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AN EVOLUTIONARY APPROACH TO STUDYING SEARCH BEHAVIOR IN THE CONTEXT OF HUMAN MATE SELECTION

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ABSTRACT

An evolutionary approach to studying search behavior in the context of human mate selection

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This research investigates the search behavior of individuals in the context of mate selection. That is, how much information individuals search for prior to initiating mating relationships? What information individuals deem important when searching for mates? How much information individuals require before rejecting mates? Evolutionary psychology was employed to understand the effects of gender, temporal condition (i.e., short-term vs. long-term relationship) and self-perception (i.e., self-perceived desirability as a mate). In Study 1, it was predicted that females would be more selective than males and that this relationship would be moderated by the temporal condition of the relationship. However, it was found that males sought more information than females, but females rejected more mating alternatives than males. This relationship was moderated by the temporal context of the relationship with the behavior of females unaffected by temporal condition but males becoming more selective in the long-term condition. Study 2 served as an exploratory study into the search processes (core attributes heuristic use, threshold use, rate of decay) employed by individuals seeking mates. Gender and temporal condition did not affect core attributes use, the number of attributes acquired, threshold use, and the rate of decay of the threshold. However, gender and temporal condition affected mate preferences (the attributes considered

important when searching for information). Self-perception also influenced the degree of search, with higher self-perception associated with a greater degree of search effort. The implications of these findings are discussed.

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CHAPTER 1

INTRODUCTION

"Man, with all his noble qualities ... still bears the indelible stamp of his lowly origin" (Darwin, 1871/1890).

Has humankind erased the imprint of its 'lowly origin'? Are people solely guided by reason and not by primal instincts? Are humans immune to innate needs and desires? Does Darwin's statement hold validity? The study of evolutionary psychology would argue that people "still bear the stamp of their lowly origin" and to understand human behavior, it is necessary to understand its biological roots (Crawford, 1989).

Evolutionary psychology is the field of study that explains human behavior as a series of adaptive mechanisms. It combines the ideas of natural selection, genetics, behavioral and social psychology in order to explain human behavior as a product of evolved mechanisms (Crawford, 1989; Cosmides, Tooby, & Barkow, 1992). Much evolutionary research has focused on human mate selection. This is because the goal of human evolution is to support the survival and reproduction of the human species (Buss, 1988, 1996; Feingold, 1992; Greenlees & McGrew, 1994; Kenrick et al, 1990; Symons, 1979; Trivers, 1972).

The current thesis extends the research on human mate selection. The objective of this research is to draw from the vast evolutionary literature on human mate selection to study the behavior of individuals searching for a mate. The research attempts to answer the following questions about search behavior. How much information do individuals require about a prospective partner before they decide to initiate a mating relationship?

Which information about a potential mate will be important to individuals searching for a partner? Which variables will influence the degree of effort individuals are willing to exert in searching for a partner?

It is evident from these questions that *information search* is the focus of this thesis. Hence, it is necessary to consider the literature regarding information search. Essentially, two aspects of information search are relevant to this research: how much information is assessed (extent of search) and which information is deemed important in searching for a partner. In considering the 'extent of search,' this research is especially concerned with the stopping behavior of individuals searching for a mate. That is, how the decision maker decides to *stop* acquiring information about a prospective partner and commit to a mate.

Two studies are employed to investigate stopping behavior in the context of mate selection. Study 1 explores the effect of gender, temporal condition (whether the individual is seeking a short- or long-term relationship) and the rejection option (whether the individual chooses or rejects mates) on the extent of information search. Study 2 investigates the effect of gender, temporal condition, and self-perception (i.e., self-perceived desirability as a mate) on search behavior.

CHAPTER 2

LITERATURE REVIEW

EVOLUTIONARY PSYCHOLOGY

The objective of this research is to investigate the behavior of individuals searching for a mate. Specifically, the research explores the stopping strategies used by individuals, namely how the decision maker decides that he/she has acquired a sufficient amount of information about a potential partner to form a mating relationship. Because the study explores two disparate disciplines, the literature from the fields of evolutionary psychology and information search behavior are presented separately.

Chapter 2 reviews the extant literature on human mating in the field of evolutionary psychology. The theories of mating are reviewed for several reasons. First, they indicate the key variables that influence mate selection. It is assumed that the variables that influence mate selection (e.g., *gender*) will affect the process employed to search for a partner. Second, the review of the literature allows the researcher to identify key mating preferences, i.e., the characteristics that are considered important in a potential mate.

The subsequent section reviews the literature on human mating. Chapter 2 begins with a general discussion on evolutionary theory. Next, the theories of mate selection are presented, with a specific focus on the theory of assortative mating and theory of sexual selection and parental investment. Finally, mate preferences of males and females are discussed.

Evolutionary psychology

The objective of the current research is to apply evolutionary theories of mating to study search behavior in the context of mate selection. Nevertheless, before specific theories of human mating can be discussed, it is necessary to understand general evolutionary theory. The subsequent sections discuss some of the key concepts that form the foundation of evolutionary psychology. Specifically, the role of *adaptations* and *ultimate explanations* in evolutionary psychology are considered.

Adaptations

Because of its focus on adaptations, evolutionary psychology is often described as the study of adaptations (Ghiselin, 1974; Symons, 1979, 1992; Tooby & Cosmides, 1992). An adaptation is defined as "an attribute that permits the possessor to accomplish those immediate objectives that it must achieve in order to survive and reproduce" (Dunbar, 1982, in Crawford, 1989). Consequently, an *adaptive problem* is a problem of survival and reproduction. Hence, when applying the evolutionary paradigm to study behavior, it is necessary to determine how a behavior has been 'selected' to solve specific adaptive problems (Crawford, 1989, Symons, 1992; Tooby & Cosmides, 1992).

Ultimate explanations

Evolutionary psychology is also characterized by its focus on the ultimate explanations of behavior. Most social sciences are concerned with the proximate mechanisms of behavior. The *proximate* explanations are the immediate factors, such as

internal physiology and environmental stimuli that produce a certain response. That is, *how* behaviors are expressed in the environment. However, evolutionary psychology focuses on the ultimate explanations of behavior. The *ultimate* mechanisms explain *why* a trait came to be exhibited in terms of adaptive advantage. That is, when applying evolutionary psychology, the researcher must determine why a characteristic exists to support survival and procreation (Crawford, 1989; Symons, 1979).

Evolutionary psychology is also distinguished by its uniqueness. Unlike other disciplines, it is not an area of study but rather a way of thinking that can be applied to any topic within the social sciences. That is, a researcher within any discipline can apply the evolutionary framework by identifying the adaptive and ultimate explanation for the behavior. Many researchers have used the evolutionary framework to provide a repertoire of explanatory concepts for human behavior. Evolutionary psychology has been used to explain altruism (Badcock, 1991), cooperation (Frank, Gilovich, & Regan, 1993), sibling relationships (Sulloway, 1995), parent-child relationships (Badcock, 1991; Symons, 1979), and language acquisition (Pinker & Bloom, 1992). However, the bulk of evolutionary research has focused on human mating (Buss, 1986; 1988; 1995; Barber, 1995; Hupka & Bank, 1996; Greenlees & McGrew, 1994; Daly & Wilson, 1992).

Human mate selection

Approximately 90% of human adults enter a monogamous relationship at some stage in their life. The selection of a mate is perhaps the most important decision undertaken by an individual (Buss, 1985). Because of its importance, several theories

have been proposed to understand how an individual selects a partner. For the purpose of this research, a review of the theory of assortative mating and the theory of sexual selection and parental investment is presented, as they are the most relevant.

Theory of assortative mating

The theory of a*ssortative mating* assumes that the union of individuals is based on similarities in genotypic or phenotypic characteristics. Hence, mate selection is not a random act but rather, people *assort* based on similarities in physical, intellectual, and personality traits (Buss, 1985). Buss & Barnes (1986) described two types of assortative mating: character-specific assortment and cross-character assortment. *Character-specific assortment* is coupling based on resemblance on certain characteristics (*e.g., wealthy male with wealthy female).* However, *cross-character assortment* is mating based on similarly valued but different characteristics (*e.g., wealthy male with beautiful female*). Both character-specific and cross-character assortment illustrates the non-random nature of human mate selection. That is, it demonstrates that individuals do not indiscriminately choose a partner but rather select a partner with similar or complementary characteristics.

There is much evidence to indicate character-specific assortment. Individuals are likely to marry someone with the same level of education, intelligence, socioeconomic status, birth-order, area of residence, and other personality dimensions (Buss & Barnes, 1986; Kenrick et al, 1993; Mare, 1991; Wilson, 1989). Kenrick et al (1993) suggested that individuals form relationships with people that carry similar mate values to themselves. The *mate value* of an individual is the degree to which an individual possesses desirable traits (e.g., wealth, beauty, intelligence). The researchers tested this

argument in a series of experiments. Subjects were asked to indicate their minimum criteria required in a mate for different traits at varying levels of relationships (e.g., *one-night stand, dating, marriage*). Subjects also rated themselves on the same characteristics. The results demonstrated that in most cases, the self-perception and minimum criteria responses of women were correlated. That is, females preferred to mate with individuals that carried similar mate values at all levels of the relationship. The responses of men were only related with self-perceptions for serious relationships (*steady dating & marriage*). That is, men preferred to mate with individuals that carry similar mate values in serious relationships. However, males do not consider similarity in mate value important for short-term relationships and are willing to enter into sexual relationships with individuals that are dissimilar to themselves.

The theory of assortative mating is relevant to this discussion because it brings forth an important variable that influences the selection of a partner. Specifically, it illustrates the role of *self-perception* in mate selection. If individuals mate with others that are like themselves, then peoples' perceptions of the degree to which they possess specific characteristics is an important determinant of mate selection. For example, a male wishes to mate with a female that possesses a similar degree of intelligence. Hence, his choice of a mate will be guided by the degree of intelligence he perceives himself to possess. Therefore, it is apparent that self-perception influences the selection of a mate.

Because self-perception is an important variable in mate selection, it is reasonable to investigate its effect on the behavior of individuals searching for a partner. Hence, this research attempts to determine the influence of self-perceived desirability as a mate on the degree of effort expended in searching for a partner.

Theory of sexual selection and parental investment

Mate selection has also been studied via the theory of sexual selection and parental investment. The discussion of this theory is relevant to the current research because it highlights the importance of gender in mate selection. Gender differences are manifest at two levels: in the selectivity of individuals in mate selection and in mate preferences.

Sexual selection

Darwin (1859) defined sexual selection as "a struggle between individuals of one sex, generally the males, for possession of the other sex." Hence, sexual selection is the evolution of any trait that enhances mating success either by attracting mates or intimidating rivals (Barber, 1995). There are two types of sexual selection: intrasexual and intersexual selection. *Intrasexual* selection is the competition between members of the same sex for access to the opposite sex. *Intersexual* selection is the preference of one sex for members of the opposite sex who possess valued traits. Intersexual selection has also been termed "female choice" because generally the female of the species is more discriminating and selective in mate choice (Buss, 1985; Buss & Barnes, 1986).

Parental investment

Trivers (1972) explained the selectivity of females in terms of differential parental investment. *Parental investment* is any investment made by the parent in an offspring that increases the offspring's chance of survival and reproduction at the expense of the

parents' ability to invest in other offspring. The parent that bears the greater costs of parenting will be more discriminating in mate selection. This is because he/she forgoes the chance to produce and provide for other offspring. In the human species, the obligatory parental investment required by men and women is very different. Minimal female parental investment involves a mandatory nine months of gestation, while minimal male investment requires a single act of sexual intercourse. Hence, if a woman decides to mate with an 'inferior' male, she will be subject to greater costs than a male that mates with an 'inferior' female. Consequently, differential parental investment forces females to be more selective in mate choice (Buss, 1995; 1996; Feingold, 1992; Kenrick et al, 1990).

The costs and benefits of indiscriminate sex also encourage female choosiness. Women are limited in the number of the offspring that they can produce. As compared to men, the reproductive life span of women is short. Furthermore, women can only conceive during ovulation, a brief period in the fertility cycle. Hence, promiscuity in women will not increase the number of children that can be borne. However, mating indiscriminately increases the likelihood of being impregnated by an unworthy male. Consequently, promiscuity has little reward for women but greatly increases the costs of parental investment. However, males are not subject to a ceiling to the number of children they can sire. An increased number of sexual encounters lead to a greater number of offspring. Therefore, selectivity does not hold the same benefits for men (Buss, 1996; Trivers, 1972).

It is apparent from the discussion of the theory of sexual selection and parental investment, that *gender* is an important variable that influences the selection of a partner.

While it is accepted that females are more discriminating in mate selection than males, the influence of gender has not been investigated within the context of information search. Hence, the current research analyzes the influence of gender on the effort exerted in searching for a partner.

Mate preferences

The theory of sexual selection and parental investment explained gender differences in selectivity when choosing a mate. However, gender differences are also manifest in mate preferences, namely the traits valued by individuals in a potential mate. These differences are also accounted for by the parental investment theory. Females provide a great degree of parental investment for their offspring. Hence, they will seek cues in partners that demonstrate the ability and willingness to share parental costs. Because males are expected to share parenting cost, they need to ensure that the child they are providing for is their own. Hence, they seek cues to sexual fidelity. Males can also benefit from indiscriminate sex because each sexual encounter can produce an offspring. However, a male will only benefit from promiscuity if he mates with fertile females. Hence, males seek fertility in partners. The subsequent sections discuss female and male mate preferences.

Female mate preferences

Female mate preferences will be guided by the need to find mates that will contribute to her survival and the survival of her offspring. When selecting a mate,

females evaluate a male's ability and willingness to provide both resources and protection.

