

2007

# Falling in love as a heuristic for mate choice decisions

Monica D. Burke

*University of South Florida*

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Falling in Love as a Heuristic for Mate Choice Decisions

by

Monica D. Burke

A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy  
Department of Psychology  
College of Arts and Sciences  
University of South Florida

Major Professor: Sandra Schneider, Ph.D.  
Cynthia Cimino, Ph.D.  
Kenneth Cissna, Ph.D.  
Cathy McEvoy, Ph.D.  
Joseph Vandelto, Ph.D.

Date of Approval:  
March 19, 2007

Keywords: decision making, mating behavior, attachment, emotion, relationships

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## Dedication

To my husband Brian and my son Xavier who have taught me more about the true nature of love than this dissertation ever could. Also to my parents, Janet Goggin and Cohn Barnes, my grandmother, Dorothy Droter, and my friends, Karen Mayo and Alexandra Demolina, whose steadfast support and unconditional love have helped me to bring this project to fruition.

## Acknowledgements

First and foremost, thanks are due to my advisor, Sandra Schneider, who has been the best possible mentor I could hope for, both in terms of professional expertise and personal support. She has stressed methodological rigor and attention to detail and provided a strong background in basic research while allowing me to pursue my personal research interests. In addition to providing excellent professional guidance she has been a true friend and provided the encouragement and moral support I needed to complete this project.

I would also like to recognize Elizabeth Gagnon, Christopher Hudspeth, Selah Lanka, and Allison Lovering for their work on coding and data entry. Audrey Barnes, Brian Burke, Alexandra Demolina, Temika Gause, Jamie Jackson, Joshua Knight, and Scott Parrow provided assistance with initial piloting and item generation. Brian Burke, Karen Mayo, Peter Schmolck, and Joel Woodman were instrumental in getting the Web-Q program up and running. Douglas Lunsford was very helpful with providing participants from his Social Science Statistics courses. I would also like to thank the members of my committee, Arthur Bochner, Cynthia Cimino, Kenneth Cissna, Ellen Kimmel, Cathy McEvoy, Louis Penner, and Joseph Vandello, for their valuable insight and guidance.

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## Falling in Love as a Heuristic for Mate Choice Decisions

Monica D. Burke

### ABSTRACT

Selecting a mate is one of the most important and complex decisions that we make in our lives. Research on human decision making has found that we often use simple rules of thumb or heuristics to facilitate complex decision-making tasks (e.g., Gigerenzer & Todd, 1999; Kahneman & Tversky, 1972, 1973; Tversky & Kahneman, 1974, 1983). Recent research has focused on the use of affect or emotion as heuristics that have a strong influence on a variety of decision making contexts (Damasio, 1994; Finucane, Peters, & Slovic, 2003; Loewenstein, Weber, Hsee, & Welch, 2001; Mellers, 2000). The emotion we most closely associate with the context of choosing a mate is the emotion of love. The focus of this paper is on how love may serve as a heuristic to facilitate and guide our mate choice decisions.

In order for falling in love to serve as an effective heuristic for making mate choice decisions, it should be triggered by characteristics that are adaptive from a mate satisfaction and evolutionary perspective. In Study 1, an attempt was made to ascertain the range of characteristics that people feel are most important to the experience of falling in love by asking participants to generate important partner characteristics for falling in love, casual sex, and marriage. In Study 2, the relative importance of the top characteristics was further refined using a Q-sort methodology. It was found that

characteristics important to falling in love corresponded closely to those important for marriage. However, attractiveness and characteristics indicating that a person is enjoyable to be around, warm towards others, and an effective and honest communicator were seen as more important to falling in love than marriage.

In Study 3, the role of falling in love as a simplifying heuristic for long-term mate choice decisions was assessed using a policy capturing approach. Results indicated that falling in love functions as a decision criterion only when partner characteristics are at their best levels. The implications of these findings for the role of falling in love as a heuristic for long-term mate choice decisions are discussed.

## Chapter One: Introduction

Selecting a mate is one of the most important and complex decisions that we make in our lives. How do we make this important decision? Research on human decision making, in general, has found that we often use simple rules of thumb or heuristics to facilitate complex decision making tasks (e.g., Gigerenzer & Todd, 1999; Kahneman & Tversky, 1972, 1973; Tversky & Kahneman, 1974, 1983). The focus of this paper is on how love may serve as a heuristic to facilitate and guide our mate choice decisions.

Much recent research has focused on the use of affect or emotion as heuristics that have a strong influence on a variety of decision making contexts (Damasio, 1994; Finucane, Peters, & Slovic, 2003; Loewenstein, Weber, Hsee, & Welch, 2001; Mellers, 2000). The emotion we most closely associate with the context of choosing a mate is the emotion of love. Specifically, the beginning of romantic love, that is “falling in love”, is proposed to act as a powerful heuristic that we use as our primary determinant for whether or not we want to pursue a long-term mating relationship with a particular individual. Falling in love is an appropriate candidate as a heuristic for mate choices because it occurs at the early parts of a romantic relationship when one is deciding whether or not to pursue a more serious commitment. It is associated with intense affective states and such intense states have been shown to have a particularly strong

influence on judgment and behavior that can often override more cognitive decision making processes (for a review see Loewenstein et al., 2001).

Recent research on the use of heuristics in judgment and decision making tasks has focused on how heuristics have evolved not only to facilitate the decision making processes but also to produce favorable outcomes. Although the use of a heuristic to make a particular decision may not always produce the most favorable outcome, the heuristics that we use tend to be those that produce favorable outcomes most of the time and that are feasible given real-world constraints (e.g., Gigerenzer & Todd, 1999). If we have evolved to use the sense of falling in love as a heuristic for mate choice decisions, falling in love should not only make the decision process easier, but also result in choices that will have positive outcomes most of the time.

Researchers examining mate-choice decisions from an evolutionary perspective have found that many of the characteristics that are most important to people when choosing a mate are those that have served to address evolutionary challenges faced by our species in the past (for a review see Buss, 1999). In addition, researchers studying marital satisfaction have found a variety of characteristics that are linked to happy and successful marriages (for a review see Watson, Hubbard, & Wiese, 2000). If falling in love serves as a heuristic for facilitating satisfying or evolutionarily adaptive mate choice decisions, it would make sense that falling in love would be highly sensitive to many of these same characteristics.

The proposed study is an attempt to examine these issues. The degree to which the experience of falling in love is linked to adaptive characteristics of a mate will be

investigated. In addition, the extent to which falling in love serves as heuristic for mate choice decisions will also be addressed.

### *The Construct of Love*

Is romantic love a universal human experience? While some have contended that love is a cultural construction of relatively recent western society (e.g., Stone, 1988), there is evidence to suggest that the experience of romantic love is nearly universal in humans. Anthropologists Jankowiak and Fischer (1992) conducted a comprehensive analysis of the ethnographic data from 166 societies and found evidence of the presence of romantic love in over 85 percent of them. This is a conservative estimate given that in 18 of the 19 societies where romantic love was considered not to be present, the data was inconclusive rather than disconfirming. The data for these societies did not distinguish between sexual desire and romantic love, and supporting evidence such as folklore was not available. Other researchers (Shaver & Wu, 1992) have found that emotional experiences related to love show similarities across eastern and western cultures.

This is not to say that culture does not have a profound impact on how, when, and with whom romantic love is experienced by individuals, but simply that the “wiring” necessary for the experience of romantic love is available to most humans. Culture may play a particularly strong role in how romantic love may be used as a heuristic for long-term mate choice decisions given practices such as arranged marriage that are present in other cultures. However, love may play more of a role in these cultures than might be expected as it has been found that families typically use similar criteria as lovers to make such decisions and that son’s and daughter’s romantic attractions are often taken into account by parents making marriage decisions. Moreover, arranged marriages can end in



divorce and individuals often subsequently marry partners of their own choosing where feelings of falling in love may come in to play (for a review see Fletcher & Stenswick, 2003).

Because love is likely to be a universal human experience it is important to have an appropriate definition that captures the range of human experience. Although all of us may know what love means to us, different people, cultures, and researchers have different ideas about what love is and thus, it is difficult to reach consensus on an appropriate operational definition. Researchers studying love have used a variety of operational definitions of love. These range from very broad definitions of love such as “one’s having stimulation that one desires (Komisaruk & Whipple, 1998, pp. 927)” or any behavior associated with reproduction (including mating and parenting, Crews, 1998) to more specific definitions that focus on behavioral indicators or attachment or self-report scores on love scales. One approach to the study of love that has been the basis of much research in the area is found in attachment theory (e.g., Bowlby, 1969; Diamond, 2001; Hazan & Shaver, 1987; Mason & Mendoza, 1998). I will begin with a discussion of the insights this approach brings to the study of love in general and falling in love more specifically. A discussion of how other theories of love relate to attachment theory and how they may help to elucidate the experience of falling in love will follow.

#### *Love as Attachment*

Attachment is defined as “an abiding relationship with (at least one) specific entity – the object of attachment – that impinges on the perceptions, memories, and (above all) the motivations and emotions of the attached individual” (Mason & Mendoza, 1998, pp. 766). Attachment has several advantages over other ways of defining love.

First, attachment theory encompasses a variety of relationships among individuals that would be considered to be loving relationships both by the layperson and researchers studying the construct. This includes the relationships of parents with children as well as the relationship of parents (and other adult couples) to one another. Second, it can be applied to the behavior of both humans and animals. Other methods of defining love such as self-report scales of love cannot be used with animal models common in neuropsychological research. Adult heterosexual attachment relationships, however, can be identified in both humans and animals and attachment theory provides a specific set of behavioral criteria with which to make this identification. This specificity is also an advantage over more general definitions of love (e.g. love as reproductive behavior) which may encompass more than what most humans consider to be romantic love.

Attachment to an individual is determined by the use of a variety of measures including selective preference, spatial distance, separation distress, and stress reduction (for reviews see, Hazan, Campa, & Gur-Yaish, 2006; Mason & Mendoza, 1998).

Attached individuals prefer to be near the object of attachment over other individuals they are not attached to. Attached individuals spend much time in close proximity to the object of attachment. They also suffer agitation or distress when separated from the object of attachment. In addition, when experiencing a stressful situation, having the object of attachment nearby will reduce the amount of stress the attached individual experiences.

Attachment relationships are fundamental to many animal species, including humans. They function to motivate individuals to engage in relationships with others that promote survival. There are four major types of attachment (for reviews see, Hazan et

al., 2006; Mason & Mendoza, 1998). The most basic is infant-to-parent or filial attachment. This is found in many birds and in all mammals and is the most basic form of attachment. This bond between infant and caregiver helps the infant's survival by motivating a child to keep close to his or her parent who provides a source of security and nurturing. The second type is parent-to-infant or parental attachment. There is much more diversity among species in parental attachment than there is with filial attachment and parental attachment is less common than filial attachment. This type of attachment helps to motivate a parent to care for a child. This, in turn, helps to increase the survival chances of the offspring, helping to increase the lifespan of the parent's gene pool.

The next type of attachment is adult attachment, also known as monogamy or pair-bonding. This form of attachment includes or is precipitated by sexual behavior. This final type is analogous to adult romantic love and thus, is the focus of this paper (Hazan et al., 2006; Hazan & Shaver, 1987). Adult attachment is relatively uncommon in animals (compared to other forms of attachment), but there are species that form monogamous attachments such as Prairie Voles, Titi Monkeys, and some species of birds. This type of attachment helps to motivate two parents to work together to provide and care for their offspring, thus further increasing the survival potential of their genes.

Attachment relationships are the closest relationships we have with other members of our species. These are social relationships formed with family, and with other adults when beginning new families. These relationships have a strong emotional component that causes us to feel distress when separated from our loved ones and comforted when we are with them. This emotional component is what we think of when we think of love. This emotional component also serves to motivate us to behave in

certain ways towards our loved ones. We strive to be near the people we care about and to behave in ways that promote their well-being. A tendency for individuals to become attached to other individuals has evolved in animals because those individuals that had a tendency to become attached (and more importantly, their genes) have reaped the survival benefits of those attachments through the ages (Brumbaugh & Fraley, 2006).

Bowlby (1979) has equated initial stage of an attachment, or attachment formation, with falling in love. There is neurophysiological evidence that falling in love, if viewed as a form of attachment, maybe biologically based. Research using animal models (particularly the monogamous Prairie Vole, for a review see, Insel & Young, 2001) have implicated two major neuropeptides, oxytocin and vasopressin, as playing a major role in monogamous attachment formation. These neuropeptides are released during mating and facilitate pair-bonding. In addition, the neural circuitry involved (and the genes responsible for this circuitry) has been identified in the prairie vole.

Essentially, mating releases oxytocin (in females) and vasopressin (in males) that operate on reward and reinforcement centers in the brain, which facilitate attachment formation. Oxytocin and Vasopressin do not activate the same pathways in closely related, but non-monogamous, species. These neuropeptides are also released during human mating and, although their direct effects on human pair-bonding have not been investigated to date, recent fMRI research has implicated similar reward pathways as operating in the human experience of love (Aron et al., 2005; Bartels & Zeki, 2000).

Although this research focuses primarily on animal models and it is still unclear how results from animal research will translate to human attachment systems, we can gain some insights from this research that may assist us in developing a working model

of romantic love in humans. Most importantly, this research indicates that attachment formation processes (for our purposes falling in love) probably have marked gender differences. Different neurotransmitters are involved for males and females and potentially different parts of the brain as well. In addition, this research highlights the importance of sexual activity to attachment formation and its role in the release of oxytocin and vasopressin. However, we need to identify how other aspects of the partner, besides mating, can facilitate pair bonding. This is important to our human conceptions of love. Romantic love is considered to be something beyond sexual desire and many human couples form attachment relationships before engaging in sexual intercourse. Indeed, fMRI activation patterns for love are different than previously identified patterns for sexual desire (Aron et al., 2005; Bartels & Zeki, 2000). Other adaptively important characteristics of a mate, beyond sexual behavior, should facilitate pair bonding.

#### *Integrating other perspectives on Love*

Working from the concept of attachment, we can begin to reconcile several different approaches to defining love. Murstein (1988) reviewed various psychologists' attempts to define love and attempted to categorize them into four basic approaches: those (a) looking at the origins of love, (b) examining who benefits from loving, (c) examining the nature of the construct of love, and (d) looking at the components of love. Clearly, love is a complex construct, and there are many ways to approach research on it. The emotion itself is a complex experience that contains both extreme highs and extreme lows (Berscheid, 1988; Fehr, 1988). There are also many contexts in which we use the term love, from loving ice cream, to loving friends, family, and lovers. It is therefore not

surprising that there are a variety of theories and research directions that have attempted to tackle the subject. The following is a discussion of some of the major issues and approaches, how they might be reconciled in light of attachment theory, and their implications for research on falling in love.

*Origins of love.* Researchers have focused on one of four things as originating the emotion of love in individuals: personal inadequacy, personal adequacy, social norms, or physiological arousal. Those coming from a primarily clinical approach (e.g., Peele, 1988) that have focused on personal inadequacy maintain that love results from some sort of deficit or need that has not been fulfilled in one's life. Those who are not strong on their own require a love object to make their life complete. In contrast, researchers that focus on personal adequacy make a strikingly different conclusion, only those who are psychologically normal and healthy have the capacity to love (e.g., Hazan & Shaver, 1987). The inability to love is therefore associated with some inadequacy or abnormality in an individual. Those who focus on social norms argue that the impetus for love is societal rather than individual (Greenfield, 1965; Lindholm, 1998). Love serves as a motivating factor that promotes adherence to social roles and the formation of family systems that benefit the functioning of society as a whole. Finally, those focusing on physiological arousal maintain that love results from intense psychological arousal in conditions where the emotion of love is appropriate (Walster, 1971). Thus, even if the arousal is from another source, individuals may misattribute love as the cause of their arousal if the true cause is not salient.

Does love arise from issues concerning personal adequacy, social norms, or physiological arousal? Love, most likely, has its origins in all of these factors.

Researchers studying attachment have found that different species exhibit different types of attachment. All mammals exhibit infant-to-parent attachments, whereas only certain species exhibit parent-to-infant attachment or adult attachment. All three types of attachment are normal for humans. Thus, the ability to love does not result from some sort of personal inadequacy. Attachments do serve to fulfill basic needs, however, and may be motivated by the lack of fulfillment of one or more of these needs. However, these needs are common to all humans and not the results of deficits in character.

In addition, attachment theorists (e.g., Hazan & Shaver, 1987) propose that the quality of the initial attachment relationship (infant-to-parent) leads to different styles of attachment in adult relationships. Those with deficits resulting from the nature of the initial attachment relationship may have either an accentuated desire for adult attachment (insecurely attached) or a restricted desire for adult attachment (avoidant attachment). Insecurely attached individuals come closest to what theorists positing personal inadequacy as the origin of love describe.

Social norms also play a role in the experience of love. Although it is likely that the social norms arose from difficulties encountered by humans in their attachment relationships, rather than attachment relationships resulting from social norms, or that the two are inextricably intertwined. Physiological arousal is also important to attachment. Attachment relationships both influence and are influenced by arousal. A degree of arousal promotes the formation of attachment relationships. Once formed, attachment relationships serve to attenuate arousal in times of stress and arousal is increased when one is separated from the object of attachment.

*Who benefits from love?* After the origins of love, the second approach Murstein (1988) discusses defines love by who it benefits. Those who maintain that love is acquisitive maintain that one loves someone else for the benefits they can receive from the relationship. In contrast, those who contend that love is benevolent focus on the altruistic benefits for the beloved. Finally, some researchers argue that love involves a mixture of benefits to both the lover and the beloved and that a strong relationship involves an equal balance between the two. Is love acquisitive, benevolent, or both? Attachment relationships incur benefits for both parties involved. For attachment to be successful both parties need to reap some benefits from the relationship. In turn, both parties need to provide some benefits to their partner. Thus, love has both an acquisitive and benevolent component and both are important for a successful relationship.

*What type of construct is love?* The third approach involves whether love is, a feeling, an attitude, behavior, or a judgment. Again, love probably contains all of these components. Although the operational definition of attachment has its focus on behavior (necessary for use with animals), there is also a feeling component to attachment. Behaviors important to identifying attachment involve feelings or emotions such as verbal distress calls and physiological agitation. Although our feelings may fluctuate over time, a key component of attachment is emotional.

Historically love has not been considered one of the ‘basic’ emotions in typologies of emotion due to its long duration with fluctuations in intensity, tendency to be associated with other positive and negative emotions such as elation and anxiety, and focus on one love object (for a review see, Shaver, Morgan, & Wu, 1996). This stands in sharp contrast to laypersons views on love who consider it to be one of the most



prototypical human emotions (e.g., Fehr & Russell, 1984; Shaver et al., 1996; Shaver & Wu, 1992). Consistent with this lay conception, researchers have more recently begun to argue that love deserves a place among the basic emotions (e.g., Fredrickson, 1998; Gonzaga, Turner, Keltner, Campos, & Altemus, 2006; Shaver et al., 1996). This is due in part to a growing appreciation of the social functions of emotion (Frijda, Mesquita, Kitayama, & Markus, 1994; Keltner & Haidt, 1999; Keltner, Haidt, Mayne, & Bonanno, 2001; Nesse, 1990), and a renewed emphasis on positive emotions in general, which have generally been neglected in the study of emotion due, in part, to their diffuse and often overlapping nature (for a review see, Fredrickson, 1998).

Proponents of love as a basic emotion emphasize that although love does have dispositional aspects and can often involve many emotions over the long term, there are short-term ‘surges’ of love that are feeling states specific to love (Gonzaga et al., 2006; Shaver et al., 1996). These short-term feelings of love even involve characteristic gestures and facial expressions that can be distinguished from related feeling states such as sexual desire (Gonzaga et al., 2006). Other researchers, while still recognizing the emotional nature of love, have characterized it as a more complex goal oriented motivational state (Aron et al., 2005; Troy, 2005). These models view love as a goal oriented state that leads to a variety of emotions depending on how well the goals are being satisfied.

Attitudes and decisions are also important when researching love in humans. Whereas, research with animals must rely on behavior and physiological indicators of emotion, research with humans can begin to assess how well these behavioral and

emotional factors are related to human attitudes, judgments, and decisions about their own love relationships.

*Components of love.* This final approach is exemplified by the research of Sternberg (1988). He conducted factor analyses of scales of love. Although one major factor was found, idealization of the beloved, three subfactors were also found. These three components of love are passion (sexual desire and fulfillment), intimacy (deep knowledge of one another and willingness to confide in the other), and commitment (desire to maintain the relationship). Sternberg (1988) also maintains that there are a variety of different kinds of love that result from different combinations of these three components of love. In addition, these components differ in their importance over the course of a relationship. Passion is of primary importance at the beginning of a relationship, whereas commitment and intimacy become of primary importance as the length of the relationship increases.

There are clearly several types of love. Our love for our mates is not the same as our love for our families or our love for our friends. Even within mating relationships there are differences in types or degrees of love and differences in what love means as time in the relationship progresses. However, there is an underlying common bond that unites all of these variations of love. One is a feeling of affection for and an idealization of the love object. Another is a desire to be near the love object, and resulting distress when that person is absent from our lives.

Romantic love can be distinguished from other forms of love in several ways as well. Romantic love is typically focused on a sexual partner and sexual activity promotes its development. Romantic love is also generally focused on one person with the

exclusion of other people. This is not the case with parent/infant attachments, which can be directed at more than one child or parent at the same time. Falling in love is the initial stage of romantic love, and thus shares its characteristics, but may be more intense and more passion-focused than romantic love in general.

### *Distinguishing Falling in Love from other Forms of Love*

Very little research has directly examined the experience of falling in love. As the previous review indicates, most research has focused on the emotion of love in general, and the types and facets of love including romantic love. Even researchers studying romantic love specifically, have paid very little attention to the formation of romantic love, and have instead focused on the components and defining factors that characterize romantic love and romantic relationships. However, the research on romantic love can give us some indication of the factors that are important for the initial formation of this bond, falling in love.

The work that has the closest connection to the concept of falling in love is that of Meyers and Berscheid (1997) examining the differentiations people make between the words “love” and “in love”. Although being in love and falling in love may not be exactly the same thing, being in love is a closer approximation to falling in love than simple love may be. They used a social categorical approach wherein they simply asked participants to list all the members of their social world that belonged to several social categories, including the love and in love categories. They found that young adults in the United States found it very easy to determine which social contacts fit these categories, suggesting that people readily make a distinction between loving and being in love and can categorize people accordingly. While it may be difficult for people to describe the

difference between these terms, they have no difficulty distinguishing between them and believe that they mean different things (Meyers, Ridge, & Berscheid, 1991 as cited in Meyers & Berscheid, 1997). Anyone who has ever heard or spoken the phrase “I love you, but I’m not in love with you” is aware of this distinction and its implications.

Meyers and Berscheid (1997) hypothesized that being “in love” is a special sub-category of love, specifically a romantic form of love containing a strong sexual component. Their hypotheses were confirmed by their results. First, the vast majority of persons named in the “in love” category were also named in the “love” category. The converse was not the case, however, those listed in the “love” category were much less likely to also be listed in the “in love” category. This suggests that love is the overarching category, with only a subset of those people we love also being people we are in love with. In addition, the people listed in the “in love” category were primarily romantic partners (spouses, dating partners), suggesting that being in love denotes a romantic relationship. Finally, they found that those in the “in love” category were also often listed in the sexual desire/attraction category (which was not the case for the “love” category), suggesting that a sexual component is critical to the distinction between love and being in love.

#### *Linking Desire and Falling in Love*

One of the defining features that separates romantic love from other forms of love is a sexual component. Although early research on romantic love generally neglected this component (e.g., Rubin, 1970), more recent research has focused on the critical link between sexuality and romantic love (Hendrick & Hendrick, 2004; Regan, 1998). Indeed, the research on the neuropsychological mechanisms of adult attachment

formation has pointed to the key role that sexual activity plays in monogamous attachment formation in animals. However, humans can fall in love without first engaging in sexual intercourse and therefore, mating per se may not be a prerequisite for attachment formation in humans. Researchers studying romantic love in humans have pointed to the importance of a related concept, sexual desire, as being a pivotal component differentiating romantic love from other forms of love (Regan, 1998).

Sexual desire may be of particular importance to the experience of falling in love. Sternberg (1988) pointed to the primacy of the passion component of love at the initial stages of a relationship. Sternberg's (1988) passionate love (love with passion, but lacking intimacy and commitment) or romantic love (passion with intimacy) typically develops into less passionate forms as the length of a relationship increases becoming companionate love (intimacy and commitment) or, if one is lucky, consummate love (intimacy, commitment, and passion).

Hatfield and colleagues (Hatfield, 1988; Hatfield & Rapson, 1993, 2000; Hatfield & Walster, 1978) have a similar model to Sternberg's, but they focus on the distinction between two types of love: passionate love and companionate love. They link passionate love to being in love. By their definition, passionate love is:

A state of intense longing for union with another. Passionate love is a complex functional whole including appraisals or appreciations, subjective feelings, expressions, patterned physiological processes, action tendencies, and instrumental behaviors. Reciprocated love (union with the other) is associated with fulfillment and ecstasy. Unrequited love (separation) with emptiness, anxiety, or despair. A state of profound physiological arousal" (Hatfield & Rapson, 1993, p. 5).

As is apparent from this definition, passionate love is fraught with both intense ups and downs. In fact, these contrasting highs and lows may fuel the intense excitement

associated with this emotion (Hatfield, 1988). The intensity of these feelings necessarily dissipates over the course of a relationship and is typically replaced by the calmer, more secure emotion of companionate love.

### *Distinguishing Sexual Desire from Falling in Love*

The research just reviewed indicates that sexual desire is routinely and especially associated with falling in love. This suggests that sexual desire is a major component of falling in love and romantic love in general. However sexual desire cannot be equated with falling in love. Meyers and Berscheid (1997) found that although the majority of persons listed in the 'in love' category were also listed in the sexual desire/attraction category, a much smaller percentage of persons in the sexual desire category were also listed in the in love category. They conclude that sexual desire may be a necessary, but not sufficient condition for being in love. Indeed, fMRI activation patterns for love were different than, but contained some overlap with, previously identified patterns for sexual desire (Aron et al., 2005; Bartels & Zeki, 2000).

In addition, Meyers and Berscheid's (1997) results suggest that friendship is also important for being in love. The majority of persons listed in the 'in love' category were also listed in the friend category. So, in contrast to theorists that propose that love is based primarily on passion or sexual desire at the beginning of a relationship which dies out and is replaced by a more companionate, friendly type of love, Meyers and Berscheid propose that friendship (intimacy), love, and sexual desire are necessary for someone to consider themselves to be in love. As time passes, sexual desire may fade and the feeling of being in love is replaced with simple love.

Recent neuropsychological theory and research by Diamond (2001; 2003; 2004) maintains that there are two separate brain systems for sexual desire and attachment (love), but that the two are highly interconnected. This allows for purely sexual relationships with no attachment and pure love relationships with no sexual component (deep love for a same sex friend). The bi-directional interconnectivity of these two systems also leads to sexual relationships developing into romantic attachments and friendships developing into romantic relationships with a sexual component.

Other recent neuropsychological research (Fisher, 2000; Fisher, 1998; Fisher, Aron, Mashek, Li, & Brown, 2002; Fisher, Crouter, & Booth, 2006) has proposed a three system model of love and sex. According to Fisher and her colleagues there are actually three brain systems governing sexual desire, attraction (romantic love), and attachment. Each brain system utilizes different neural pathways and involves different neurochemicals. As with Diamond's model, each system is highly interconnected and can influence the other systems.

In Fisher's scheme (Fisher, 2000; Fisher, 1998; Fisher et al., 2002; Fisher et al., 2006), attachment is analogous to companionate love and attraction is equated with romantic or passionate love. This calls into question whether romantic love can be equated with adult attachment. However, given that the attraction system is interconnected with and tends to fuel the attachment system it should be pivotal to attachment formation or falling in love. Indeed, other researchers examining love as attachment (Shaver, Hazan, Bradshaw, Sternberg, & Barnes, 1988; Shaver & Hazan, 1988) have proposed that romantic love involves an interplay between three behavior systems proposed by Bowlby (1969; 1979): sex, attachment, and caregiving.

I propose that the understudied experience of falling in love lies at the intersection of the various systems examined in this section. Falling in love is fueled by sexual desire and attraction, but with a goal of long-term attachment. If the motivating determinants of these three systems coexist one has the experience of falling in love and pursues a goal of long-term intimacy. In this study I will examine how characteristics of a mate that are important to sexual desire and long-term attachment (marriage) relate to those important to the experience of falling in love.

In summary, this research suggests that falling in love is a very intense emotional state, fueled by sexual desire and a general desire to be with the other person. Merely having a strong sexual desire for someone is not enough, however, for someone to fall in love. That person must also meet the criterion for loving someone, which includes, among other things, a friendship or intimacy component.

Although the major components of sexual desire, friendship, and intimacy have been identified as being integral to the experience of falling in love with someone, little research has attempted to identify specific characteristics of a mate that are likely to trigger this experience. In this project I will examine which characteristics of a mate are important for falling in love and how they relate to those important for sexual desire and marriage. In the next section research examining important characteristics in a mate will be examined in an attempt to identify those that should be most important to the experience of falling in love.



## Chapter Two: Selecting an Appropriate Mate

Falling in love is a very intense experience in our lives. In this dissertation it is hypothesized that such a strong emotional experience would have evolved to help us find appropriate mates in our social environment. If this is the case, the experience of falling in love should be associated with cues that a mate is particularly suitable. But, in order to examine this issue we must first determine what characteristics indicate that a mate is an appropriate one. It is often difficult to determine which potential mates are most appropriate.

