not significant. A further interesting finding was the lack of support for the view that males are adapted to a casual mating strategy whereas females prefer to have sex within the context of a committed relationship. In this sample males and females of all race groups appeared to consider males and females to be equally capable of casual sex, and equally able to form an emotional attachment without necessarily becoming sexually involved.

Although the study was based on a questionnaire developed by evolutionary psychologists, it provided only partial support for the evolutionary psychology theories. Contrary to evolutionary psychology theory, males in the sample disliked both forms of infidelity to an almost equal degree, which provides little support for the view that male jealousy occurs largely in response to

sexual infidelity, and that this is due to a need for paternity confidence. Similarly, the view that female jealousy evolved to combat the threat of loss of resources provided by their male partners was not supported, because males disliked emotional infidelity almost as much as sexual infidelity. The finding which was most significant, and which replicates findings from other studies, was the strong (70%) majority female dislike for emotional infidelity.

A number of reasons may be hypothesized for this finding, including genetic differences, the unique childhood experiences of females during psychosexual development, socialization practices and power imbalances in gender relations. Indeed it is possible that all these factors influence the development and experience of jealousy in females, indicating that an integrated theory on the development and experience of jealousy would hold the greatest explanatory power.

The study also showed considerable support for the social psychological and social constructionist perspectives on jealousy, in that there was considerable variation in the pattern of response to the jealousy scenarios, shown by the different race groups. However, at this stage, the cultural and social forces which lead to these differences are largely unresearched. Any reasons put forward for these differences can therefore be speculative at best.

To conclude, therefore, while the general premises current in jealousy research are largely supported by this study, none of the theories as to why these differences exist provide full explanatory power. The integrated perspective proposed by Pines (1998) is possibly the most comprehensive.

In the first place, there are possibly genetic differences between males and females which may account in part for their different response to jealousy triggers. These may include a heightened reactivity to sexual stimuli on the part of males. Secondly, different childhood experiences during the Oedipal conflict may affect the jealousy experience, leading females to fear the loss of love involved in an emotional infidelity, and males to dislike the sexual infidelity more. In the third place, socialization practices, which include gender and power differences, as well as the social construction of gender roles in society, may provide different norms for males and females, as well as different norms for the interpersonal basis of relationships between males and females, which may influence their expectations of relationships, and therefore the infidelity triggers they find most distressing. These norms may differ in different cultural groups, and this may result in differences in response patterns across different cultural groups. And finally, jealousy patterns may change as the demands of society and the environment change. It is possible that immediate environmental influences, which transcend culture and gender, may influence emotional and behavioural responses like jealousy. It is possible, for example, that factors such the AIDs crisis in Southern Africa may override gender and cultural norms and influence emotional responses such as jealousy. In this case, as Buss (2000) has pointed out, jealousy could be seen to be a healthy, adaptive and "emotionally intelligent" response.

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The following questionnaire is concerned with sexuality, intimate relationships, and jealousy. The questionnaire serves only scientific purposes and is part of an international cross-cultural study currently conducted in several European and Non-European countries.

MANY THANKS IN ADVANCE FOR YOUR PARTICIPATION AND TIME!

Sex: ☐ male ☐ female

Age: _____

Home language: _____

Cultural / ethnic group:* ☐ Black ☐ White ☐ Indian ☐ Coloured

* We apologise if this question causes offence. As this is a cross-cultural study information about the ethnic background of our subjects is crucial.

I am the _____child (birth-order) out of (including me)_____siblings

Are you employed?
- ☐ yes, fulltime
- ☐ yes, part-time
- ☐ no, currently period of rest
- ☐ no, currently jobless
- ☐ no, I am a housewife
- ☐ no, pupil / student / trainee
- ☐ no, retired

Your educational level (for pupils and students - which type of school did you attend):

- ☐ Primary school not completed
- ☐ Primary school completed
- ☐ High-school not completed
- ☐ High-school completed
- ☐ University degree / diploma / or other not completed
- ☐ University degree / diploma / or other completed

Your father and/ or mother's occupational group:

- ☐ Unemployed
- ☐ Self-employed / entrepreneur / employer
- ☐ Blue-collar worker
- ☐ Trade (e.g. mechanic, plumber, electrician etc.)
- ☐ Professional
- ☐ Other, namely: _____

Your occupational group if relevant (use categories above): _____

Do you currently have a committed relationship? ☐ yes ☐ no

Length of current committed relationship (months): _____

Sex of partner: ☐ male ☐ female

Age of partner: _____

My current partner is _____ years older / _____ years younger than I (if you do not currently have a committed relationship, please fill in the age-difference between you and your last partner with whom you had a committed relationship).

Do you have children? If so, how many?

☐ no ☐ yes, _____ children of my own and _____adopted children

Marital status:

☐ not married, partner
☐ not married, no partner
☐ married
☐ divorced
☐ not living together
☐ widowed

How large is the community where you live?