Ability to provide resources

The theory of parental investment dictates that females should seek mates with the ability to provide resources. There are decided adaptive advantages in focusing on the resource acquisition potential of mates. Men with high earning capacity can easily provide the female and the offspring with food, shelter, protection, money, status, and learning opportunities (Greenlees & McGrew, 1994). Hill & Hurtado (1992) found higher survival rates among children that had access to male parental investment.

Much empirical research supports the idea that females are concerned with the resource-acquisition potential of males. Several researchers including Buss (1985), Buss & Barnes (1986), Buss et al (1990) investigated the characteristics that people find desirable in a mate. Buss & Barnes (1986) used samples of married couples and students and concluded that females in both groups favored mates that were college graduates, career-oriented, and exhibited good earning capacity. Buss et al (1990) extended this research in the *International Mate Selection Project* (IMSP) to explore mate selection across cultures. In a study of thirty-seven cultures, the researchers found large gender differences in mate preferences for earning capacity and financial prospects. Women also desired ambitiousness and industriousness in a partner, characteristics related to the ability to acquire resources. Consequently, the female partiality for males with high resource acquisition potential is invariant across cultures, implying that it is an evolved preference as it is not influenced by differences in culture.

Townsend & Levy (1990a) s0tudied the effect of socioeconomic status (SES) on the willingness of individuals to enter into six types of relationships (*casual conversation, dating, sex only, serious relationship with marriage potential, sex & serious relationship with marriage potential, and marriage*). Subjects viewed photographs of models of varying levels of physical attractiveness. Along with the photograph, a profile of the model described his/her occupational status and income. The SES of the potential partner influenced women's willingness more than men's to enter all types of relationships with the influence of SES being greater with higher levels of intimacy. In a similar study, Townsend & Levy (1990b) manipulated SES through clothing rather than a written profile about the model. That is, the models wore costumes that signalled their SES (e.g., *suit & Rolex, Burger King employee uniform*). The findings confirmed earlier results. Moreover, the research concluded that females were more willing to form relationships with high-status, unattractive men than with low- or medium-status attractive men.

Researchers have frequently explored personal ads to study human mate preferences in a field setting (Ahuvia & Adelman, 1992; Bernard, Adelman, & Schroeder, 1991; Greenlees & McGrew, 1994; Hirschman, 1987). Analysis of published advertisements confirms that females are more likely to seek cues to resource acquiring potential and financial security. That is, females will be more concerned with the occupational, educational, and intellectual status of prospective mates.

Feingold (1992) lent further support to the parental investment model. In a meta-analysis of 34 studies (*26 questionnaire studies & 8 personal ads content analyses*), he found that compared to male subjects, female subjects valued to a greater extent socioeconomic status, intelligence, and ambitiousness in a potential mate.

Although researchers agree that females value monetary resources in a potential mate more than males, many have attributed this preference to gender stereotypes or an inferior access to resources. That is, women assessed financial capabilities because they were unable to obtain the resources themselves or could only acquire high status through marriage (Ellis, 1992; Sprecher, 1989). Hence, once women achieve high status they can select on criteria such as physical attractiveness. In response to this argument, Townsend (1987) explored the effect of increasing SES on the mate choices of male and female medical students. Male students acknowledged that with their rising status they were able to enjoy more transitory relationships. However, female subjects expressed concern over the lack of eligible men. That is, with their rising SES, women recognized that the number of men with equal or higher status had diminished. Therefore, increasing status increased the number of mating opportunities for men but reduced them for women. Clearly, even with high socioeconomic status, females will still want to marry someone of even higher status (Ellis, 1992).

Women's desire for men that can provide resources is moderated by the temporal context of the mating relationship. Buss & Schmitt (1993) concluded that in a short-term relationship (i.e., *one-night stand, brief affair, etc.*) women are concerned with immediate resource procurement. This means that males that are extravagant, spend money and buy presents will be favored. However, in a long-term relationship, a good financial prospect, a promising and reliable career, education, and ambitiousness are deemed important. Kenrick et al (1990) also concluded that the females placed greater value on traits such as status, power, wealth, earning capacity and education as the seriousness of the relationship increased.

Willingness to provide resources

While the ability to invest is an important selection criterion, equally important is the willingness of the male to provide resources. Mating with wealthy, high-status men will not be advantageous to the females if the man is only engaging in short-term dalliances. That is, women can only amass the benefits of the man's money and power if he is willing to engage in a long-term relationship and provide for the female and her offspring (Buss, 1995). However, a man's propensity to invest is more difficult to assess than his ability to invest. Hence, females have to rely on secondary traits that signal willingness. Researchers have also found it difficult to pinpoint the characteristics that are related to the inclination to provide resources (Buss, 1992).

Males that demonstrate fondness for children are regarded as likely to invest in a relationship. The rationale for this is that males that display affection for children should want to invest in their own offspring (Ellis, 1992). Buss & Barnes (1986) found that fondness for children was identified as a desirable trait in men. Furthermore, Schmitt & Buss (1996) studied the tactics used to derogate rivals. Males could effectively disparage a competitor by suggesting that he had abandoned a pregnant girlfriend. Hence, men that forsake their offspring are viewed negatively.

Furthermore, males that are kind, understanding, considerate, affectionate, emotionally supportive, romantic, dependable, emotionally stable and mature are regarded as more inclined to invest. Buss (1985) and Buss & Barnes (1986) demonstrated that females valued honesty, kindness, and dependability in males. Findings from the IMSP also discovered that females valued dependability, emotional stability and maturity, and a pleasing disposition in prospective partners (Buss et al,

1990). A study of strategies to attract mates revealed that showing concern, understanding, sensitivity, and love were effective tactics to attract females (Schmitt & Buss, 1996). Kenrick et al (1990) confirmed these findings and found that the importance of kindness and understanding increased with higher levels of intimacy. In addition, females valued emotional stability more than males at all levels of the relationship.

Research using personal ads substantiates the latter results. Greenless & McGrew (1994) found that females were more likely to ask for a serious commitment while men were more likely to advertise their willingness to provide time, effort, and resources to the relationship. Similarly, Feingold (1992) discovered that 'character' was important to females when evaluating personal ads.

The importance of a male's willingness to invest is moderated by the temporal context of the mating relationship. Buss & Schmitt (1993) suggested that the propensity to invest will be more important for long-term than short-term relationships. Kenrick et al (1990) demonstrated that the traits related to the willingness to provide resources became more important to females with increasing levels of intimacy in the relationship.

Ability and willingness to protect

Women are physically weaker than men and are consequently vulnerable to violence from men and other predators. Hence, males that demonstrate the ability and willingness to protect the female and her offspring will be valued above those who do not. There are many benefits to forming a relationship with a man that demonstrates the ability to protect. Strong and dominant males are more likely to retain their resources and

are able to extract resources from others. Hence, the females will be assured of a supply of resources. Powerful men can also offer physical protection to the female and her children. Finally, females that mate with dominant males will experience an elevation in their own status. The ability to protect is related to physical traits such as size and physiognomy or personality traits such as self-confidence and assertiveness (Ellis, 1992).

Tall men are considered more dominant and more powerful (Symons, 1979). Hence, women prefer taller men because height is associated with the ability to protect (Buss & Barnes, 1986). Sheppard & Strathman (1989) discovered that while women did not evaluate their "tall" mates as more attractive, they were more likely to date tall men and expressed a preference for men taller than themselves. Consequently, as compared to shorter men, taller men have more attractive girlfriends (Feingold, 1982).

Females will be attracted to physical traits that signal strength. Barber (1995) reported that women viewed the moderately developed torso most attractive. From an evolutionary perspective, this physique is the optimal because it represents strength without the bulk that impedes endurance. Furthermore, mature male features are considered appealing. Facial hair, a wide face, or a square jaw, are linked to maturity and hence sought by females (Barber, 1994; Ellis, 1992, Keating, 1987).

In response to this female preference, males exhibit physical prowess to attract women. Buss (1988) found that men lifted weights, exercised, and kept physically fit to attract females. Walters & Crawford (1994) discovered that men displayed and acquired athletic ability, played dangerous sports, worked out, lifted weights, and showed off their physique to attract females. These acts demonstrate physical strength and hence connote the ability to protect.

Researchers have also investigated the individual personality traits that indicate the ability to protect. Sadalla, Kenrick, & Veshure (1987) studied the role of dominance on attraction. A dominant individual is described as assertive, self-confident, self-assured, and poised (Ellis, 1992). In a series of experiments, Sadalla et al, manipulated dominance through written profiles and body language. Dominant males were perceived as more sexually attractive, while dominance did not affect the appeal of females.

The temporal context of the relationship influences the importance of the ability to protect. Buss & Schmitt (1993) concluded that physical strength was more important in short-term mating than in long-term relationships. The explanation for this was that females are more likely to be harassed by other aggressive men when they are in a short-term relationship and will hence require protection. Furthermore, when engaging in short-term relationships, women are more concerned with physical appearance because they are less interested in parental investment. Hence, the physicality of the male (i.e., strength and height) is more relevant in short-term than long-term relationships.

Male mate preferences

Males have faced different adaptive problems than women. Men are concerned with identifying reproductively valuable females and ensuring that the children that they provide for are their own. Hence, when males select a mate, they assess her fertility and her promiscuousness.

Fertility

The reproductive value of a female cannot be observed. Hence, males evaluate secondary characteristics that cue fertility. Males assess the age, health, and physical attractiveness of a female.

Age

The age of a women is closely related to her reproductive value. Females are fertile during the brief period between menarche and menopause. Furthermore, fertility peaks during late teens and early twenties and by the age of 50 most women are unable to reproduce (Feingold, 1992; Symons, 1979). Because age is strongly related to reproductive value, men should prefer younger mates (Buss, 1995; Kenrick et al, 1992; Kenrick & Keefe, 1995; Symons, 1979).

South (1991) found that men prefer to marry someone younger than themselves and are unlikely to marry a woman older than themselves. This was consistent with demographic statistics that show that husbands tend to be older than their wives. Kenrick & Keefe (1992) studied marriage age statistics and found that as men aged, they married women that were increasingly younger than themselves. The evolutionary explanation for this phenomenon is that young men will not be averse to marrying women only slightly younger or even somewhat older than themselves because the reproductive value of these women is not low. However, older men will seek youth, because women only slightly younger than themselves are unlikely to be fertile. Kenrick & Keefe (1992) compared data from the 1920s and the present and discovered similar patterns in both

generations. The results indicate that this is an adaptive phenomenon because it has endured for 70 years.

A study of personal ads revealed that men are more likely to seek mates younger than themselves (McGrew & Greenlees, 1994). Kenrick & Keefe (1992) also explored personal ads and concluded that as men grew older, they sought women progressively younger than themselves. The researchers also examined personal ads in different cultures and found identical results.

Kenrick et al (1995) compared age preferences in personal ads for homosexuals and heterosexuals. Although reproductive value was not a consideration for homosexual men, they preferred increasingly younger partners as they aged. Essentially, the male preference for youth is so ingrained that it cannot be counteracted by a difference in sexual orientation.

Age is not as important for women. Nevertheless, females prefer men older than or close to their own ages. The age of men is related to their ability to acquire resources. Consequently, women are not averse to marrying men older than themselves (Kenrick & Keefe, 1992; Kenrick et al, 1995; South, 1991; Symons, 1979).

Health

Buss et al (1990) found that good health in a prospective mate was a major concern across cultures. However, Symons (1979) suggested that health was a greater concern for men than women because it cued reproductive value. Women with a history of illness, poor health and malnourishment are less fertile and thereby less valuable as

mates. Women are concerned with health to the extent that it does not affect the survival of a mate. A deceased mate would not be able to provide parental investment.

While the importance of health in short- or long-term relationships has not been explored, it is expected that health would be more important in long-term relationships. Poor health jeopardizes the reproductive value of women and reproductive capacity should be more important for long-term relationships.

Physical attractiveness

The male preference for beauty is well documented (Buss & Barnes, 1986; Feingold, 1992; Greenlees & McGrew, 1994; Kenrick et al, 1990; Sprecher, 1989, Townsend & Levy, 1990a, 1990b). Because it is difficult to assess the age and health of a female, men rely on secondary factors that signal youth and reproductive value. Symons (1979) suggested that the relationship between female sexual attractiveness and age is so apparent that few researchers have bothered to assess the relationship between the two variables. Nevertheless, the characteristics that define a woman's beauty deteriorate with age. Furthermore, health is closely related to physical beauty. Clear eyes, clear and vibrant complexion, good muscle tone, shiny hair, and a nice physique, are attractive traits that are cues to good health.

Buss (1985) and Buss & Barnes (1986) used samples of married couples and college students, and discovered that men preferred physical attractiveness and good looks in mates. Findings from the *IMSP* found significant sex differences for the importance of physical attractiveness. Hence, the preference for beauty is universal to

human males. A meta-analysis of evolutionary studies confirmed the male partiality for attractiveness (Feingold, 1992).

Buss & Schmitt (1993) found that men valued physical attractiveness in both long-term and short-term relationships. Moreover, men were unlikely to mate with a person they perceived as unattractive. Kenrick et al (1990) also indicated that men placed greater importance on physical attractiveness at all levels of intimacy. Furthermore, the importance of physical appearance was greatest for potential marriage partners. Thus, it is readily apparent that physical attractiveness is important to males.

Females place less importance on physical appearance (Feingold, 1992). The good looks of a male do not guarantee parental investment. Consequently, females do not value beauty in mates (Buss & Barnes, 1986; Feingold, 1992; Greenlees & McGrew, 1994). However, the physical attractiveness is found to be more important for short-term relationships. Parental investment is more important in long-term relationships where there is a greater likelihood of offspring. Consequently, women can focus on attractiveness in the short-term because they are not as concerned with parental investment (Buss & Schmitt, 1993).

Sexual fidelity

Men encounter the problem of certainty in paternity. In humans, fertilization occurs internally within women. Therefore, women can always be assured that the child they invest in is their own. However, males cannot be guaranteed the same degree of certainty in paternity (Buss, 1995). Because of paternity uncertainty, men place greater

value on characteristics such as chastity and sexual loyalty that improve the likelihood of paternity.