Although little research has examined what characteristics of a mate are important to falling in love, much research has examined factors that are important to people in mate selection. Typically, this research also looks at why these characteristics may be advantageous in promoting successful relationships. Two lines of research have focused on criteria for a successful adult relationship. The first focuses on a lasting, happy relationship as the criterion for what makes a successful adult relationship. This research, examines what factors contribute to marital or relationship satisfaction. Other research has used an evolutionary criterion to determine what counts as a successful relationship. Successful adult relationships are those that produce offspring that are successful in continuing our genetic line, thus promoting the survival of our genes. If, as hypothesized, the experience of falling in love serves to cue us to appropriate mates in our environment, characteristics that promote both marital satisfaction and evolutionary fitness should be

important to the experience of falling in love. These characteristics will be examined in the following sections.

### *Promoters of Marital Satisfaction*

The subject of what makes a satisfying marriage has been a topic of much research in psychology and the social sciences. The following are some highlights of research particularly pertinent to this research project. Bradbury and his colleagues (Bradbury, Fincham, & Beach, 2000), in their review of marital satisfaction research, outline several factors important to marital satisfaction including: patterns of interaction and communication (e.g., negative reciprocity, demand/withdrawal patterns), attributions of partner behavior, negative affect, social and spousal support (including expressions of affection), violence, environmental/contextual factors (e.g., children), economic and work-related stressors, and partner characteristics.

For the present purposes only a subset of these factors are relevant. This study focuses on those characteristics of a partner that are important for both the experience of falling in love and a satisfying relationship. Thus, the focus of this section will be on attributes of a mate that have been linked to marital and relationship satisfaction. However, the other aspects of a relationship important to mate satisfaction, such as patterns of interaction and communication, often play a moderating role and are discussed in relation to these partner characteristics (Bradbury & Karney, 2004).

### *Neuroticism*

One of the most generally accepted models of personality is the Five Factor model or Big Five model (Mayer, 2003; O'Connor, 2002). This model outlines five major traits that account for most of the variation in human personality: neuroticism,

extroversion, openness, agreeableness, and conscientiousness. Research using the Big Five model of personality has linked certain partner characteristics to relationship satisfaction. Being married to partners that are high on the trait neuroticism, which reflects negative affectivity and lack of emotional stability, has been linked to decreased marital satisfaction in several studies (e.g., Gattis, Berns, Simpson, & Christensen, 2004; for a review see Watson et al., 2000). Karney and Bradbury (1995) in a meta-analytic review of longitudinal research on marital satisfaction found that neuroticism was the only personality characteristic that showed a strong relationship to marital satisfaction.

Watson et al. (2000) found that partners' self-rated neuroticism was a strong predictor of relationship satisfaction in males for both married and dating couples. Furthermore, when participants' ratings of their partners' characteristics were correlated with marital satisfaction (i.e., correlating a wife's marital satisfaction with her ratings of her husband's personality), almost all of the big five personality characteristics (with the exception of openness) and both positive and negative affectivity were significantly related to relationship satisfaction. Neuroticism and negative affect were correlated negatively with relationship satisfaction, and extroversion, agreeableness, and conscientiousness were correlated positively with relationship satisfaction. This suggests that a person's perceptions of their partner's personality have a stronger impact on relationship satisfaction than the partner's self-reported personality does or that marital satisfaction influences perceptions of a partner's personality.

Researchers using models of personality other than the Big Five have also found that traits similar in nature to neuroticism are linked to relationship satisfaction. These related characteristics have been variously described by researchers as negative

affectivity, trait pleasure/displeasure, and trait anxiety. Watson et al. (2000) found that partners' self-rated overall negative affectivity was a predictor of marital satisfaction for both males and females. Blum and Mehrabian (1999) found that a partner's trait pleasure/displeasure was linked to marital satisfaction for both males and females in their study. They link this trait with psychological adjustment. Essentially, people who have better adjusted mates have higher satisfaction with their marriages than those with less well adjusted mates.

Caughlin, Huston, & Houts (2000) investigated the relationship of a partners' trait anxiety to marital satisfaction in a longitudinal study. Trait anxiety is also highly related to negative affectivity and neuroticism. They found that a partners' trait anxiety was indeed related to marital satisfaction, and that this relationship was independent of marital negativity.

In summary, researchers studying the impact of a partner's personality characteristics on marital satisfaction have found that a partner's personality does have an impact on marital satisfaction, but that this relationship may be weak for most personality characteristics. The exception to this is the degree of negative affectivity or lack of emotional stability characterized by the big-five personality trait of neuroticism. People with partners who are prone to emotionality and negative affect have decreased marital satisfaction. It is easy to see how this personality characteristic could play a moderating role in other factors important to marital satisfaction. A tendency towards negative affect may make certain patterns of interaction, such as negative reciprocity, more likely, as well as making negative attributions of partner behavior more prevalent, increasing the amount of negative affect in a relationship more generally (Bradbury & Karney, 2004).

### *Other Variables*

The trait of emotional expressivity has also been investigated with respect to marital satisfaction. Emotional expressivity involves the tendency to be emotional, warm towards others, prosocial, and relationship-oriented. A partner's degree of emotional expressivity has been linked with greater relationship satisfaction (Gattis et al., 2004; Miller, Caughlin, & Huston, 2003). This relationship is particularly strong for females, with females own expressivity and partners expressivity being linked to females relationship satisfaction (Lavee & Ben-Ari, 2004). Miller and colleagues (2003) have proposed a model wherein this relationship is mediated by the amount of affectionate behaviors exhibited by expressive partners which leads to a greater perception of partner responsiveness. Expressions of affection are linked to spousal support processes that lead to positive marital outcomes (Bradbury et al., 2000). This characteristic may be particularly important to the friendship/intimacy component identified in the previous chapter as being critical to the experience of falling in love.

Certain demographic variables have been linked to marital satisfaction; most notable among these are education level and income. Blum and Mehrabian (1999) found that a partner's education level was significantly correlated with relationship satisfaction for both males and females. Karney and Bradbury (1995), in their meta-analytic review, also found a link between education level and relationship satisfaction. In addition, they found that a husband's income was a positive predictor of marital satisfaction, but that wives' income had the opposite relationship to marital satisfaction. Income and education level may also help to attenuate environmental factors that lead to marital distress such as economic and work related stressors.

It is also interesting to note that, in Karney and Bradbury's (1995) meta-analytic review of longitudinal research on marital satisfaction, sexual satisfaction was the strongest positive predictor of marital satisfaction for husbands and the second strongest predictor for wives. In light of the findings reviewed in the previous chapter highlighting the key role of sexual desire in falling in love, it would appear that the importance of sexual desire to falling in love might have implications down the road in promoting marital satisfaction. I hypothesize that sexual desire as well as the other characteristics reviewed in this section will be important to the experience of falling in love because falling in love serves as a powerful cue to appropriate mates in our environment.

#### *Evolutionary Perspectives on Mate Choice*

From an evolutionary standpoint, choosing a mate is one of the crucial decisions we face in our lives. Our mates contribute half of their genes to our offspring and thus are important in determining the genetic quality and survival potential of those offspring. In addition, our mates often provide valuable resources, including material resources and parenting skills, which assist us in raising successful offspring. If our offspring do not survive and succeed in raising offspring themselves, our genes die with them.

A pioneering researcher in the area of the evolution of mate choice, David Buss, has investigated how the challenges we have faced, both as a species and as individual sexes have contributed to our strategies for choosing our mates. The evolutionary challenge for any individual is to create offspring that are successful and live to reproduce themselves, carrying with them our genes. Because our mates contribute half of their genes to our offspring, it is important to select mates that will contribute the best

possible genes to our children. Those who select mates based on criteria that contribute to the survival of their genes are evolutionarily more successful than those who do not.

This is not to say that people consciously recognize that they are making choices that impact the survival of their genes and choose their mates accordingly. Rather, people in the past who have made choices based on criteria that promoted the survival of their genes, have been more likely to pass on those genes to their offspring who are more likely to use those criteria themselves. All of our ancestors are people who have made genetically successful mate choices, and have passed on the ability to do this to us. I hypothesize that one way this has been passed on is through the mechanism of falling in love. The experience of falling in love has evolved to be stimulated by characteristics in a mate that are advantageous to the continuation of our genetic line. The following is a summary of important characteristics that have been identified.

A great deal of research spanning several decades and a variety of cultures has examined preferences for partner characteristics in mate choice and identified key sets of important attributes (e.g., Buss, 1989; Buss, Abbott, Angleitner, & Asherian, 1990; Hill, 1945; Hudson & Henze, 1969; McGinnis, 1958). More recent research has attempted to condense these characteristics to a few key dimensions using factor analysis (e.g., Fletcher, Simpson, Thomas, & Giles, 1999; Shackelford, Schmitt, & Buss, 2005; Simpson & Gangestad, 1992). Although specific factor structures vary from study to study depending on the set of characteristics used, three key dimensions tend to come out in these analyses. The first involves positive personal characteristics with relational overtones such as kindness and warmth towards others. The second involves

attractiveness, health, and vitality. The third involves social status and financial resources.

Thus, our ideal mates are those who are kind, attractive, and have resources to offer. However, the ideal mate is difficult to come by and we generally must make tradeoffs among these dimensions when selecting actual mates (Fletcher et al., 1999). In essence, we must often make tradeoffs between securing the highest quality genes for our children (by mating with attractive, healthy partners) and the most secure upbringing for our children (by acquiring caring or resourceful mates). How we make these tradeoffs may depend, in part, on the mating context (long-term or short-term) and our gender. Males and females have faced different constraints and issues in our evolutionary past that have led to emphasis on different characteristics. In addition, since we are not an entirely monogamous species, the strategies we use to select a mate vary depending on whether we are choosing a short-term or long-term mate (for reviews see Buss, 1999; Fletcher & Stenswick, 2003).

### *Long-Term Mating Strategies*

In the context of choosing a long-term mate, men and women share certain adaptive problems. These shared problems relate to choosing a compatible mate that will help them to provide the best possible upbringing for their children. It is important that the couple be able to function effectively as part of a team to facilitate the child-rearing task. Therefore, individuals are at an advantage, evolutionarily speaking, if they choose mates with whom they are compatible. Thus, the characteristics outlined above as important for marital satisfaction would also be advantageous from an evolutionary perspective. Indeed, emotional stability, kindness, dependability, and compatibility have



been found to be viewed as highly important in a partner in many studies (Buss, 1999; Fletcher & Stenswick, 2003; Regan, Levin, Sprecher, Christopher, & Cate, 2000).

Positive personal/relational characteristics, the first dimension identified in factor analysis of mate preference, tends to be viewed as of primary importance in long-term relationships (Fletcher et al., 1999) and among individuals who have a more long-term orientation to mating relationships (Simpson & Gangestad, 1992).

A long-term mate can also bear part of the burden of raising the children and those children would be at an advantage if that mate possessed good parenting skills. Therefore individuals who prefer mates who have characteristics that indicate good parenting skills would also have an advantage over those who do not. These same caring characteristics that make for a compatible partner also make a good parent, adding to the value of these characteristics in long-term relationships. Although characteristics indicating a caring, stable mate are important to all individuals in long-term relationships, the importance of other characteristics may depend, in part, on gender.

*Female mate-choice strategies.* While there is a great deal of overlap in the evolutionary challenges that men and women have faced throughout history, there are certain problems that are different for men and women. These differing challenges have led to some distinctive mate preferences for men and women. Females, necessarily, have a greater investment in each child they have than males. They must carry the child for nine months and, if they want it to survive, nurse it during infancy. They are also only able to bear a finite number of children during their lives. It is therefore in the best interest of their genes if women are choosy about whom they allow to mate with them and that they provide the best possible upbringing for the children they have. These

constraints have, over time, promoted the survival of women with genes that lead them to be choosier than males with their mates.

Specifically, Buss (1999) outlines five adaptive problems that women have faced in their past when choosing long-term mates and makes hypotheses about characteristics of a mate that would assist women in solving these problems. These adaptive problems are as follows: choosing a mate that is able to make an investment in one's self and one's offspring, choosing a mate who is willing to make this investment, choosing a mate who can provide protection for one's self and one's children, choosing a mate with good parenting skills, and choosing a compatible mate (the last two are also of particular importance to males when choosing a long-term mate as discussed above).

When choosing a long-term mate, a woman would be at an advantage if she selects a person who has the ability to assist her in providing for her own needs as well as those of her offspring. However, choosing a mate with the ability to invest means little if that mate is unwilling to share those resources with his mate and his children. Therefore a woman and her children would be at an advantage if she preferred a mate who not only had the ability to invest, but also the desire and willingness to invest. In addition to providing resources, mates may also provide a source of protection for a woman and her vulnerable children. Historically, women who prefer mates possessing characteristics that would assist them in protecting their family would also be at an advantage.

Buss hypothesizes that women who prefer a mate who possesses several relevant characteristics would have been in the best position to address the adaptive problems outlined above. The characteristics include good financial prospects, high social status, slightly older age, ambition, industriousness, size, strength, athletic ability, dependability,

a loving and committed nature, ability to positively interact with children, bravery, emotional stability, kindness, and similarity with the woman in values and personality. Women in the past who preferred mates who exhibited these characteristics would have been in a better position to provide a quality environment for themselves and their children, thus increasing the survival rates for those offspring. Those offspring, in turn, would be likely to inherit those preferences and use them in their own mate selection challenges. Over the course of time this process should lead to modern women having preferences for these same traits in their mates.

Indeed, women's preferences for these characteristics have been documented in several studies, including those conducted in time periods ranging from the 1930's to the 1990's and those using samples of a wide variety of cultures, racial and religious groups, political systems, and mating systems (for reviews see Buss, 1999; Fletcher & Stenswick, 2003). For example, in several studies women and men were asked to rate the importance of various partner attributes when choosing a marriage partner, including one cross-cultural study that examined preferences in 37 different cultures (Buss, 1989; Buss et al., 1990; Hill, 1945; Hudson & Henze, 1969; McGinnis, 1958).

The results of these studies indicate that females rate good financial prospects, high social status, slightly older age, industriousness, ambition, dependability, emotional stability, height, strength, athletic ability, and being loving as being very important in a potential marriage partner. In addition many of these characteristics, most notably good financial prospects, were rated as much more important by women than men. The status/resources dimension found in factor analytic research on mate preferences is also more important for women than for men (Regan et al., 2000; Shackelford et al., 2005).

Preferences for these characteristics have also been documented in actual behavior including research looking at responses to personal ads and actual marriage patterns (e.g., Baize & Schroeder, 1995; Udry & Eckland, 1984).

*Male mate-choice strategies.* Males do not have the same physical burden of bearing and nursing a child that women do. In addition, they have faced certain unique challenges that women do not share. Men face the problem of securing a reproductively valuable mate, as commitment to one partner hinders access to other, potentially more fertile, partners (women tend to frown on men with other commitments in either context). Although this is also an issue for females, it is a greater one for males because the reduction in the number of potential children a man can have when he restricts himself to one partner is much more than with women.

Two major indicators of reproductive potential are the characteristics of youth and beauty. Youth in a long-term partner is important because it indicates that a woman has a longer period of future fertility than an older woman, and will have a greater likelihood of being able to bear more children over the course of the marriage. Attractiveness is an indicator of both health and a quality genetic material, which will increase both the likelihood of conception and the survival potential of the offspring. In addition, certain standards of female attractiveness, such as the waist to hip ratio, are linked to reproductive potential. Therefore, males who prefer females who are young and attractive are at an advantage over those who do not. Again, cross-culturally, men's preferences for these qualities in a mate have been borne out in a substantial amount of research examining both stated preferences and actual mating behaviors (for reviews see, Buss, 1999; Fletcher & Stenswick, 2003). For example, the attractiveness/vitality

dimension found in factor analytic research on mate preferences has been found to be more important to males than females (Regan et al., 2000; Shackelford et al., 2005).

Males also have one problem that females do not share: the question of paternity. Females know that their offspring are their own, but males can seldom be completely certain that the child of their partner is their own. Providing valuable resources to another man's child, thinking it is your own, uses valuable time and energy and could hinder one's ability to continue one's own genetic line. This is not to say that a man may garner personal benefits associated with raising a child (even if it is not his own) and potentially reproductive benefits as well (as women prefer mates who show good parenting skills), simply that a man has a greater chance of passing on his genes to a future generation if he has exclusive access to his wife's reproductive potential. Therefore, a male that displays a preference for a long-term partner with characteristics such as faithfulness, sexual loyalty, and chastity will be at an advantage over those that do not. The tendency for males to value these qualities in a mate more than females has also been borne out by the literature (for reviews see, Buss, 1999; Fletcher & Stenswick, 2003).

#### *Short-Term Strategies*

Short-term relationships do not require the ability to work together over time, therefore the characteristics of a mate that signal good genes tend to take precedence in these contexts. The attractiveness/vitality/health dimension found in factor analytic studies of mate preferences has been found to be of primary importance to those likely to choose short-term mating (Regan et al., 2000; Simpson & Gangestad, 1992). For women, characteristics representative of this dimension such as health, attractiveness, size, as

strength garner immediate genetic, resource, and protective advantages and may take precedence over other factors such as ambition and dependability that are more useful for selecting mates that will be good long-term partners. Males also have the problem of identifying which females they are most likely to have successful copulations with (resulting in offspring). Therefore, indicators of youth and physical attractiveness are important in this context, as well as in more long-term contexts. Although women and men may share this preference for attractiveness and vitality in short-term relationships, there are other partner characteristics on which they would be expected to differ.

*Female mating strategies.* Women are at an advantage if they are choosy, even when selecting a short-term mating partner. Even a brief coupling can result in a child that requires a tremendous amount of investment on the part of the woman. Women are at an advantage if they choose a partner that not only provides good genes to their offspring but also will contribute to the care and upbringing of the child. For this reason, women should be hesitant about engaging in short-term mating and may use it to screen potential long-term mates. Therefore, their criteria for choosing a short-term partner should be very similar to their criteria for choosing a long-term partner.

In addition to the attractiveness/vitality and personal factors outlined above, factors important to women in a casual sexual partner should also include those factors that will garner immediate benefit for her and her children. These include (a) a willingness to expend resources on her, (b) factors that indicate that he has the potential for a long-term commitment, such as evidence of no previous commitments and a lack of promiscuity, and (c) factors indicating that he would have the ability to provide at least short-term protection for her and her offspring, such as size and strength. The research of

Buss and others (for reviews see, Buss, 1999; Buss & Schmitt, 1993; Fletcher & Stenswick, 2003) has substantiated that, across cultures, these factors are important to women in their choice of a short-term partner.

*Male mating strategies.* Unlike females, males have no limit on the number of children they can sire, provided that they can find a woman willing to mate with them. They also need only expend a minimal amount of time and energy to sire a child. They still have a vested interest in that child's survival, but it is not as strong as a woman's interest because they can increase the probability of having a child that survives by having many more children than a woman can. Therefore, they should be much less choosy than women when choosing a short-term partner. They also should be much more likely to employ a short-term mating strategy, because it allows them to mate with a larger number of women and thus, increase their odds of siring successful offspring.

To increase their odds of getting a potential short-term prospect to mate with them, men may look for cues indicating promiscuity or sexual experience when choosing a short-term mate. The faithful, loyal, and chaste women that are highly valued as long-term mates are the opposite of what is desired in a short-term mate because a long-term relationship is not desired. In addition, because a desire for a commitment on the part of a potential mate would be detrimental to their short-term strategy, indicators that a potential short-term mate is interested in something more long-term should not be desirable to males in this context.

Note that this puts female and males short-term strategies at odds with one another as women seeking to use short-term mating to screen potential long-term mates may not be seen as suitable long-term mates by their short-term partners because of a

perceived tendency towards promiscuity or, conversely, may not be seen as suitable short-term mates because of their long-term intentions. This presents even further cause for women to be reticent to engage in short-term mating, except for cases wherein men's relaxed short-term standards lead to the opportunity for women to obtain higher quality genes for their offspring than would be possible in a long-term pairing.

It has been established that, cross culturally, these characteristics are important to men and women in these different mating contexts (Buss, 1999; Buss & Schmitt, 1993; Fletcher & Stenswick, 2003). However, critics of the evolutionary approach (Eagly & Wood, 1999; Eagly, Wood, & Diekmann, 2000; Wood & Eagly, 2000, 2002) maintain that this focus on innate gender differences neglects the influence of traditional gender roles common in many societies that deny the same level of access to resources to females that are available to males. In fact, many of these gender differences are attenuated in more egalitarian cultures (Eagly & Wood, 1999). The evolutionary approach does not deny the effects of culture, however. Evolutionary influences on behavior develop slowly over a very long period of time. If we were not also equipped with the ability to adapt more quickly to the particular constraints of our environment, we would not be able to perform successfully as a species. In fact, our ability to use language to transmit cultural information is an adaptation that makes us uniquely human. Evolutionary and social role theories often lead to similar predictions in mate choice contexts and these influences undoubtedly interact to produce the complex mating behavior seen in human life.

Although mutual love tends to come out as the top characteristic for long-term relationships for both males and females cross culturally (Buss et al., 1990), the relationship of the other partner characteristics discussed in this chapter to the experience



of falling in love has not yet been explored. If falling in love serves as a mechanism to facilitate long-term mate choice decisions as I hypothesize, it would be adaptive if these characteristics also play a role in triggering the experience of falling in love. Indeed, the attractiveness/vitality and personal/relational dimensions found in factor analyses of mate choice preferences seem to correspond nicely with the key dimensions of sexual desire and friendship identified as being integral to the experience of falling in love in the previous chapter.

In this project, I will explore how these characteristics, especially those important for long-term relationships, relate to the experience of falling in love. It is expected that the characteristics identified in this chapter as being important for a successful relationship (either from an evolutionary or marital satisfaction perspective) will be key in prompting the experience of falling in love. Falling in love, in turn, should serve as a powerful cue to appropriate mates in our environment allowing us to condense a large amount of interpersonal information into a feeling state that is difficult to ignore and leads us towards partners with whom we have a greater likelihood of a successful relationship.

Although the ways in which falling in love may serve to facilitate decision making has not been specifically examined, the relationship of other emotional experiences to decision making has been researched. In the next section, evidence showing how affective states may help us easily integrate information in order to make adaptive, quality decisions will be explored.

### Chapter Three: A Judgment and Decision Making Perspective

As reviewed in the previous chapter, there are many important criteria that are weighed when attempting to select an appropriate mate. In this chapter I will examine mate choice decisions from the perspective of decision making research. Certainly, choosing a mate is one of the most important decisions we make in our lives. The quality of this decision can have a profound effect on the quality of our life and the lives of our children. This decision is a complex one, however, as potential mates are multi-faceted individuals with many different strengths and weaknesses. How do we handle the problems associated with this decision making task including: acquiring information about a potential partner's relevant characteristics, making sense of a vast amount of information about these people, and dealing with the typically sequential nature of our encounters with prospective mates?

#### *Heuristics as Tools for Making Judgments and Decisions*

In this dissertation it is proposed that the experience of falling in love serves to assist us in this task. I hypothesize that characteristics of a partner and our interactions with that partner may lead to the feeling that we are falling in love with that partner, for particularly appropriate partners. I propose that this allows us to use the criterion of whether or not we fall in love with someone as a simplifying rule for effectively deciding whether or not to pursue a long-term relationship with an individual. In this chapter, I will examine the judgment and decision making literature on how people use simplifying

decision rules or heuristics to facilitate complex decision tasks. In particular, the ways in which affective or emotional heuristics are used to aid decision making will be explored.

Research on decision making in general, has often shown that we use simple rules or heuristics to assist us in making decisions. The pioneering research of Kahneman and Tversky (1972; 1973; Tversky & Kahneman, 1974, 1983), established the existence of several heuristics that humans use to facilitate judgment and choice. These include the representativeness heuristic (judging the likelihood of category membership by evaluating similarity to category prototypes), the availability heuristic (judging the likelihood of an event by the ease with which examples of that event come to mind), and anchoring and adjustment (judging the likelihood of an event by starting from a readily available reference point, the anchor, and adjusting estimates up or down from that point based on additional information).

Although Tversky and Kahneman claim that “heuristics are highly economical and usually effective” (1974, p. 1131), the majority of their research and the research of those who have followed in their footsteps has been primarily focused on how the use of these heuristics can have a biasing effect on judgment and can produce different responses than would be predicted by a more normative or rational strategy (Doherty, 2003; Gigerenzer & Stainton, 2006; Jungermann, 1983; Shafir & LaBoeuf, 2002). For example, in a classic demonstration of the representativeness heuristic (Tversky & Kahneman, 1983), participants are presented with a description of a woman, Linda, who is described as having many characteristics that would be representative of a prototypical feminist. Participants were then asked to rank the likelihood of several statements about Linda. Participants tended to rank the likelihood that Linda is both a feminist and a bank

teller as higher than the likelihood that Linda is a bank teller alone. This response, though consistent with the use of the representativeness heuristic (Linda matches our prototype of a feminist, but not our prototype of a bank teller), does not conform to normative rules of logic and probability, specifically the conjunction rule. The probability of a person being *both* a feminist and a bank teller is necessarily smaller than the probability of a person being a bank teller alone because feminist bank tellers are a subset of bank tellers as a whole.

Although these kinds of simplifying heuristics are often viewed in a negative light, highlighting the fact that they do not always lead to the “best” or most “rational” decisions, recent research has indicated that, in fact, the heuristics we use to make decisions do result in good outcomes most of the time, especially given the constraints of our brain and our environment (Gigerenzer, 2000; Gigerenzer & Todd, 1999; Slovic, Finucane, Peters, & MacGregor, 2004; see also Simon, 1955). In contrast to the so-called heuristics and biases approach to judgment and decision making outlined above, a more recent approach has concentrated on the strength of heuristics as reasoning techniques that produce satisfactory decisions most of the time and operate within the constraints of limited information processing capacity, access to information, and time.

Researchers from this so-called “optimistic” (Doherty, 2003) or “efficiency” (Jungermann, 1983) approach have criticized much of the heuristics and biases literature for employing contrived situations designed to put the normative response at odds with the heuristic response. Although this may be an appropriate paradigm for demonstrating that people do indeed use heuristics in decision making tasks, the preponderance of research illustrating cases where heuristics lead to a non-normative decision can lead one

to assume that humans are inherently irrational, which presumably is not the case. Members of the optimist camp also focus on the intense demands that making a judgment or decision in a normative manner may place on human beings. Many models of normative decision making involve considering all the costs, benefits, and probabilities associated with each possible option, consolidating this information into an expected utility for each option, and then choosing the option with the highest expected utility. This method poses several problems for an individual with limited information, information processing ability, and time (Gigerenzer & Selten, 2001; Gigerenzer & Todd, 1999; Simon, 1955). The potential costs, benefits, and probabilities associated with each option may not be known or readily available to the person making the decision. Even if all this information is known, it may be very difficult or time consuming to come up with an expected utility for each option. Costs and benefits must be weighted according to importance, and it is often difficult to compare costs and benefits from different domains.

The normative scheme for making a decision outlined above may seem at first to be a rational way to go about choosing among options, but in real life it may require time and effort that is disproportional to the importance of the decision, or be impossible to compute given available information. In short, we may not typically have the time and resources necessary to arrive at the optimal decision and must stick to techniques that help us to arrive at decisions that are good enough and lead to positive outcomes most of the time.

Simon (1957) refers to the ability to make the best decisions possible given the constraints of the brain and the environment as bounded rationality. In fact, researchers such as Gigerenzer and his colleagues (Gigerenzer & Selten, 2001; Gigerenzer &

Stanton, 2006; Goldstein & Gigerenzer, 2002; Hutchinson & Gigerenzer, 2005; Todd & Gigerenzer, 2003) have found that very simple heuristics such as the “take the best” heuristic can perform as well as, or even better than, more complex normative decision rules in certain decision tasks. This use of heuristic based strategies that provide the best possible solutions to problems given the realistic contextual constraints has been termed *ecological rationality*.

### *Heuristics and Mate Choice Decisions*

Many researchers have attempted to create mathematical models of mate choice decision strategies in humans and other animals with varying degrees of success in replicating real world mating contexts (for a review see Simao & Todd, 2002). Guided by the principles of ecological rationality, Todd and his colleagues (Simao & Todd, 2002; Todd & Miller, 1999) have used computer simulations that test different mating strategies under parameters that attempt to replicate key elements of the realistic human mate choice decision context. These constraints include the fact that encounters with different potential mates typically occur in a sequential fashion and that there are difficulties associated with trying to go back and rekindle a relationship with a previous mate after others have proved inferior.

Todd and Miller (1999) did computer simulations of several different methods of choosing a mate and rated each method on a variety of performance measures including mate quality. They found that a very simple heuristic they call “try a dozen” works well given key real world constraints on the mate choice task. Try a dozen involves dating a dozen potential mates and making a mental note of the best one so far, then choosing the next mate that comes along that exceeds the previous best.

In later work Simao and Todd (2002) added a courtship period to their models in an attempt to more closely approximate human mating conditions. They again found that simple heuristic strategies outperform more complex ‘rational’ strategies for choosing mates. This strategy not only produced quality pairings, but also closely approximated real world phenomenon such as high correlations among partners in mate quality, average number of partners, and ability of the majority of the population to mate.

This application of heuristics to mate choice contexts provides evidence of the power of heuristics for mate choice (or complex) decisions but it does not directly address the potential for the emotion of love to serve as the heuristic. I propose that the psychological mechanism used by humans to assess mate quality is the feeling of falling in love associated with a particular mate. In fact, as reviewed in the next section, emotional feelings are commonly used as heuristics to assist decision making tasks. Falling in love is the obvious candidate for serving this purpose in mate choice decisions.

#### *Affect as a Heuristic*

Although early theories on judgment and decision making had a decidedly cognitive focus, recent theoretical models have posited affect as a major driving force in judgments and decisions (Damasio, 1994; Finucane et al., 2003; Loewenstein et al., 2001; Mellers, 2000). One decision rule, or heuristic, that we often use to assist us in making decisions is to consider how we “feel” about a particular option (Damasio, 1994; Forgas, 2000; Hogarth, 2001; Loewenstein et al., 2001).