☐ less than 2,000 inhabitants
☐ less than 5,000 inhabitants
☐ less than 10,000 inhabitants
☐ less than 20,000inhabitants
☐ less than 100,000 inhabitants
☐ less than 1 million inhabitants
☐ more than 1 million inhabitants

1:

Please think of a serious or 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 became interested in someone else. What would upset or distress you more?
(Here and in the following, please only circle one.)

☐ Imagining your partner forming a deep personal attachment to that person.

☐ Imagining you partner enjoying passionate sexual intercourse with that person.

2:

(like above.)
Imagine that you discover that the person with whom you have been seriously involved became interested in someone else. What would upset or distress you more?

☐ Imagining your partner trying different sexual positions with that other person.

☐ Imagining you partner falling in love with that other person.

3:

(like above.)
Imagine that you discover that the person with whom you have been seriously involved became interested in someone else. What would upset or distress you more?

☐ Imagining your partner buying this person several expensive gifts.

☐ Imagining you partner having sex with this other person.

4: (like above.)
Imagine that you discover that your partner is engaging in sexual intercourse with someone else. How likely do you think it is that your mate is in love with this person?

very unlikely very likely

☐ ☐ ☐ ☐ ☐ ☐

5: (like above.)
Imagine that you discover that your partner is in love with someone else.
How likely do you think it is that you mate is also engaging in sex with this other person?

very unlikely very likely

☐ ☐ ☐ ☐ ☐ ☐

6:
Imagine that your partner both formed an emotional attachment to another person and had sexual intercourse with that other person. Which aspect of your partner's involvement would upset you more?

☐ The sexual intercourse with that other person.
☐ The emotional attachment to that other person.

7:
Which would upset or distress you more?

☐ Imagining your partner having sexual intercourse with that person, but you are certain that they will not form a deep emotional attachment.

☐ Imagining your partner forming a deep emotional attachment to that person, but you are certain that they will not have sexual intercourse.

8:
Which would upset or distress you more?

☐ Imagining that your partner is still sexually interested in the former lover, but is no longer in love with this person.

☐ Imagining that your partner is still emotionally involved with the former lover, but is no longer sexually interested in this person.

9:
Which would upset or distress you more?

☐ Imagining your partner having sexual intercourse for just one night with another person, with no chance of any further involvement.

☐ Imagining your partner becoming emotionally involved with another person, with no chance of any sexual involvement.

The following questions will ask you about how likely a typical man / a typical woman is to act in certain ways. Assume that the letters M.A. refer to a typical man and the letters W.O. refer to a typical woman.

10:
If M.A. develops a deep emotional attachment to a woman, how likely is it that M.A. and the woman are now, or soon will be, sleeping together?

very unlikely very likely

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

11:
If M.A. has slept with a woman, how likely is it that M.A. and the woman will form a deep emotional attachment?

very unlikely very likely

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

12:
If W.O. develops a deep emotional attachment to a man, how likely is it that W.O. and the man are now, or soon will be, sleeping together?

very unlikely very likely

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

13:
If W.O. has slept with a man, how likely is it that W.O. and the man will form a deep emotional attachment?

very unlikely very likely

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

14:
If you develop a deep emotional attachment to someone of the opposite gender, how likely is it that you and this other individual are now, or soon will be, sleeping together?

very unlikely very likely

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

15:
If you have slept with someone of the opposite gender, how likely is it that you and this other individual are now, or soon will be, developing a deep emotional attachment?

very unlikely very likely

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

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- ☐ no, currently jobless
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Do you have children? If so, how many?

☐ no ☐ yes, _____ children of my own and _____adopted children

Marital status:

☐ not married, partner
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☐ married
☐ divorced
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How large is the community where you live?

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☐ Imagining your partner enjoying passionate sexual intercourse with that person.

☐ Imagining you partner forming a deep emotional attachment to that person.

2:

(like above.)
Imagine that you discover that the person with whom you have been seriously involved became interested in somebody else. What would upset or distress you more?

☐ Imagining your partner falling in love with that other person.

☐ Imagining you partner trying different sexual positions with that other person.

3:

(like above.)
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☐ Imagining your partner having sex with this other person.

☐ Imagining you partner buying this person several expensive gifts.

4: (like above.)
Imagine that you discover that your partner is engaging in sexual intercourse with someone else. How likely do you think it is that your mate is in love with this person?

very likely ☐ ☐ ☐ ☐ ☐ ☐ very unlikely

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How likely do you think it is that you mate is also engaging in sex with this other person?

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If M.A. has slept with a woman, how likely is it that M.A. and the woman will form a deep emotional attachment?

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If W.O. develops a deep emotional attachment to a man, how likely is it that W.O. and the man are now, or soon will be, sleeping together?

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☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

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If W.O. has slept with a man, how likely is it that W.O. and the man will form a deep emotional attachment?

very likely very unlikely

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

14:
If you develop a deep emotional attachment to someone of the opposite gender, how likely is it that you and this other individual are now, or soon will be, sleeping together?

very likely very unlikely

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

15:
If you have slept with someone of the opposite gender, how likely is it that you and this other individual are now, or soon will be, developing a deep emotional attachment?

very likely very unlikely

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