Buss et al (1990) studied cross-cultural mate preferences. Out of 37 international samples, 23 samples demonstrated gender differences in the importance of chastity in a prospective mate. Moreover, in no sample did women value chastity more than males did. Schmitt & Buss (1996) investigated mate attraction and competitor derogation tactics. To attract men, females remained faithful to their mates and avoided having sex with other men. Furthermore, to disparage rivals, women suggested that their competitor was disloyal, sleazy, slept around a lot, and cheated on men.

The importance of fidelity and promiscuity is strongly related to the temporal context of the relationship. In a long-term relationship, faithfulness is highly valued by males because it improves the chance of paternity certainty. However, the value of sexual loyalty changes dramatically for a short-term relationship. Buss & Schmitt (1993) found that sexual loyalty, chastity, and faithfulness were sought by male for long-term relationships but regarded negatively for short-term relationships. Similarly, the female mate attraction and competitor derogation tactics that signalled fidelity were found to be effective for long- term relationships but not for short-term relationships.

Buss & Schmitt (1993) concluded that in short-term relationships promiscuity, sleeping around a lot, and infidelity were looked upon favorably by men. This is because promiscuous women are not expected to demand commitment and investment. Consequently, a man can engage in a sexual relationship without bearing large investment costs. Schmitt & Buss (1996) discovered that the most effective short-term mate attraction tactics for women included acceptance of the man's sexual offer, making a

sexual offer, sleeping with the man, and suggesting that the man spend time alone with her. The most effective tactics for derogating a competitor were suggesting that she was frigid, that she was a tease, or that she would not put out. Clearly, the likelihood that a woman will accept sexual offers will increase her attractiveness as a short-term mate.

The discussion of mate preferences illustrates several key points. First, it demonstrates that gender differences influence not only the selectivity of individuals in mate choice, but also the traits they desire in a potential partner. Hence, the importance of *gender* in mate selection is reaffirmed. The literature review on human mate preferences introduces yet another important variable. That is, the role of *temporal condition* in human mate selection is illustrated. It is apparent that the seriousness of the relationship (i.e., short- or long-term relationship) influences the preference for certain characteristics. Hence, it is necessary to consider the influence of temporal condition on the search behavior of an individual who is seeking a mate. The degree of effort that an individual is willing to spend searching for a partner should be affected by whether he/she is searching for a long- or short-term relationship.

It is also important to mention that human mate preferences have been studied extensively and in a myriad contexts. Researchers have employed questionnaires (Buss, 1985; 1998; Buss et al, 1990, Kenrick et al, 1993), personal ads (Bernard, Adelman, & Schroeder, 1991; Greenlees & McGrew, 1994), demographic data (Kenrick & Keefe, 1992; South, 1991) and experimental manipulations (Sadalla, Kenrick & Veshure, 1987; Townsend & Levy, 1990a; 1990b) to assess preferences. However, preferences have not been examined within the context of information search.

Summary

The literature on mate selection as discussed in the evolutionary psychology paradigm was reviewed in order to identify the variables that would influence the behavior of an individual searching for a partner. The literature provides important insights about human mating behavior.

- The theory of assortative mating suggests that *self-perception* influences the selection of a partner. While the influence of self-perception on search behavior has not been explored, it is expected that how one perceives oneself should affect their behavior when seeking a partner.
- The theory of sexual selection and parental investment indicates that mating strategies are strongly affected by *gender*. The parental investment theory demonstrates that women will be more selective in choosing a mate. This is because they are subject to greater costs of parental investment than men are and stand to lose more by selecting an inferior partner. Hence, gender should moderate the search behavior of individuals searching for a partner.
- Differential parental investment also contributes to gender differences in mate preferences. That is, males and females value different traits in their prospective partners. Hence, gender should also influence which information is deemed important when searching for a mate.
- The *temporal context* of the relationship influences mating strategies. That is, the behavior of an individual will be influenced by whether they are searching for a partner for a long-term or short-term relationship. It is reasonable to expect the selectivity of individuals to increase with the seriousness of the relationship. Hence,

the temporal context of the relationship should affect the search behavior of an individual seeking a mate.

- The temporal context of the relationship should also affects mate preferences. Hence, temporal condition should influence which characteristics are deemed important when searching for a mate.

CHAPTER 3

LITERATURE REVIEW

INFORMATION SEARCH

In Chapter 2, several variables that influence mate selection were identified. Specifically, the roles of gender, temporal condition, and self-perception were reviewed. In Chapter 3, the relevant literature on information search is reviewed. It is believed that to fully understand the influence of gender, temporal condition, and self-perception on search behavior, it is first necessary to understand the seminal theories of information search. The current thesis focuses on two aspects of information search. First, the research is concerned with how much information an individual requires about a potential mate prior to forming a mating relationship. Hence, it is necessary to review the theories of information search that predict the extent of information search. Second, the research investigates which information is deemed important when searching for a partner. In Chapter 2, a review of mate preferences was presented. It is assumed that mate preferences will influence the information deemed important in seeking a mate. Hence, only a review of the literature pertaining to the extent of information search is presented in Chapter 3.

Extent of information search

Frank (1988) suggested that in a mating relationship, both parties are constantly searching for information. Both partners search for information about the other. They also search for and evaluate alternate mating opportunities. However, *search* is effortful. Meeting people and dating them to assess their suitability as a mate is time consuming.

The search for new partners to replace old ones is also effortful. Hence, it is apparent that *search* is a key element in mating and that searching for a partner is effortful. The objective of this research is to determine the extent of effort an individual is willing to expend in searching for a partner.

Cost-benefit framework

Beach & Mitchell (1978) developed the cost-benefit framework to explain the extent of search undertaken by a decision maker. The cost-benefit model assumes that an individual is equipped with a repertoire of information search strategies. Each strategy is defined by the amount of resources required to implement the strategy (cost) and the ability of the strategy to produce an accurate response (benefit). Hence, the selection of an information search strategy reflects a trade-off between the desire for accuracy and the desire to expend minimal effort. Hence, the extent of search undertaken by an individual is affected by the costs and benefits of an information search strategy (Beach & Mitchell, 1978; Payne, Bettman, & Johnson, 1993).

Contingent and constructive view of decision making

It is evident that the extent of search is affected by the degree of accuracy desired by an individual (benefit) and by the degree of effort he/she is willing to expend to achieve this accuracy. However, it is also necessary to consider the variables that affect the effort and accuracy required by a decision maker. This is explained via the *contingent* and *constructive* view of decision making (Payne, Bettman, & Johnson, 1993).

Contingent processes

The contingent view of decision making assumes that an individual has a repertoire of information search strategies and makes cost-benefit trade-offs about these strategies prior to undertaking a decision problem. The costs and benefits of a strategy are *contingent* upon the characteristics of the decision problem, the characteristics of the decision maker, and the characteristics of the social environment (Beach & Mitchell, 1978; Payne, 1976, 1982; Payne, Bettman & Johnson, 1993).

Characteristics of the problem

The costs and benefits of a search strategy are affected by the characteristics of the problem. The characteristics of the problem are typically classified as either task or context effects. *Task effects* define the structure of the decision problem. This includes variables such as the number of attributes, the number of alternatives, the mode of information display, and time pressure. *Context effects* are the actual values of the items in the choice sets. The difference between attribute values (e.g., the alternatives are similar) is an example of a context effect. The significance of the decision, the irreversibility of the decision outcome, and the degree of accountability for the decision, also influence the selection of a strategy (Beach & Mitchell, 1978). Therefore, decision making behavior is contingent upon the demands imposed by the characteristics of the problem (Beach & Mitchell, 1978; Dahlstrand & Montgomery, 1984; Gertzen, 1992; Payne, 1976, 1982; Payne, Bettman & Johnson, 1993).

The characteristics of the problem are relevant to the discussion on mate selection. For the purpose of this thesis, the temporal condition of the relationship is

classified as a characteristic of the problem that would influence strategy selection. It is assumed that the desire for accuracy in mate selection would be affected by whether the individual is searching for a long- or short-term partner.

Characteristics of the individual

The selection of information search strategies also depends upon the characteristics of the person. Beach & Mitchell (1978) suggested that the knowledge, ability, and motivation of the decision maker determined choice of strategies. For example, the level of expertise of the decision maker will affect the selection of different strategies (Shanteau, 1988).

The costs and benefits of a search strategy in the context of mate selection are also affected by individual differences. For the purpose of this research, two such variables have been identified: gender and self-perception. Evolutionary theory suggests differences in the selectivity of men and women in mate selection. Hence, it is reasonable to expect that gender will affect the degree of accuracy and effort desired in mate selection. Similarly, the theory of assortative mating identified *self-perception* as an important variable that affects mate selection. Hence, this variable should affect the extent of search undertaken by the decision maker.

Characteristics of the social environment

The characteristics of the social environment influence the costs and benefits of an information search strategy (Beach & Mitchell, 1978; Payne, Bettman, & Johnson, 1993). Simonson (1989) studied the relationship between the need to justify a decision

and the inclination to succumb to the attraction or compromise effect. The attraction effect is defined as the addition of a relatively inferior alternative to the choice set improves the attractiveness of the dominating alternative. The compromise effect proposes that an alternative becomes a more popular choice when it is the compromise or middle option in the choice set. Individuals were more likely to succumb to these biases when they were required to justify their choice to others. This demonstrates the powerful effect of the social environment on decision making behavior.

The characteristics of the social environment may also influence the selection of a mate. For example, the opinion of others will be more important in the selection of a long-term partner than in the selection of a short-term mate. This is because the decision maker will need to justify his choice of a life partner to his/her peers but will not need to explain his choice for a one-night stand.

The review of the contingent view of decision making illustrates that the characteristics of the problem, the individual, and the social environment influence the degree of accuracy desired by an individual and the degree of effort he/she is willing to exert. In the following section, the constructive view of decision making is presented. The constructive view also identifies the factors that affect the costs and benefits of information search strategies.

Constructive processes

The constructive view of decision making assumes that an individual *constructs* strategies during the process of making a decision. That is, as decision makers learn of the structure of the problem, they create strategies in response to the demands of the

information search task. Unlike the contingent view of decision making which assumes that the decision maker selects strategies based on *a priori* perceptions of the problem, the constructive view suggests that the selection occurs 'online.' That is, when individuals construct strategies, they make 'on the spot' cost-benefit evaluations (Payne et al, 1992; Payne, Bettman, Johnson, 1993). The constructive view also assumes that the costs and benefits of a strategy are affected by the characteristics of the decision problem, of the individual, and of the social environment. Because these characteristics were discussed in the previous section, only a brief review is presented here.

The characteristics of the problem may affect 'online' cost-benefit evaluations. For example, an individual may encounter a decision problem where the attribute values are similar and consequently decides to assess another attribute where greater differentiation can be achieved. This suggests that the decision maker has realized the high costs and low benefits to be obtained from continuing to process the attribute and hence switches to an attribute that provides greater benefits at a lower cost (Payne et al, 1992).

The constructive view of decision making can be applied in the context of mate selection. For example, an individual may decide that intelligence (as an attribute) is the most important criterion in selecting a mate. Therefore, when he/she meets potential mates, he/she plans to use intelligence to make a choice between mates. However, the individual realizes that both mates are equally intelligent. Hence, this attribute cannot be used to differentiate between the mates. Therefore, the individual will select another attribute (e.g., kindness) to distinguish between the mating options. This represents an 'on the spot' construction of a decision making strategy.

In summary, the extent of search is affected by both the accuracy (benefit) and effort (cost) considerations. The costs and benefits of information search strategies are affected by the characteristics of the problem, the characteristics of the individual, and the characteristics of the social environment. The cost-benefit framework is compatible with both the contingent and constructive view of decision making. The contingent view assumes that individuals make a priori cost-benefit evaluations while the constructive view assumes that individuals make online effort-accuracy trade-offs.

Stopping strategies

Stopping strategies also explain the extent of search undertaken by a decision maker. Stopping strategies refer to how the decision maker decides to *stop* acquiring information and commit to a choice. They are indicative of the degree of effort he/she is willing to expend in search. Frank (1988) suggested that individuals getting 'coupled' realize that there are other better mating opportunities. However, they recognize that continued search is 'economically wasteful'. That being said, how do individuals decided to stop acquiring information about prospective partners and choose to initiate a mating relationship? The stopping behavior of individuals has been explained via the criterion dependent choice model, the converging threshold model, and the core attributes heuristic. These models use the sequential binary choice paradigm to explain stopping strategies. Before an explanation of these models can be presented, it is necessary to define the sequential binary choice paradigm.

Sequential binary choice

The sequential binary choice paradigm combines two frameworks: the sequential choice and binary choice framework. The sequential choice model assumes that information is acquired and integrated sequentially (i.e., one item at a time). The sequential choice paradigm is derived from the sequential-sampling model developed by Wald (1947). The model posits that an individual acquires information (*sequentially*) until the accumulated evidence exceeds some predetermined criterion.

Binary choice models assume that the decision maker is faced with only two alternatives. Several researchers have examined information acquisition behavior in a multi-attribute binary choice situation (Aschenbrenner, Albert & Schmalhofer, 1984; Bockenholt et al, 1991; Russo & Dosher, 1983; Saad & Russo, 1996; Schmalhofer et al, 1986). The model removes the multi-alternative component, thereby allowing researchers to focus on attribute-based processing. The binary choice model has enabled the discovery of information processing strategies that could not have been identified using the traditional multi-alternative, multi-attribute paradigm (e.g., the threshold models and the core attributes heuristic to be discussed below).