#### *The Affect Heuristic*

Finucane and colleagues (Finucane, Alhakami, Slovic, & Johnson, 2000; Finucane et al., 2003; Slovic et al., 2004; Slovic, Peters, Finucane, & MacGregor, 2005)

have proposed that our affective reaction to stimuli serves as a heuristic to guide decision making. This affect heuristic helps us with our decisions by facilitating information processing, guiding reason, identifying priorities, and motivating behavior. While the term affect is typically used to broadly refer to any type of feeling state, including moods and emotions, these researchers adopt a much more specific definition of affect. In their model affect is a subtle feeling state that represents the positive or negative quality of a particular stimulus. Affect, by their definition, does not include broad mood states associated with no particular stimulus or specific emotions that involve more intense appraisals of specific qualities of a stimulus (e.g., fear, anxiety, love).

Following the work of the neuropsychologist Damasio (1994), Finucane and her colleagues maintain that the majority of our thought processes involve images (not necessarily visual), and that these images are typically imbued with an affective tone of varying intensity. When we recall or imagine a particular image, that image typically carries with it some sort of positive or negative evaluation that we have acquired through learning. They propose that when we make a judgment about a particular stimulus we bring to mind images concerned with that stimulus. The combined affective information contained in these images forms what they refer to as the “affective pool” for that stimulus. This affective pool serves as a cue that guides our judgment. For example, giving participants information about the benefits of nuclear power decreases their perceptions of the risks associated with it (Finucane et al., 2000). They argue that this operates by making the affective pool for nuclear power more positive resulting in lower risk assessments when the affective pool is consulted to make a risk judgment (Finucane et al., 2000). Consulting the affective pool is much more efficient than using some



complex scheme to weigh the pros and cons of an option and, thus serves as a heuristic to facilitate the decision making process. Indeed, people are more likely to make affectively based judgments when under time pressure than when not (Finucane et al., 2000).

It is easy to see how the affect heuristic could be applied to a mate-choice decision. When we are considering whether a person would be a suitable mate we generate images in our mind about that person, their characteristics, and our past and imagined future experiences with them. These images will contain some affective content such as the pleasure we experienced talking with them or the negative evaluation we have of their frustrating bad habits. The combination of our positive and negative affect related to these images would form our affective pool that we use in our evaluation. If our affective pool is very positive, we would make a positive evaluation of that person and decide that they would be an appropriate mate. However, this model is concerned with only general positive and negative evaluations and does not specifically address stronger emotions, such as love, that we often feel for particular individuals (although the positive affect associated with love would presumably lead to a strongly positive affective pool for loved individuals). Other researchers have looked beyond generalized affect to how more specific emotions can influence our decision making.

#### *Decision Affect Theory*

Mellers and her colleagues have developed a theory of how affect impinges on decisions, known as Decision Affect Theory (Mellers, 2000; Mellers & McGraw, 2001; Mellers, Schwartz, & Ritov, 1999). Their work focuses on the effects of anticipated emotions on decisions under uncertainty or risk. In other words, they hypothesize that people make decisions based on how they expect to feel about the potential outcomes.

Specifically, they propose that decisions are based on the anticipated pleasure or displeasure associated with each option, which, in their model is a function of three factors each of which can have a positive or negative valence: anticipated disappointment, anticipated surprise, and anticipated regret.

Anticipated disappointment is the relative elation or disappointment associated with the potential outcomes of one particular option. By way of example, consider a choice between two gambles. Each gamble is an option that can be chosen by the decision maker. Anticipated disappointment would involve a consideration of the possible outcomes associated with one option or gamble. One would consider how much elation they would expect to feel if they won the gamble minus the disappointment they would expect to feel if they lost, to come up with an anticipated level of disappointment for that gamble. Anticipated surprise involves the consideration of the degree of belief that each particular outcome will occur. In other words, the amount of surprise someone anticipates from winning the gamble depends on how strongly they believe they are going to win. Anticipated regret is concerned with comparisons across particular options. If I choose gamble A how much do I think I may regret not choosing gamble B.

An application of Decision Affect Theory to mate-choice would look something like this: When deciding whether to choose particular person as a mate, I would come up with an estimate of the anticipated pleasure I would expect to feel from having this person as a mate. This anticipated pleasure would be a function of (a) the good and bad outcomes I anticipate experiencing while this person is my mate (anticipated disappointment) (b) my degree of belief that these good and bad outcomes will occur (anticipated surprise) and (c) how the outcomes I expect from this mate compare to

outcomes I would expect from other potential mates (anticipated regret). Note that in this model the decision is based on emotions I expect to feel in the future. Although my previous and current experience of positive and negative emotions with this person may help me to determine what emotions I anticipate for the future, anticipated emotions rather than current feelings (such as falling in love) are the focus of this model.

### *Risk as Feelings*

Loewenstein and his colleagues have proposed an alternate model for how people make decisions under risk, known as the Risk as Feelings hypothesis (Loewenstein et al., 2001). In their model, the determinant of choice is not anticipated emotions but anticipatory emotions. Anticipatory emotions differ from anticipated emotions in that anticipatory emotions are described as the visceral responses one feels **while** they are making a decision, rather than feelings they expect to have in the future. Anticipatory emotions are triggered at least in part by the inherent risk and uncertainty present in the options. Their model focuses on the interplay of anticipatory emotions and cognitive evaluations of risk when deciding about options.

These researchers maintain that when faced with a situation where we must decide upon options with some form of inherent risk, we evaluate those options on both an emotional and cognitive level. The emotional evaluation is the more primary evaluation that may carry more weight than the cognitive evaluation. There are several reasons why the emotional evaluation may be of primary importance. First, emotional reactions occur more rapidly and operate on a more basic level than cognitive evaluations (Bargh, 1984; Zajonc, 1980). Emotions operate quickly to orient us to important stimuli in the environment, such as potential threats. Secondly, emotional evaluations have, not

only a direct effect on our evaluation of options, but also can have an influence on more cortically mediated cognitive evaluations. The memories of the past and imaginings of future consequences that we use to create a cognitive evaluation of the options may be emotionally laden themselves.

Although this model focuses on negative emotions generated by risks and uncertainties, it points to the profound importance of emotional reactions more generally in making decisions. Positive emotional reactions, such as falling in love may also have profound effects on relevant decision making such as whom to choose as a mate. In addition, the “risk as feelings” approach maintains that when our emotional evaluation is pitted against our cognitive evaluation (the emotional system says one thing while our cognitive thought processes say the opposite) the emotional evaluation usually wins.

In combination, these theories suggest that our experience of feelings or emotions can give us a quick way to assess which is the preferred option from a set of options. In addition, our experienced emotions may have a stronger influence on our decision making than more cognitive thought processes. It would be expected that the strong, emotional experience of falling in love would have a profound influence on our choices among mates and serve to simplify this complex and very important decision.

This project consists of three separate studies designed to examine to what extent (a) falling in love serves as a heuristic for making mate choice decisions and (b) this heuristic is sensitive to characteristics of a mate that are adaptive both from a relationship satisfaction and an evolutionary standpoint. In order for falling in love to serve as an effective heuristic for making mate choice decisions, it should be triggered by characteristics that are adaptive from a mate satisfaction and evolutionary perspective.

The first two studies address this issue. In Study 1 an attempt is made to ascertain the range of characteristics that people feel are most important to the experience of falling in love by asking participants to generate partner characteristics they find to be most important. For the purposes of comparison, participants are also asked about important characteristics for casual sex and marriage. In Study 2, the relative importance of the top characteristics is further refined using a Q-sort methodology. Finally, in Study 3, the role of falling in love as a simplifying heuristic for long-term mate choice decisions is assessed using a policy capturing approach.

#### Chapter Four: Study 1: Partner Characteristics Important for Falling in Love

Study 1 was designed to allow for a comparison between partner characteristics that people feel are most important to the experience of falling in love and characteristics important for short- and long-term romantic experiences. This study was fashioned after previous research on mate choice which looks at the characteristics that people feel are most important to short- and long-term relationships. Several elements were incorporated into the design of the study that make it unique. This study asks participants to (a) report which characteristics they feel are important to the experience of falling in love, (b) generate their own important characteristics rather than rating a pre-generated list, and (c) list both promoters and deterrents for each of the three contexts of: **falling in love**, having **casual sex**, and **marrying**.

The primary goal of this study was to determine if falling in love is triggered by characteristics of a mate that are important for long-term relationships. If falling in love serves as a useful heuristic for long-term mate choice, we would expect this to be the case. This design allows for a comparison between characteristics generated for falling in love and those generated for marriage. The inclusion of the casual sex context allows us to examine whether there are also elements of a mate that are important for short-term mating that are important for falling in love.

The majority of research on mate preference have used pre-generated lists of items which may not include the full range of characteristics that are important to people

when choosing a mate (for exceptions see Fletcher et al., 1999; Goodwin, 1990). In the interest of obtaining the full range of characteristics people find important to these three contexts, participants were asked to generate their own criteria for important characteristics in this study.

In addition, previous judgment and decision making research has indicated that judgments and choices can be strongly influenced by whether a person is considering positive or negative aspects of experiences (e.g., Caffray & Schneider, 2000), so participants were asked to generate both characteristics that are important for deterring and promoting relationships in each of the three behavioral contexts. As Fletcher and Stenswick point out: “mate selection cannot be properly understood apart from mate deselection” (2003, p.86).

### *Hypotheses*

#### *Partner Characteristics Important for Short- and Long-Term Mating Relationships*

Items on casual sex and marriage were included in an attempt to both replicate the previous findings of Buss and others as well as to enable a comparison between the characteristics important for falling in love and those important for these short- and long-term contexts. It is expected, consistent with the previous findings outlined in Chapter 2, that the following factors will be important for casual sex and marriage.

*Casual sex.* In short-term mating contexts, characteristics indicating health, good genes, and the likelihood of successful copulation take precedence over other characteristics that promote useful long-term relationships (Buss, 1999; Fletcher & Stenswick, 2003). It was expected, therefore, that the characteristics people list most

frequently for the casual sex context would be factors such as attractiveness, sexiness, vitality, and healthiness.

Although the above characteristics would be important for both genders, certain gender differences were expected (Buss, 1999; Fletcher & Stenswick, 2003). Males were expected to be more likely than females to list characteristics indicating (a) sexual access (promiscuity and sexual experience), (b) lack of desire for commitment, and (c) reproductive potential (physical attractiveness, youth). Women should be more likely than men to list factors indicating (a) a willingness to expend resources on her (generosity, gift giving, taking her out), (b) no previous commitments, (c) lack of promiscuity, and (d) ability to protect her (size and strength).

*Marriage.* For long-term relationships, characteristics that indicate the probability of a successful family relationship come to the forefront (Buss, 1999; Fletcher & Stenswick, 2003). Thus, for marriage, it was predicted that characteristics indicating a positive, agreeable personality, mental stability, compatibility, dependability, and good parenting skills would likely be listed in this context.

As with casual sex, gender differences were also predicted for marriage (Buss, 1999; Fletcher & Stenswick, 2003). Males should be more likely than females to list characteristics indicating (a) reproductive potential (physical attractiveness, youth), and (b) sexual fidelity (faithfulness and chastity). Women should be more likely to list factors indicating: (a) ability and willingness to provide resources (ambition, wealth, good education), (b) social status, (c) older age, (d) dependability and stability, (e) size and strength, and (f) love for her and commitment to her.



### *Characteristics for Falling in Love*

It was hypothesized that the experience of falling in love has developed in our species as a heuristic for making mate choice decisions as efficiently and adaptively as possible. Thus, it was expected that the characteristics that are important to the experience of falling in love should be those that would be advantageous to our satisfaction with our relationship, our social status, and the survival of our genes.

Specifically, it was predicted that characteristics important to falling in love would correspond primarily with factors important in a long-term mate (e.g., positive personality, compatibility). The experience of falling in love is a preliminary stage in a more long-term association. If falling in love guides the initiation of long-term relationships, it would be adaptive for factors that are important for long-term mates to also be important for the experience of falling in love.

However, the experience of falling in love occurs primarily at the beginning of a relationship and might also be expected to be triggered by certain characteristics important to short-term mating. Indeed, there is evidence associating sexual desirability with being in love (Meyers & Berscheid, 1997) and sexual satisfaction with marital satisfaction (Karney & Bradbury, 1995). In addition, neuropsychological research indicates complex interactions between sexual desire, attraction, and attachment systems (Diamond, 2001, 2003, 2004; Fisher, 2000; Fisher et al., 2002). Given these findings it was also expected that sexual desirability and characteristics associated with it (e.g., attractiveness, vitality) play a key role in the experience of falling in love.

Thus, the following predictions are made for the falling in love context: (a) characteristics listed would show a greater degree of correspondence with characteristics

listed in the marriage context than with characteristics listed in the casual sex context and (b) characteristics related to the sexual desirability of a partner will also be frequently listed in the falling in love context.

### *Method*

#### *Participants*

Psychology undergraduates participated for extra credit in their psychology classes. Participants were recruited from several psychology courses and asked to complete the study at the end of their class period. A total of 178 students (44 males, 134 females) participated in Study 1. Of these, 15 (13 female, 2 male) were excluded from the analyses because they were married and 15 (3 male, 12 female) were excluded because they reported homosexual or bisexual preferences. Due to the overrepresentation of female participants in the remaining sample, a subset of 50 females was selected for inclusion in the data analysis. The selected female participants were matched to the male participants by course and age.

The responses to the demographic and dating questions for the resulting sample are presented in Table 1. The vast majority of the sample had never been married, with one participant being widowed. There were no significant differences between the genders on dating status. Females reported that they were less likely to engage in casual sex than males did. However, means for both genders fell between not likely and somewhat likely reflecting a tendency to avoid engaging in casual sex. Although the genders did not differ on having been in love before or the number of times they had been in love, there was a gender difference for the currently in love question, with the

percentage of those who reported they were currently in love being greater for females than males.

Table 1

*Responses to Demographic and Dating Questions for Females and Males*

Question/response	Female	Male	Total
Demographic question			
Age	21.46	21.84	21.63
Dating questions			
Dating status			
Not interested	19%	17%	18%
Casually dating	31%	50%	39%
Steadily dating	38%	25%	32%
Living together	13%	8%	11%
Likelihood of engaging in casual sex	2.20*	2.68	2.42
Have been in love before	80%	76%	78%
Number of times	1.95	1.45	1.74
Currently in love	60%*	29%	47%

*Note.* \* indicates that the difference between males and females was significant at  $p < .05$ .

Although undergraduates are obviously not representative of all persons who fall in love, they are at a time in their lives when mate choice decisions are of great importance and they are less likely to have been married and potentially biased by

previous experience. In addition, this age group has been used in previous research on mate choice decisions (e.g. Buss et al., 1990) which we are, in part, attempting to replicate here. Therefore, undergraduates are an appropriate sample for obtaining a preliminary picture of the role of falling in love in mate choice decisions.

### *Materials and Procedure*

Each participant was asked to list seven characteristics of an opposite sex partner that he or she felt would be most important for each of the following six contexts (see Appendix A for all Study 1 materials): Characteristics that would:

- (1) be most likely to cause them to fall in love with another person
- (2) be most likely to prevent them from falling in love with another person
- (3) make them most likely to have casual sex with another person,
- (4) most likely prevent them from having casual sex with another person,
- (5) make them most likely to marry another person and
- (6) be most likely to prevent them from marrying another person.

Each major context (falling in love, casual sex, and marriage) was presented on a separate page with one question asking about deterrents (preventative characteristics) and one question asking about promoting factors. The order of the major context pages were randomized as well as whether the promoter or deterrent questions were listed first on each page. Participants were given up to thirty minutes to complete the questionnaire (five minutes for each question).

Participants were then given a demographic questionnaire asking about their age, sex, marital status, and sexual orientation. This demographic page also asked questions

ascertaining if they had ever fallen in love before and, if so, how many times; if they were currently in love, and their willingness to engage in casual sex (see Appendix A).

### *Results*

The participants listed a total of 1,825 promoters and 1,811 deterrents. Characteristics that were identical, or different grammatical forms of the same word (e.g., wit and witty), were combined resulting in a final list of 783 promoters and 918 deterrents. Frequencies were calculated for each attribute for each of the relationship contexts broken down by gender.

### *The Coding Process*

In the first part of the analysis, an attempt was made to consolidate this large number of attributes into a smaller set of *attribute categories* containing attributes that were similar enough in meaning to be combined together. It is important to note that all responses were combined so that coders were blind to the relationship context in which each characteristic was generated. To facilitate this process, it was conducted in two steps: 1) dividing the list of attributes into several large *groups* that were similar in type and 2) separating the groups of attributes into the attribute categories that contained a smaller set of characteristics that were very similar in meaning.

The list of attributes was first subjected to a general grouping process to facilitate further coding. This grouping process was designed to break the large list of characteristics into smaller, more manageable lists containing characteristics that were similar in type. The preliminary grouping scheme was developed by a single coder who attempted to encompass the major types of characteristics included in the final list. This was guided by the work of Schneider and Barnes (2003) with six of their eight categories

of important motivating factors for decision making being used in the final set of groups for this study. Fourteen groups of attributes were identified in this process: physical characteristics, mental characteristics, interests/leisure, communication, acts, sex, health, love/feelings, moral/religion, relationships, financial, goals, and other. Detailed descriptions of these groups are presented in Table 2.

This list of groups and their descriptions were used by three coders to divide the promoter and deterrent lists into groups. Each coder was given lists of all the items on a sheet with columns for each of the general groups (See Appendix B for a sample coding sheet). Coders put an X for each item in a single column for the group they thought that item best represented. This was done separately for promoters and deterrents. Agreement between coders was calculated by dividing the total number of items that were coded as being in the same group by the total number of items. At least 2 of the three coders agreed on the categorization 94% of the time for the promoters and 95% for the deterrents. Pairwise agreements ranged from 76% to 86%, with all three coders agreeing on categorization for 74% of the promoters and 75% of the deterrents.

Discrepancies in coding typically arose when items seemed to represent more than one category. For example, energetic could be either a physical or mental characteristic and fidelity is a mental characteristic that is also related to relationships, sex, and feelings. Discrepancies in coding were resolved through discussion and consensus among the three coders. When resolving coding discrepancies, an attempt was made to ensure that controversial characteristics were combined such that similar items (e.g., fidelity, faithful) ended up in the same general group. A sample of the

Table 2

*Descriptions of General Groups*

General group	Description
Mental characteristics	Anything about personality, intelligence, languages spoken, etc., excluding anything that particularly relates to one of the other categories. Examples: nice, intelligent, selfish, moody
Physical characteristics	Anything about the individual that can be seen, heard or smelled; pertains to the physical body or clothing. Excludes items that particularly relate to sex or one of the other categories. Examples: attractive, well dressed, loud, overweight
Love/feelings	Anything referring to feelings: either feelings the individual has for the participant or feelings the participant has for the individual. Examples: loves me, I like him, cheater, uncaring
Relationships	Anything referring to relationships: either relationships the individual has with other people, or the relationship the individual has to the participant, or what type of direction the relationship is heading (including references to children). Examples: wants children, is a friend, divorced, uncommitted
Sex	Anything having to do with sex or sexual attractiveness (excluding condom use and STDs). Examples: sex is good, sexy, promiscuous, bad kisser
Health	Anything referring to the health of the individual. Including condom use, drug/alcohol use, and STDs Examples: no diseases, good hygiene, a smoker, has STDs
Goals	Anything referring to the individual's goals and plans for the future. Examples: same goals, goal oriented, lazy, no future
Communication	Anything that refers to communication skills or willingness to communicate. Examples: talkative, listens, secretive, inarticulate
Moral/religion	Anything referring to morals or religion. Examples: Christian, good morals, racist, not spiritual
Career/education	Anything referring to the individual's educational or job status and attitudes towards career and education. Examples: willing to learn, college degree, no job, uneducated
Acts	Anything referring to actions the individual takes towards the participant. Examples: Treats me well, opens doors, abusive, not giving
Interests/leisure	Anything referring to hobbies or leisure interests, or to having things in common (other than religion). Examples: likes outdoors, likes music, hates animals, doesn't dance.
Financial	Anything referring to money or finances. Examples: has money, good with finances, greedy, poor

characteristics and their individual coder and final groups are presented in Appendix C.

Next, the category lists were subjected to a coding process wherein characteristics listed were grouped into attribute categories. Each general group was examined and separately divided into attribute categories by two different coders according to the following guidelines. Attributes were placed into categories according to differences in meaning. Participants' responses that were deemed by the coders to be identical or sufficiently similar in meaning were placed into one attribute category. Each characteristic was assigned to a single attribute category. Coders assigned an attribute name for each category to represent all of the characteristics in that attribute category.

The three coders then resolved discrepancies in attribute categorization through discussion. In some cases characteristics were re-assigned to a different group if that characteristic was sufficiently similar in meaning to an attribute category in a different group. This resulted in a set of 127 promoter attribute categories and 120 deterrent attribute categories. Idiosyncratic attribute categories that were listed by only one participant were then eliminated from the list resulting in a final set of 109 promoter attribute categories and 110 deterrent attribute categories. A sample of some attribute categories with the individual characteristics included in those attribute categories is presented in Appendix D.

#### *Identifying the Most Frequently Listed Attribute Groups*

One of the goals of this study is to identify the types of attributes that are most common attributes for each of the relationship contexts. To get a preliminary picture of this, the results for each group of attributes, broken down by gender and relationship context, is presented in Table 3. For each gender or gender/context combination, these



are expressed as a percentage of the total number of characteristics listed by all participants of that gender or in that particular gender/context combination. Due to the unequal numbers of males and females, percentages for each context are averages of the percentages for each gender in that particular context. A purely descriptive analysis of these findings is presented below.

The last three columns of Table 3 show the percentages for each group by context averaged across genders. It was predicted that factors such as attractiveness, sexiness, vitality, and healthiness would be of primary importance to both genders in the casual sex context. Consistent with predictions, attributes in the sex, physical characteristics, and health groups were more commonly reported in the casual sex context than in the other two contexts.

For the marriage context, it was predicted factors promoting a positive family life would be most important, including positive, agreeable personality, mental stability, compatibility, dependability, and good parenting skills. Consistent with these predictions, it was found that mental characteristics, relationships, acts, love/feelings, goals, financial, career attributes, moral/religion, and interests/leisure, were more important for the marriage context than the casual sex context.

It was expected that the falling in love context would share many of the same types of important attributes with the marriage context. Moral/religion, love/feelings, and interests/leisure attributes that were important for the marriage context were of equal importance for the falling in love context. Acts and mental characteristics were even more important in the falling in love context than they were in the marriage context.

Table 3

*Percentages of Attributes from Each General Group Listed by Participants by Gender and Context*

General group	Male			Female			Gender averages		Context averages		
	Sex	Love	Marriage	Sex	Love	Marriage	Male	Female	Sex	Love	Marriage
Mental characteristics	31.26	44.85	43.26	36.46	50.14	41.82	40.01	42.86	33.86	47.50	42.54
Physical characteristics	31.47	16.31	11.80	20.89	9.13	7.11	19.52	12.33	26.18	12.72	9.46
Love/feelings	3.11	7.57	10.30	7.35	10.67	9.82	7.11	9.29	5.23	9.12	10.06
Relationships	6.21	3.30	6.18	5.62	3.09	10.67	5.22	6.45	5.92	3.20	8.42
Sex	11.80	3.30	3.37	10.23	0.84	1.42	6.01	4.13	11.02	2.07	2.40
Health	9.94	3.69	3.00	10.09	2.53	1.99	5.42	4.84	10.01	3.11	2.49
Goals	0.83	3.11	4.68	1.01	5.06	6.40	2.94	4.17	0.92	4.08	5.54
Communication	2.90	2.72	2.62	1.87	4.92	1.71	2.74	2.84	2.39	3.82	2.16
Moral/religion	0.83	4.66	4.12	0.72	1.54	2.99	3.26	1.75	0.77	3.10	3.55
Career/education	0.62	1.94	3.56	1.15	2.67	4.69	2.09	2.84	0.89	2.31	4.13
Acts	0.00	1.94	0.75	1.44	5.48	3.84	0.91	3.60	0.72	3.71	2.29
Interests/leisure	0.83	4.85	3.56	0.72	1.69	1.71	3.13	1.38	0.77	3.27	2.63
Financial	0.21	1.17	2.25	1.59	1.69	5.26	1.24	2.84	0.90	1.43	3.76

Communication was more important for falling in love than marriage or casual sex. It was also predicted that attributes relating to sexual attractiveness would be more important for the falling in love context. This did not seem to be supported in this preliminary examination. Percentages of attributes listed in the sex group for the falling in love context were low and did not differ from the marriage context. Participants were, however, more likely to list physical characteristics in the falling in love context than in the marriage context, though the frequency that participants listed these items for falling in love did not approach the percentages obtained for the casual sex context.

Gender differences in attributes listed were also hypothesized. It was predicted that commitment, ability and willingness to expend resources and provide protection would be more important to women than men across contexts. The gender averages across context indicate that, in general, acts, financial, goals, and love/feelings attributes were more important to females than males. It was expected that physical and sexual characteristics (chastity in the long-term and promiscuity in the short-term) would be more important to males than females. It was found that, indeed, physical characteristics and sex attributes were listed more frequently by males than females. In addition, interests/leisure and moral/religion attributes were found to be reported more often by males than females.

This gives us a general picture of the types of attributes that were listed by participants of each gender in each relationship context. Now I will discuss the results for the specific attribute categories.

### *Identifying the Most Frequently Listed Attributes*

In order to get a sense of the most important characteristics for each gender in each relationship context, the attribute categories with the highest frequencies were examined. A more detailed analysis of all of the attribute categories and their relationship to previous research is presented in Appendix E. The 10 attribute categories most frequently listed in each context for males and females are presented in Table 4 in descending order by frequency. The frequency that participants of each gender listed the attribute for the specific context is indicated in parentheses. More characteristics were listed in instances where there were ties for the tenth most frequently listed characteristic.

In the casual sex context, characteristics involving attractiveness and health were of primary importance to both genders. However, mental and personality characteristics are still commonly found as top characteristics in this context for both genders especially sense of humor, *argumentative*<sup>1</sup>, and intelligent. Good sexual drive was much more frequently listed as important in a casual sex partner by males than females. Nice, honest, and know them well were more commonly listed as casual sex promoters by females than males. *Lack of respect, promiscuity, arrogance, and drug/alcohol abuse* were bigger deterrents of casual sex for females than males.

For the marriage context, personality characteristics move to the forefront, however attractiveness is still important for both genders and the top characteristic for males. Honesty, respect, nice, committed, and forgiving were personality attributes that were more frequently listed by females than males. Characteristics indicative of financial support, such as financially secure, *lack of career, and low/unstable finances* were also

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<sup>1</sup> Deterrent characteristics will be listed in italics throughout the text.

Table 4

*Top Attribute Categories for Males and Females in Each Context and Their Associated Frequencies*

Casual sex		Falling in love		Marriage	
Female	Male	Female	Male	Female	Male
Attractive (47)	Attractive (37)	Attractive (30)	Attractive (32)	Honest (34)	Attractive (24)
Unattractive (32)	Unattractive (28)	Honest (26)	Unattractive (16)	Not honest (24)	Argumentative (19)
Nice body (21)	Bad hygiene (24)	Not honest (25)	Sense of humor (16)	Unmotivated (21)	Sense of humor (18)
Bad hygiene (19)	Nice body (22)	Lack of respect (23)	Intelligent (16)	Attractive (19)	Intelligent (15)
Promiscuity (19)	Unattractive body (21)	Unmotivated (21)	Argumentative (13)	Argumentative (19)	Unmotivated (14)
Lack of respect (18)	Sense of Humor (15)	Nice (21)	Caring (12)	Abusive (18)	Unattractive (12)
Unattractive body (18)	Promiscuity (11)	Arrogance (19)	Shared interests (12)	Caring (16)	Honest (12)
Nice (15)	Good sexual drive (11)	Sense of humor (17)	Honest (11)	Nice (16)	Not honest (12)
Drugs/alcohol abuse (14)	Intelligent (10)	Intelligent (17)	Not honest (11)	Sense of humor (14)	Caring (12)
Honest (13)	Sexy (9)	Caring (17)	Not intelligent (11)	Affectionate (14)	Unfaithful (11)
Stds/illness (13)			Different interests (11)	Goal-oriented (14)	Different interests (11)
				Financially secure (14)	

more important to females than males. *Abusive* was a very important deterrent for females, but was not listed by a single male participant in this context.

The falling in love context reflects elements of some of the characteristics from both the marriage and casual sex contexts. As with the casual sex context, attractiveness is back as the top characteristic for both genders. However personality characteristics important to the marriage context replace the health oriented characteristics important for casual sex in the falling in love context. Honest, *not honest*, and other items related to trust (see Appendix E) were listed more frequently for females than males along with *lack of respect*, nice and *arrogance* and other items indicating a friendly, agreeable disposition (see Appendix E). *Unmotivated* and other items related to ambition and income (see Appendix E) were also more frequently listed by females than males. Although they were not in the top 10 items, attribute categories related to *violence* and good communication were more frequently listed by females than males for falling in love. *Unattractive*, shared interests, *different interests* and other items related to attractiveness, compatibility, and a positive outlook (see Appendix E) were more frequently listed by males than females in this context.

These findings tend to replicate previous findings on gender and context differences in preferred characteristics. However, the self-generated nature of these responses brought to light certain important characteristics that have not been recognized in the previous literature. Honesty was very frequently listed by both genders in the marriage and falling in love contexts and by females in the casual sex context. In fact, honest and *not honest* were the top two attribute categories for females in the marriage context. This characteristic has not been included in the standard items used in studies of

mate-choice (for exceptions see Buss & Barnes, 1986; Regan & Berscheid, 1997), though the two previous studies that also used self-generated lists also found this to be an important factor (Fletcher et al., 1999; Goodwin, 1990).

Sexual characteristics (other than chastity and sexy) have also rarely been included in questionnaires assessing preferences in mates (for exceptions see Regan & Berscheid, 1997; Regan et al., 2000; Sprecher & Regan, 2002), even in studies that specifically address short-term sexual encounters (e.g., Kenrick, Groth, Trost, & Sadalla, 1993; Kenrick, Sadalla, Groth, & Trost, 1990). The results for the attribute groups indicate that sexual characteristics are particularly important for the casual sex context and the attribute category results indicate that good sexual drive is frequently listed by males as a promoter for casual sex. *Promiscuity* is a sexual characteristic that was frequently listed as a deterrent by both genders in the casual sex context. This is of particular interest because evolutionary theory predicts that promiscuity would actually be a promoter for casual sex because it is related to sexual accessibility. Since previous research has typically examined only the opposite of promiscuity, chastity, the role of promiscuity as a deterrent for males has not been recognized. Promiscuity was found as frequently listed deterrent for males despite the fact that good sexual drive and other factors that promote sexual accessibility (see Appendix E) were found to be more frequently listed by males than females in this context. It appears that, in this context, males prefer a partner that appears willing to have sex with them, but unlikely to have sex with others. This makes sense considering that this strategy would increase the chances of paternity and decrease the probability of acquiring sexually transmitted diseases.

The inclusion of deterrents in the listing task also produced other unique results. *Lack of respect* was frequently listed by females in the casual sex and falling in love contexts. This item has not been included in previous research on partner preferences. Abusive was also a very prominent deterrent for females in the marriage context. This attribute has been found to be an important factor in the marital satisfaction literature, but has not been included in research on evolutionary influences on mate choice.

Now that we have a preliminary picture of the most frequently listed attributes in each context and their relationship to previous research on partner preferences, I now turn to an examination of the relationship of falling in love to short- and long-term mating contexts.

#### *Relationship of Falling in Love to Casual Sex and Marriage*

It was hypothesized that the characteristics listed by participants in the falling in love context would be more highly related to characteristics listed for marriage than to characteristics listed for casual sex. If falling in love guides the initiation of long-term relationships, it would be more adaptive for factors that are important for long-term mates to be equally important for the experience of falling in love.

The results thus far suggest that the characteristics frequently listed for falling in love mirror those listed for marriage for the most part. However, physical attractiveness, acts, communication, and certain mental characteristics (see Appendix E) were more frequently listed in for falling in love than for marriage. Characteristics related to financial resources and parenting were less prominent in the falling in love context than in the marriage context, especially for females (see Appendix E).



In this section this prediction is further examined by a descriptive comparison of the percentage of overlap in attribute categories for each of the context pairs (broken down by gender). For each context pair, this was calculated by dividing the number of attribute categories that were listed in both contexts by the number of attribute categories that were listed in either context. These results are presented in Table 5.

The hypothesis was supported by the data. The percentage of overlapping attributes for the falling in love and marriage context was greater than the percentage of overlap for the falling in love and casual sex categories for both genders. In addition, the percentage of overlap between the falling in love and casual sex categories was slightly greater for females than males, providing at least weak support for the assertion made by Buss and others that females are more likely to use casual sex to screen potential long-term partners.

Table 5

*Percentage of Overlap in Attribute Categories for Context Pairs*

	Males			Females		
	Love & marriage	Love & sex	Sex & marriage	Love & marriage	Love & sex	Sex & marriage
Percentage overlap	65.92%	48.60%	49.20%	61.62%	52.50%	52.94%

This study presents a picture of what characteristics people spontaneously generate as being important to short- and long-term relationships and falling in love. In

the next study, the most important characteristics generated here will be ordered for relative importance by a new group of participants.

## Chapter Five: Study 2: The Relative Importance of Partner Characteristics

The results of Study 1 gave us a sense of people's open-ended impressions of what the important partner characteristics for falling in love are and their relationship to characteristics important for long- and short-term relationships. In Study 2, the relative importance of the top characteristics is further refined using a Q-sort methodology. In this methodology participants have to make more precise comparisons between items in order to ascertain the differential importance of characteristics for each context. As with Study 1, this study was designed to allow for a comparison between partner characteristics that people feel are most important to the experience of falling in love and characteristics important for short-term and long-term romantic experiences. Specifically, participants were asked to sort the top attributes from Study 1 for importance in three contexts: **falling in love**, having **casual sex**, and **marrying**. Participants were asked to sort both characteristics that are important for deterring and promoting relationships in each of the three behavioral contexts.

### *Hypotheses*

#### *Partner Characteristics Important for Short- and Long-Term Mating Relationships*

It is expected, consistent with the predictions for Study 1, that the following factors will be important for casual sex and marriage.

*Casual sex.* In short-term mating contexts, characteristics indicating health, good genes, and the likelihood of successful copulation would be of primary importance.

Males were expected to place greater emphasis than females on (a) sexual access, (b) lack of desire for commitment, and (c) reproductive potential. Women should give higher rankings than men to list factors indicating (a) a willingness to expend resources on her, (b) no previous commitments, (c) lack of promiscuity, and (d) ability to protect her.

*Marriage.* For long-term relationships, characteristics that promote a successful family relationship should have the highest importance including those indicating a positive, agreeable personality, mental stability, compatibility, dependability, and good parenting skills. Males should be more likely than females to list characteristics indicating (a) reproductive potential, and (b) sexual fidelity. Women should be more likely to list factors indicating: (a) ability and willingness to provide resources, (b) dependability and stability, (c) intelligence, (d) size and strength, and (e) love for her and commitment to her.

#### *Characteristics for Falling in Love*

Consistent with the hypotheses for Study 1, the following predictions are made for the falling in love context: (a) importance ratings would show a greater degree of correspondence with ratings for the marriage context than with ratings for the casual sex context and (b) characteristics related to the sexual desirability of a partner will also be of high importance in the falling in love context.

#### *Method*

##### *Participants*

Undergraduates in psychology and social science statistics courses participated in exchange for extra credit points. Participants who reported that they were married, homosexual or bisexual, or non-native English speakers were not included in the

analyses. The remaining sample consisted of a total of 164 students (49 males, 115 females). Due to the overrepresentation of female participants in the sample, a subset of 50 females was selected for inclusion in data analyses involving gender comparisons. The female sub-sample included all of the female participants from psychology (who completed the task in the lab, see below) and additional Social Science Statistics students selected to match the male sample as much as possible on age and race.

The responses to the demographic and dating questions for resulting matched sample are presented in Table 6. The vast majority of this sample had never been married, with three participants being divorced. Males rated themselves as being more likely to engage in casual sex than females did, but the genders did not differ significantly on dating status, whether or not they had been in love before, how many times they had been in love, or whether they were currently in love.

#### *Materials and Procedure*

Data collection for Study 2 was conducted using the WebQ computer program (Schmolck, 1999), a free, web-based program for collecting Q-sort data online that was developed by researchers in Management and Information Science at the University of Georgia and Education at the University of the Federal Armed Forces in Munich. Participants were first given detailed verbal instructions on completing the task as well as a visual demonstration of a sample Q-sort. The full instructions are presented in Appendix F. Participants then went to the study website on their computer to complete the study. Psychology students completed the Q-sort in a computer lab directly after receiving the instructions. Social Science Statistics students received the verbal instructions and demonstration in-class along with a written handout of the instructions.

Table 6

*Responses to Demographic and Dating Questions for Females and Males*

Question/response	Female	Male	Total
Demographic questions			
Age	21.44	21.96	21.70
Ethnicity			
Caucasian	60%	67%	64%
African-American	20%	14%	17%
Hispanic	12%	10%	11%
Asian	6%	4%	5%
Other	2%	4%	3%
Dating questions			
Dating status			
Not interested	8%	6%	7%
Casually dating	24%	31%	27%
Steadily dating	38%	39%	38%
Living together	26%	8%	17%
Likelihood of engaging in casual sex	2.28***	3.30	2.77
Have been in love before	80%	78%	79%
Number of times	1.57	1.53	1.55
Currently in love	54%	40%	47%

*Note.* \*\*\* indicates that the difference between males and females was significant at  $p < .001$ .

They then completed the Q-sort on their personal computers within one week of receiving the in- class instructions. Participants were asked to complete a Q-sort for each of the three contexts: casual sex, marriage, and falling in love. Contexts were presented in one of 6 possible random orders.

Using the lists of features generated by participants in Study 1, a list of 60 important characteristics (30 promoters and 30 deterrents) was created. It was desired that this list be representative of each context/gender combination. Therefore, attribute categories were first ordered by frequency within each of the six gender/context combinations. If there had been no repetition, the list would have included 10 attributes (5 promoters and 5 deterrents) per gender/context combination. Due to repeated occurrences (e.g., attractive occurs in the top 10 for all gender/context combinations), it was possible to include the top 13 characteristics in each context/gender combination for promoters and the top 12 characteristics in each context/gender combination for Deterrents.

For each of the three contexts of casual sex, falling in love, and marriage, participants were given the list of the 30 promoter and 30 deterrent attributes. In addition, for the casual sex and marriage contexts, two items referring to feelings of falling in love were included as additional characteristics in the list. Both positive and negative variants of falling in love were included (i.e., you are falling in love with him/her and *you are not falling in love with him/her*) to provide a balanced number of promoters and deterrents. The program randomized the order in which the characteristics were listed. Participants were then asked to do a modified Q-sort (McKeown & Thomas,

1988) on those attributes for how much they would contribute to the likelihood of having casual sex with, falling in love with, or marrying a person.

*Preliminary ratings.* The Q-sort computer program began by giving the list of characteristics to participants with a radio button next to each corresponding to ratings from -5 to +5. Participants were asked to first go through the list of characteristics and do a preliminary rating by clicking the button next to each that represented how important that characteristic was to them in a mate for that particular context, just as if they were completing a standard rating scale. Positive numbers were described as indicating promoters – “positive characteristics that would be likely to cause you to engage in a particular type of relationship with a person”. Negative numbers were described as representing deterrents – “characteristics that would be likely to prevent you from or make you not want to have a particular type of relationship with that person”. Higher absolute values signified greater importance. When participants had clicked a rating button for each characteristic they were instructed to hit the update button. This sorted the characteristics according to participants’ selections from top to bottom with highest rated items at the top and lowest rated items at the bottom.

*Resorting.* The Q-sort procedure determines the number of items possible for each rating in a normally distributed fashion, such that fewer responses are allowed for extreme ratings than are allowed for more moderate ratings. The quasi-normal distribution for a set of 60 items is presented in Figure 1. A total of 62 characteristics were included in the Q-sorts for casual sex and marriage, due to the addition of the falling in love items. Two additional slots were added to the 0 (ambivalent) column in these contexts.



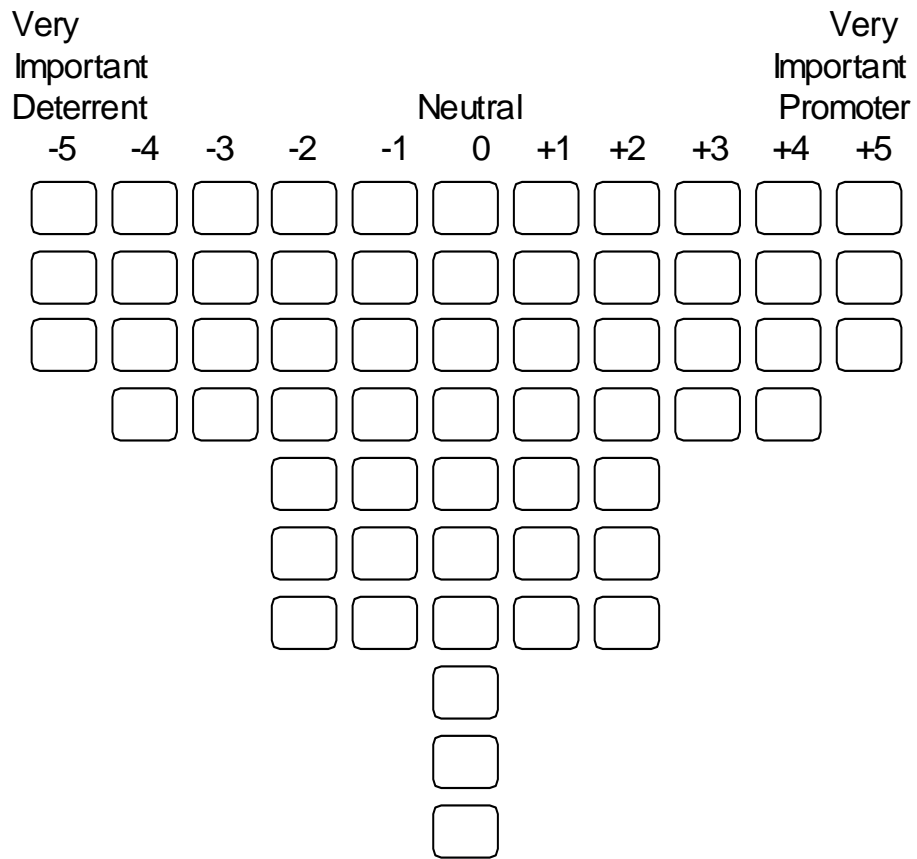


Figure 1. The quasi-normal distribution for a Q-sort with 60 items. Boxes represent the number of allowed attributes.

In the WebQ program each score is listed from highest (+5) at the top to lowest (-5) at the bottom. The characteristics assigned to that rating by the participant in the preliminary rating are listed underneath each score. The number of items allowed for each score is indicated by the number of blue boxes next to the score. Green dots in these boxes indicate that that slot is filled. Red dots indicate that a participant has too many characteristics for that score and needs to move some characteristics to another score. Participants could do this by picking the characteristic that they wanted to move and

clicking a different button for a different score and then hitting the update button. Participants were instructed to complete the resorting process by starting with the most important promoter and deterrent characteristics (+5 and -5) then updating the rank ordering and continuing to work towards the center of the ranking continuum by reviewing and moving attributes to and from the remaining ratings. The program would not let participants submit their Q-sorts until they had the correct number of items for each numerical rating.

Once they had completed the Q-sort for the first context, they were asked to repeat the procedure for each of the two remaining contexts. A description of each context was presented before the Q-sort for that context. In addition, the current context was listed at the top of the screen during each Q-sort. When participants completed the final Q-sort, they were given the same demographics questions used in Study 1, with an added race/ethnicity question, and asked to provide an answer for each.

### *Results*

The data for these analyses are the Q-sort ratings (on a -5 to +5 scale) provided for each of the characteristics for each of the three contexts by the participants. To get a sense of the most important characteristics for each gender/context combination, mean ratings were calculated and the top characteristics were determined. Next a MANOVA was conducted on the Q-sort data to determine how ratings on individual items differed as a function of gender and context. Finally, correlations between contexts were examined to determine the relationship between characteristics important for falling in love and those for marriage and casual sex.

### *Most Important Characteristics by Gender and Context*

To determine the most important characteristics, mean ratings were calculated for each gender/context combination. Items with the highest absolute values (most important promoters and deterrents) are presented in Table 7. For the purposes of comparison with the frequency results from Study 1, Table 7 is presented in the same format as Table 4.

For the casual sex context, as predicted, characteristics relating to health, attractiveness, and sex were common in the top 10 lists of both genders. The health related characteristics of *STDs/illness*, *no diseases*, and *poor hygiene* were present in the top 10 characteristics for both males and females, as well as *drug/alcohol problem* for females. Attractiveness appeared to be more important in this context for males than females. All five attractiveness related items (*attractive*, *unattractive*, *nice body*, *unattractive body*, and *sexy*) were present in the top 10 for males, with only *attractive* in the top 10 for females. Good sexual drive was present in the top 10 list for both genders, which would be expected as it presumably would increase the likelihood of successful mating. Internal characteristics were more commonly listed by females than males, particularly those that refer to how the partner behaves towards their mate such as *abusive*, *respectful*, *not respectful*, and *not honest*. This would be expected due to the higher level of standards females are hypothesized to have in short-term partners arising from greater parental investment and the tendency to use short-term partners to screen long-term mates. Fun was the only personality characteristic that ranked in the top 10 for males

For the marriage context, as hypothesized, characteristics that promote a satisfying long-term relationship are most important for both genders. In fact, the top 10

Table 7

*Top 10 Characteristics for Males and Females in Each Context and Their Associated Means*

Casual sex		Falling in love		Marriage	
Female	Male	Female	Male	Female	Male
<i>STD's/illness (-4.30)</i>	<i>STD's/illness (-4.06)</i>	<i>Abusive (-4.30)</i>	<i>Unfaithful (-3.63)</i>	<i>Abusive (-4.14)</i>	<i>Unfaithful (-4.04)</i>
<i>Abusive (-4.24)</i>	Sexy (3.49)	<i>Unfaithful (-3.94)</i>	<i>Not honest (-3.18)</i>	<i>Unfaithful (-4.06)</i>	Feelings for you (3.31)
<i>Drug/alc. Prob. (-3.12)</i>	Nice body (3.29)	<i>STD's/illness (-3.72)</i>	Feelings for you (3.12)	<i>STD's/illness (-3.60)</i>	Committed (3.20)
No diseases (3.04)	Good sex drive (3.24)	Honest (3.58)	<i>Bad personality (-3.10)</i>	Committed (3.42)	Falling in love (3.12)
Good sex drive (2.92)	No diseases (3.18)	<i>Not honest (-3.40)</i>	Honest (3.10)	Falling in love (3.42)	Honest (3.10)
<i>Poor hygiene (-2.86)</i>	<i>Poor hygiene (-3.12)</i>	Treats you well (3.20)	Good personality (3.10)	Honest (3.38)	<i>Drug/alc. Prob. (-3.00)</i>
Respectful (2.86)	Attractive (3.02)	<i>Drug/alc. prb. (-3.18)</i>	<i>STD's/illness (-3.08)</i>	<i>Promiscuous (-3.30)</i>	<i>Not fall. in love (-3.00)</i>
<i>Not respectful (-2.80)</i>	<i>Unattrac. body (-2.94)</i>	Feelings for you (3.14)	<i>Drug/alc. prob. (-2.96)</i>	Feelings for you (3.18)	<i>STD's/illness (-2.94)</i>
<i>Not honest (-2.66)</i>	<i>Unattractive (-2.92)</i>	<i>Promiscuous (-3.10)</i>	<i>Abusive (-2.82)</i>	Treats you well (3.16)	<i>Not honest (-2.92)</i>
Attractive (2.54)	Fun (2.71)	Caring (2.98)	Committed (2.78)	<i>Drug/alc. Prb. (-3.12)</i>	<i>Bad personality (-2.90)</i>

Note. Alc. = alcohol; Unattrac. = Unattractive; fall. = falling.

lists for males and females were strikingly similar with a few exceptions. *abusive*, *promiscuous*, and *treats you well* were present for females instead of *not falling in love*, *not honest*, and *bad personality* for males. In particular, characteristics relating to commitment to the relationship (i.e., *committed*, *unfaithful*, *has feelings for you*), and honesty were of primary importance in this context. As predicted, feelings of falling in love were very important in this context; with the falling in love item appearing for both genders and the *not falling in love* item appearing for males as well.

Interestingly, the health related items of *STDs/illness* and *drug/alcohol problem* figured prominently in this context. In fact, they were present in the top 10 for every gender/context combination except for casual sex for males which did not include drug/alcohol problem. This is probably due to the strong stigma attached to each and the profound implications they have for sexual relations, health, relationship satisfaction, and parenting (in the case of *drug/alcohol problem*).

As predicted, the most important items for the falling in love context were very similar to those important for the marriage context. The top 10 items for falling in love for females contained the same characteristics as for marriage with the exception of *not honest* and *caring* which replaced the *committed* and *falling in love* items from the marriage list. The most important falling in love items for males were also the same as for marriage with the exception of *good personality* and *abusive* which replaced the two falling in love items from the marriage list.

Thus far, the results suggest that most important partner characteristics differ depending on the context and the gender of the participant. However, gender differences

were minor in the marriage and falling in love contexts. Therefore, it is also important to get a detailed sense of gender and context interactions for the full set of characteristics.

#### *Gender x Context MANOVA*

To examine which characteristics differed as a function of gender and context, a 2 x 3 mixed-model MANOVA was conducted on the Q-sort rating data. Gender was the between-participants factor with two levels (male, female). Context was the within-participants variable with 3 levels (casual sex, falling in love, marriage). The dependent measures were the ratings for each of the 60 characteristics included in the Q-sort<sup>2</sup>.

The multivariate tests revealed an overall effect for gender,  $F(60, 38) = 3.43, p < .001$ , an overall effect for context,  $F(120, 272) = 4.61, p < .001$ , and a Gender x Context interaction,  $F(120, 272) = 1.43, p < .01$ . Each of these effects will be examined, in turn, by looking at the univariate effects for individual characteristics.

*Gender differences.* Univariate tests revealed significant gender differences for 24 out of the 60 characteristics. These characteristics are presented in Tables 8 and 9. As can be seen in Table 8, the characteristics that males viewed as significantly more important than females were primarily those involving physical appearance. This is consistent with the prediction that men would place more importance than women on characteristics that indicate reproductive potential in both short- and long-term contexts. Males also rated the characteristic fun as being of more importance than women did.

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<sup>2</sup> The falling in love and not falling in love items were not included in this analysis because they were not included for all levels of the context variable (falling in love items were not included for the falling in love context). Analyses for the falling in love items will be discussed separately.

Table 8

*Characteristics Rated as More Important by Males than Females*

Characteristic	Male mean	Female mean
Attractive	2.66***	1.79
<i>Unattractive</i>	-2.27**	-1.49
Nice body	2.18***	1.21
<i>Unattractive body</i>	-2.25***	-1.37
Sexy	2.39***	1.40
Fun	2.42*	1.83

*Note.* Higher absolute values indicate higher importance. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

As can be seen in Table 9, Several items relating to financial security (e.g., financially secure, *no career*) were rated as more important by females than males. Women also had a tendency to place greater importance than men on more internal characteristics. These include characteristics indicating good treatment (e.g., respectful, *abusive*), importance of relationships (e.g., committed, wants children/family), integrity (e.g., good values, *not honest*), and other personal characteristics (e.g., positive attitude, intelligent). These findings are consistent with the hypothesis that females tend to be more likely to look for compatible mates that can assist with child rearing responsibilities in both contexts.

Table 9

*Characteristics Rated as More Important by Females than Males*

Characteristic	Male mean	Female mean
Financially secure	0.33	1.57***
<i>No Career</i>	-0.81	-1.78***
<i>Poor/unstable Finances</i>	-0.83	-1.71***
Goal-oriented	1.02	1.45*
Respectful	1.74	2.70***
<i>Not respectful</i>	-1.91	-2.87***
Treats you well	2.34	2.92*
<i>Abusive</i>	-2.73	-4.23***
<i>Demanding</i>	-1.22	-1.64*
<i>Aggressive</i>	-0.48	-1.82***
<i>Not honest</i>	-2.49	-2.99*
Good values	1.62	2.47**
<i>Promiscuous</i>	-1.77	-2.89**
Wants children/family	0.37	1.39***
Committed	2.02	2.58*
Dependable	1.40	2.02**
Positive attitude	1.59	2.09*
Intelligent	1.56	2.15*

*Note.* Higher absolute values indicate higher importance. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .



*Context effects.* Significant effects for context were found for the majority of characteristics with 45 out of the 60 characteristics showing significant differences in ratings across the different contexts. Post hoc tests were conducted to further examine the nature of these differences. Although family-wise errors are a serious concern with this large number of tests, a few general patterns were found that were common to many characteristics. Therefore, the focus of this set of results is on the overall patterns reflecting the relationship between the contexts, rather than any individual result.

The vast majority (28 out of 45) of the significant context effects exhibited a pattern wherein the average ratings for the casual sex context were significantly different from the means of the other two contexts, which did not differ significantly from one another. Results for these characteristics are presented in Tables 10 and 11. This pattern of results supports the hypotheses that (a) criteria for partners in short-term relationships differ from criteria for partners in long-term relationships and (b) characteristics important for falling in love correspond more closely with characteristics important for long-term partners.

It was predicted that factors related to health, good genes, and the likelihood of successful copulation would be of primary importance in the casual sex context. As can be seen in Table 10, the factors rated as more important for the casual sex context than the other contexts were consistent with these predictions. The health related factors of *has STDs/illness*, *no diseases*, and *poor hygiene* were of more importance in the casual sex context than in the other two contexts. Physical attractiveness can be used as an indicator of quality genes and reproductive potential. Several items related to physical attractiveness were rated as of most importance for the casual sex context. There were

also items related to sexual accessibility represented, such as good sexual drive and extroverted. Although extroverts may not be more sexually accessible, they are more socially accessible which may make sexual success seem more likely.

Table 10

*Characteristics Rated as Most Important for the Casual Sex Context*

Characteristic	Casual sex	Falling in love	Marriage	Falling in love versus marriage
<i>Has STDs/illness</i>	-4.18	-3.40**	-3.27***	
<i>No diseases</i>	-3.11	-1.16***	-0.88***	
<i>Poor hygiene</i>	-2.99	-2.46*	-2.18***	
Well-groomed	2.01	1.42*	0.89***	**
Attractive	2.78	2.12**	1.73***	*
<i>Unattractive</i>	-2.52	-1.69***	-1.42***	
Nice body	2.67	1.28***	1.12***	
<i>Unattractive body</i>	-2.45	-1.58***	-1.38***	
Sexy	2.85	1.53***	1.29***	
Good sexual drive	3.08	1.88***	1.64***	
Extroverted	1.09	0.41***	0.09***	

*Note.* Higher absolute values indicate higher importance. Asterisks in the falling in love and marriage columns refer to tests of the differences between casual sex and these contexts. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

It was predicted that personal factors that promote successful long-term relationships would be of lesser importance for the casual sex context. As can be seen in Tables 11 and 12, these predictions were borne out in the results. Characteristics that were of lesser importance in the casual sex context included those involving feelings and relationships, values, treatment, personality, and financial success. Table 12 shows the few items that were rated differentially for the marriage context than the other two contexts. Characteristics rated as more important for the marriage context include characteristics relating to financial success, responsibility and family-orientation. Interestingly, *has children* (from a previous relationship) and fun were rated as less important for the marriage context than the other two contexts.

It was predicted that characteristics important for falling in love would correspond primarily with those important for the marriage context. As can be seen from the results presented thus far, this was generally the case. There were, however, items on which ratings for marriage and falling in love differed. As presented in Table 12, *Wants children/family*, *no career*, financial security, and *lack of responsibility* were rated as more important for marriage than either falling in love or casual sex. *Has children* and fun were less important for marriage than they were for falling in love and casual sex.

It was predicted that issues of sexual attractiveness would be more important for falling in love than for marriage. This was only partially supported by the results. As seen in Table 10, *attractive* and *well-groomed* were viewed as more important for the falling in love context than for the marriage context (though not as highly important as for casual sex). However, other attractiveness items such as *unattractive*, *nice body*, and

the item most closely related to sexual attractiveness, sexy, were not rated significantly differently for the falling in love and marriage contexts.

Table 11

*Characteristics Rated as Less Important for the Casual Sex Context*

Characteristic	Casual sex	Falling in love	Marriage
Has feelings for you	1.37	3.13***	3.24***
You know them well	0.99	1.81**	2.22***
Committed	0.76	2.84***	3.31***
<i>Unfaithful</i>	-1.95	-3.79***	-4.05***
<i>Promiscuous</i>	-1.37	-2.66***	-2.97***
Good values/morals	1.04	2.40***	2.71***
<i>Different religion</i>	-0.33	-0.65**	-0.86**
Honest	1.93	3.34***	3.24***
Dependable	1.17	1.99***	1.97**
Treats you well	2.25	2.88**	2.77*
Forgiving	0.85	1.38*	1.73***
<i>Aggressive</i>	-0.75	-1.42**	-1.29**
<i>Bad personality</i>	-1.91	-2.89***	-2.74***
Intelligent	1.15	2.27***	2.14***
<i>Not intelligent</i>	-1.22	-1.96***	1.80**
<i>Uneducated</i>	-1.22	1.81**	1.72**
Goal-oriented	0.62	1.54***	1.57***
<i>Unmotivated</i>	-1.15	-1.87**	-1.69**
<i>Poor/unstable finances</i>	-0.93	-1.44**	-1.45*

*Note.* Higher absolute values indicate higher importance. Asterisks in the falling in love and marriage columns refer to tests of the differences between casual sex and these contexts. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Table 12

*Characteristics Rated as of Differential Importance for the Marriage Context*

Characteristic	Marriage	Falling in love	Casual sex	Falling in love versus casual sex
<i>No career</i>	-1.67	-1.28*	-0.95***	
Financially secure	1.33	0.81**	0.72**	
<i>Lack of responsibility</i>	-2.00	-1.75	-1.45*	
Wants children/family	1.94	1.19**	-0.47***	***
<i>Has children</i>	-0.82	-1.28*	-1.43**	
Fun	1.68	2.35***	2.33**	

*Note.* Higher absolute values indicate higher importance. Asterisks in the falling in love and casual sex columns refer to tests of the differences between marriage and these contexts. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Instead it seems that falling in love is distinguished from marriage by a set of characteristics that lead to open, enjoyable interactions. The items in Table 13 represent items that were rated as of higher importance for the falling in love context than the other two contexts. These items, paired with fun from Table 12, indicate that, in addition to characteristics important to marriage, honest, positive, engaging, enjoyable, caring interactions are also important for the experience of falling in love.