The sequential binary choice model studies the sequential acquisition of information in a binary choice environment. Several researchers have applied this paradigm to develop theories about information search behavior. Specifically, the current thesis focuses on the criterion dependent choice model (Aschenbrenner, Albert & Schmalhofer, 1984; Bockenholt et al, 1991; Schmalhofer et al, 1986), the converging threshold model (Saad & Russo; 1996) and the core attributes heuristic (Saad & Russo, 1996).

Criterion dependent choice model

The criterion dependent choice (CDC) model has been proposed to explain the termination of the information acquisition process. The CDC model assumes that choice is a product of a series of sequential processing steps. A decision maker evaluates one piece of information at a time across both competing alternatives. During the evaluation of the choice pair on a given attribute, the subjective difference between the two alternatives is compared. Information is acquired until the cumulative difference exceeds some threshold criteria determined by the individual (see Figure 1). The decision to stop acquiring information indicates the degree of search a decision maker undertakes. Frank (1988) has argued that mate selection follows a similar process, namely a mating relationship is formed when two searchers meet or exceed one another's thresholds.

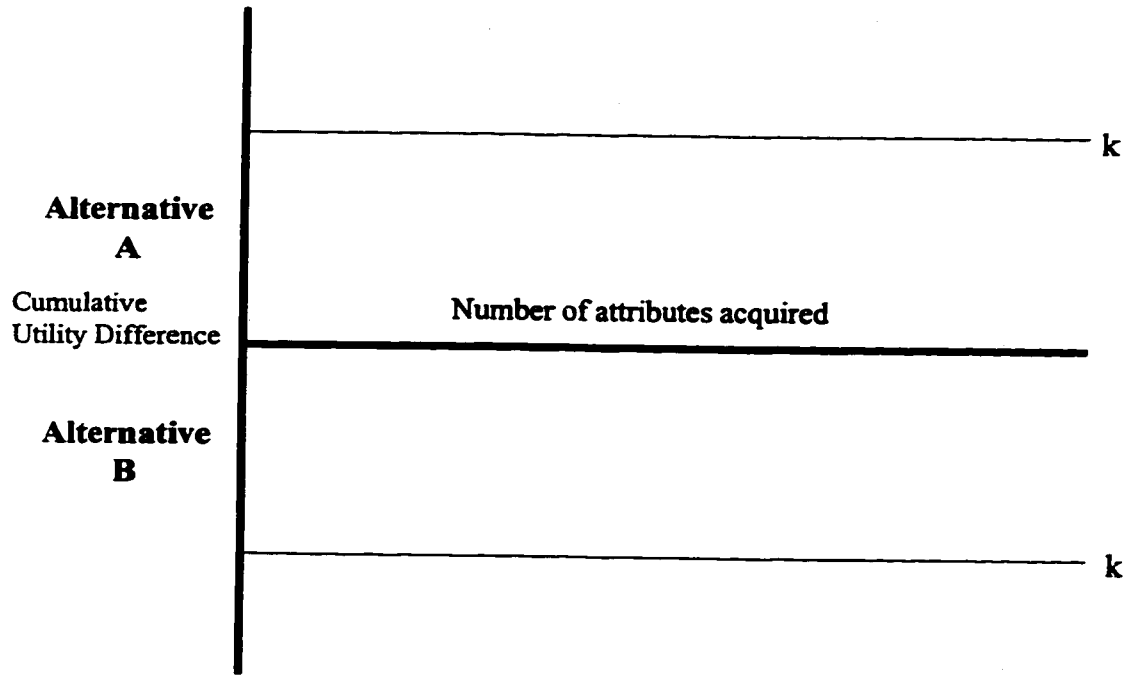

Figure 1. Criterion-dependent choice model

Bockenholt et al (1991) presented a mathematical model to describe the process of information acquisition. The subjective evaluations of alternatives *a* and *b* on attribute *i* are denoted by $v(a_i)$ and $v(b_i)$ respectively. The difference of the subjective evaluations is expressed as $\{v(a_i) - v(b_i)\}$. These differences are summed over the selected attributes until the absolute sum of the differences exceeds the critical value (k). The information search process is represented as:

$$| \Sigma (v(a_i) - v(b_i)) | \geq k.$$

The CDC model is consistent with the cost-benefit framework. The decision maker determines the threshold value (k). Hence, the selection of the threshold value is an effort-accuracy assessment. A large criterion value (k_1) suggests that the decision maker will need to view more information to exceed the threshold. However, a small threshold value (k_2) implies that the individual can meet the critical value by evaluating less information (see Figure 2). Consequently, the size of k reflects the decision maker's trade-off between accuracy (benefit) and effort (cost) and the extent of search he/she is willing to undertake.

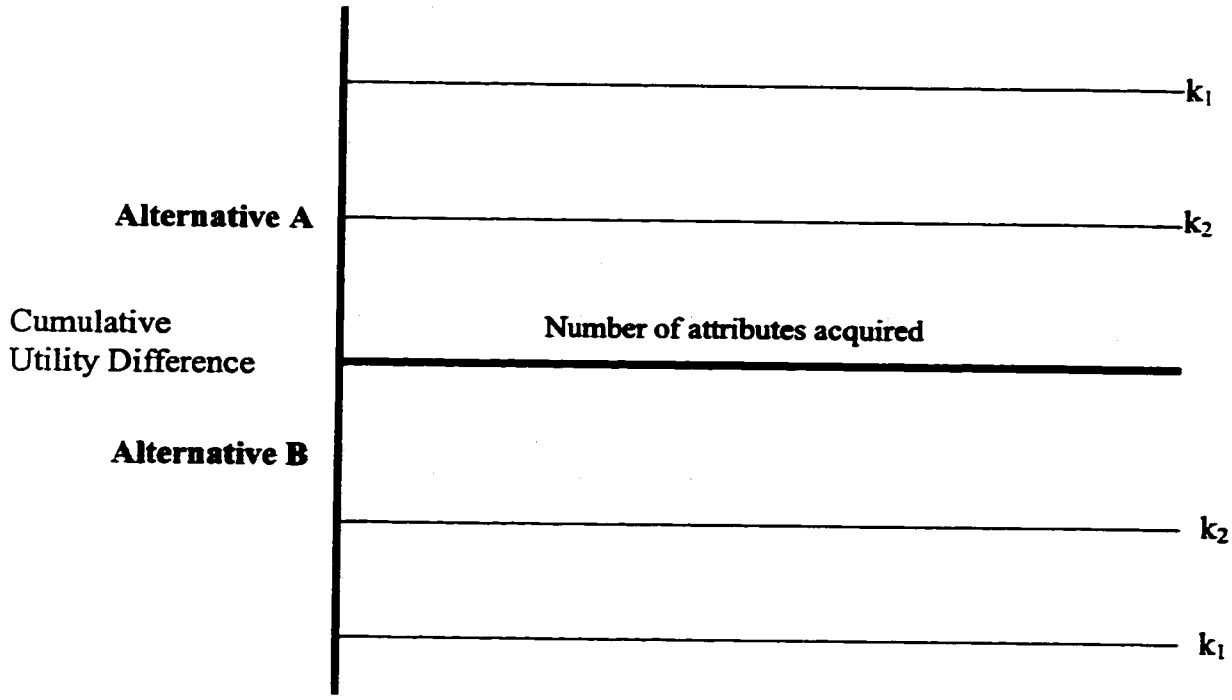

Figure 2. Different threshold values in the CDC model – k_1 implies more effort and greater accuracy; k_2 implies less effort and a corresponding lower accuracy.

The contingent view of decision making assumes that the costs and benefits of a search strategy are contingent upon the characteristics of the problem, of the individual, and of the social environment. The CDC model is compatible with the contingent view of decision making. Bockenholt et al (1991) and Schmalhofer et al (1986) found that the costs and benefits of search are *contingent* upon the characteristics of the problem. For example, they found that individuals search for more information when alternatives are similar than when they are dissimilar (*characteristic of problem*). Decision makers also search for more information when neither alternative dominates the other (*characteristic of problem*). An alternative is said to be dominant if it is superior to the other alternative on all attributes. In both cases, more information is sought because the subjective utility

differences are small and more information is required in order to reach the critical value. Hence, the extent of search undertaken in a sequential binary choice environment will be contingent upon characteristics of the problem and of the individuals. For the purpose of this research, it is assumed that gender, self-perception (*characteristic of individual*) and the temporal condition of the relationship (*characteristic of problem*) influence search behavior.

Converging Threshold Model

An alternative model has been proposed to explain the stopping decision (Saad & Russo, 1996). Rather than a fixed threshold, the threshold decays with the number of attributes acquired (see Figure 3). The convergence of the threshold is a result of poor differentiation between the alternatives and/or the high cost of acquiring additional information. The converging threshold model accords with a constructive view of information search. That is, the decision maker adjusts the threshold as he/she learns of the properties of the decision task. For example, if the decision maker learns that the alternatives are similar, he/she can relax the threshold. Saad & Russo (1996) found strong evidence for the convergence of the thresholds.

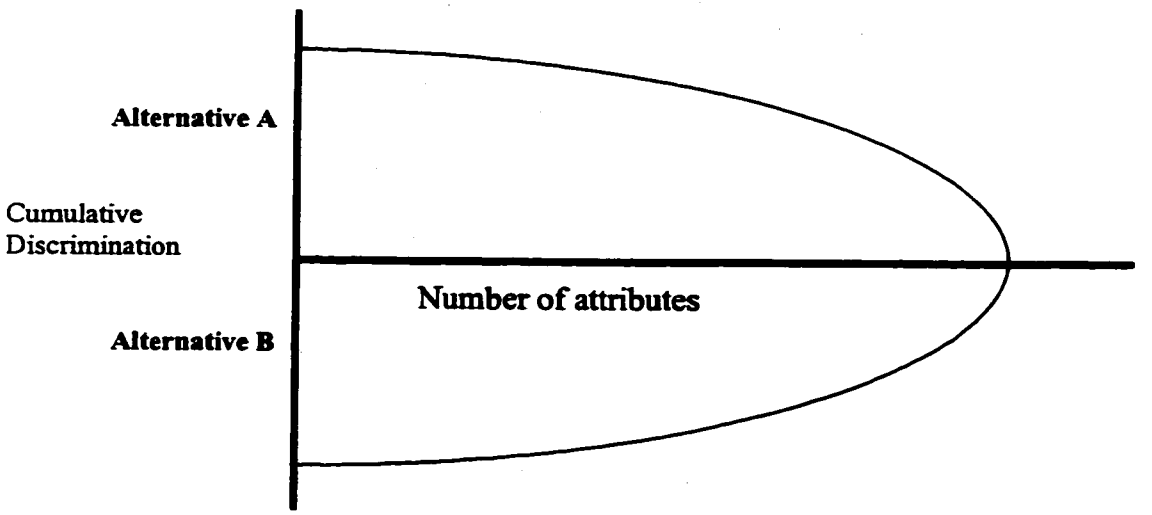

Figure 3: Converging threshold

The decaying threshold model is compatible with the constructive view of the cost-benefit framework. In the CDC model, the selection of the horizontal threshold is based on a priori predictions of costs and benefits. However, in the converging threshold framework, the effort-accuracy decision is captured by the rate of decay of the threshold. If the threshold converges quickly, this means that the decision maker will evaluate less information and meet the criterion sooner (see Figure 4). However, if the threshold is relaxed more slowly, the decision maker will view more information prior to surpassing the criterion. Furthermore, where the threshold is established is also a cost-benefit decision. A higher threshold value implies that a greater degree of accuracy is desired (see Figure 4). Therefore, the rate of decay and the threshold value indicate the level of effort and accuracy desired by the decision maker (Saad & Russo, 1996).

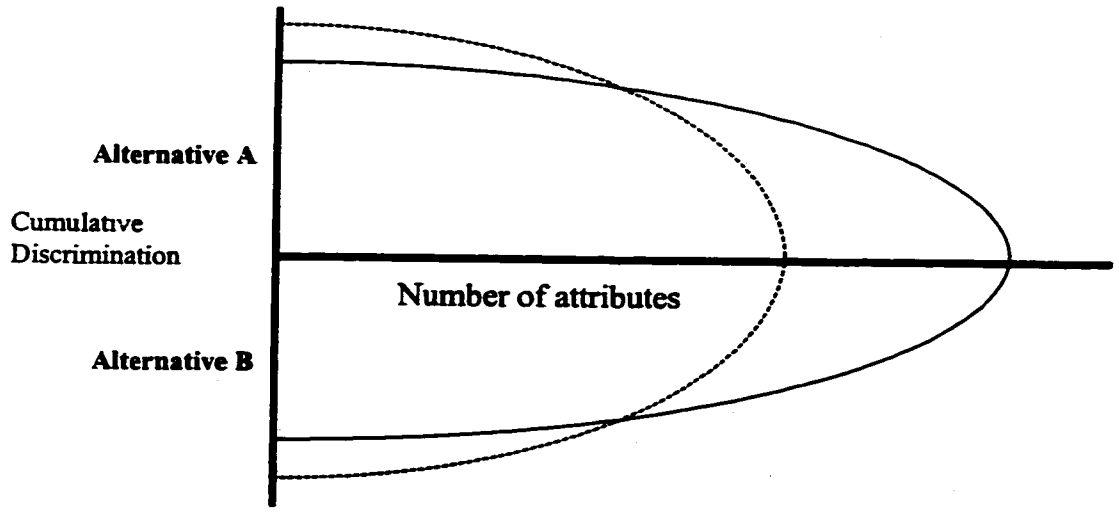

Figure 4: Different decay curves in the converging threshold model

The characteristics of the problem, the characteristics of the individual, and the characteristics of the environment should all influence the rate of decay of the threshold. Saad (1994) found that increased time pressure led to an increased rate of decay. This is consistent with the idea that under conditions of time pressure, the cost-benefit equation is altered and therefore, search behavior changes. However, little research has explored the effect of other individual difference variables on the convergence of the threshold.

Core Attributes Heuristic

Stopping behavior has also been explained via the core attributes (CA) heuristic (Saad & Russo, 1996). The *CA heuristic* specifies that individuals have a set (core) of most important attributes. A decision maker will search for information until the last of his/her core of important attributes has been acquired. After evaluating the core attributes, the individual will commit to the alternative that is leading at that time. For example, an individual searching for a mate may decide to evaluate a core of important

attributes (e.g., *age, intelligence, physical attractiveness*, and, *kindness*). A pure CA user would assess these attributes and commit to the alternative that is leading after the evaluation of these attributes.

The CA heuristic is not necessarily incompatible with the converging threshold model. Saad & Russo (1996) explained this via the adaptive use of the CA heuristic. That is, decision makers intend to use the CA heuristic, but adapt their usage in response to the achieved cumulative differentiation between the two alternatives. For example, a decision maker may identify a specified number of core attributes that he/she wishes to evaluate. However, after only viewing a few attributes (e.g., intelligence and beauty), the decision maker achieves a sufficiently large degree of differentiation between the alternatives and hence does not evaluate the remaining attribute in the core set. Furthermore, a decision maker may evaluate all the attributes in his/her core set (e.g., intelligence, beauty, kindness, and age) but not achieve a sufficiently large degree of differentiation. Hence, he/she will be forced to examine attributes past his/her core set. Both examples illustrate the adaptive use of the CA heuristic.

The CA heuristic is also consistent with the effort-accuracy framework. The core size is a cost-benefit decision. A large core set implies that the decision maker will evaluate a greater amount of information and consequently exert greater effort and achieve greater accuracy (Saad & Russo, 1996). Hence, the extent of search undertaken by an individual is also determined by the size of his/her core set.

The CDC model, the converging threshold model, and the CA heuristic explain when the decision maker will terminate the information acquisition process. Hence, stopping strategies capture the extent of search undertaken by a decision maker. For

example, the CDC model suggests that a decision maker will acquire information until he/she exceeds some predetermined criterion. Hence, the extent of search is established by the determination of the criterion. The converging threshold model assumes that a decision maker will acquire information until he/she exceeds a pre-determined threshold. However, this threshold decays with poor differentiation between the alternatives and/or rising search costs. Hence, the extent of search is in part determined by the rate of decay of the threshold. The CA heuristic assumes that the decision maker acquires information from a core set of attributes. The extent of search is determined by the size of the core set. Hence, it is apparent that stopping behavior indicates the extent of search undertaken by the decision maker.

Choices and Rejections

Thus far, the literature has focused on theories that predict the degree of search undertaken by decision makers. It is believed that these theories can be used to predict the search behavior of individuals searching for a mate. However, it is also important to consider the outcome of a search process. Traditionally, it is assumed that the decision maker will *stop* acquiring information and *choose* an alternative (i.e., a mate). However, it is also possible that the decision maker will *stop* acquiring information and decide to *reject* the alternatives. For example, an individual seeking a mate may decide after viewing a specified number of attributes that he/she does not wish to form a relationship with the available mates. Little research has examined rejection behavior (Dhar, 1996; 1997; Shafir, 1993).

Shafir (1993) compared choices and rejections. He found that individuals apply different decision making processes when they are asked to choose an alternative than when they are asked to reject an alternative. He concluded that individuals weighted attributes differently depending on whether they are choosing or rejecting an alternative. Positive attributes are weighted more heavily when choosing than when rejecting, and negative attributes are weighted more heavily when rejecting than when choosing. Hence, individuals evaluate information differently when they are choosing versus when they are rejecting alternatives.

Dhar (1996, 1997) also investigated rejection behavior. However, he focused on the *no-choice option* which is defined as the decision to defer choice. That is, the individual decides to defer choice by seeking more information about the alternatives or by searching for new alternatives. In a series of experiments, Dhar (1997) studied the preference for the no-choice option. He identified several task and context variables that influence the preference for the no-choice option. For example, Dhar (1997) found that individuals were more likely to defer choice (i.e., prefer the no-choice option) when alternatives were similar versus when they were dissimilar. Furthermore, individuals were less likely to prefer the no-choice option when one of the alternatives in the choice set was dominant.

The influence of rejections has not been investigated within the framework of sequential decision making. However, the definition of the no-choice option as applied by Dhar (1996, 1997) cannot be used when applying the sequential multiattribute choice paradigms. He described "no-choice" as the decision to seek new alternatives or the decision to seek new information about the existing alternatives. In the binary choice

model, the decision maker is restricted to two alternatives. Hence, the individual cannot defer choice and seek more alternatives. Furthermore, the sequential model posits that the decision maker assesses attributes sequentially. That is, after evaluating each attribute, the individual must decide whether he/she wishes to evaluate additional information or choose between the alternatives. Hence, the decision to seek more attributes is an integral part of the sequential choice model and cannot be considered a no-choice option. Therefore, if the no-choice option is to be investigated in the context of the sequential decision making paradigm a different definition must be applied. For the purpose of this research, a no-choice option is defined as the decision to stop acquiring information by deciding to not choose either of the alternatives in the choice set.

Summary

The literature on information search was reviewed in order to derive several key insights about the search behavior of individuals seeking a mate.

- The cost-benefit model and the sequential sampling models have been used to explore the extent of information search undertaken by a decision makers.
- The cost-benefit model is used to predict both the choice of a search strategy and the extent of search undertaken by the decision maker. The cost-benefit model suggests that individuals adopt an information search strategy that reflects the degree of accuracy they desire (benefit) and the degree of effort (cost) they are willing to exert.
- Cost-benefit tradeoffs about information search strategies are made prior to (*contingent view*) or during (*constructive view*) the search process. The costs and

benefits of strategies are affected by the characteristics of the problem (e.g., *temporal context of mating relationship*), and the characteristics of the individual (e.g., *gender, self-perception of mating value*).

- Stopping models also indicate the extent of search undertaken by the decision maker. Stopping models investigate when the decision maker decides that he/she has acquired a sufficient amount of information and commits to a choice. The CDC model, the converging threshold model, and the CA heuristic explain stopping behavior.
- Both the CDC and converging threshold model assume that the decision maker will establish a threshold and acquire information until he/she meets or exceeds that threshold. While the CDC model assumes a horizontal threshold, the converging threshold model assumes that the threshold decays with incremental costs of search and/or poor differentiation between the alternatives.
- The thresholds in both the CDC and converging threshold model are affected by the characteristics of the problem and by the characteristics of the individual. In the current context, gender, self-perception, and, temporal condition will influence where the threshold is established and its rate of decay.
- The CA heuristic assumes that the decision maker will *stop* acquiring information once he/she has acquired his/her *core set* of most important attributes. The influence of the characteristics of the problem or the characteristics of the individuals on the use of the CA heuristic has not been investigated.
- The study of stopping behavior investigates the process used by the decision maker to decide to stop acquiring information and accordingly commit to a choice. The

decision maker can either choose one of the two alternatives or reject both of the alternatives. This research proposes to examine two aspects of rejection behavior: the propensity to reject mates and differences in search behavior when an individual chooses or rejects a mate.

CHAPTER 4

RESEARCH QUESTIONS & HYPOTHESES

Study 1

The objective of the current thesis is to investigate the behavior of individuals searching for a mate. Specifically, the research investigates the stopping behavior of individuals seeking a mate. That is, how decision makers decide that they have acquired sufficient information about prospective partners to initiate mating relationships. The literature on mate selection as discussed in the evolutionary paradigm identified several key variables that affect mate selection. It is expected that these variables will also influence the stopping behavior of individuals searching for a mate. Study 1 explores the effect of two variables identified in the evolutionary literature: gender and the temporal context of the relationship. The literature on information search identified an additional variable that is investigated in Study 1, namely the rejection option. The rejection option refers to the decision maker's option to reject both of the mating alternatives. Study 1 investigates two aspects of rejection behavior. First, the actual number of times the subjects reject both mates is considered. That is, predictions are made about whether males or females will reject mates more frequently and whether this relationship is moderated by the temporal context of the relationship. Second, comparisons are made about the extent of search undertaken by subjects when they select a mate and when they reject both mates.

Chapter 4 begins with a discussion of the cost-benefit framework. The cost-benefit framework is integrated with evolutionary theory to derive the hypotheses about the variables investigated in Study 1. It is used to predict the gender differences in

stopping behavior as moderated by the temporal context of the relationship. The cost-benefit framework is also used to predict the search behavior of individuals when they choose versus reject mates.

Cost-benefit framework

Mate selection can be explored via the cost-benefit framework. Decision making research identifies one of the costs of a search strategy as the effort (i.e., mental effort) required to apply that strategy. Similarly, the cost of a mating strategy can be described as the effort spent seeking for information about a prospective mate. The decision making paradigm defines the benefit of an information search strategy as the ability of the strategy to produce an accurate choice. In the context of mate selection, the benefit of a mating strategy is selecting the right partner (i.e., being accurate). In the subsequent sections, the cost-benefit framework is used to predict the effect of gender and temporal condition on the search behavior of subjects searching for a mate.

Gender

Evolutionary theory indicates that males and females have faced different adaptive dilemmas. From a decision making perspective, this implies that males and females have encountered different cost-benefit equations. Women have more to lose by mating with an 'inferior' mate. Hence, it is important for females to be accurate in their choice of a mate. However, to achieve this high degree of accuracy, women must exert a greater degree of effort in searching for mate. Males do not suffer as severely as females by mating with an 'inferior' partner. Hence, males will be satisfied with a lesser degree of

accuracy and will exert less effort in seeking a mate. Therefore, the following hypothesis is posited.

H_1: Females are more selective compared to males.

The current thesis employs several dependent measures to assess the selectivity of individuals searching for mates. One such measure is the number of attributes acquired. The number of attributes acquired indicates the amount of information evaluated by the decision maker prior to making a choice. It is indicative of the degree of effort expended by the individuals seeking a partner. Hence, because females are more selective, they should evaluate more information.

H_{1a}: Females will acquire a greater number of attributes compared to males. That is, gender will have a main effect.

The selectivity of males and females will also be assessed by examining where the differentiation threshold is established. The criterion dependent choice (CDC) model posits that individuals compare one attribute of information at a time and evaluate the subjective difference between those two alternatives on that attribute. Information is acquired until the cumulative difference exceeds some threshold criteria (k) determined by the individual. The selection of k is an effort-accuracy tradeoff with higher values of k associated with greater levels of accuracy.

The current research assesses differences in the threshold criteria (k) via the cumulative confidence score. The cumulative confidence measure indicates the differentiation achieved between two alternatives. The concept is fully discussed in Chapter 5. It is expected that gender will influence the cumulative confidence score.

H_{1b}: Females will stop acquiring information at a higher threshold (cumulative confidence) compared to males. That is, gender will have a main effect.

The selectivity of individuals in choosing a mate was also assessed via the number of times they rejected a pair of mates. The decision to reject a pair of alternatives is explained via the cost-benefit framework. Evolutionary theory dictates that females have more to lose than males in mating with an inferior mate. Furthermore, because females desire a greater degree of accuracy, it is likely that fewer prospective mates will fulfill their requirements. Hence, if the situation presents itself, women will rather not mate than mate with an inferior mate.

Males are not subject to the same costs of indiscriminate sex. For males, every sexual encounter can potentially produce an offspring. Hence, males will not reject willing partners. Furthermore, men desire a lesser degree of accuracy in mate selection. Hence, it is more likely that potential partners will fulfil their criteria. Consequently, men are more likely to decide to mate even if the prospective female does not meet their requirements.

H_{1c}: Females are more likely than males to choose not to mate (i.e., reject a pair of mates).

Temporal condition

Mating strategies are also sensitive to the temporal context of the relationship. In long-term relationships, both males and females commit to a greater degree of parental investment. Hence, both groups desire accuracy in mate selection. However, in a short-term relationship, the same degree of accuracy is not required. Hence, it is predicted that individuals will be more selective when searching for a long-term partner as opposed to a short-term mate. The selectivity of individuals in the short- and long-term condition will be assessed via the number of attributes acquired, the cumulative confidence score, and the number of times they reject a pair of mates.

H_2: Individuals searching for a long-term mate will be more selective than individuals searching for a short-term mate.

H_{2a}: Individuals searching for a long-term mate will acquire a greater number of attributes than those individuals searching for a short-term partner. That is, temporal condition will have a main effect.

H_{2b}: Subjects searching for a long-term mate will stop acquiring information at a higher threshold (cumulative confidence) than those subjects searching for a short-term mate. That is, temporal condition will have a main effect.

H_{2c}: Subjects searching for a long-term mate are more likely to reject a pair of mates than those subjects searching for a short-term mate.

Interaction between gender and temporal condition

Temporal condition has a differential effect on males and females. The parental investment model assumes that the sex providing greater investment will be more discriminating in mate choice (Trivers, 1972). This implies that females, independent of temporal condition, will be more selective than males because they provide a greater degree of investment. It is evident that women encounter high parental costs in short- and long-term relationships. That is, whether the child is the product of a casual liaison or marital relationship, a woman will be required to provide nurturance. Hence, females will not be influenced by the temporal context of the mating relationship.

Kenrick et al (1990) suggested that differences in mating strategies are moderated by anticipated investment. While males *anticipate* little investment for casual sexual liaisons, they accept high investment costs for long-term relationships. Therefore, males will be selective when searching for a long-term partner. Hence, males are sensitive to the temporal condition of the relationships.

The cost-benefit framework can be used to predict differences in mating strategies. Females provide a high level investment and therefore require a great degree

of accuracy in mate selection. Hence, females will exert a similar degree of effort in searching for a mate in either temporal condition (*short- or long-term*). For men, the cost-benefit equation is different in the short- and long-term. That is, males desire a greater degree of accuracy when searching for a long-term mate than when searching for a short-term partner. Hence, males should expend a lesser degree of effort when searching for a short-term partner. The following hypotheses are posited:

H_3: Males searching for a long-term mate will be more selective than males searching for a short-term mate. However, females searching for long- and short-term mate will not differ in their selectivity.