Table 13

*Characteristics Rated as Most Important for the Falling in Love Context*

Characteristic	Falling in love	Marriage	Marriage versus	
			Casual sex	casual sex
<i>Not honest</i>	-3.29	-2.91*	-2.02***	***
Good personality	2.94	2.25**	1.91***	
Good sense of humor	2.65	2.03**	1.95***	
Caring	2.53	2.07*	1.38***	**
<i>Poor conversationalist</i>	-2.12	-1.56**	-1.47***	
Good communicator	2.06	1.51*	1.23***	
<i>Argumentative</i>	-1.81	-1.42*	-1.37*	

*Note.* Italics indicate deterrents. Higher absolute values indicate higher importance. Asterisks in the casual sex and marriage columns refer to tests of the differences between falling in love and these contexts. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

*Gender x Context interactions.* The main effects of gender and context were qualified by significant Gender x Context interactions for 11 of the 60 characteristics. These interactions are presented in Figures 2-5. The most common pattern of Gender x Context interaction is presented in Figure 2. This pattern is one in which males and females did not differ for the falling in love and marriage contexts, but males gave lower importance ratings to the characteristic for the casual sex context. This pattern was found for the committed, good values, has feelings for you, and *not honest* characteristics. A similar pattern was found for the respectful, *aggressive*, and *promiscuous* characteristics,

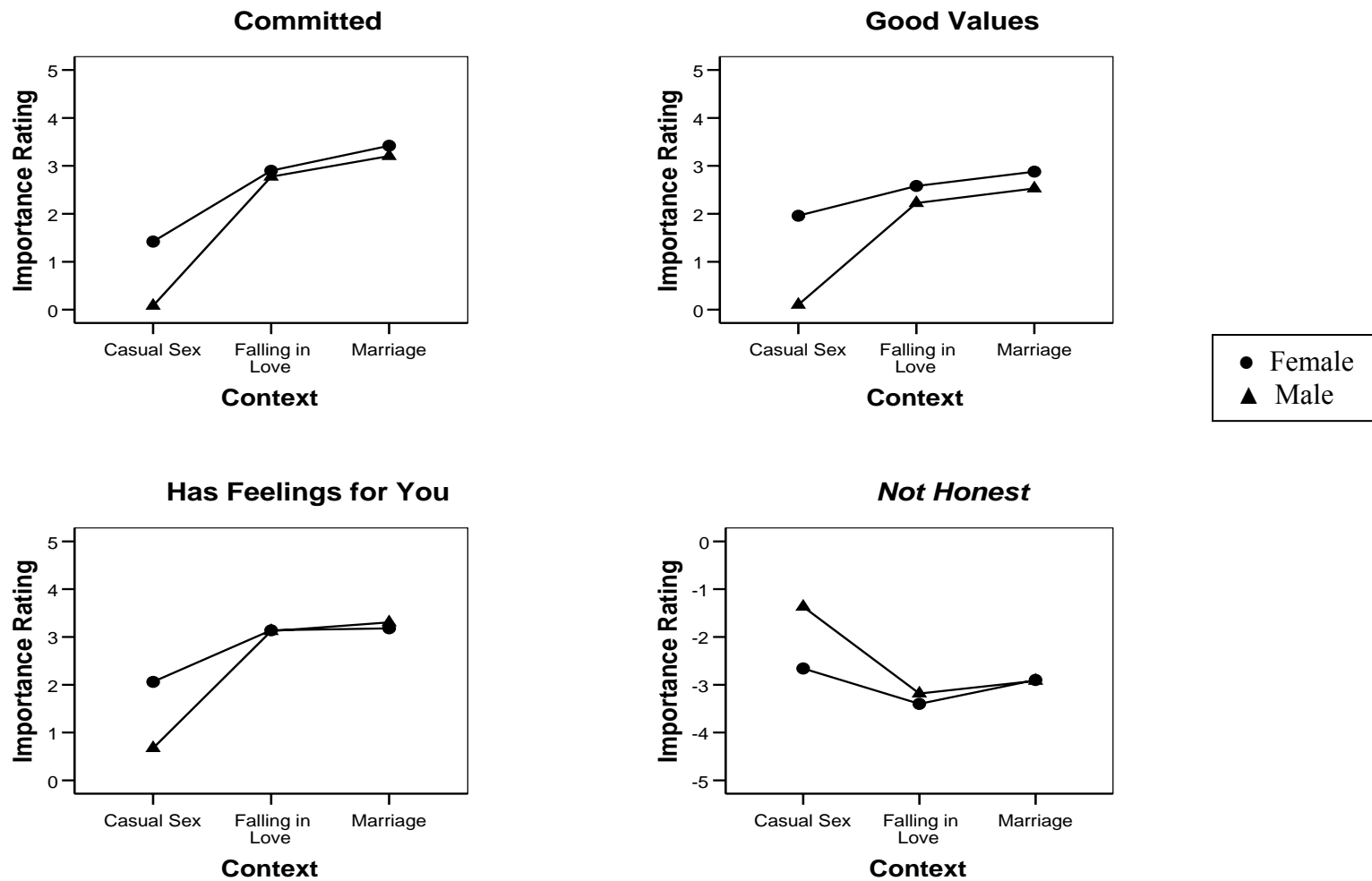


Figure 2. Gender x Context interactions for the committed, good values, has feelings for you, and *not honest* characteristics.

see Figure 3. For these characteristics, females rated the characteristic as more important than males overall, but the difference was larger for the casual sex context.

These patterns are consistent with the greater likelihood of women using short-term encounters to screen potential long-term partners and maintaining higher standards for short-term mates. These patterns also occur for characteristics that may be related to sexual accessibility (*promiscuous, aggressive, good values*) and desire for commitment (*committed, has feelings for you*) for which males were predicted to have the most difference between short- and long-term contexts. Although ratings did not reverse valence for these characteristics as predicted, ratings did go from positive in the marriage context to neutral in the casual sex context.

A third pattern was one in which the genders differed most strongly in the marriage context, see Figure 4. For financially secure, females gave this higher importance ratings than males overall, as predicted, but this effect was stronger for the marriage context. Males gave neutral ratings to this characteristic in all contexts. For *different religion*, males and females both gave very low ratings in the casual sex and falling in love contexts, but males gave a slightly higher importance rating than females in the marriage context.

The final pattern, presented in Figure 5, occurred for two characteristics that were found to be more important for the falling in love context than the other two contexts: *poor conversationalist* and caring. For caring, the difference between falling in love and the other two contexts was due to the responses of the females, who rated caring as more important to falling in love than the other two contexts. For *poor conversationalist*, this



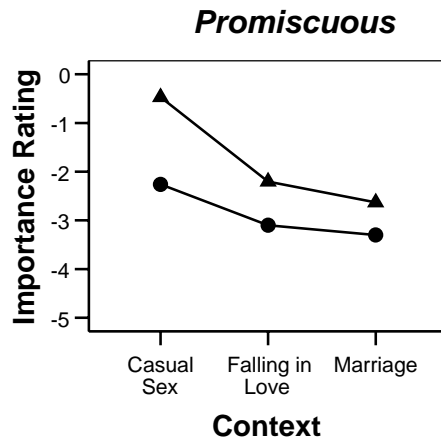
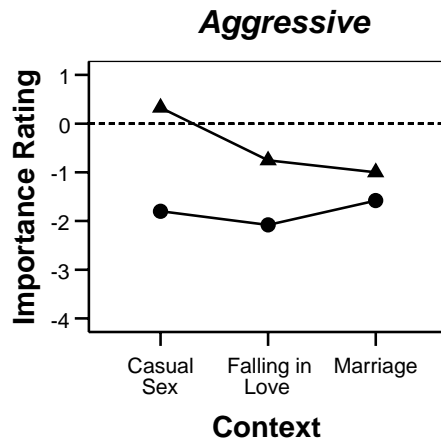
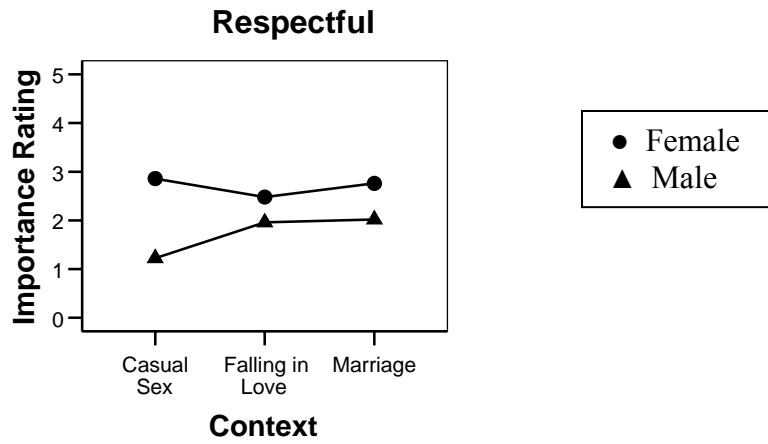


Figure 3. Gender x Context interactions for the respectful, aggressive, and promiscuous characteristics.

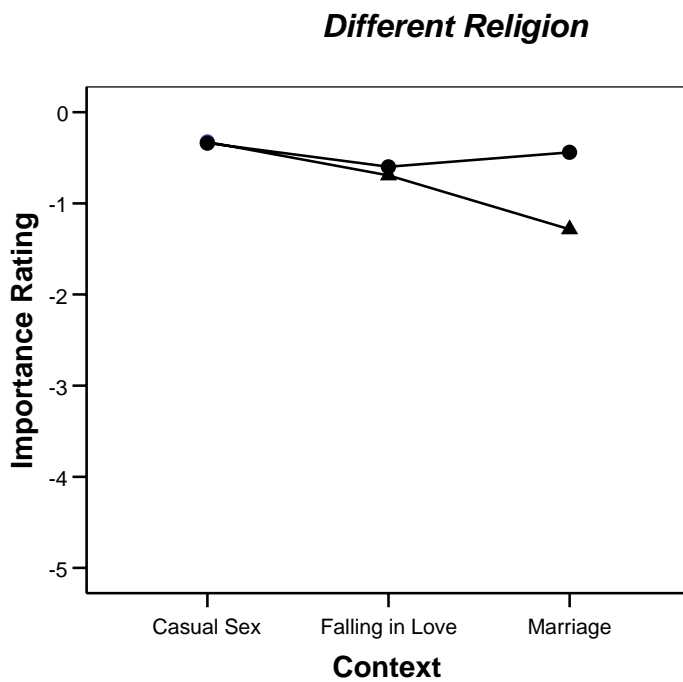
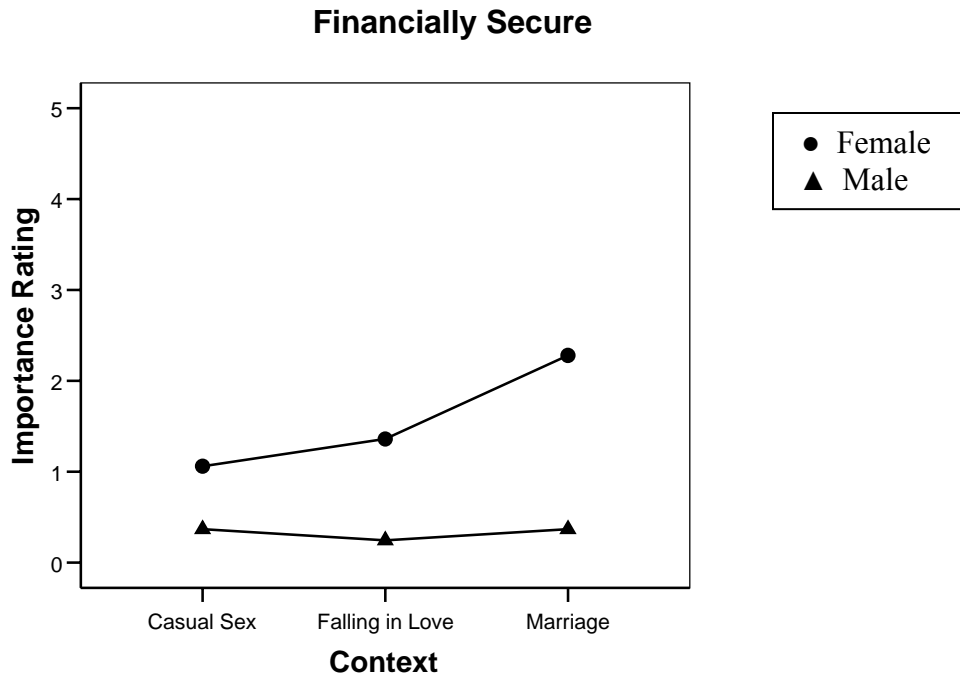


Figure 4. Gender x Context interactions for the financially secure and *different religion* characteristics.

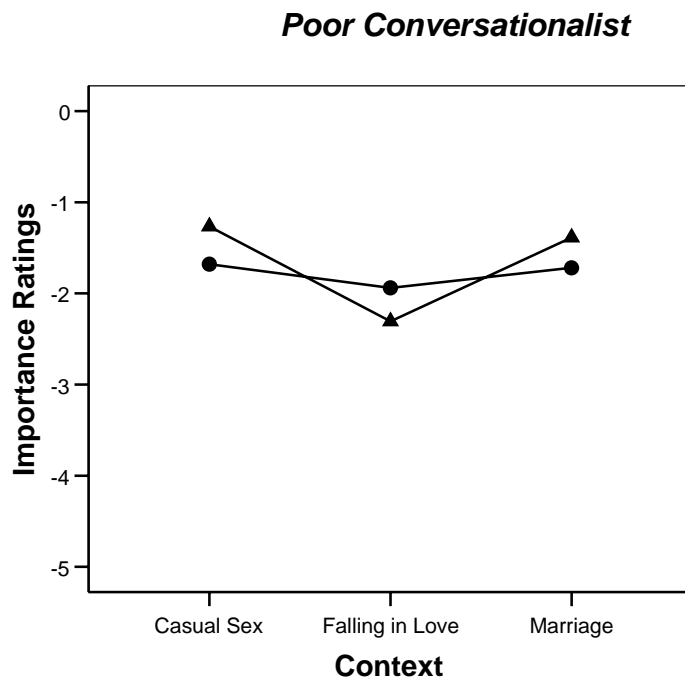
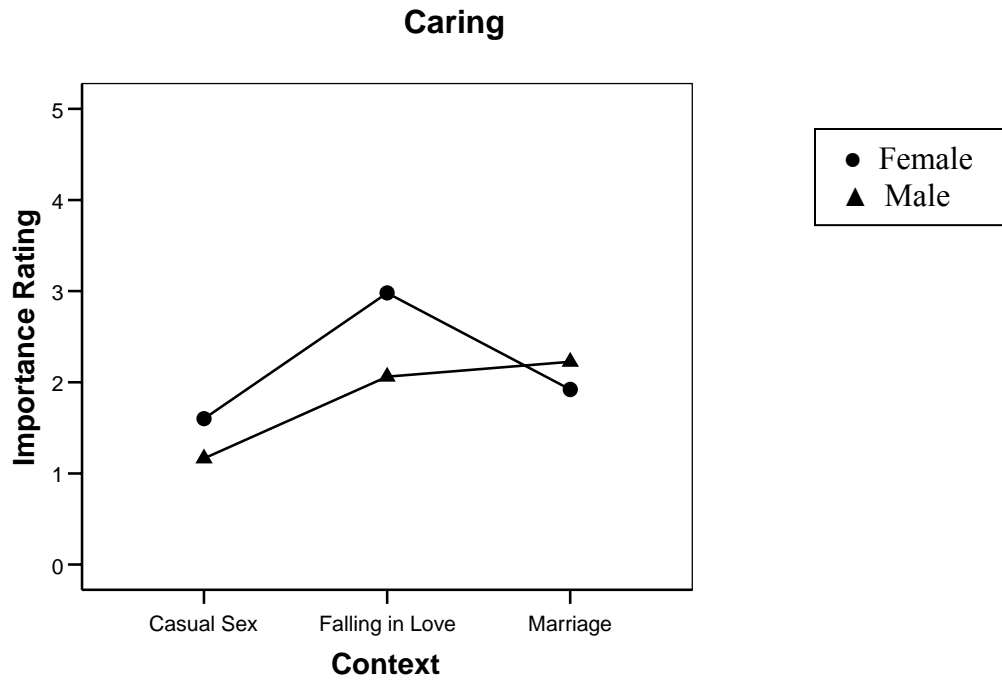


Figure 5. Gender x Context interactions for the caring and *poor conversationalist* characteristics.

effect seemed to be driven by the responses of males, with females giving this characteristic similar ratings for all contexts.

*Falling in love items.* Two falling in love characteristics (“you are falling in love with him/her” and “you are not falling in love with him/her”) were included in the Q-sorts for the casual sex and marriage contexts. A separate 2 x 2 mixed-model MANOVA was conducted on these two items with gender (male, female) as the between-participants variable and context (casual sex, marriage) as the within-participants variable.

Multivariate tests revealed a main effect for context,  $F(2,96) = 44.41, p < .001$ . There was not a significant main effect for gender,  $F(2,96) = 2.39, ns$ , or a significant Gender x Context interaction,  $F(2,96) = 1.99, ns$ . Univariate tests revealed significant context effects for each of the falling in love items. The means for these items, by context, are presented in Table 14. As predicted, the falling in love items were given much higher importance ratings for the marriage context than the casual sex context, with ratings being neutral for the casual sex context and very important for the marriage context.

The results thus far indicate that characteristics important for falling in love are, indeed, highly related to those important for marriage for both genders. However, characteristics important to males and females tend to differ more in the short-term context of casual sex. This issue will be examined further in the next section in which the average correlations between contexts are examined.

Table 14.

*Average Ratings for the Falling in Love Characteristics by Context*

Characteristic	Casual sex	Marriage
You are falling in love with him/her	0.69***	3.27
<i>You are not falling in love with him/her</i>	-0.25***	-2.84

*Note.* Higher absolute values indicate higher importance. \*\*\* $p < .001$ .

*Correlations between Contexts*

In order to assess the degree of similarity between the Q-sorts for the three different contexts, the intercorrelations between each participant's ratings for the three contexts were computed. The distribution of the Pearson's  $r$  statistic is not normally distributed and must be transformed to z-scores using Fischer's R to Z transformation in order to conduct hypothesis testing. Therefore, the correlational data was transformed into z-scores for the purposes of the ANOVA. For descriptive purposes, average correlations are reported below.

The resulting z-scores were subjected to a 2 x 3 Gender x Context Pair (casual sex/falling in love, casual sex/marriage, or falling in love/marriage) mixed-model ANOVA. A main effect of context pair was expected, with the relationship between falling in love and marriage being strongest and the relationship between casual sex and marriage being weakest. This effect was found,  $F(2, 192) = 98.48, p < .001$ . Post hoc tests revealed significant differences between all levels of context pair ( $p < .001$ ) with

falling in love/marriage having the largest correlation ( $M = 0.74$ ), falling in love/casual sex next ( $M = 0.62$ ), and marriage/casual sex being the least related ( $M = 0.59$ ).

Because females are more likely to use short-term sexual encounters as a means of determining appropriate candidates for more long-term relationships, it was expected that they would show greater overall consistency across contexts and therefore higher correlations overall than males. This was found to be the case,  $F(1, 96) = 6.32, p < .05$ , with the correlations between contexts for females ( $M = 0.71$ ) being higher than those for males ( $M = 0.59$ ).

An interaction between context pair and gender on context relationships was also expected. This interaction was indeed found,  $F(2, 192) = 3.99, p < .05$ . Men and women were predicted to differ more on context pairs that involve casual sex, because of women's greater parental investment and likelihood of using short-term encounters to screen long-term mates and men's more divergent criteria for short- and long-term mates (e.g., chaste, faithful mates for long-term partners and sexually accessible mates with no desire for commitment for short-term partners). This pattern was indeed found and is illustrated in Figure 6.

The results of this study are consistent with those of Study 1, indicating that characteristics important for casual sex and marriage are different and that characteristics important for falling in love tend to coincide with those for marriage. For casual sex, physical, health-related, and sexual characteristics were most important. Personal and relational characteristics were most important to the marriage context. These characteristics, as well as those indicating the potential for enjoyable, open, interactions were most important for falling in love.

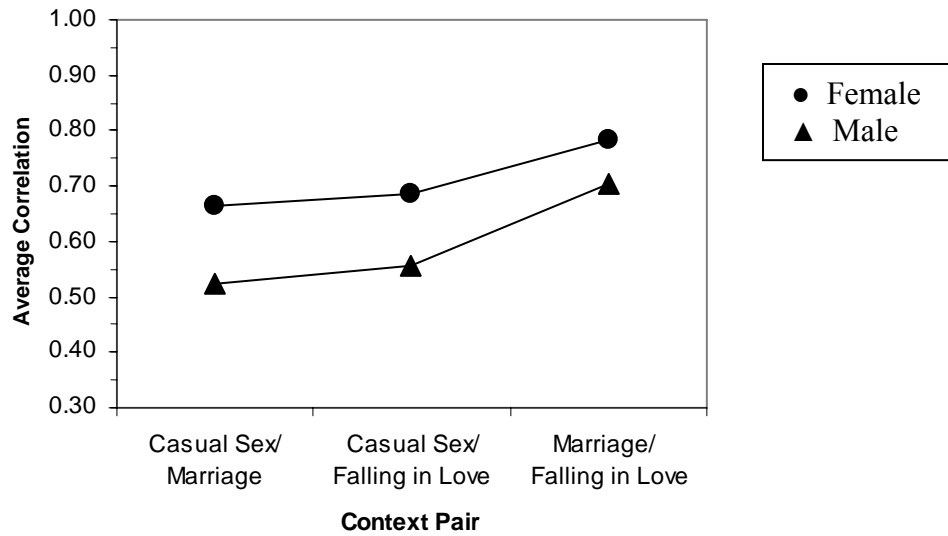


Figure 6. Gender x Context Pair interaction for average correlations.

There were also gender differences found, with males giving primacy to attractiveness related characteristics and females placing more importance on a relationship orientation, good treatment, ability to provide, and integrity. These differences were most pronounced in the casual sex context with males typically having more lax criteria for partners in this context.

Now that the results of Studies 1 and 2 have confirmed that falling in love is, indeed, triggered by characteristics that are important in a long-term mate, Study 3 will examine the role that falling in love plays in mate choice decisions.

## Chapter Six: Study 3: Policies for Mate-Choice

Studies 1 and 2 have established that the experience of falling in love is tied to characteristics in a mate that are important for successful long-term relationships. This is necessary if falling in love is to act as an effective heuristic for long-term mate choice decisions. In this final study I will examine how falling in love contributes to these decisions. This study was designed to ascertain the role of falling in love, relative to sexual desire and partner characteristics, in mate choice decisions. Is falling in love the primary factor in making an assessment of a potential mate that supersedes all other factors, or do other characteristics play a role equal to falling in love in mating decisions? If falling in love indeed serves as a heuristic for mate choice decisions, we would expect the former to be the case.

Study 3 employed a policy capturing technique to gauge the importance of falling in love, relative to partner characteristics and sexual desire, when participants are making judgments about hypothetical potential mates. Policy capturing is a technique that can be used to ascertain how multiple factors impinge on judgment. In contrast to the methodology of the Studies 1 and 2, policy capturing has the advantage of indirectly assessing the cues that are most important to an individual in a decision task and thus may overcome any lack of insight people have into their actual decision making behavior.

In a policy capturing study, a set of cues are manipulated in a series of profiles which participants are asked to make judgments about. In this study the profiles will



consist of descriptions of hypothetical mates. The first step is to identify cues that are relevant to the judgment. Three types of cues were included in this study (1) falling in love, (2) sexual attraction, and (3) the mate's status on several important partner characteristics identified in Study 2. Descriptions of hypothetical partners were created that varied the mate's status on each of these cues. Participants were asked to rate each of these partners for how much they would like to have casual sex with, date, or marry that individual. This allows for an analysis of the relative impact of falling in love, sexual attraction, and partner characteristics on participants' ratings for each type of relationship.

### *Hypotheses*

In the previous studies the hypotheses concerned the relative importance of various partner characteristics to falling in love and their relationship to those important to short- and long-term relationships. In this study, however, the primary concern is not with the importance of various characteristics, but with how falling in love may supersede those characteristics as the primary determinant of a suitable long-term mate.

### *Hypotheses for Casual Sex*

It was hypothesized that sexual attraction would be of primary importance in a casual sex partner. Sexual attraction may serve a purpose in this context similar to the one that is hypothesized for falling in love in more long-term mating contexts. The top partner characteristics identified in Study 2 were also expected to help determine who would make a good casual sex partner. This contribution is not expected to be as strong as the role of sexual attraction, however.

The role of falling in love for casual sex is unclear. It may operate as a cue for an appropriate partner; however, if falling in love is designed only to aid in the selection of a more long-term partner, then it may not exert a strong influence in this context. It may even have a negative impact on the willingness to engage in casual sex, as one would not want to preclude a more serious attachment with someone with whom they are falling in love.

#### *Hypotheses for Serious Dating Relationships/Marriage*

When asked to evaluate a prospective partner as being desirable for a serious dating relationship or marriage, sexual attraction and other characteristics previously determined as being most important in Study 2 were expected to play an important role. However, the feeling of falling in love with that person was expected to have a greater impact than these characteristics on the evaluation of the potential partner.

#### *Method*

##### *Participants*

Participants were undergraduates in psychology and social science statistics courses who participated in exchange for extra credit points. Participants who reported that they were married, homosexual or bisexual, non-native English speakers or who did not complete the demographic questionnaire were not included in the analyses. A total of 379 students (105 males, 274 females) met these qualifications for Study 3. Due to the overrepresentation of female participants in the remaining sample, a subset of 105 females was selected for inclusion in data analyses involving gender comparisons. The female sub-sample was selected such that it matched the male sample as much as possible on key demographic variables (age, race, and class section).

The responses to the demographic and dating questions for resulting matched sample are presented in Table 15. No one in this sample had ever been married. For the dating items, males, again, rated that they were more likely to have casual sex than females did. In addition, Females were more likely to report that they were living together in a committed relationship with their partner. For the love items, males were more likely to state that they had never been in love before and Females were more likely to respond that they were currently in love.

### *Materials and Procedure*

One of the variables included in Study 3 was the set of characteristics that hypothetical partners had. Each hypothetical partner was described by a set of 6 characteristics that, as a whole, were good, moderate, or poor. In order to increase the variety of partners that participants rated and to provide a replication of the effects of the variables for partners with different characteristics, three sets of characteristics were selected. It was desired that each set be of equivalent importance for each gender and context.

To determine the characteristics that were included as the partner characteristics cue sets in the stimuli for Study 3, an overall mean rating was calculated for each characteristic from Study 2 by averaging the means on that characteristic for each gender/context combination. The 18 promoters<sup>3</sup> from Study 2 with the highest overall

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<sup>3</sup> Only promoters were included as potential characteristics for use in Study 3, due to difficulties inherent in creating comparable positive variants of many of the deterrent characteristics.

Table 15

*Responses to Demographic and Dating Questions for Females and Males*

Question/response	Female	Male	Combined
Demographic questions			
Age	20.75	21.06	20.90
Ethnicity			
Caucasian	73%	74%	74%
African-American	13%	11%	12%
Hispanic	9%	9%	9%
Asian	1%	1%	1%
Other	4%	4%	4%
Dating questions			
Dating status			
Not interested	10%	15%	12%
Casually dating	30%	39%	34%
Steadily dating	41%	33%	37%
Living together	20%*	8%	14%
Likelihood of engaging in casual sex	2.33***	3.18	2.74
Have been in love before	86%*	67%	76%
Number of times	1.38	1.28	1.33
Currently in love	61%**	35%	48%

*Note.* \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

means across all gender/context combinations made up the partner characteristics cue sets used in Study 3. Falling in love and “sexy” were not included in the list of 18 characteristics, as they were included as separate variables in Study 3.

The top 18 characteristics identified in Study 2 were divided into three groups of six characteristics. It was desired that each of these groups be comparable in average importance for both short-term and long-term relationships for both genders. To accomplish this, the mean for each group was calculated for casual sex and for love and marriage combined (as marriage and falling in love were highly correlated and often different from casual sex). A combined short-term/long-term mean was created for each group by averaging these two means. The groups were constructed such that the combined short-term/long-term mean for each gender were as close as possible for all groups. In addition, groups were created such that similar characteristics were not included in the same group (e.g., attractive, nice body).

For each partner characteristics set there were three levels of status of the potential mate: good, moderate, and poor. To achieve this, a good, moderate and poor variant of each of the 18 characteristics was first created. These are presented in Appendix G. This was done by the researcher and two undergraduate assistants with the goal of creating a good variant that was very positive, a poor variant that was negative but not so bad that it would tend to preclude any desire for involvement with that individual, and a moderate variant that was between the two. Two rounds of pilot testing were conducted to ensure that the variants met these criteria as much as possible.

Next, a good, moderate, and poor variant of each set of six characteristics was created. The first level was a good characteristic set (mate has a good status on 4

characteristics and moderate on the other two), the second level was a moderate characteristic set (mate has two characteristics each of the good, moderate, and poor status), and the final level was a poor characteristic set (mate has a poor status on 4 characteristics and moderate on the other two). A randomizing method was used to determine which characteristics were assigned a good, moderate, or poor status in each variant. This produced a total of nine sets (3 Groups x 3 Variants) of characteristic descriptions for use in the stimuli. These sets were also piloted to make sure that the good, moderate, and poor variants were perceived as such and reasonably comparable across groups.

For the falling in love cue, the profiles contained one of the following statements describing a potential mate's status on that cue: (a) you realize that you are falling in love with him/her, or (b) you realize that you could not fall in love with him/her. For the sexual desirability cue, profiles contained one of the following statements: (a) you realize that you feel very sexually attracted to him/her or (b) you realize you don't really feel sexually attracted to him/her.

The profiles were created by factorially manipulating the cues so that there was a profile for every possible combination of cues. This created a set of 36 (2 x 2 x 9) profiles. Profiles were presented in two different orders and cue levels were counterbalanced as well as the order of the cues within each profile. A sample profile (Group 1, good partner characteristics, high sexual attraction, falling in love) read as follows:

Imagine that you have been on a number of dates with a person you recently met and feel you now have a pretty good idea of what he is like. From your previous encounters with this person, you have discovered the following about him:

- He treats you like a queen.
- He has a decent personality.
- You find him to be highly attractive in appearance.
- He seems like a moderately caring individual.
- You find him to be quite intelligent.
- You are confident he does not have any diseases.
- You realize that you feel very sexually attracted to him.
- You realize that you are falling in love with him.

After reading each description participants were asked how much they think they would like to (a) have a casual sexual relationship with that person, (b) become involved in a serious dating relationship with that person, and (c) marry that person, on a scale from 1 (not at all) to 7 (very much). In addition, they were asked to what extent each description sounded like it could be a real person, on a scale from 1 (not at all realistic) to 7 (very realistic).

The materials packet contained an instruction sheet (see Appendix H), followed by three sample profiles to acquaint the participants with the range of descriptions they would be asked to evaluate, then the set of 36 profile descriptions. At the end of the packet participants were asked to rate each of the 18 characteristics included in the profiles for importance, on a scale from 1 (not at all important) to 7 (very important). Participants then received the same demographic questionnaire used in Study 2.

## *Results*

The data for these analyses are the participants' ratings of the profiles on the 1 to 7 scale for each of the three contexts and realism. An Analysis of Variance was first conducted to examine relationships between the independent variables and likelihood ratings for engaging in relationships. Next, results for the realism dependent variable were examined to see how the manipulation of the cues impacted how realistic the hypothetical partner profiles were perceived to be.

### *Analysis of Variance for Likelihood Ratings*

A 2 x 2 x 2 x 3 x 3 mixed-model ANOVA was conducted in order to examine the overall pattern of relationships between the various independent variables and participants' likelihood ratings for engaging in relationships with the hypothetical partners. Gender was the sole between-participants variable in this analysis with two levels, male and Female. The four within-participants variables were falling in love (yes, no), sexual attraction (yes, no), partner characteristics (good, moderate, poor), and context (casual sex, dating, marriage). To simplify the presentation of results, the dependent variable in this analysis was the mean likelihood rating across the three partner characteristic groups used in the profiles.

*Manipulation check.* The three groups of characteristics used in the profiles were designed to be as equivalent as possible, both in terms of relative strength of the good, moderate, and poor partner characteristics manipulation and in terms of overall importance across contexts and gender. To check whether this was indeed true for this data, a 2 x 2 x 2 x 3 x 3 mixed-model MANOVA was first conducted with ratings for each of the three groups as the dependent variables. Results indicated that there was a



significant effect of partner characteristics for each of the three groups and that the good, moderate, and poor levels were all significantly different from one another at  $p < .001$  for each group.

An examination of the means for partner characteristics variable for each group, however, revealed that although the good and poor levels were comparable across all three groups, the mean for the moderate level for Group 1 was significantly lower than the means for the moderate levels of the other two groups and was, in fact, lower than the mean for the poor level for Group 3. Although this introduces additional noise into the ANOVA analysis using group means, this is compensated for by sizeable amount of power provided by the large numbers of participants used in this analysis. In addition, a detailed examination of the MANOVA results indicated that patterns of results did not differ markedly across groups for any of the significant effects examined below.

*Main effects.* Significant main effects were found for all of the independent variables and are presented in order of effect size. Partial  $\eta^2$  is used as the measure of effect size in these analyses. It is a useful measure of effect size in studies with many independent variables because its size is not dependent on the number and magnitude of other effects in the analysis.

As would be expected, there was a main effect of partner characteristics,  $F(2,416) = 976.69, p < .001, \text{partial } \eta^2 = .82$ . Participants gave significantly higher ratings of likelihood for engaging in relationships with hypothetical mates with a good set of characteristics ( $M = 4.31$ ) than those with a moderate set of characteristics ( $M = 3.05$ ) which were, in turn, higher than those with a poor set of characteristics ( $M = 2.21$ ), all significant at  $p < .001$ .

There was also a main effect for sexual attraction,  $F(1, 208) = 409.33, p < .001$ , partial  $\eta^2 = .66$ . Not surprisingly, participants rated themselves as having a higher likelihood of engaging in relationships with hypothetical partners that they were sexually attracted to ( $M = 3.55$ ) than those they were not sexually attracted to ( $M = 2.82$ ).

A main effect for falling in love was also found,  $F(1, 208) = 388.69, p < .01$ , partial  $\eta^2 = .65$ . As predicted, participants rated hypothetical partners with whom they were falling in love ( $M = 3.54$ ) as more likely candidates for relationships than those with whom they were not falling in love ( $M = 2.84$ ).

A main effect for context was also found with likelihood ratings decreasing as the level of commitment involved in the relationship increased,  $F(2,416) = 146.22, p < .001$ , partial  $\eta^2 = .41$ . Likelihood ratings were somewhat higher for the casual sex ( $M = 3.52$ ) context than for dating ( $M = 3.39, p < .05$ ) which were higher than for marriage ( $M = 2.66, p < .01$ ).

There was also a main effect for gender,  $F(1, 208) = 48.18, p < .001$ , partial  $\eta^2 = .19$ . Males ( $M = 3.52$ ) gave higher likelihood ratings for engaging in relationships with hypothetical mates than females ( $M = 2.86$ ). This is consistent with the predicted tendency of females to be choosier about mates than males overall, due to higher parental investment in offspring.

*Interactions.* These main effects were qualified by 15 significant interactions. Several of these interactions had very small effect sizes. To simplify presentation, significant interactions with trivial effect sizes (partial  $\eta^2$  of less than .05) will not be discussed.

Of the remaining nine interactions with larger effect sizes, six were two-way interactions. These will be discussed in order of effect size. The first was a Context x Falling in Love interaction,  $F(2, 416) = 145.44, p < .001, \text{partial } \eta^2 = .41$ . It was predicted that the effect of falling in love would be strongest for the long-term contexts of marriage and dating and less, even potentially reversing direction, for the casual sex context. As illustrated in Figure 7, the effect of falling in love was, indeed, much stronger for the dating and marriage contexts than the casual sex context. Likelihood ratings for falling in love were only slightly higher than ratings for not falling in love in the casual sex context.

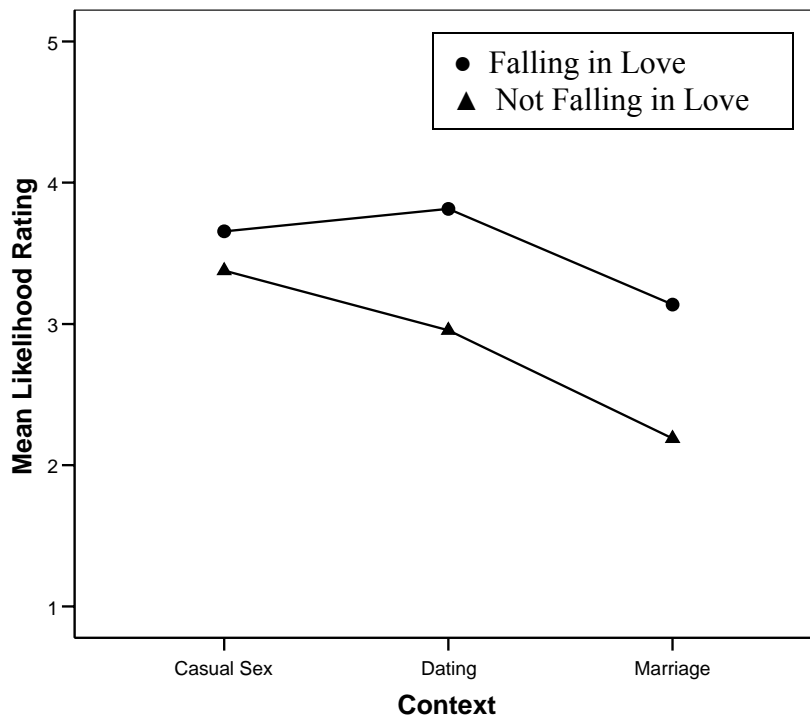


Figure 7. Context x Falling in Love interaction for likelihood ratings.

There was also a significant Partner Characteristics x Falling in Love interaction,  $F(2, 416) = 103.20, p < .001, \text{partial } \eta^2 = .33$ . As shown in Figure 8, the effect of falling in love increased as the partner characteristics became more positive.

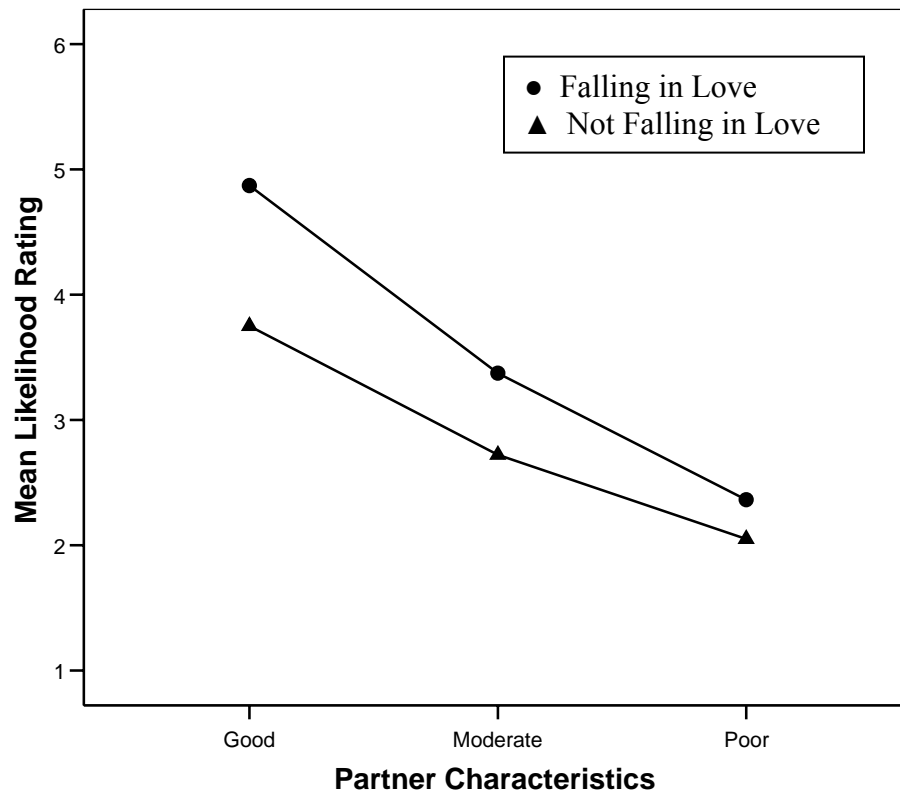


Figure 8. Partner Characteristics x Falling in Love interaction for likelihood ratings.

The significant Context x Sexual Attraction interaction is illustrated in Figure 9,  $F(2, 416) = 99.97, p < .001, \text{partial } \eta^2 = .33$ . As predicted, the effect of sexual attraction was strongest for the casual sex context, though still present for both the dating and marriage contexts.

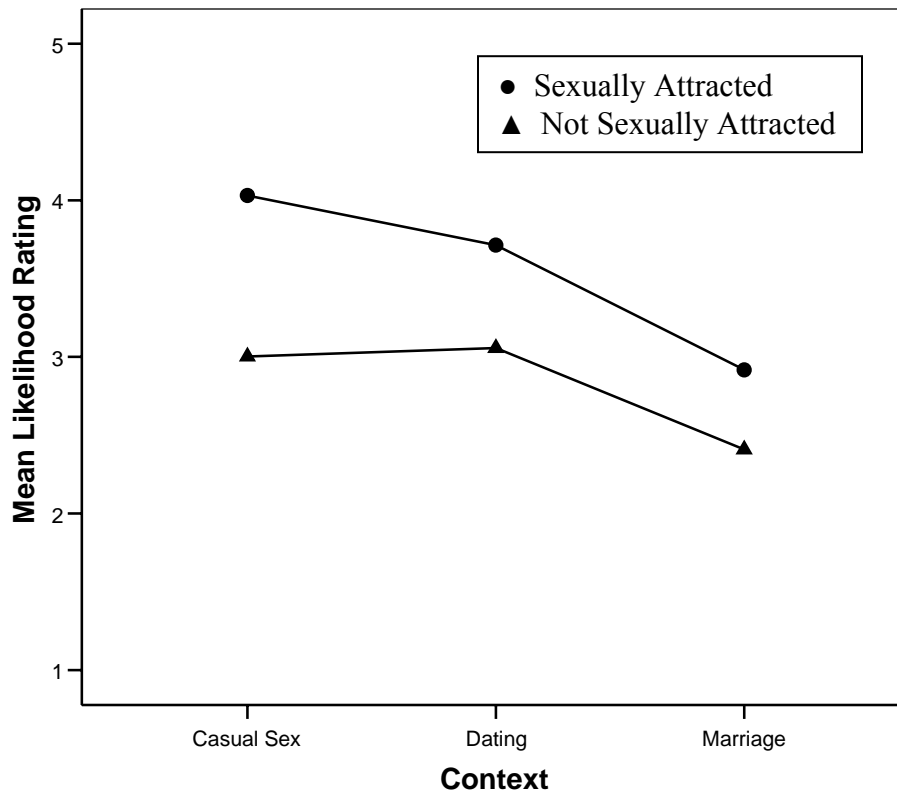


Figure 9. Context x Sexual Attraction interaction for likelihood ratings.

There was also a significant Context x Partner Characteristics interaction which is shown in Figure 10,  $F(4, 832) = 60.46, p < .001, \text{partial } \eta^2 = .23$ . Likelihood rating differences between the dating and casual sex contexts were consistent with the main

effect of context for the poor condition but very slight for the good and moderate sets of partner characteristics with the effect of context actually reversing direction for the good level of partner characteristics. Participants were more likely to be willing to date a hypothetical mate with good characteristics than to have casual sex with them.

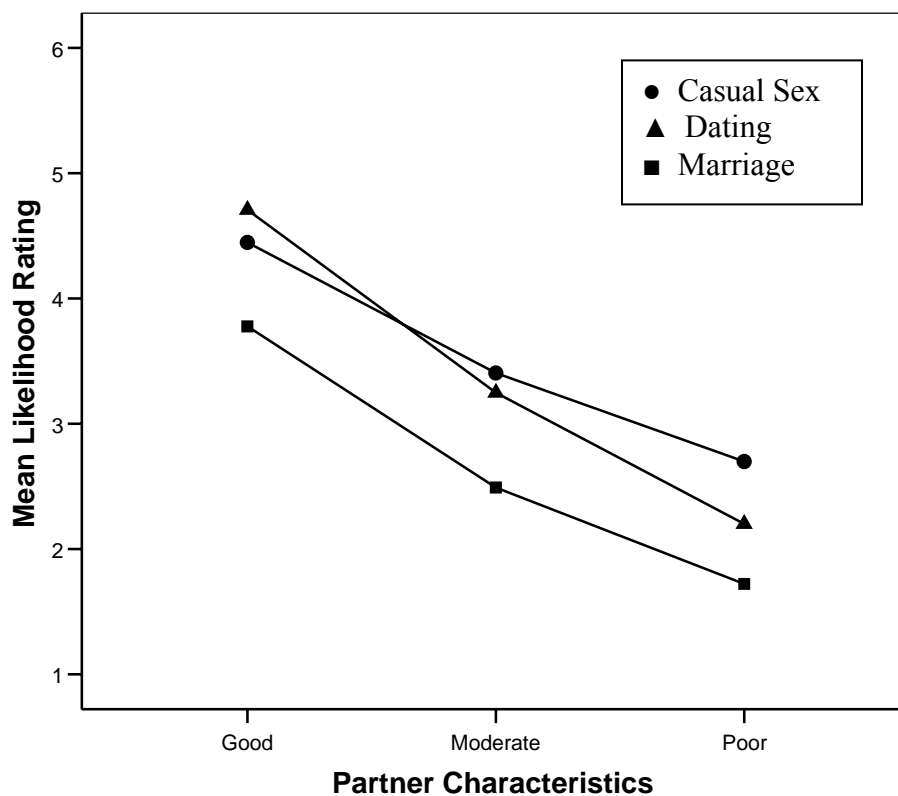


Figure 10. Context x Partner Characteristics interaction for likelihood ratings.

The Sexual Attraction x Partner Characteristics interaction presented in Figure 11 is very similar to the Falling in Love x Partner Characteristics interaction,  $F(2, 416) =$

39.43,  $p < .001$ , partial  $\eta^2 = .16$ . The effect for sexual attraction also increased as the set of partner characteristics improved.

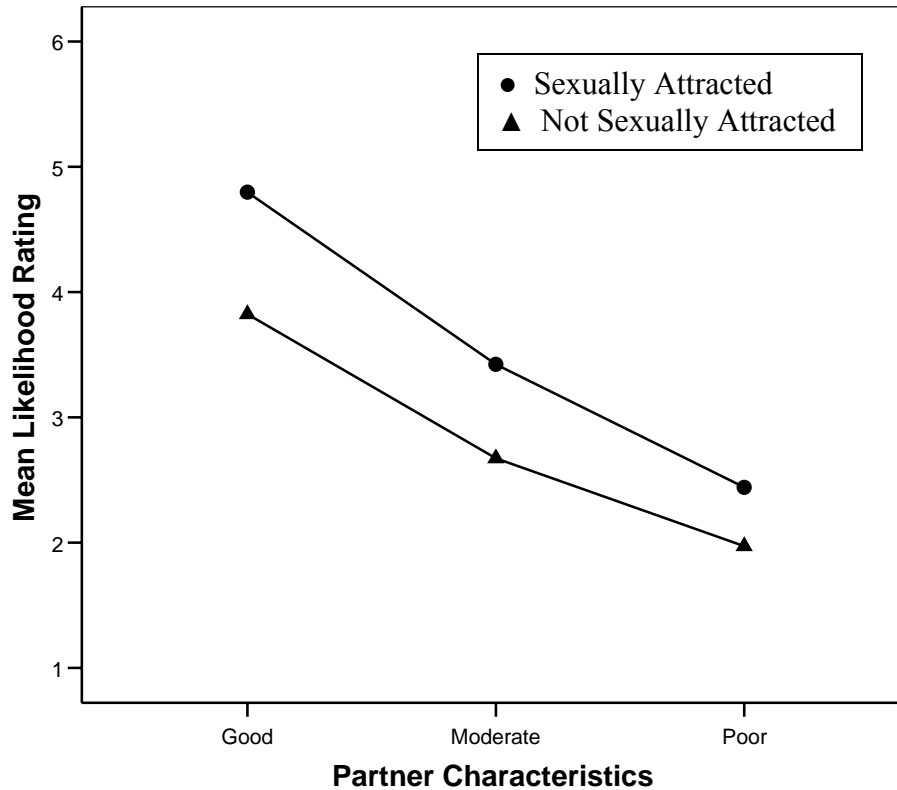


Figure 11. Partner Characteristics x Sexual Attraction interaction for likelihood ratings.

Finally, there was the predicted Context x Gender interaction,  $F(2, 416) = 23.65$ ,  $p < .001$ , partial  $\eta^2 = .10$ . As can be seen in Figure 12, males reported greater likelihood of engaging in a relationship with a hypothetical mate was most pronounced in the casual sex context. Females are expected to be much choosier than males in casual sex partners due to the greater disparity in potential parental investment in this context.

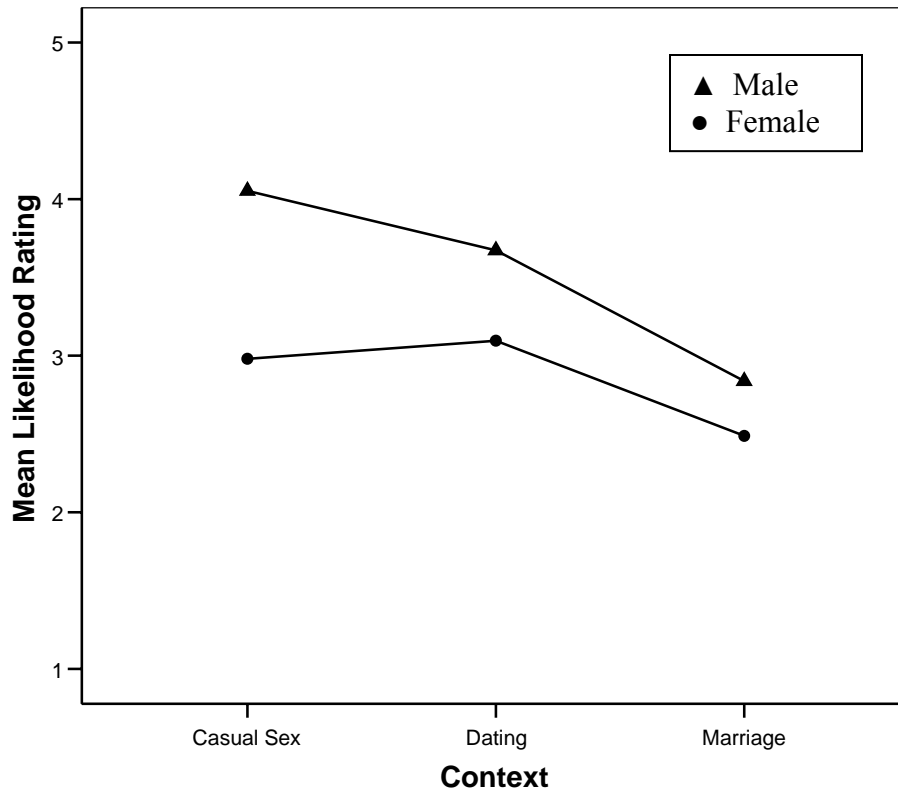


Figure 12. Context x Gender interaction for likelihood ratings.

These effects were further qualified by two three-way interactions. The first was a Context x Partner Characteristics x Falling in Love interaction,  $F(4, 832) = 86.46, p < .001$ , partial  $\eta^2 = .29$ . Figure 13 shows that the Partner Characteristics x Falling in Love interaction discussed above was only present for the dating and marriage contexts. The effect of falling in love was weak in the casual sex context across all levels of partner characteristics. This is consistent with the prediction that the falling in love variable would only show strong effects for the long-term contexts.



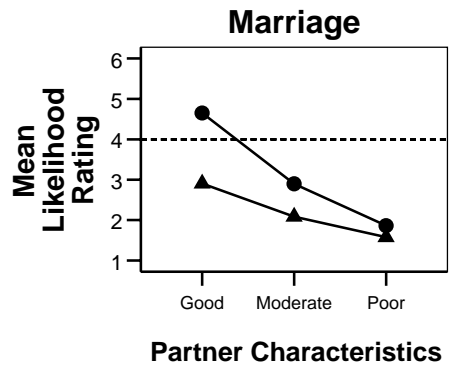
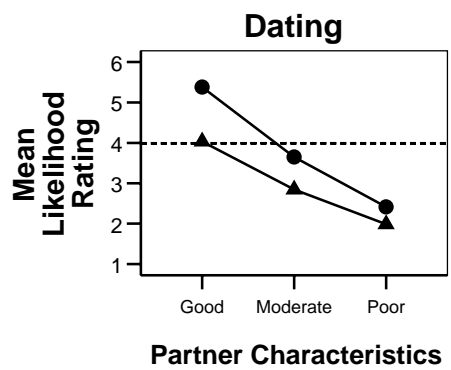
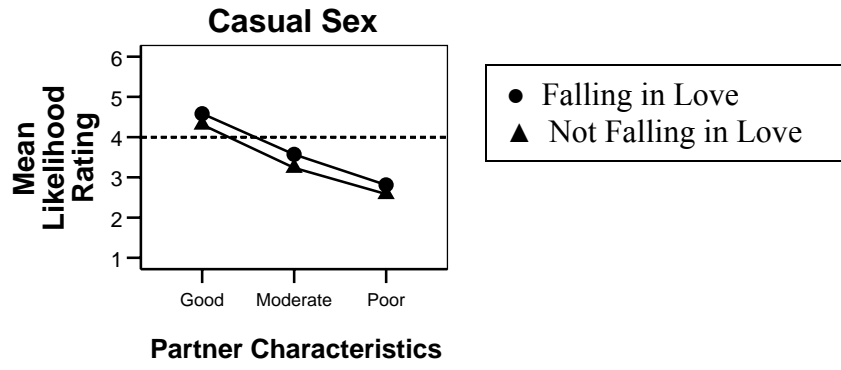


Figure 13. Partner Characteristics x Falling in Love x Context interaction for likelihood ratings.

There was also a significant Context x Sexual Attraction x Falling in Love interaction,  $F(2, 416) = 53.26, p < .001, \text{partial } \eta^2 = .20$ . This interaction is pictured in Figure 14. The size of the effect of falling in love depends on the context and level of sexual attraction. For the casual sex context, the effect of falling in love is slightly larger when there is no sexual attraction. For the dating context, the size of the falling in love effect is roughly equivalent for both levels of sexual attraction. For the marriage context, however, the effect of falling in love is largest when there is sexual attraction.

The final interaction was a Context x Partner Characteristics x Sexual Attraction x Falling in Love interaction,  $F(4, 832) = 12.50, p < .001, \text{partial } \eta^2 = .06$ . As shown in Figure 15, the Sexual Attraction x Falling in Love interaction for casual sex was roughly equivalent across all levels of partner characteristics. For marriage, however, the Partner Characteristic x Falling in Love interaction was strongest when partners were sexually attractive. The effect of falling in love for partners with good characteristics was much larger when partners were also sexually attractive. A similar pattern was found for dating, though the size of the effect was not as large.

*Summary.* Thus, it appears that, in general, results were as predicted, with some discrepancies. The strongest effect size in these analyses was for the partner characteristics variable. This would be expected because the sets of partner characteristics were specifically designed to have similar effects across all contexts, whereas the sexual attraction and falling in love variables were only expected to play strong roles in certain contexts.

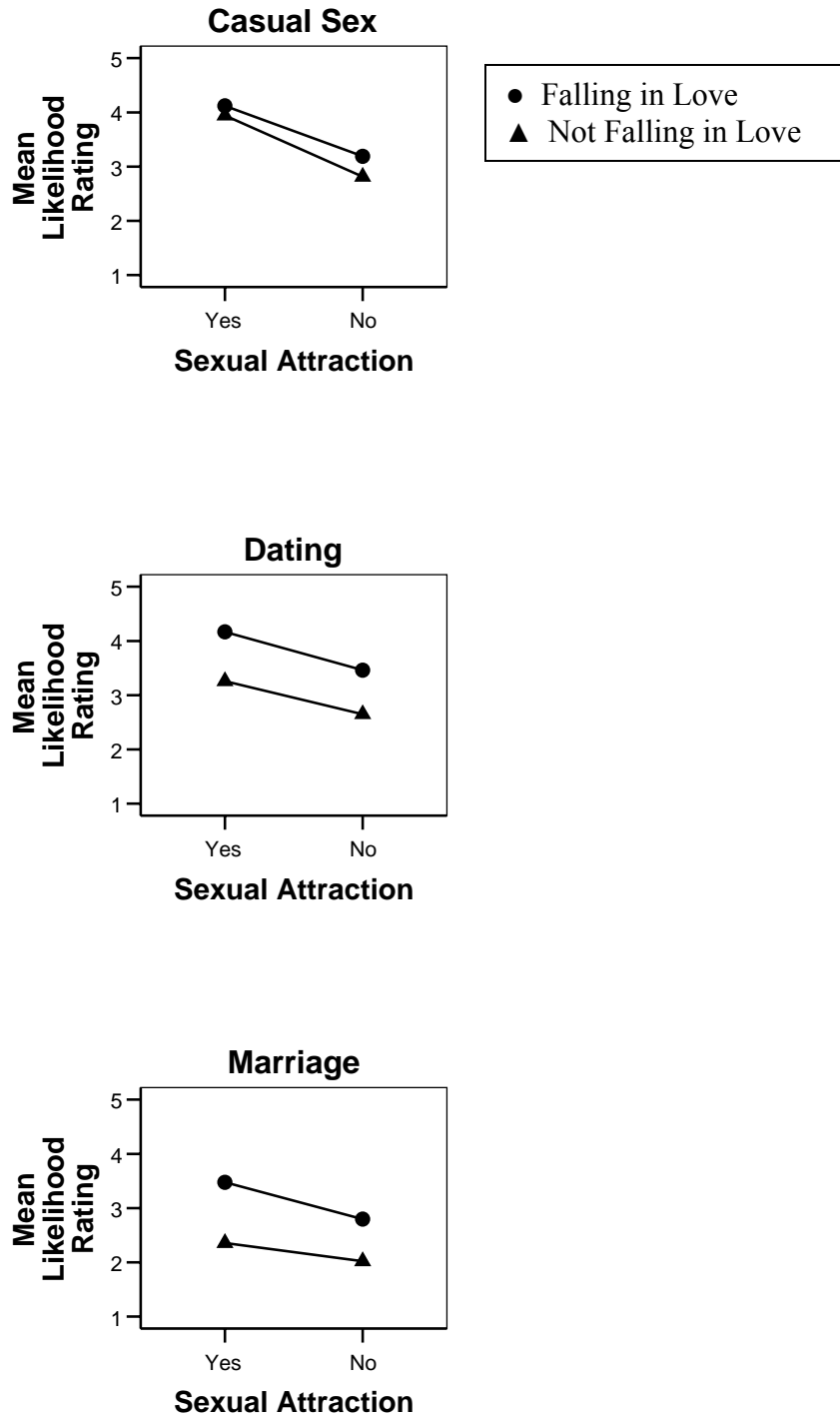


Figure 14. Context x Sexual Attraction x Falling in Love interaction for likelihood ratings.