H_{3a}: Males searching for a long-term mate will acquire a greater number of attributes than males searching for a short-term mate. However, females searching for long- and short-term partners will not differ in the number of attributes acquired. That is, there will be an interaction between gender and temporal condition.

H_{3b}: Males searching for a long-term mate will stop acquiring information at a higher threshold (cumulative confidence) than males searching for a short-term mate. The cumulative confidence score of females searching for long- and short-term mates will not differ. That is, there will be an interaction between gender and temporal condition.

H_{3c}: Males searching for a long-term partner are more likely to choose not to mate (i.e., reject a pair of mates) than males searching for a short-term mate. Females searching for long- and short-term mates will not differ in the likelihood of rejecting a pair of mating alternatives.

Selectivity when choosing versus rejecting

The current thesis also investigates the search behavior of individuals when they choose an alternative versus when they reject both alternatives. The cost-benefit framework is used to compare the selectivity of individuals when they choose and when they reject alternatives.

Individuals can reject a pair of mates for several reasons. First, a decision maker will reject a pair of mates if both mates are unattractive. The cost-benefit framework explains the rationale for rejecting unattractive mate pairs. When the decision maker encounters a pair of unattractive mates, he/she has several options. The individual can choose one of the two unattractive alternatives, reject both of the unattractive alternatives, or acquire more information. The cost-benefit framework indicates that the rejection option is the most feasible. If the decision maker decides to make a choice, he/she has expended effort to produce a potentially sub-optimal choice. If the decision maker searches for more information, he/she agrees to expend a greater degree of effort. Nevertheless, more effort will not lead to greater accuracy, as both alternatives have already been deemed undesirable. Hence, the cost-benefit framework would suggest that

the benefit of rejecting a pair of unattractive alternatives exceed the cost of searching for more information.

The decision maker can also reject a pair of mates because he/she is unable to achieve a sufficient degree of differentiation between the alternatives. That is, the pair of mates is not necessarily unattractive but rather undifferentiated. The CDC model predicts that the decision maker will acquire information until he/she exceeds some predetermined criterion. When the alternatives are undifferentiated, the decision maker will find it difficult to exceed the threshold. Hence, the cost-benefit framework suggests that the decision maker will reject both mates because the cost of searching for more information to achieve a sufficient degree of differentiation between the alternatives exceeds the benefit to be achieved from acquiring more information.

Finally, decision makers are more selective when choosing versus rejecting mates because the cost of making an inaccurate choice exceeds the cost of making an inaccurate rejection. For example, a female that inaccurately chooses a mate risks becoming impregnated by an inferior partner and bearing parental investment costs alone. A female that inaccurately rejects mates misses the opportunity of mating with an individual that will share parental investment. However, she still has the opportunity to search for another worthy partner. Similarly, a male that inaccurately chooses an inferior female (i.e., poor health, old age, promiscuous) risks being unable to pass on his genes and/or providing for offspring that are not his. However, a male that inaccurately rejects a partner also has the chance to search for another desirable mate. Hence, the costs of selecting an inferior partner outweigh the cost of rejecting a desirable mate.

From the discussion of the cost-benefit framework, the following hypotheses are derived about the selectivity of individuals when rejecting and choosing mates.

H_4: Selectivity is greater when choosing as opposed to rejecting mates.

H_{4a}: Subjects will acquire a greater number of attributes when they choose a mate than when they reject a pair of mates. That is, the no-choice option will have a main effect.

H_{4b}: Subjects will stop acquiring information at a lower threshold (cumulative confidence) when rejecting a pair of mates (i.e., selecting the no-choice option) than when choosing a mate. That is, the no-choice option will have a main effect.

CHAPTER 5

METHODOLOGY

Study 1

The experimental task consisted of two parts: a computerized mate selection task and a post-experimental questionnaire. The DSMAC (Dynamic Sequential Multi Attribute Choice) interface (Saad, 1998) was used to investigate search behavior of subjects seeking a mate. The DSMAC is a process tracing software that tracks the sequential acquisition of information in a binary choice environment. The questionnaire collected demographic information, information on the self-perception of subjects as potential mates (i.e., how one perceives oneself) and the degree of desirability they require in mate (i.e., how much a potential mate should possess various attributes such as intelligence or beauty). The questionnaire data is relevant for Study 2 and therefore is not discussed in this section. The subsequent section focuses on the DSMAC interface.

Task

Subjects made choices between 15 pairs of competing mates. The participants were instructed to select a mate for either a short-term or long-term relationship. A short-term relationship was defined as a one-night stand, a brief affair or casual date while a long-term courtship was described as a relationship that could lead to marriage. The task took approximately one hour to complete.

Subjects

Subjects were recruited from the campus of Concordia University. Forty-five subjects participated in the experiment (25 males & 20 females). Twenty subjects were randomly assigned to the short-term condition while 25 subjects were assigned to the long-term condition. A 2 (gender) × 2 (temporal condition) factorial design was employed. Hence, there were four conditions in the experiment: short-term males (N=10), short-term females (N=8), long-term males (N=12), and long-term females (N=12). However, only 42 subjects[1] completed the mate selection task (DSMAC). Each subject also made choices between 15 pairs of mates. However, the data from a subject's first trial was considered practice and not included in the analysis. The results are based on 588 trials (42 subjects × 14 trials). Subjects chose a mate 397 times and rejected mates 191 times. Subject received $10 for their participation.

Apparatus

DSMAC consists of two modules: the experimenter and subject interface. The experimenter module allows the researcher to specify the experimental parameters used in the study. The researcher can define the experimental stimulus (e.g., choice between two mates) and the corresponding attributes defining it (e.g., age, intelligence, and attractiveness). The experimental interface also enables the researcher to specify the number of binary choices to be made by the subject and the number of attributes used to describe the stimulus. The subject module operationalizes the stimulus defined in the experimental interface to create the task for the subject (Saad, 1996; 1998).

The interface collects a multitude of information that can be used for analysis. The number of attributes acquired by the subject prior to making a choice, the order that the information was acquired in, and the achieved cumulative confidence when he/she decides to stop acquiring information was recorded.

Stimulus

The experimenter module of the DSMAC was used to design the stimulus. A detailed discussion of the experimenter module is presented in Saad (1998).

Attributes

Mate pairs were defined by 25 attributes. The attributes were derived from the extensive literature on human mate selection. These were selected to provide subjects with information about various attributes of the hypothetical mates. That is, the attributes provided the subject with information about the physical characteristics, intellectual abilities, financial potential, and the personality traits of the prospective partners. A list of the attributes used and the corresponding attribute scales are presented in Table 1.

[1] The program crashed for two male participants. One male participant withdrew from the experiment.

Table 1

Stimuli Used

Attribute	Attribute Scale
Age	Years
Ambitiousness	Very little to very much
Assertiveness	Very unassertive to very assertive
Attractiveness of face	1-10 (1 = worst, 10 = best)
Exciting personality	Very boring to very exciting
Fashion sense	Very poor to very good
Healthiness	Very unhealthy to very healthy
Height	Very short to very tall
Income	Annual $$$
Intelligence	Very low to very high
Kindness	Very unkind to very kind
Moral character	Very weak to very strong
Number of children desired	# of children
Occupation	Occupation
Physical strength	Very little to very much
Physique (beauty of body)	1-10 (1 = worst, 10 = best)
Seeks commitment	Very little to very much
Self-confidence	Very low to very high
Sense of humor	Very poor to very good
Sexual experience	# of previous partners
Sexual fidelity	Very unfaithful to very faithful
Shows affection	Very little to very much
Shows emotional support	Very little to very much
Similarity of interests	Very dissimilar to very similar
Social skills	Very poor to very good

Ability to Provide Resources

The ability to invest resources was captured by *income, occupation, intelligence,* and *ambitiousness*. These variables signal the resource acquisition potential of prospective partners.

Willingness to provide resources

The willingness to provide resources is gauged by secondary traits. The attributes *shows affections, kindness, seeks commitment, shows emotional support, moral character* and *number of children desired* were used to capture willingness to invest.

Ability & Willingness to provide protection

The ability and willingness to offer protection were captured by *physical strength, height, self-confidence,* and *assertiveness*.

Physical Attractiveness

The attributes *attractiveness of face, physique (beauty of body), age, healthiness,* and *fashion sense* were utilized to determine physical attractiveness.

Fidelity & Promiscuity

The faithfulness of a prospective partner was described through *sexual experience,* and *sexual fidelity*.

A number of attributes were included to reflect individual preferences. Attributes such as *similarity of interests, sense of humor, social skills,* and *exciting personality* are

guided by individual tastes. Furthermore, these attributes are often very important in the formation of mating relationships.

Attribute scales

The attribute differences were subjectively determined. Most attributes used in the experiment were defined by 7-point scales (e.g., *very low (1) - low (2) - somewhat low (3) - adequate (4) - somewhat high (5) - high (6) - very high (7)*). A difference of one on the scale was deemed a small difference (e.g., *high (6) to very high (7), low (2) to somewhat low (3)*). A difference of 2 to 3 was considered a medium difference (e.g., *very low (1) to somewhat low (3), adequate (4) to very high (7)*). A difference of 4, 5, or 6 was a large difference (e.g., *very low (1) to very high (7)*).

Attractiveness of face and physique (beauty of body) were described using a 10 point scale (*i.e., 1-10, 1 = worst, 10 = best*). This scale was chosen because in the real world, beauty is often rated on a 1-10 scale. A difference of 1 to 2 was defined as a small difference, while a difference of 3 to 4 was a medium difference. Differences of 5 or more were deemed large.

The age of a potential mate was described by how old the individual was (in number of years). Small age differences constituted 5 years or less. Differences that were greater than 5 but less than 10 were considered medium and differences greater than 10 were deemed large.

Income was defined as the annual salary of an individual. A difference of $2,000 or less was deemed a small difference. A difference greater than $2,000 but less than

$10,000 was considered medium. Finally, any difference greater than or equal to $10,000 was deemed large.

The number of desired children was subject to a ceiling. That is, the maximal number of desired children was set at 4. It was unrealistic to include values greater than 4 as most families include less than 4 children. A difference of 1, 2, 3, reflected a small, medium, and large difference respectively.

Sexual experience was captured by the number of past sexual partners. A difference of 1 or 2 in the number of sexual partners represented a small difference. Differences of 3 or 4 were considered medium, while differences of 5 or greater was deemed large.

A list of occupations was obtained from *Money Magazine's* (1996) ranking of Top 50 jobs. All the ranked professions were identified as lucrative occupations. However, the occupations differed on their prestige rankings. Each occupation received a letter grade between A+ to C- to reflect occupational prestige. A difference of one grade (e.g., A+ to A) represented a small difference. A difference of two to three grades represented a medium difference (e.g., B to C+). A difference of 4 grades or greater was considered a large difference (e.g., A to C).

Trial configuration

Subjects made choices between 15 pairs of mates. Each mate pair was defined by a corresponding *trial.* The trials were configured to create variability in stopping points. The trial configuration table was used to specify the attribute differences and to indicate which of the two mates is superior on the attribute. Attribute differences were

subjectively classified as small (± s), medium (± m), or large (± l). The ± sign indicates which of the two mates is superior on the attribute. Thus, cell (i, j) refers to value for the jth most important attribute for binary choice i. For example, a subportion of Trial 1 was configured as -l, -m, +s, +s, -m, -l, -s. Accordingly, the most important attribute yielded a large difference in favor of the second alternative (i.e., Mate B), the second most important attribute produced a medium difference in favor of B, the third most important attribute yielded a small difference in favor of the first alternative (i.e., Mate A) and so forth (See Saad, 1996 for detailed discussion).

Procedure

The experiment was conducted in multiple sessions. Data was collected in a six-week period. Prior to each session, the experimenter provided a detailed demonstration of the interface. Subjects were encouraged to ask questions during the demonstration to clarify ambiguities. A script was developed for the demonstration. This helped the experimenter in presenting identical demos and hence, minimizing potential biases.

Eliciting attribute ranks and weights

The program began by eliciting subjects' attribute ranks and importance weights using the Q-Sort procedure. Subjects were presented with an alphabetical listing of the 25 attributes. The participants were also given a printed attribute guide to define each of the attributes. Subjects classified the 25 attributes into one of five categories (*very important, important, moderately important, slightly important, and unimportant*) (See Appendix A - Figure 5). Once the participant divided the attributes into the five

categories, they were asked to rank-order them within each category. A rank-ordered list of the 25 attributes was then presented and subjects were asked whether they wished to modify the list. Modifications involved 'swapping' the places of two attributes. For example, a subjects could modify the order by swapping the places of the first and forth most important attribute. The subjects could modify the order of the attributes till a final list reflecting the importance rankings (from most important to least important) was obtained. In the final stage of the Q-Sort procedure, subjects were asked to assign importance weights to the final rank-ordered list of the attributes. The most important and least important attributes were anchored at 100 and 5 respectively. Subjects 'worked up' the list of attributes, beginning with the second least important and moving up to the second most important attribute. Numerical weights were assigned to the attributes to reflect their relative importance. Each successive weight was greater than or equal to the previous weight (See Figure 6 – Appendix A).

Attribute selection screen

Once the importance ranks and weights were elicited, a randomized list of the 25 attributes was presented. A 'randomized' list meant that the attributes were displayed in random order. The list was re-randomized at the start of each binary choice. That is, the list of attributes was presented in a different order for each new binary choice. Subjects acquired information about the attribute by clicking the box next to the attribute. The participants could solely request one piece of information at a time across the two competing alternatives (See Figure 7 – Appendix A).