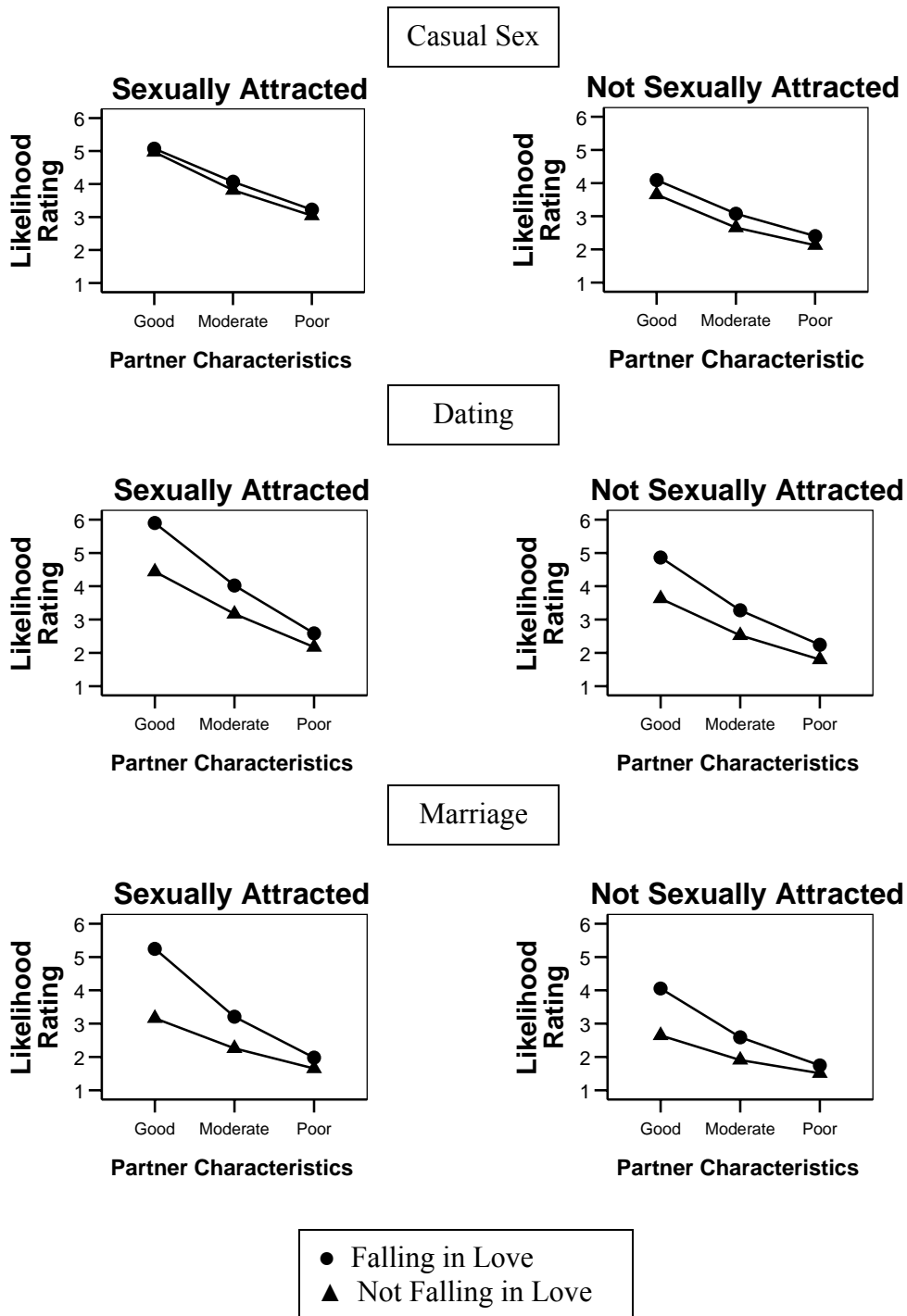


Figure 15. Partner Characteristics x Sexual Attraction x Falling in Love x Context interaction for likelihood ratings.

The effects for sexual attraction were as predicted, with it playing its strongest role in the casual sex context, but still being important for the dating and marriage contexts.

The major prediction was that falling in love would play a strong role in the dating and marriage contexts. Consistent with this prediction, the Context x Falling in Love interaction had the largest effect size of any interaction found. However, the significant Context x Partner Characteristic x Sexual Attraction x Falling in Love interaction calls into question the role of falling in love as a heuristic that consolidates other variables to facilitate long-term mate choice decisions. Falling in love played its strongest role when other partner variables were at the best levels. Thus, it seems that falling in love may play a role in differentiating good candidates for long-term relationships after unacceptable ones have been eliminated.

Interestingly, gender effects were very small in these analyses. Males reported being more likely to engage in relationships than females, especially in the case of casual sex. Otherwise, females and males responded similarly to the main variables. Of course, this would be expected for the partner characteristics variable because the sets were designed to be of equal importance to both genders.

In the next section, I will examine the manipulation check variable of Realism to determine how the realism of the profile may have impacted the results on the main dependent variables.

#### *Profile Realism*

The dependent measure of realism was included in the materials for this study as a manipulation check to ensure that the profiles were consistent with what people would

expect from typical dating partners. Overall, participants rated the hypothetical partners and being reasonably realistic ( $M = 4.96$ ). In order to further examine the pattern of relationships between the various independent variables and participants' realism ratings a  $2 \times 2 \times 2 \times 3$  mixed-model ANOVA was conducted on participants realism scores averaged across the three groups of characteristics.

There was a significant main effect of sexual attraction,  $F(1, 208) = 66.82, p < .001$ , partial  $\eta^2 = .24$ . Participants rated the hypothetical partners that contained the positive sexual attraction information as being more realistic ( $M = 5.08$ ) than those that contained the negative sexual attraction information ( $M = 4.84$ ). There was also a significant main effect for partner characteristics,  $F(2, 416) = 44.83, p < .001$ , partial  $\eta^2 = .18$ . Participants rated hypothetical partners with good characteristics ( $M = 5.18$ ) as being more realistic than those with moderate characteristics ( $M = 4.94$ ) which were rated as more realistic than those with poor characteristics ( $M = 4.75$ ), all differences were significant at  $p < .001$ .

There was a small main effect for falling in love,  $F(1, 208) = 6.58, p < .05$ , partial  $\eta^2 = .03$ . Realism ratings for hypothetical partner profiles that included the positive falling in love information ( $M = 5.00$ ) were slightly higher than ratings for profiles containing the negative falling in love information ( $M = 4.92$ ). This effect was qualified by two significant two-way interactions.

The first of these was a Partner Characteristic x Falling in Love interaction,  $F(2, 416) = 9.34, p < .001$ , partial  $\eta^2 = .04$ . This interaction, pictured in Figure 16, is one in which participants felt profiles which included positive falling in love information were more realistic only for hypothetical mates with good or moderate characteristics.

Participants felt that it was more realistic for them not to be falling in love with mates with poor characteristics. This may help explain the Partner Characteristics x Falling in Love interaction for the likelihood variables. Falling in love may have played a lesser role for partners with poor characteristics because participants felt it was unrealistic for them to actually be falling in love with someone with such poor characteristics.

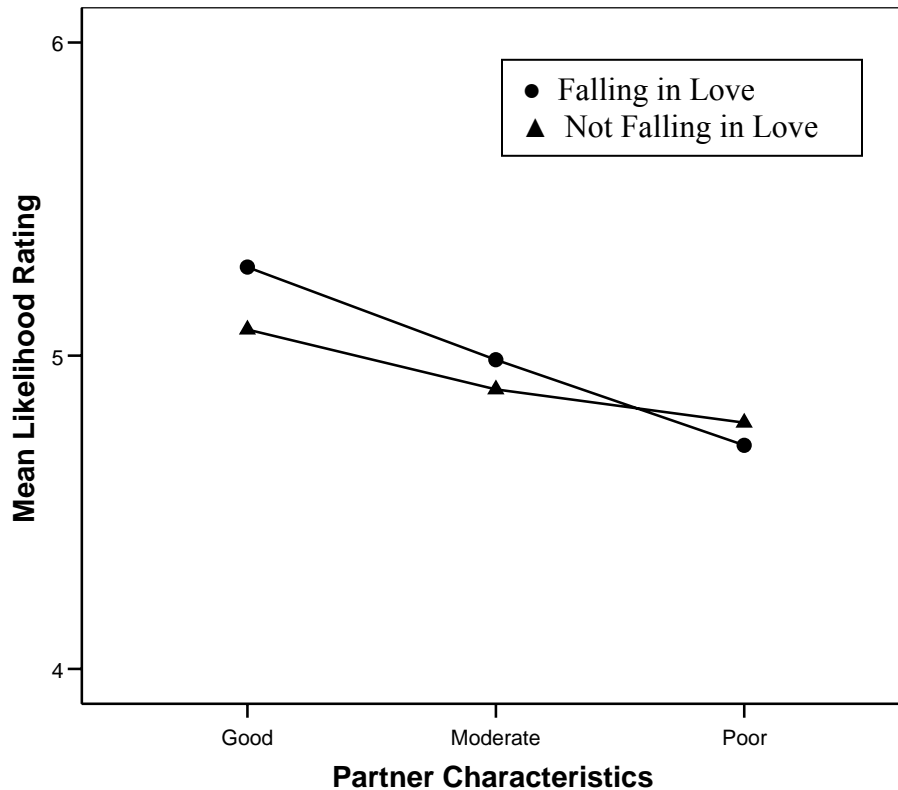


Figure 16. Partner Characteristics x Falling in Love interaction for realism ratings.

The next interaction was a Sexual Attraction x Falling in Love interaction,  $F(1, 208) = 7.25, p < .01, \text{partial } \eta^2 = .03$ . As seen in Figure 18, when profiles included

positive sexual attraction information participants rated hypothetical mates as more realistic when they were falling in love with them than when they were not falling in love with them. When profiles contained negative sexual attraction information, however, there was no difference in falling in love conditions.

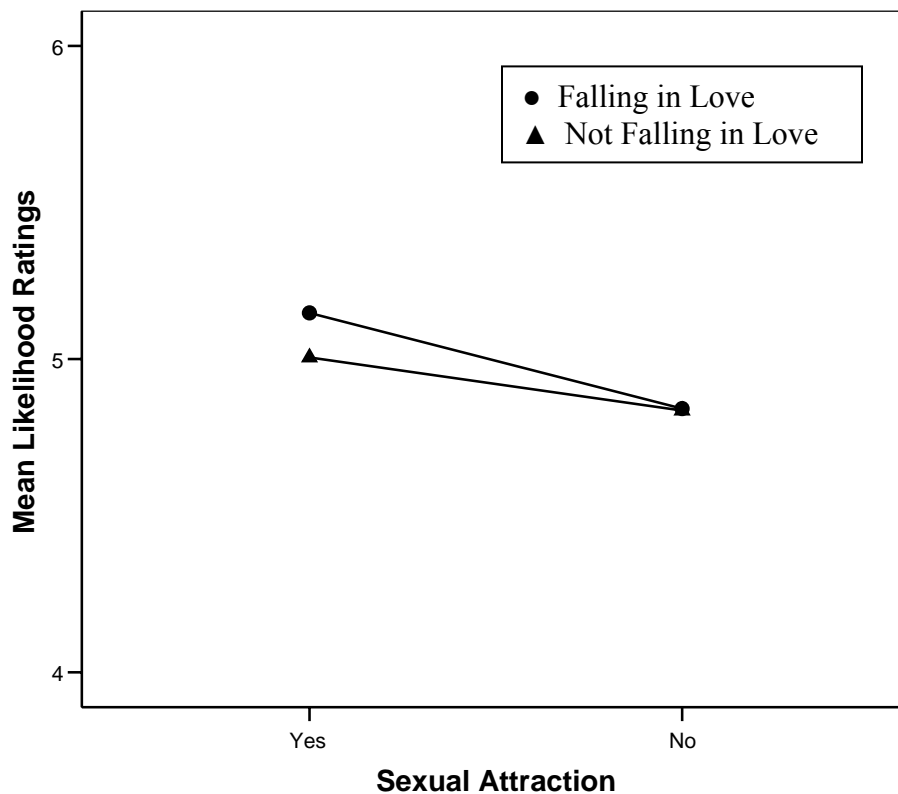


Figure 17. Sexual Attraction x Falling in Love interaction for realism ratings.

There were no significant effects for gender or any of the other potential interactions. Overall, these results indicate that the profiles of hypothetical mates were viewed as reasonably realistic, but partners with more negative profiles were seen as less



realistic. The falling in love variable interacted with the other variables in a manner consistent with the results from Studies 1 and 2 showing that partner characteristics and sexual attractiveness are important to the experience of falling in love.

## Chapter Seven: Discussion

This series of studies was designed to gain a broader understanding of the emotional experience of falling in love. An attempt was made to ascertain the characteristics of a partner that are most important to the experience of falling in love and the role that falling in love plays in long-term mate choice decisions. It was hypothesized that falling in love serves a heuristic function in facilitating these decisions.

### *Summary of Findings*

In order for falling in love to serve as a useful heuristic, it should be triggered by characteristics of a mate that would be advantageous in a long-term partner. The first two studies were designed to examine this issue. The final study addresses the core question of the role of falling in love as a heuristic in mate selection decisions.

In Study 1, participants were asked to generate the partner characteristics that they felt were most important to the experience of falling in love. Partner characteristics were also generated for casual sex and marriage so that characteristics critical to falling in love could be compared to those most important for short-term and long-term contexts. Many studies have examined the relative importance of various partner characteristics for short- and long- term relationships, but this is the first to conduct a detailed analysis of the characteristics important for falling in love. In addition, the vast majority of studies on characteristics important for different types of relationships have had participants rate a set of characteristics generated by the researchers. These sets of characteristics, typically

a variation of a set of 18 items developed by Hill (1945), may not be representative of the full range of characteristics important to people when choosing among mates. This is why participants were asked to generate their own characteristics in this study.

Participants were also asked to list important promoters and deterrents for each of the three contexts in order to examine both mate rejection and mate selection. This is the first study to include a detailed examination of both of these factors.

The results of Study 1 replicated previous results for short- and long-term contexts for each gender and confirmed that falling in love corresponds most closely with characteristics most important for the long-term context. In addition, the open ended design allowed for the recognition of several factors not typically included in previous research, including honesty, respect, sexual drive, abuse, and promiscuity, as important to the mate-choice decisions and falling in love.

In Study 2, participants were asked to do a Q-sort for of the relative importance of characteristics for the different contexts of casual sex, falling in love, and marriage using the top 60 promoters and deterrents generated by participants in Study 1. This gives a more detailed picture of the relative importance of various characteristics for each of these contexts. The Q-sort procedure has advantages over a simple rating scale because it limits the number of characteristics that can be assigned to each particular rating. This forces participants to make critical distinctions about the relative importance of each of the characteristics. All the characteristics used in the Q-sort task were selected because they were viewed as very important to mate selection by participants in Study 1 and would probably be rated very highly in a standard rating task. However, in real life it is unlikely to find all of these characteristics in the same mate and we must accept some

negative characteristics in order to attain partners with the characteristics we prize most highly. The Q-sort task mimics these constraints in the decision process and adds an element of realism to the task.

This study, again replicated previous results on mate preferences but also confirmed that characteristics identified in Study 1 such as honesty, respect, and abuse are important to mate selection and should be included in future research. Study 2 confirmed that falling in love is closely linked to characteristics of a mate that are important in a long-term partner, but also that it is triggered by aspects of a mate that promote open, enjoyable interactions.

In Study 3, falling in love was manipulated, in addition to personal characteristics and sexual attraction, and participants were asked to rate their likelihood of engaging in short- and long-term relationships with a series of hypothetical partners. This allowed for an examination of the relative importance of these three factors in people's policies for selecting mates. If falling in love serves as a heuristic for long-term mate choice decisions, it should have the most impact in decisions about mates for long-term contexts. Although these partners were hypothetical, an attempt was made to make them as realistic as possible, with all partners having some shortcomings and participants being given instructions that indicated that the descriptions represented the participants' personal impressions after a series of encounters.

This study found that while falling in love was a strong predictor of the likelihood of engaging in long term relationships with a particular mate, it operated primarily when the mate had a favorable set of characteristics. The findings of these three studies will

now be discussed in more detail in relationship to the major questions addressed in this dissertation.

### *Characteristics Important for Falling in Love*

If falling in love serves a heuristic role in simplifying long-term mate choice decisions, it should be triggered by characteristics in a mate that are beneficial in a long-term partner. Therefore, it was predicted that characteristics important to falling in love would correspond closely to those important for marriage. This was found to be the case in both Study 1 and 2. However, there were some characteristics for which responses for falling in love and marriage tended to differ. Participants in both studies viewed certain practical considerations involving income and raising children as more important for marriage than to the experience of falling in love.

It was predicted that sexual desire would be an important factor in triggering the experience of falling in love. Although sexual desirability itself did not seem particularly important for falling in love, the broader category of attractiveness was found to be more important for falling in love than marriage in both Study 1 and 2. Characteristics indicating that a person is enjoyable to be around, warm towards others, and an effective and honest communicator were also seen as more important to falling in love than marriage.

Considering that communication, lack of negative affect, and emotional expressivity are linked to marital satisfaction and attractiveness is linked to good genes and reproductive capacity, these results indicate that relying on our feelings of falling in love may confer an advantage to those who use it when making decisions about long-term partners in terms of the likelihood of maintaining the relationship and successful

reproduction. In fact, Miller (2000) has argued that many of the cultural advancements of our species, such as art, literature, music, and humor arise from preferences for mates that are enjoyable, articulate, and expressive.

### *The Role of Falling in Love in Mate-Choice Decisions*

The results of Study 3 indicate that falling in love is a strong predictor of long-term mate choice decisions. However, the role of falling in love as a true heuristic was called into question. In order for falling in love to be a heuristic it should not only be triggered by advantageous characteristics in a mate, but then supplant those characteristics as the primary decision rule for making long-term partner decisions. This was not found to be the case in Study 3. Partner characteristics were a stronger predictor of the likelihood of committing to a long-term relationship than falling in love. Falling in love appeared to function effectively as a decision criterion only when partner characteristics were at their best levels.

Several elements of the design of this study may have contributed to this finding. The factorial manipulation of the variables in this study prevented the possibility of testing for a mediating effect for falling in love. Though partner characteristics may lead to the experience of falling in love in real life (which would be suggested by the results of Studies 1 and 2), feelings of falling in love were artificially paired on an equally likely basis with each level of partner characteristics in this study. Thus, these factors did not covary in a realistic manner in this study, as seen to some degree in the results for the realism variable, which may have influenced the way in which participants responded to the falling in love variable.

In an effort to prevent the falling in love characteristic from artificially dominating the other variables in the policy capturing task, it was listed as a single sentence randomly interspersed into the set of partner characteristics along with the sexual attraction variable. This may have caused the falling in love information to be inadvertently overwhelmed by the partner characteristics information, which makes up the majority of the descriptive information. Given this, the strong role of the falling in love manipulation in participants' likelihood ratings is really quite remarkable.

In addition, the way in which falling in love seemed to function as a decision rule only for the good level of partner characteristics may make sense when you consider real world dating practices. Although the profiles were designed to have a good, moderate, and poor level of partner characteristics, participants' average likelihood ratings for the moderate and poor levels were below neutral. In real life, members of the opposite sex with such poor characteristics would be rejected outright at the first approach or after the first date or two. Falling in love is something that comes into play when choosing who, among candidates who meet minimum requirements for a date, is suitable for a long-term commitment.

Finally, in real life the experience of falling in love is one that is compelling and difficult to ignore. The hypothetical descriptions used in Study 3 cannot mimic this phenomenon. Although participants were told that they were feeling like they were falling in love and most could look back on their previous experience (76% of the sample reported having been in love before) to infer the impact this would have on their decision, they may have underestimated the impact this feeling would have on their actual decisions. Such visceral experiences have been found to operate not only at a cognitive

level, but also at a more basic level that may not be able to be accessed by participants when they are not experiencing these emotions (Bargh, 1984; Loewenstein et al., 2001; Zajonc, 1980).

### *Gender Differences*

In Studies 1 and 2, predicted differences between females and males in preferred characteristics were found for males and females, with males placing more emphasis on physical attractiveness than females and females finding internal characteristics and financial resources more important than males. However, these differences were primarily found for the casual sex context and the genders did not differ nearly as much when it came to long-term contexts. This is likely due to males more lax criterion for casual sex partners and females tendency to look for casual sex partners that make good potential long-term mates. Since characteristics for falling in love tended to mirror those for marriage, gender differences were also not large for falling in love. When considering falling in love, males did tend to place more emphasis on attractiveness, shared interests, and a positive, enjoyable personality than women whereas women placed more importance on communication, caring, and emotional availability than men.

Although there may be some differences in the characteristics that contribute to the experience of falling in love for males and females, the way in which falling in love and sexual desirability contributed to likelihood ratings in Study 3 was not different for males and females. The only gender difference found in Study 3 was the tendency for males to give greater likelihood ratings for engaging in relationships in general, especially for casual sex.



### *Short-Term versus Long-term Relationships*

Studies 1 and 2 were also an attempt to replicate previous findings on the differential importance of specific characteristics of a mate in short- and long-term contexts. These findings were replicated, with participants placing more importance on health, attractiveness, and sexual attributes in the casual sex context and giving greater value to more intrinsic characteristics in the marriage context. Researchers have argued that many of the gender differences seen above are due to the greater likelihood for males to choose a short-term mating strategy (e.g., Buss & Schmitt, 1993). In the future, it would be of interest to examine differences in the importance of various characteristics between females in the sample who are more or less likely to engage in casual sex relationships and to compare these results to those for males.

In Study 3, it was found that sexual attraction played a role for casual sex similar to the one that falling in love plays for marriage. Falling in love was of little importance in the short-term context overall. Sexual attraction played a strong role in all contexts, but did not play as strong of a role in the long term contexts as falling in love did. For marriage, participants reacted most strongly when the full conglomeration of good characteristics, sexual attraction, and falling in love were present in a mate.

### *Directions for Future Research*

This dissertation is an attempt to contribute to research on love and mate-choice from a cognitively-oriented judgment and decision making framework. The majority of research in this area comes from the clinical, evolutionary, or social psychological fields. Given the profound implications of mate-choice decisions to individual lives and the species as a whole, it is surprising that so little serious research has examined this issue

from a judgment and decision making perspective. Likewise, the experience of falling in love and its implications for these decisions has received even less attention in the field, even in emotion research, despite the fact that it is one of the deepest emotional experiences we have in our lives and clearly influences our decision making processes.

The results of the studies presented here add to our knowledge about these issues, but much more remains unexplored. One of the major drawbacks of these studies is the hypothetical, self-report nature of the tasks. Although this methodology allows greater control, it cannot capture many elements of real-life mate choice decisions. Future research needs to try to incorporate more realism if we are to gain a deeper understanding of the role of falling in love in actual decisions. One way to do this would be to use actual couples and compare participants' perceptions of their partner's characteristics for couples that are and are not falling in love. These could then be used to predict actual mate choice decisions and relationship outcomes in a longitudinal design. This would still have the limitations inherent in self report measures, however.

One way to get at the characteristics important to the experience of falling in love without using self-report might be to use the fMRI methodology that has been used to investigate activation patterns for love (Aron et al., 2005; Bartels & Zeki, 2000) and examine how activation patterns change as people think about different characteristics of their partner. This strategy illustrates the importance of integrating findings from different fields to attain a more comprehensive picture of the experience of falling in love. This is consistent with recent efforts to integrate social, cognitive, and neural sciences (Adolphs, 2003; Easton & Emery, 2005; Heatherton, 2004; Ochsner & Lieberman, 2001; Todorov, Harris, & Fiske, 2006).

Finally, the role of culture in these experiences and decisions should not be discounted, even though this dissertation has come primarily from a cognitive or evolutionary perspective. Evolution and cultural approaches have often been pitted against one another in the ages old nature versus nurture debate. However, these two approaches are not mutually exclusive and, as with most dichotomies, the truth is typically found somewhere between the two poles. The ability to use language to transmit cultural information is one of the greatest evolutionary advancements of our species and may, as Miller (2000) argues, have developed primarily as a result of sexual selection pressures. We may all share the ‘wiring’ that allows us to fall in love, but how this is experienced and used to drive mate choice decisions in each culture may differ. The ability to adapt to circumstances that change more quickly than the slow pace of the evolutionary adaptation is precisely where culture is most advantageous.

If we are ever going to attain a deeper understanding of the experience of falling in love and its function in our lives we need to be able to look across all disciplines for which it has implications and integrate the knowledge that can be gained from each of these perspectives. The fact that falling in love is so relevant to so many fields of study points to its critical impact on people’s lives and necessitates its recognition as a vital topic of research.

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## Appendices

## Appendix A: Study 1 Materials

### *Verbal Instructions*

On this survey you will be asked to answer a series of questions about your preferences in a hypothetical mate. For each question you will be asked to list the characteristics of a potential mate that you feel would be most important in three different relationship contexts. The characteristics that you list may include personal, social, or physical characteristics, or any other kind of characteristics that you feel are important in a potential mate. Some questions will ask you to list positive characteristics of another person that would make you likely to engage in a relationship with them. On other questions you will be asked about negative characteristics of another individual that would prevent you, or make you not want to have a particular type of relationship with them.

Please read the instruction sheet and each question carefully. Please try to list 7 characteristics for each question, even if that context is not relevant to your current dating/marital situation. Please remember that your responses are important to increasing our understanding of interpersonal relationships. So, please take a few minutes to think about each context and provide the most realistic and honest answers possible.

When you complete the survey, please turn it in to me at the front of the room. Then print your name and last four digits of your social security number on the points sign up sheet so that you will get credit for the experiment. You must make sure you are registered with e-toolkit in order to get points. Once you sign up for points you can pick up a yellow point slip for your records and a debriefing form. Thanks again for participating in this study.

## Appendix A: (Continued)

### *Questionnaire Packet*

#### **Study MDD**

Our relationships with other people are of fundamental importance in our lives. In this study we are interested in finding out more about close interpersonal relationships. On the following pages you will be asked to answer a series of questions about your preferences in a hypothetical mate. For each question you will be asked to list the characteristics of a potential mate that you feel would be most important in three different relationship contexts: casual sex, falling in love, and marriage. The characteristics that you list may include personal, social, or physical characteristics, or any other kind of characteristics that you feel are important in a potential mate.

Please try to list 7 characteristics for each question, even if that context is not relevant to your current dating/marital situation. Please take a few minutes to think about each context to provide the most realistic and honest answers possible.

Appendix A: (Continued)

**Falling In Love**

(Note: If, for whatever reason, you are not interested in falling in love right now, please list the characteristics that you feel *would* make you most likely to fall in love with an individual, if you *were* interested in falling in love.)

**Please list the 7 characteristics of a hypothetical mate that would be most likely to cause you to fall in love with that person.**

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)

**Please list the 7 characteristics of a hypothetical mate that would be most likely to prevent you from falling in love with that person.**

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)



Appendix A: (Continued)

**Casual Sex**

(Note: If, for whatever reason, you are not interested in casual sexual relationships right now, please list the characteristics that you feel would make you most *desire* having a casual sexual relationship with an individual, *even if you would not necessarily act on those desires.*)

**Please list the 7 characteristics of a hypothetical mate that would make you most likely to have a casual sexual relationship with that person.**

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)

**Please list the 7 characteristics of a hypothetical mate that would most likely prevent you from having casual sex with that person.**

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)

Appendix A: (Continued)

**Marriage**

(Note: If, for whatever reason, you are not interested in looking for a marriage partner right now, try to list characteristics that you *would* feel are important in a marriage partner, if you *were* looking for one.)

**Please list the 7 characteristics of a hypothetical mate that would make you most likely to marry that person.**

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)

**Please list the 7 characteristics of a hypothetical mate that would be most likely to prevent you from marrying that person.**

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)

Appendix A: (Continued)

**Demographic Questionnaire**

Please answer the following demographic questions. Some questions may involve sensitive information about you. You are not obligated to answer any question you feel uncomfortable answering. But, all answers are kept anonymous, so your answers will not be associated with your name in any way. Please remember that your responses will be very helpful to us as researchers in learning more about interpersonal relationships.

**Age:** \_\_\_\_\_

**Gender:**       M               F

**Current Marital Status:**  Single  Married  Separated  Divorced  Widowed

If you are not married or are currently separated, please indicate your current dating status:

- Not interested in dating right now
- Casually Dating
- Dating with a commitment to only one person (steady dating)
- Living together in a committed relationship

If you were not in a committed relationship, how likely would you be to engage in casual sex?

<b>Not at all Likely</b>	<b>Not Likely</b>	<b>Somewhat Likely</b>	<b>Likely</b>	<b>Very Likely</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**Sexual Orientation:**  Heterosexual       Homosexual       Bisexual

**Have you ever been in love before?**  Yes       No       Don't Know

**If yes, how many times?** \_\_\_\_\_

**Are you currently in love?**  Yes       No       Don't Know

Appendix B: Sample Coding Sheet

Characteristic	Physical	Mental	Int/les	Comm	Acts	Sex	Car/Ed	Health	Love	Mor/rel	Rel	Fin	Goals	Oth
Easy going														
Easy to get along with														
Easy to talk to														
Educated														
Emotional														
Emotionally stable														
Employed														
Enchanting disposition														
Energetic														
Enjoys same activities														
Enjoys sex														
Exciting														
Experienced														

Appendix C: Sample Characteristics with Individual Coder and Final Groups

Characteristic	Coder A	Coder B	Coder C	Final category
Good chemistry	Mental	Mental	Love/feelings	Love/feelings
Good clothing taste	Physical	Physical	Physical	Physical
Good communication	Communication	Communication	Communication	Communication
Good connection	Interests	Mental	Love/feelings	Love/feelings
Good conversation	Communication	Communication	Communication	Communication
Good cook	Interests	Physical	Interests	Interests
Good dresser	Physical	Physical	Physical	Physical
Good family	Relationships	Relationships	Relationships	Relationships
Good hearted	Mental	Mental	Mental	Mental
Good hygiene	Health	Physical	Health	Health
Good in bed	Sex	Sex	Sex	Sex
Good job	Career	Career	Career	Career
Good kisser	Physical	Physical	Sex	Sex
Good lips	Physical	Physical	Physical	Physical
Good listener	Communication	Communication	Communication	Communication
good looking	Physical	Physical	Physical	Physical
good manners	Physical	Physical	Mental	Physical
good outlook on life	Mental	Mental	Mental	Mental

## Appendix D: Sample Characteristics and Attribute Categories

Attribute category	Characteristic
Mental Problems	crazy in the head
Mental Problems	emotionally unstable
Mental Problems	neurotic
Mental Problems	obsessiveness
Mental Problems	psychopathic
Moody	easily upset
Moody	irrational
Moody	mood behavior
Moody	mood changes easily
Moody	moody
Moody	overly sensitive
Moody	unpredictable
Nasty	creepy
Nasty	nasty
Nasty	obscene
Nasty	raunchy
Nerdy	"nerd" type
Nerdy	awkward
Nerdy	dorky

## Appendix E: Detailed Analysis of Attribute Category Results for Specific Predictions

In this analysis, an attempt was made to determine if the results for specific attribute categories replicated the previous findings of Buss and others for the casual sex and marriage contexts. In addition, the results were examined to see if the falling in love context would correspond more closely to the previous results found for long-term mating contexts rather than short-term mating contexts.

In order to begin these analyses, it was necessary to map the characteristics found to be important in previous research to the set of attribute categories identified in the current study. To begin this process, a list of important characteristics was developed by examining the major findings and predictions of the marital satisfaction and evolutionary literature outlined in Chapter 2 and summarized in the hypotheses for this study. Two coders then examined the list of attributes and attribute categories from the current study to find those that were comparable with the list of characteristics from previous research.

Attribute categories were grouped into meaningful sets of related attributes according to their relevance to particular characteristics. For example, good income is a characteristic that is mentioned both in the evolutionary and marital satisfaction literature. The related attribute categories of good career, financially responsible, financially secure, *lack of career*, and *poor/unstable finances* were combined into the good income set for these analyses. Additional sets were added as necessary in order to encompass as much of the full list of attribute categories as possible. Sets were kept as discrete as possible by attempting to avoid putting the same attribute category in more than one set if possible. This was accomplished for the most part with a few exceptions (e.g., affectionate was included both in emotional expressivity and demonstrates love). The final sets of

## Appendix E: (Continued)

characteristics included all but eight of the attribute categories, these categories were very infrequently listed with total frequencies across both genders and all contexts ranging from two to four times.

The resulting characteristic sets are presented in Tables E1-E6 along with the associated percentages of times they were listed for each gender/context combination. These were calculated by dividing the number of times that attribute categories in each set were listed in each gender/context combination by the total frequency of all the characteristic sets used in these analyses for the same gender context/combination. The resulting percentages were quite small in most cases; nevertheless, a cursory examination of potential differences across genders and contexts was conducted.

### *Short-Term Mating*

It was predicted that, for both genders, characteristics indicating health, good genes, and reproductive capacity would be more important in the causal sex context than the marriage context. Five sets of attribute categories representing these characteristics were created. These are presented in Table E1. They are health and vitality (e.g., no diseases, lively, a *smoker*, *doesn't use protection*), well groomed (e.g., good hygiene, well groomed, *bad hygiene*, *does not care about their appearance*), attractive (e.g., attractive, nice body, *unattractive*, *unattractive body*), sexual desirability (e.g., charming, sexy, *doesn't know how to talk to the opposite sex*, *sexually unattractive*), and sexual satisfaction (e.g., good in bed, not kinky, *bad in bed*, *too kinky*).



Appendix E: (Continued)

As predicted, each of these characteristics was listed most frequently in the casual sex context by both genders. Consistent with the hypotheses, frequencies were comparable for the falling in love and marriage context for all of these characteristics except for attractive and sexual satisfaction. It was predicted that characteristics related to sexual desirability would be more important to the falling in love context than the marriage contexts. This was not found for sexual desirability, but attractive, a component of sexual desirability, was listed more frequently in the falling in love context than the marriage context by both genders. Sexual satisfaction was listed more frequently for falling in love than marriage only by males.

Table E1

*Characteristics Predicted to be Most Important for the Casual Sex Context*

Characteristic	Male			Female		
	Sex	Love	Marriage	Sex	Love	Marriage
Health and vitality	<b>4.92%</b>	2.65%	2.75%	<b>6.12%</b>	1.63%	1.47%
Well groomed	<b>7.68%</b>	1.89%	1.28%	<b>4.26%</b>	1.36%	0.54%
Attractive	<b>22.64%</b>	11.72%	8.61%	<b>16.49%</b>	7.74%	5.49%
Sexual desirability	<b>2.76%</b>	0.95%	1.28%	<b>3.19%</b>	0.27%	0.13%
Sexual satisfaction	<b>2.17%</b>	1.32%	0.55%	<b>1.99%</b>	0.27%	0.67%

Appendix E: (Continued)

It was predicted that certain characteristics would be more important in the casual sex context for males than females. These were characteristics indicating sexual accessibility, lack of desire for commitment, and reproductive potential. As can be seen in Table E2, results were as expected for sexual accessibility (e.g., sexually experienced, sexually forward, *low sexual drive, too little sexual experience*) and does not want a commitment (e.g., doesn't want a relationship, don't know them well, *too jealous, wants a relationship*). It was expected that the characteristics from Table E1 that involved physical attractiveness would be higher for males as they are indicative of reproductive potential. This was found to be the case for attractive and well groomed, but not for sexual desirability. A detailed examination of the attribute categories included in the sexual desirability set indicated that males responded as expected for the more physical attribute categories (*sexy, sexually unattractive*) while females more frequently listed less physical attributes (e.g., charming).

Table E2

*Characteristics Predicted to be More Important for Males than Females in the Casual Sex Context*

Characteristic	Male			Female		
	Sex	Love	Marriage	Sex	Love	Marriage
Sexual accessibility	<b>3.15%</b>	0.57%	0.92%	<b>1.06%</b>	0.14%	0.27%
Does not want a commitment	<b>3.15%</b>	0.38%	0.55%	<b>1.06%</b>	0.82%	0.67%

## Appendix E: (Continued)

It was expected that several characteristics would be more preferred by females than males in this context. Due to females presumed greater likelihood of using casual sex encounters as a screening tool for long-term mates, it was predicted that the characteristics of not promiscuous (no multiple partners, not promiscuous, *promiscuity*, *sexually aggressive*) and no previous commitments (e.g., plans for a relationship, available, *already in a relationship*, *issues with previous relationships*) would be more important to females than males in this context. As can be seen in Table E3, this was not borne out by the data. Females and males were equally likely to list these characteristics for casual sex. This is interesting considering the fact that responses for sexual accessibility were as predicted and that promiscuity was actually predicted to be a promoter for males in this context. It appears that, in this context, males prefer a partner that appears willing to have sex with them, but unlikely to have sex with others.

It was also predicted that characteristics indicating a willingness to expend resources would be more important to females than males in this context. Contrary to expectations, there was no difference in females and males for generous (generosity, selfless, *not giving*, *greedy*). Finally, it was predicted that characteristics indicating an ability to provide protection would be more important for females than males in this context. This was found to be the case, with the big/strong/protective characteristic being listed more frequently for females than males. This characteristic included the makes you feel secure attribute category as well as instances from the nice body, *unattractive body*, and *not stable/not secure* attribute categories that specifically

Appendix E: (Continued)

referred to size, strength, or protectiveness. In addition, knowing the person well was more important to females than males for casual sex.

Table E3

*Characteristics Predicted to be More Important for Females than Males in the Casual Sex Context*

Characteristic	Male			Female		
	Sex	Love	Marriage	Sex	Love	Marriage
Not promiscuous	<b>3.74%</b>	0.95%	0.92%	<b>3.72%</b>	0.27%	0.27%
No previous commitments	<b>1.97%</b>	0.00%	0.73%	<b>1.99%</b>	0.41%	2.54%
Generous	<b>0.59%</b>	2.27%	2.93%	<b>0.66%</b>	2.99%	2.54%
Big/strong/protective	<b>1.77%</b>	1.13%	0.55%	<b>3.86%</b>	0.95%	1.07%
Know them well	<b>0.59%</b>	0.00%	0.18%	<b>2.13%</b>	0.41%	0.13%

In summary, results were as predicted for casual sex except that generosity and a lack of outside relationships were equally important to males and females in this context.

*Long-Term Mating*

Several researchers have previously examined characteristics that are important in a long-term mating context. In this section, the characteristics listed by participants in this study for the marriage context will be compared with the characteristics that have previously been found to be important in long-term mating contexts. In addition, an

## Appendix E: (Continued)

examination of the relationship of characteristics listed in the falling in love context to those important in long-term mating will be conducted.

Researchers from a variety of perspectives have examined what characteristics are important in a long-term mate, in this analysis we will focus on two major perspectives: a marital satisfaction perspective and an evolutionary perspective. From a marital satisfaction perspective, some characteristics have been consistently associated with marital satisfaction. These characteristics are degree of negative affectivity, lack of emotional stability, emotional expressivity, education level, and sexual satisfaction. As illustrated in Tables E1 and E4, analogs to all of these characteristics were present in the attribute categories generated by the participants in this study.

Researchers studying the relationship between personality variables and marital satisfaction (Blum & Mehrabian, 1999; Caughlin, Huston, & Houts, 2000; Karney & Bradbury, 1995; Watson et al., 2000) have found that personality characteristics linked to negative affectivity and lack of emotional stability have a negative impact on marital satisfaction. As shown in Table E4, positive/no negative affect was more frequently listed by males in the marriage context, but not by females. This was even more frequently listed by males for falling in love than marriage. Attribute categories related to emotional stability (e.g. even tempered, stable, *moody*, *mental problems*) were more frequently listed in the marriage context than the other two contexts for females, but not males. A characteristic related to emotional stability and important in the marital satisfaction literature is violence (*abusive*, *aggressive*). This was almost never listed for males, but increased in importance for females as context became more long-term.

Appendix E: (Continued)

Emotional expressivity (e.g., shares personal thoughts, sensitive, *non-communicative, doesn't care*) was also predicted to be more important in the marriage context than the casual sex context. This appeared to be the case for both genders, but this was listed most frequently for falling in love by both males and females. A related construct is good communication (e.g., good communication skills, listens, *doesn't listen, poor conversationalist*). This was found to be equally important to all contexts for males but most important for the falling in love context for females.

Table E4

*Characteristics Important to Marital Satisfaction*

Characteristic	Male			Female		
	Sex	Love	Marriage	Sex	Love	Marriage
Positive/no negative affect	1.60%	3.78%	<b>2.75%</b>	1.76%	1.50%	<b>0.93%</b>
Emotional stability	3.59%	2.65%	<b>3.85%</b>	3.80%	3.82%	<b>6.35%</b>
Violence	0.20%	0.00%	<b>0.00%</b>	1.49%	2.18%	<b>2.38%</b>
Emotional expressivity	2.00%	3.78%	<b>2.93%</b>	2.71%	4.91%	<b>3.57%</b>
Good communication	2.40%	2.46%	<b>2.38%</b>	1.63%	4.23%	<b>1.06%</b>
Education	0.40%	1.89%	<b>2.20%</b>	0.27%	0.82%	<b>1.59%</b>

Education level has also been found to be predictive of marital satisfaction for both genders. As predicted, education (educated, willing to learn, *uneducated*) was

## Appendix E: (Continued)

found to be more important to marriage than casual sex for both genders and more important for falling in love than casual sex for males.

From an evolutionary perspective, it was expected that characteristics that promote a successful family relationship would be most important in the marriage context for both genders. In addition to the characteristics important for marital satisfaction listed above it was predicted that characteristics indicating a warm, agreeable personality, compatibility, good parenting skills, dependability and stability would be especially important in this context. As can be seen in Table E5, results were as predicted for agreeable (e.g., compromising, forgiving, *argumentative, demanding*), compatible (e.g., shared interests, compatibility, *different views on life, incompatible*), and good parenting skills (e.g., good with kids, likes kids, *different ideas about children/family, poor childrearing skills*). Friendly/social (e.g., caring, nice, *arrogance, not social*) was more frequently listed for marriage only by males and dependable and stable was more frequently listed for marriage only by females. Enjoyable (e.g., sense of humor, fun, *bad personality, not enjoyable*) was equally frequently listed by males in all contexts but least prominent in the marriage context for females.

Additional characteristics were listed by participants that, although not specifically predicted by previous research, would seem to be of most relevance to the marriage context. These were trust (e.g., you trust them, honest, *no mutual trust, untrustworthy*), morals (values/morals, *bad morals*), religion (religious, same religion, *no religion, different religion*), and love/feelings (e.g., has feelings for you, mutual love, *don't love them, no mutual feelings*). Trust and religion were found to be more

Appendix E: (Continued)

frequently listed in the marriage context than the casual sex context for both genders. Love/feelings was more frequently listed by males in the marriage context, but equally frequently listed across contexts for females. Morals was not different for casual sex and marriage for either gender, but was more frequently listed for falling in love than the other two contexts by males.

Table E5

*Characteristics Predicted to be Most Important in the Marriage Context by Evolutionary Psychological Research*

Characteristic	Male			Female		
	Sex	Love	Marriage	Sex	Love	Marriage
Friendly/social	6.19%	10.40%	<b>8.06%</b>	9.91%	14.60%	<b>9.26%</b>
Agreeable	2.99%	3.59%	<b>4.58%</b>	2.17%	6.00%	<b>5.95%</b>
Enjoyable	9.78%	9.64%	<b>9.71%</b>	6.38%	8.46%	<b>4.23%</b>
Compatible	2.40%	7.75%	<b>6.96%</b>	3.39%	3.55%	<b>5.03%</b>
Good parenting skills	0.40%	0.95%	<b>2.93%</b>	0.00%	0.41%	<b>4.50%</b>
Dependable and stable	0.60%	1.13%	<b>0.92%</b>	0.68%	1.09%	<b>2.51%</b>
Trust	2.40%	4.73%	<b>6.23%</b>	4.34%	7.50%	<b>8.33%</b>
Morals	0.40%	2.08%	<b>0.92%</b>	0.41%	0.55%	<b>1.19%</b>
Religion	0.40%	2.46%	<b>3.11%</b>	0.27%	0.95%	<b>1.59%</b>
Love/feelings	1.00%	2.27%	<b>3.11%</b>	2.17%	2.05%	<b>2.51%</b>



## Appendix E: (Continued)

There were also characteristics that were predicted to be differentially important for males and females in the marriage context. These are presented in Table E6. Factors indicating an ability and willingness to provide resources were predicted to be more important to females than males in this context. These would include generous (see Table E3), good income (e.g., financially responsible, financially secure, *lack of career*, *poor/unstable finances*), ambitious (e.g., hard working, goal oriented, *bad future*, *unmotivated*), intelligence (intelligent, talented, *not intelligent*), social status (e.g., extroverted, good family background, *bad past*, *bad dresser*), mature (independent, practical, *lack of responsibility*) and dependable and stable (see Table E5). Results were as predicted only for good income and dependable and stable. The other items were equally frequently listed by females and males in the marriage context with the exception of intelligence which was more frequently listed by males than females.

It was also expected that demonstrating love and commitment would be more important to females than males in this context. As hypothesized, demonstrates love (e.g., has time for you, treats you well, *not affectionate*, *unsupportive*), commitment (e.g., committed, wants a relationship, *not committed*, *poor relationship future*), and no previous commitments (see table E3) were all found to be more frequently listed by females than males in the marriage context. Demonstrates love was equally frequently listed by males and females for the falling in love context, however. Males, on the other hand, were expected to give primacy to sexually faithful and chaste mates in the marriage context. There was a trend in this direction for faithful (faithful, *unfaithful*) and not

Appendix E: (Continued)

promiscuous (see Table E3). Males were also expected to place more importance on physical attractiveness in this context than women. As was seen in Table E1, this was found to be the case for attractive and sexual desirability.

Table E6

*Characteristics Predicted to be Differentially Important for Males and Females in the Marriage Context*

Characteristic	Male			Female		
	Sex	Love	Marriage	Sex	Love	Marriage
Good income	0.20%	0.38%	<b>1.83%</b>	1.90%	2.05%	<b>5.95%</b>
Ambitious	1.20%	3.40%	<b>5.86%</b>	1.09%	5.32%	<b>5.69%</b>
Intelligence	1.20%	2.84%	<b>2.20%</b>	1.09%	1.36%	<b>0.79%</b>
Social status	2.20%	1.89%	<b>1.28%</b>	2.31%	1.64%	<b>1.06%</b>
Mature	0.40%	0.95%	<b>1.47%</b>	0.81%	0.95%	<b>1.32%</b>
Demonstrates love	1.00%	4.16%	<b>2.01%</b>	2.31%	4.09%	<b>3.70%</b>
Committed	0.80%	1.13%	<b>1.10%</b>	0.95%	2.18%	<b>3.17%</b>
Faithful	0.20%	1.89%	<b>2.38%</b>	0.54%	2.46%	<b>1.72%</b>

In summary, results were as predicted in most cases. Health and vitality, well groomed, attractive, sexual desirability, sexual satisfaction, and not promiscuous were listed more frequently for casual sex than for marriage by both genders. Well groomed, attractive, sexual accessibility, does not want a commitment, and enjoyable were

## Appendix E: (Continued)

listed more frequently by males than females in this context. Health and vitality, big/strong/protective, know them well, violence, friendly/social, compatible, trust, love/feelings, good income, and demonstrates love were more important to females than males in this context.

Generous, education, agreeable, compatible, good parenting skills, trust, religion, good income, ambitious, demonstrates love, and faithful were listed more frequently for marriage than for casual sex by both genders. No previous commitments, emotional stability, violence, friendly/social, agreeable, good parenting skills, dependable and stable, trust, good income, demonstrates love, and committed were more frequently listed by women than men in this context. Health and vitality, attractive, sexual desirability, positive/no negative affect, good communication, enjoyable, compatible, religion, and intelligence were more frequently listed by men than women in this context.

Characteristics listed for falling in love were more likely to agree with those for marriage than casual sex for both genders. For good parenting skills and good income, however, frequencies for falling in love were more similar to casual sex than marriage for both genders. This was also the case for emotional stability, compatible, and dependable and stable for females. Emotional expressivity and friendly/social were listed more frequently for the falling in love context than the other two contexts for both genders. Demonstrates love, positive/no negative affect, and morals were more frequently listed in the falling in love context than in the other two contexts for males. Females listed good communication and enjoyable more frequently in this context than in the other two contexts.

## Appendix F: Study 2 Instructions

### **Mate Choice Decisions Study**

In this study we are interested in finding out more about close interpersonal relationships. On the website you will be asked to answer a series of questions about your preferences in a hypothetical mate.

#### **Instructions for completing this study:**

**Please do not hit the back button on your browser at any point in the study**

**Use only Internet Explorer(PC) or Safari(Mac) other browsers such as Firefox or Netscape will not work properly with this program**

**You must complete all 3 sections of this study to receive extra credit for completion. Please follow the instructions on the screen until you get to the debriefing page.**

**This study will take approximately 30-60 minutes to complete. Please make sure you have that much time available. You will *not* be able to complete part of the study and then come back to finish it later on**

**Please do not discuss your answers with anyone else while you are completing the study or discuss your answers with classmates who have not yet completed the study.**

**Your responses are entirely anonymous and very important to our research on mate choice, so please respond as realistically and honestly as possible.**

**Please open internet explorer and go to <http://shell.cas.usf.edu/~barnes/> to begin**

#### **Overview:**

**In this study you will be completing a Q-sort task. A Q-sort is basically designed to determine the relative importance of particular items by having people sort them in to rankings of different levels of importance.**

**In this study you will do a sort for 3 different contexts: marriage, casual sex, and falling in love. Please complete each section, even if that context is not relevant to your current dating/marital situation.** For example, if you are not interested in casual sexual relationships right now, please rate the characteristics on how much they would make you *desire* having a casual sexual relationship with an individual, *even if you would not necessarily act on those desires*. If you are not interested in looking for a marriage partner right now, please rate the characteristics according to what you *would* feel is important in a marriage partner, if you *were* looking for one.

Appendix F: (Continued)

You will click on the [Click here to begin](#) link to begin the study.

When you begin each section there will be an instruction page for the context you will be doing the sort for. Please read these instructions carefully. IMPORTANT: Please pay attention to the context you are being asked to sort for in each section. The characteristics that are important to you in a mate may be different depending on what type of relationship you intend to have with that person. Please sort the characteristics according to the context for that section.

When you have finished reading the instructions click the [Begin Q sort](#) link.

At the top of the screen you will see the context where it says “please answer for...” There is a list of characteristics of a person on the side. Next to each characteristic there are a series of buttons corresponding to ratings of importance. In this practice example the ratings range from -2 to +2. In the actual study the ratings will range from -5 to +5. You will click on these buttons to assign your rating to each characteristic.

Positive numbers indicate promoters: characteristics in a mate that would make you likely to engage in a particular type of relationship with that person. Negative numbers indicate deterrents: characteristics that would prevent you from engaging in a particular type of relationship with that person. Higher absolute values indicate greater importance. For example: clicking the button for +5 indicates that that is one of the most important characteristics that would make you likely to have a particular type of relationship with someone. A score of 0 indicates that you are neutral about the characteristic and don't think it would cause you to or prevent you from engaging in a particular type of relationship with someone.

When you begin each Q-sort the computer will put all of the items under the 0 rating. You will need to scroll down to see all of the items. You will sort the characteristics by roughly presorting the characteristics first, then updating the screen, and continuing with sorting and re-sorting characteristics into their final positions.


Presorting

- **First go through the list of characteristics and click the button next to each that represents how important that characteristic is to you in a mate for that particular context. You will need to scroll down to see all the characteristics.**
  - **Positive numbers indicate promoters – positive characteristics that would be likely to cause you to engage in a particular type of relationship with a person.**
  - **Negative numbers indicate deterrents – characteristics that would be likely to prevent you from or make you not want to have a particular type of relationship with that person.**
  - **Higher absolute values indicate greater importance. For example: clicking the button for +5 indicates that that is one of the most important characteristics that would make you likely to want to have a relationship with someone.**
- **When you have clicked a button for each characteristic hit the *update* button in the top panel. This will sort the characteristics according to your selections.**

Re-sorting:

- **In this task you are limited in the number of characteristics you can put in each level of importance (e.g., you can not have more than 3 items with a + 5 score.)**
  - **The number of items allowed for each score is indicated by the number of blue boxes next to the score.**
  - **Green dots in these boxes indicate that that slot is filled.**
  - **Red dots indicate that you have too many characteristics for that score and need to move some characteristics to another score. You can do this by picking the characteristic that you would like to move and clicking a different button for a different score and then hitting the update button.**
- **Begin with selecting the *most important promoter characteristics* for categories +5 and +4 and the *most important deterrent characteristics* for categories -5 and -4. (Don't forget to *Update* the rank-ordering)**
- **Continue working towards the center of the ranking continuum by reviewing and moving characteristics to and from the remaining levels of importance (+3 ... -3).**
- **You may have to make some tough decisions as you are sorting your items. In this task we are concerned what really matters to people when selecting a mate. Try to be as realistic as possible, this will make the task easier to complete. In real life people are not perfect, we may accept some faults in a person, provided those faults are balanced by positive characteristics. Keep this in mind when completing the sorting task and think about what really matters to you. You may think back on your previous relationships to help you in your sorting.**

## Appendix F: (Continued)

- Review your rank-order and make sure that all levels of importance contain the correct number of characteristics (all boxes must have green dots ) , **and** that characteristics within each number rank are similar in importance.

### Completing the Q-sort:

- When you are **finished**, click on the *Submit* button
  - In case there are categories with too many or too few statements, you are asked to continue with sorting.
  - Then you will be asked to provide an 8 digit **code word** which will be used for assigning your extra credit points. **Your 8 digit code word is the last 4 digits of your Social Security Number then the last 4 digits of your phone number (no spaces)**. Your code word is the same for all three sections of the study. When you have entered your code word click the *continue* button.
  - You will then be asked for an **optional** e-mail address. You do **not** need to enter your e-mail. Include an e-mail address **only** if you would like to receive a summary of the results of the study after it is completed. Your e-mail will be kept separate from your data, so your responses will remain anonymous.
  - Click the *send* button and follow the instructions on the screen to complete the next portion of the study.

### Completing the Study:

- When you finish your third Q-sort you will be asked a series of demographic questions. Please enter the **number** of your response for each question. It is important that you please answer **all** questions honestly; all your responses to this study are kept strictly anonymous.
- When you have completed the demographic questions and sent your responses, click the [click here to complete the study](#) link. This will bring you to the debriefing page with more information about this study that you can read.
- **When you reach the debriefing page you know the study is complete and you are eligible to receive your extra credit for completion.**

Any questions?

**Thanks again for participating in this study, please contact Monica at 294-1485 or [barnes@mail.usf.edu](mailto:barnes@mail.usf.edu) if you have any questions or problems while completing the study.**

Appendix G: Good, Moderate, and Poor Variants of the Characteristics

Group	Item	Level	Item
1	1	Good	He/she treats you like a king/queen.
1	1	Moderate	He/she treats you reasonably well.
1	1	Poor	He/she doesn't treat you that well.
1	2	Good	He/she has a great personality.
1	2	Moderate	He/she has a decent personality.
1	2	Poor	He/She has a somewhat dull personality.
1	3	Good	You find him/her to be highly attractive in appearance.
1	3	Moderate	You find him/her to be moderately attractive in appearance.
1	3	Poor	You find him/her to be not all that attractive in appearance.
1	4	Good	He/she seems like a caring individual.
1	4	Moderate	He/she seems like a moderately caring individual.
1	4	Poor	He/she doesn't seem to be an especially caring individual.
1	5	Good	You find him/her to be quite intelligent.
1	5	Moderate	You find him/her to be of normal intelligence.
1	5	Poor	You do not find him/her to be that intelligent.
1	6	Good	You are confident he/she does not have any diseases
1	6	Moderate	You're moderately sure he/she doesn't have any diseases
1	6	Poor	You can't be sure he/she doesn't have any diseases



Appendix G: (Continued)

Group	Item	Level	Item
2	1	Good	You feel he/she is definitely an honest person.
2	1	Moderate	You feel he/she is probably an honest person.
2	1	Poor	You feel he/she may not be the most honest person.
2	2	Good	You always feel respected when you are around him/her
2	2	Moderate	He/She is sometimes respectful of you
2	2	Poor	He/She isn't always that respectful of you.
2	3	Good	He/she is not afraid to show affection.
2	3	Moderate	He/she sometimes shows affection.
2	3	Poor	He/she is hesitant about showing affection.
2	4	Good	He/she is lots of fun to be around.
2	4	Moderate	He/she is kind of fun to be around.
2	4	Poor	He/she is not that much fun to be around.
2	5	Good	He/she has a very nice body.
2	5	Moderate	He/she has a decent body.
2	5	Poor	He/She doesn't have that great of a body.
2	6	Good	You can always depend on him/her
2	6	Moderate	He/She is somewhat dependable
2	6	Poor	He/She is not always that dependable

Appendix G: (Continued)

Group	Item	Level	Item
3	1	Good	You know he/she has strong feelings for you
3	1	Moderate	You think he/she might have some feelings for you
3	1	Poor	You're not sure if he/she has feelings for you
3	2	Good	You feel sure he/she is the type of person who would be willing to commit to a long-term relationship.
3	2	Moderate	You think he/she might be the type of person who would be willing to commit to a long-term relationship.
3	2	Poor	You think he/she is the type of person who would be hesitant about committing to a long-term relationship.
3	3	Good	It seems like it would be easy for you to get him/her sexually aroused
3	3	Moderate	It seems like you might be able to get him/her sexually aroused
3	3	Poor	It seems like it wouldn't be that easy to get him/her sexually aroused
3	4	Good	He/she always makes you laugh.
3	4	Moderate	He/she sometimes makes you laugh.
3	4	Poor	He/she rarely makes you laugh.
3	5	Good	He/She seems to have a strong sense of values in line with your own.
3	5	Moderate	He/She seems to have values that sometimes agree with your own.
3	5	Poor	You're not sure if his/her values agree with your own.

Appendix G: (Continued)

Group	Item	Level	Item
3	6	Good	He/she has an especially positive attitude.
3	6	Moderate	He/she has a somewhat positive attitude.
3	6	Poor	He/she does not have a very positive attitude.

## Appendix H: Study 3 Instructions

### **Mate Choice Decisions Study**

In this survey you will be asked to answer a series of questions about your preferences regarding interpersonal relationships. In particular, we are interested in various types of romantic relationships. For each question, you will be asked to read a description of a potential mate and rate that person on how much you would like to participate in three different types of relationships with her: a casual sexual relationship, a serious dating relationship, and a marital relationship. You will also be asked about how realistic the various descriptions seem or whether each description sounds like it could be a real person.

On this questionnaire you will read the descriptions of 39 different individuals. For each description please imagine that you recently met her and have been on a number of dates with her. You feel you now have a pretty good idea of what she is like. Please consider each description individually and assume that she is the only person you are currently dating.

Please answer all questions for each description, even if that context is not relevant to your current dating/marital situation. If, for whatever reason, you are not interested in casual sexual relationships right now, please rate the person on how much you might *desire* having a casual sexual relationship with her, *even if you would not necessarily act on those desires*. If, for whatever reason, you are not interested in looking for a marriage partner right now, please rate the person according to what you *would* feel is important in a marriage partner, if you *were* looking for one.

## Appendix H: (Continued)

Please remember that your responses are important to increasing our understanding of interpersonal relationships. So, please take a few minutes to think about each description and provide the most realistic and honest answers possible.

When you complete the survey, please turn it in to me at the front of the room.

Thanks again for participating in this study.

### About the Author

Monica Burke received a B.A. in Psychology from the University of South Florida in 1994 and a M.A. in Experimental Psychology from the University of South Florida in 1997. While in the Ph.D. program at the University of South Florida she has taught courses in Research Methods and Experimental Design and Analysis and served as the Academic Advisor for the Department of Psychology.

Ms. Burke is active in the Society for Judgment and Decision Making and has presented at annual meetings as well as assisted with meeting coordination. She served as the Assistant Secretary/Treasurer for the Society from 2002 to 2003. She has coauthored a publication in the *Journal of Behavioral Decision Making* as well as a chapter in *Emerging Perspectives on Judgment and Decision Research*.