Information integration screen

After an attribute was chosen from the attribute selection screen, subjects viewed the requested item from within the information integration screen (See Figure 8 – Appendix A). The information integration screen displayed the attribute, the attribute scale, and the value of each mate on that attribute. Participants updated their cumulative confidence in favor of Mate A or B by moving the cumulative confidence bar. A cumulative confidence measure of p in favor of A meant that there was a $(1 - p)$ chance of preference reversal in light of all possible information. Initially, the cumulative confidence measure was pegged at 50 percent. The fifty-percent figure represented indifference between the two alternatives. Participants were able to move the cumulative confidence bar in either direction (toward A or B) till the upper boundary of 100. A cumulative confidence score of 100 indicated that the subject was absolutely certain of his choice (zero chance of a preference reversal) (See Figure 8 – Appendix A)

Directionality was implemented for certain attributes. *Directionality* flags changes in cumulative confidence that are contrary to expectations (See Figure 9 – Appendix A). For example, if Mate A is *kind* and Mate B is *unkind*, it is assumed that a kind person is superior to an unkind person. Hence, if the subject moved towards Mate B (*unkind*) the program would flag the subject and ask the subject to confirm his/her choice. Directionality was not implemented for age, assertiveness, height, number of children desired, seeks commitment, and sexual experience. For these attributes, males and females valued the attributes differently. For example, assertiveness is valued in males but not valued in females. Hence, it was not possible to implement directionality for

assertiveness and the other attributes because the researcher used the same stimuli for all subjects.

Once the subject entered a change in cumulative confidence value, he/she had several options. The subject could click on *Next Piece of Information* to acquire additional information about the mates. By choosing *Next Piece*, the subject was returned to the attribute selection screen. In the attribute selection screen, the subject could select additional attributes for evaluation.

The participant could click on *Choose* which indicated that he/she had acquired sufficient information to select one of the two mating options. Subjects could also select *Neither* which demonstrated that the researcher had acquired enough information to determine that they were not satisfied with either mating alternatives. The selection of *Neither* was considered a rejection option. That is, the subject had decided to reject both mating alternatives. Finally, from the information integration screen, the subject could review previously acquired information. An explanation of the latter option ensues.

Past information screen

The past information option allowed the researcher to explore 'online' backtracking. Online backtracking is the review and re-evaluation of previously acquired information during the decision making process. The current thesis does not focus on information re-acquisition.

In the past information screen, subjects could *View* and/or *Modify* previously acquired information. This could be accomplished by clicking on the *View* or *Modify* boxes next to the attribute. If the subject clicked on *View*, the attribute values of both

mates were revealed along with the previously-entered change in cumulative confidence (delta confidence). If the subject clicked on *Modify*, he/she was asked to enter a new delta confidence (See Figure 10 – Appendix A). It was expected that the subject would select *Modify* if he/she re-evaluated information and concluded that the effect of an attribute was greater than previously thought or if he/she demonstrated preference reversal on an attribute (e.g., moving in favor of A instead of B). However, the data derived from Past Information is not relevant to the current study.

From the past information screen, subjects could either return to the information integration screen or select the *Curve*. The tracking curve illustrated the changes in cumulative confidence made during the trial (See Figure 11 – Appendix A).

Attribute re-ranking

Upon completion of the 15 binary choices, subjects repeated the Q-Sort procedure (i.e., eliciting the subjects' attribute ranks and weights). This was done to determine whether completion of the task affected a subject's ranking of the 25 attributes. It also allowed the researcher to check for consistency in rankings.

Survey Instrument

After subjects had completed the mate selection task, they were required to complete a post-experimental questionnaire. The questionnaire collected data on the subjects' self-perceptions, the subjects' minimum requirements for a mate, and demographics. The survey booklet included the cover letter, the attribute guide, and a filler task (see Appendix B). The subsequent section only discusses the cover letter and

attribute guide as it is relevant to Study 1. The data pertaining to self-perception and minimal requirements will be addressed in Study 2.

Cover letter

The cover letter outlined the purpose of the experiment and requirements of the experimental task. The cover sheet stated whether the subject was to search for a short-term or long-term partner. Hence, it was used to assign subjects to one of the two temporal conditions (i.e., short- or long-term). The consent agreement was included in the cover letter. That is, subjects were informed of their right to withdraw from the experiment and their right to confidentiality.

Attribute Guide

It was imperative that subjects understand the meaning of the attributes because they were used throughout the experimental task (i.e., Q-Sort procedure, attribute selection). The attribute guide provided a description of the traits used in the study to alleviate potential ambiguities.

CHAPTER 6

RESULTS

Study 1

The objective of this research was to investigate the stopping strategies of individuals searching for a mate. The effects of gender, temporal condition, and rejection behavior (i.e., choices vs. rejections) were explored. A 2 (male, female) × 2 (short-term, long-term) × 2 (choose, reject) factorial design was employed.

Method of Analysis

The selectivity of subjects in choosing a mate was assessed via the number of attributes acquired, the cumulative confidence score, and the likelihood of rejecting a pair of mates.

A 2 (gender) × 2 (temporal condition) × 2 (decisional outcome) ANOVA was conducted in order to test the hypotheses. The ANOVA was used to test Hypotheses 1a, 1b, 2a, 2b, 3a, 3b, 4a, and 4b. It was also necessary to determine whether the decision to reject mates was influenced by gender and temporal condition. A chi-squared test was conducted in order to test Hypotheses 1c, 2c, and 3c.

Gender

It was predicted that females would be more selective in mate selection than males (Hypothesis 1). Hence, gender was expected to influence the number of attributes acquired, the cumulative confidence score and the likelihood of rejecting mates

(Hypotheses 1a, 1b, 1c). Table 2 displays the mean number of attributes acquired and mean cumulative confidence scores of males and females.

Number of attributes acquired

It was predicted that females would exert a greater degree of effort than males in searching for a mate. That is, females would acquire a greater amount of information (Hypothesis 1a). The ANOVA revealed a main effect for gender ($F_{1, 580} = 5.143$, $p < 0.05$). However, the effect was not in the expected direction. That is, Hypothesis 1a was not supported.

Table 2

Mean number of attributes acquired and mean cumulative confidence broken down by gender

	N (number of trials)	*ATTRIBUTE*	*CUMULATIVE CONFIDENCE*
MALES	308	8.07	69.22
FEMALES	280	6.43	66.64
TOTAL	588	7.29	67.99

Cumulative confidence

It was predicted that females would stop acquiring information at a higher cumulative confidence score than males would (Hypothesis 1b). The ANOVA did not

yield a main effect for gender ($F_{1, 580} = 0.080$, $p > 0.10$). Hence, the hypothesis was not supported.

Number of rejections

The selectivity of males and females in choosing a partner was reflected in the number of rejections of mates made by the individuals. The contingency table displays the number of times Neither (rejection) and Choose (choice) are selected by males and females (See Table 3). A chi-squared test was conducted to determine whether the rejection of mates and gender were independent. Males selected *Neither* in 24.0% of cases while females selected *Neither* in 41.8% of cases. Therefore, gender and the decision to reject mates were not independent ($\chi^2 = 21.093$, $p < 0.001$). Hence, Hypothesis 1c was supported.

Table 3

The number of times subjects choose and reject mates broken down by gender

	MALES	*FEMALES*	*TOTAL*
Choose	234	163	397
Neither	74	117	191
Total	308	280	588

Temporal condition

It was expected that subjects searching for long-term mates would be more selective than subjects searching for short-term mates (Hypothesis 2). The selectivity of subjects seeking long- and short-term partners was assessed via the number of attributes acquired, the cumulative confidence score, and the number of rejections (Hypothesis 2a, 2b, 2c). Table 4 displays the mean number of attributes acquired and the mean cumulative confidence score of subjects seeking short- and long-term relationships.

Number of attributes acquired

It was expected that subjects seeking long-term relationships would acquire a greater number of attributes than individuals seeking short-term relationships (Hypothesis 2a). An ANOVA was conducted and a main effect was found for temporal condition ($F_{1, 580} = 13.856$, $p < 0.001$). Hence, the hypothesis was supported.

Table 4

Mean number of attributes acquired and mean cumulative confidence broken down by temporal condition

	N (number of trials)	*ATTRIBUTE*	*CUMULATIVE CONFIDENCE*
SHORT-TERM	252	6.30	66.78
LONG-TERM	336	8.03	68.90
TOTAL	588	7.29	67.99

Cumulative confidence

It was expected that long-term subjects would stop acquiring information at a higher cumulative confidence than short-term subjects would (Hypothesis 2b). The effect of temporal condition was marginally significant ($F_{1, 580} = 3.531$, $p < 0.10$). Hence, the hypothesis was supported.

Number of rejections

A chi-squared test was conducted to determine whether the temporal context of the relationship and the inclination to reject mates were related (Hypothesis 2c). Table 5 presents the number of times *Neither* (reject) and *Choose* (choice) is selected in each temporal condition. In the short-term condition, subjects selected *Neither* 34.9% of cases while *Neither* was chosen 30.7% of times in the long-term condition. The chi-squared test revealed that the temporal context of the relationship and the selection of *Neither* were independent ($\chi^2 = 1.195$, $p > 0.10$). Hence, the hypothesis was not supported.

Table 5

Number of times subjects choose and reject broken down by temporal condition

	SHORT-TERM	LONG-TERM	TOTAL
Choose	164	233	397
Neither	88	103	191
Total	252	336	588

The interaction of gender and temporal condition

It was predicted that the relationship between gender and selectivity in mate selection would be moderated by the temporal context of the relationship (Hypothesis 3). This relationship was assessed via the number of attributes acquired, the cumulative confidence score, and the number of rejections (Hypotheses 3a, 3b, 3c).

Number of attributes acquired

It was expected that the relationship between the number of attributes acquired and gender would be moderated by the temporal condition of the relationship (Hypothesis 3a). Hence, the interaction between the two variables was assessed. The 2 × 2 interaction of gender and temporal condition was considered. Table 6 presents the mean number of attributes acquired by short-term males (N=140), short-term females (N=112), long-term males (N=168) and long-term females (N=168). The interaction was significant ($F_{1, 580} = 20.013$, $p < 0.001$). Hence, Hypothesis 3a was supported. Figure __ depicts the interaction of gender and temporal context.

Table 6

Mean number of attributes broken down by gender and temporal condition

	MALES		FEMALES		TOTAL	
	Mean	N	Mean	N	Mean	N
Short-term	6.48	140	6.08	112	6.30	252
Long-term	9.39	168	6.67	168	8.03	336
Total	8.07	308	6.43	280	7.29	588

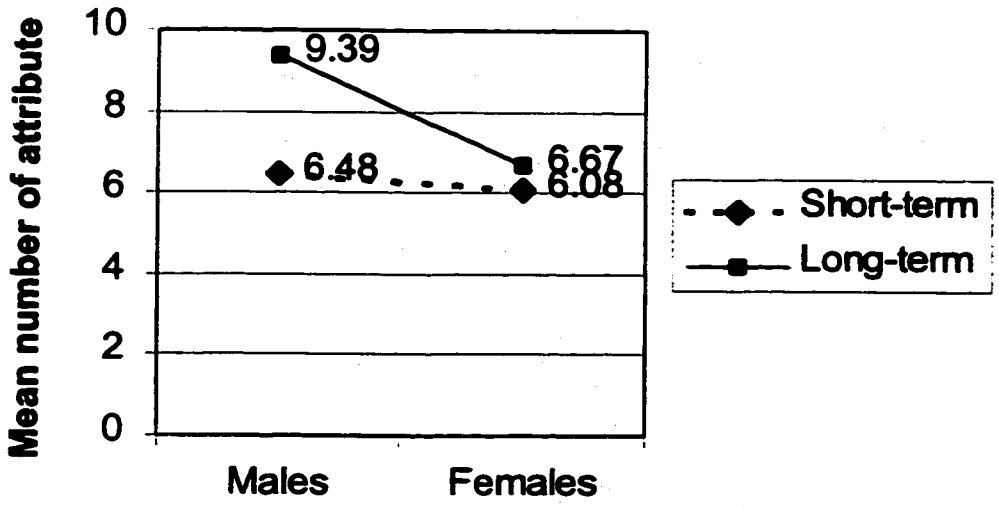

Figure 12: Mean number of attributes acquired in each of the four conditions

The gender × temporal condition interaction warrants further investigation. That is, the interaction indicates that temporal condition moderates the relationship between gender and the number of attributes acquired. Consequently, planned comparisons between males searching for long-term and short-term partners, and females searching for long- and short-term partners were performed.

Male mating strategies and temporal condition

Long-term males were expected to evaluate more information than short-term males (Hypothesis 3a). The difference was significant ($t = 5.730$, $p < 0.001$). Hence, the hypothesis was supported.

Female mating strategies and temporal condition

It was predicted that females would not be influenced by the temporal condition of the relationship (Hypothesis 3a). The difference was not significant ($t = 1.084$, $p > 0.10$). Hence, the hypothesis was supported.

Cumulative confidence

It was predicted that temporal condition would moderate the relationship between gender and cumulative confidence (Hypothesis 3b). The 2 × 2 interaction between gender and temporal condition for cumulative confidence was assessed. Table 7 displays the mean cumulative confidence scores of short-term males (N=140), short-term females (N=112), long-term males (N=168), and long-term females (N=168). The interaction was not significant ($F_{1, 580} = 0.002$, $p > 0.10$). Hence, the hypothesis was not supported.

Table 7

Mean cumulative confidence broken down by gender and temporal condition

	MALES		FEMALES		TOTAL	
	Mean	N	Mean	N	Mean	N
Short-term	70.28	140	62.40	112	66.78	252
Long-term	68.33	168	69.47	168	68.90	336
Total	69.22	308	66.64	280	67.99	588

Number of rejections

The number of pairs of mates rejected by subjects reflected the selectivity of individuals.

Male mating strategies and temporal condition

It was expected that males searching for long-term mates were more likely to reject mates than males searching for short-term mates (Hypothesis 3c). Males seeking a short-term partner selected *Neither* 14.3% of the time while males in the long-term condition picked *Neither* in 32.1% of cases (See Table 8). The results indicate that gender and rejections (*Neither & Choose*) were not independent ($\chi^2 = 13.340$, $p < 0.001$). Hence, the hypothesis was supported.

Table 8

Number of times subjects choose and reject mates broken down by gender and temporal condition

	NEITHER	CHOOSE	TOTAL
Short-term males	20	120	140
Short-term females	68	44	112
Long-term males	54	114	168
Long-term females	49	119	168
Total	191	397	588

Female mating strategies and temporal condition

It was expected that females in both temporal condition (i.e., short- and long-term) would be equally likely to reject mates (Hypothesis 3c). The number of times Neither and Choose was selected by females in the short- and long-term condition is displayed in Table 8. Females in the long-term condition picked *Neither* 29.2% of the time while females seeking a short-term relationship picked *Neither* 60.7% of the time. The chi-squared test revealed that the selection of *Neither* was not independent of temporal condition ($\chi^2 = 27.494$, $p < 0.001$). Hence, the hypothesis was not supported.

Selectivity when choosing versus rejecting

It was predicted that individuals would be more selective when choosing versus rejecting mates (Hypothesis 4). The number of attributes acquired and the cumulative confidence scores of subjects when they chose and when they rejected were compared.

Number of attributes acquired

It was expected that individuals would acquire less information when they rejected a pair of mates as opposed to when they chose a mate (Hypothesis 4b). The number of attributes evaluated in *Neither* and *Choose* trials was compared (See Table 9). When subjects picked *Neither* (N=191), they evaluated 5.62 pieces of information. However, when subjects picked *Choose* (N= 397), they assessed 8.09 pieces of information. A main effect was found for the rejection option ($F_{1, 580} = 42.028$, $p < 0.001$). Subjects acquired less information when they rejected mates. Hence, the hypothesis was supported.

Cumulative confidence

It was predicted that the cumulative confidence scores of subjects would be lower when they rejected mates (Hypothesis 4b). When subjects picked *Neither* (N=191), they stopped acquiring information at the cumulative confidence of 57.51. However, when subjects selected *Choose* (N=397), the mean cumulative confidence was 73.03. The ANOVA revealed that the difference was significant ($F = 162.835$, $p < 0.001$). Hence, the hypothesis was supported.

Table 9

Mean number of attributes acquired and mean cumulative confidence broken down by choice (i.e., choose vs. reject)

	N (number of trials)	*ATTRIBUTE*	*CUMULATIVE CONFIDENCE*
REJECT	191	5.62	57.51
CHOOSE	397	8.09	73.03
TOTAL	588	7.29	67.99

Summary of Results

The results of Study 1 provide mixed support for the hypotheses. Table 10 summarizes the hypotheses and findings of the study. The implications of the results are discussed in the following chapter.

Table 10

Summary of hypotheses and results of Study 1

	HYPOTHESES	RESULT
H1	Females will be more selective in mate selection than males.	
H1a	Females will acquire a greater number of attributes than males will.	NOT SUPPORTED
H1b	Females will stop acquiring information at a higher threshold than males.	NOT SUPPORTED
H1c	Females are more likely to reject a pair of mates than males are.	SUPPORTED
H2	Subjects searching for a long-term mate will be more selective than subjects searching for a short-term mate.	
H2a	Subjects searching for a long-term partner will acquire a greater number of attributes than individuals searching for a short-term partner.	SUPPPORTED
H2b	Subjects searching for a long-term partner will stop acquiring information at a higher threshold than subjects searching for a short-term partner.	PARTIALLY SUPPORTED
H2c	Subjects searching for a long-term partner are more likely to reject pairs of mates than subjects searching for a short-term partner.	NOT SUPPORTED
H3	Males searching for a long-term mate will be more selective than males searching for a short-term mate. However, females searching for long- and short-term mate will not differ in their selectivity.	
H3a	Males searching for a long-term mate will acquire a greater number of attributes than males searching for a short-term mate. However, females searching for long- and short-term partners will not differ in the number of attributes acquired. That is, there will be an interaction between gender and temporal condition.	SUPPORTED/ SUPPORTED
H3b	Males searching for a long-term mate will stop acquiring information at a higher threshold (cumulative confidence) than males searching for a short-term mate. The cumulative confidence score of females searching for long- and short-term mates will not differ. That is, there will be an interaction between gender and temporal condition.	NOT SUPPORTED/ NOT SUPPORTED
H3c	Males searching for a long-term partner are more likely to reject a pair of mates than males searching for a short-term mate. Females searching for long- and short-term mates will not differ in the likelihood of rejecting a pair of mating alternatives.	SUPPORTED/ NOT SUPPORTED
H4	Selectivity is more important when choosing as opposed to rejecting	
H4a	Subjects will acquire a greater number of attributes when they choose a mate than when they reject a pair of mates. That is, the no-choice option will have a main effect.	SUPPORTED
H4b	Subjects will stop acquiring information at a lower threshold (cumulative confidence) when rejecting a pair of mates (i.e., selecting the no-choice option) than when choosing a mate. That is, the no-choice option will have a main effect.	SUPPORTED

CHAPTER 7

DISCUSSION

Study 1

The study of evolutionary psychology has proposed several theories to explain human mating. One such theory is the theory of sexual selection and parental investment which posits that the sex providing greater parental investment in the offspring will be more discriminating in mate selection. Therefore, because females provide greater investment in offspring they are expected to be more selective in choosing a mate. However, research has also demonstrated that the temporal context of the relationship influences mating behavior. Females are not affected by the temporal context of the relationship because they provide a high degree of parental investment regardless whether they are involved in short- or long-term relationships. However, males are sensitive to the temporal condition of the relationship because they anticipate a higher level of investment for long-term relationships as opposed to short-term relationships.

Study 1 applied a similar logic in investigating the behavior of individuals searching for a mate. It was believed that differential parental investment would contribute to gender differences in the degree of effort exerted in searching for a partner. Furthermore, gender differences in search behavior would be moderated by the temporal context of the relationship. The hypotheses of Study 1 received mixed support.

Gender differences

Much research on human mate selection demonstrates that females are more selective in mate selection (Feingold, 1992; Kenrick et al, 1990; 1993; Trivers, 1972). In

Study 1, there was evidence to show that females were more selective when searching for a mate. Females were more likely to reject mating options (i.e., choose Neither) than males were. However, the results pertaining to the number of attributes acquired and the cumulative confidence score did not demonstrate that females were more discriminating when searching for a mate than males were. Rather, the findings indicated that males acquired a greater number of attributes than females did.

It is difficult to account for this unexpected finding. On one hand, the results pertaining to the rejection option are in accordance with the theory of parental investment. However, the finding regarding the number of attributes acquired suggests that the parental investment theory is not an accurate predictor of search behavior. Because one dependent measure (i.e., rejection) yielded such favorable results and the other (i.e., number of attributes) yielded such unfavorable results, it is believed that the key to understanding lies in the further investigation of the interaction of these two variables. Originally, the hypotheses of Study 1 were tested via a 2 (gender) × 2 (temporal condition) × 2 (decisional outcome) ANOVA. The gender × rejection interaction was not significant ($F_{1, 580} = 1.327$, $p > 0.10$). Hence, the original findings did not indicate the need to investigate the relationship between gender and decisional outcome. Nevertheless, because it is believed that it will add to the understanding of the problem at hand, this relationship is analyzed in greater details. The results of the analysis are presented in the subsequent sections.

Table 11 displays the mean number of attributes acquired by males and females broken down by choice (i.e., choose, neither). An ANOVA was conducted to compare the number of attributes acquired by males when they choose (N=234), males when they

reject (N=74), females when they choose (N=163), and females when they reject (N=117). Tukey's comparisons yielded several interesting results. First, women evaluate more information when they choose a mate as opposed to when they reject a mate ($p < 0.001$). However, the same does not hold true for males. Men look at the same amount of information when they choose and when they reject mates ($p > 0.10$). Second, the comparison revealed no difference in the number of attributes acquired by males and females when analyzing the Choose trials. That is, males and females exhibit similar search behavior when choosing a partner. Clearly, these results have some interesting implications for the current study.

Table 11

Mean number of attributes broken down by gender and choice (choose vs. reject)

	Choose	*Neither*	*TOTAL*
Males	8.39	7.04	8.07
Females	7.66	4.73	6.43
TOTAL	8.09	5.62	7.28

These findings suggest that the implicit assumption that men and women would be influenced by the rejection option in a similar fashion was false. Rather, males and females were differentially affected by the inclusion of the Neither option. Males were not only less likely to reject a pair of mates, but also needed greater assurance (in terms of number of attributes) to reject a pair of mates. Females, on the other hand, were more

willing to reject pairs of mates and required less convincing to do so. Hence, the results are not contrary to evolutionary theory because they indicate that males are less inclined to reject a pair of mates. More importantly, the results also partially explain the unexpected results regarding the number of attributes acquired. Males acquired a greater number of attributes when they chose and rejected mates whereas females acquired a greater number of attributes only when they chose a mate. This contributed to the unexpected finding.

While the proposed explanation appears to be feasible, some questions still remain. First, if the rejection option influences men and women differently, why was the original gender × rejection interaction not significant? Is it possible that the influence of the third variable (i.e., temporal condition) negated the relationship between the variables? Second, if we only consider the instances when males and females choose a mate (i.e., Choose trials), no gender differences were reported for the number of attributes acquired. It is important to consider why there are no gender differences in the number of attributes acquired? Could the lack of gender differences be solely attributed to the rejection option? That is, the rejection option produced an effect that could not be predicted by our original hypotheses. The absence of a conclusive explanation for the result regarding the number of attributes acquired suggests that further research is needed to understand gender differences in search behavior in the context of mate selection.

Temporal condition

Evolutionary research has found that the temporal context of the relationship affects the selection of mating strategies (Buss & Schmitt, 1993; Kenrick et al, 1990;

1993; Schmitt & Buss, 1996). The findings of Study 1 lend support to the idea that individuals searching for a long-term mate are more discriminating in selecting a mate. Subjects seeking a long-term commitment examined more information about a prospective mate and established a higher differentiation threshold. Hence, individuals searching for long-term mates were more selective than subjects searching for short-term mates because they anticipated high parental investment costs.

The findings pertaining to the likelihood of rejecting mates did not support the idea that subjects were more selective when searching for long- versus short-term mates. Individuals seeking short- and long-term mates were equally likely to reject a pair of mates. Upon examination of the data, it is apparent that this unexpected finding can be attributed to the higher frequency of rejection by short-term females. It was assumed that individuals searching for short-term mates would be equally likely to reject partners. Moreover, it was predicted that short-term females would be less likely to reject mates than long-term females. However, this assumption was false. Females seeking short-term mates rejected partners more often than the other experimental groups (i.e., short-term males, long-term males, long-term females). Hence, the researcher was unable to find an effect for temporal condition, because men and women were not more likely to reject mates for short-term relationships. The implication of short-term females rejecting mates is discussed in later sections.

Interaction of gender and temporal condition

The relationship between gender and search behavior was expected to be moderated by the temporal condition of the relationship. The findings indicated a

significant interaction for the amount of information acquired but not for the cumulative confidence. Hence, the amount of information evaluated about a prospective mate is affected by the interaction of gender and temporal condition. However, the subjects in the four experimental conditions (*short-term males, short-term females, long-term males, long-term females*) required a comparable degree of differentiation between the alternatives. The decision to reject mates is also influenced by gender and temporal condition. The results are discussed in the ensuing sections. First, a discussion of male search behavior in the short- and long-term condition and of female search behavior in the short- and long-term is presented. This corresponds to the findings in support of Hypothesis 3a and 3c. However, to fully understand mate selection it is also necessary to compare gender differences in the short-term condition and gender differences in the long-term condition. A discussion of these findings is also presented.

Temporal condition and male search behavior

The mating strategies of males are greatly influenced by the temporal context of the relationship because there is a large difference in the amount of parental investment required of males in short- and long-term relationships. There is evidence to demonstrate the selectivity of males in long-term relationships. Males seeking long-term partners evaluated more information about potential mates. Furthermore, long-term males were more likely to reject mating alternatives than short-term males. Hence, the results support the notion that males are sensitive to the temporal context of the relationship.

Temporal condition and female search behavior

Buss (1996) suggested that there is little difference in minimal parental investment required of women in short and long-term relationships. Hence, females will not be influenced by the temporal context of the relationship. There is evidence to show that females are not affected by temporal condition when searching for a partner. The number of attributes acquired and the cumulative confidence score of women did not differ in the short- and long-term condition. However, the results regarding the decision to reject mates did not support this idea. Short-term females rejected (i.e., selected Neither) mates more often than long-term females.

This finding was unexpected, as the researcher predicted no difference in the likelihood of rejecting mates. However, it is believed that females were more likely to reject mate pairs because they wished to minimize the risk they were undertaking by engaging in casual sexual relations. A female engaging in a short-term relationship risks becoming impregnated by an inferior male. Therefore, she should only agree to a short-term relationship if she is convinced that the prospective partner is worthy. However, few males possess the traits required in a *superior* mate. Hence, most males will be rejected for short-term relationships. The research on mate selection supports this idea. Townsend (1987) found that male medical students could enjoy transitory relationships. Similarly, wealthy male celebrities can engage in casual sexual liaisons. Because these males possess high mate value, females will not reject them for short-term relationships.

Gender differences in long-term relationships

While Study 1 did not consider gender differences in long-term relationships, this relationship was investigated to achieve a greater understanding of search behavior. The parental investment theory suggests that women, independent of temporal condition, will be more selective in mate selection. However, the results of Study 1 did not support this contention. Males searching for long-term mates acquired a greater amount of information than females searching for long-term partners. Furthermore, long-term males and females did not differ in the likelihood of rejecting a pair of mates. These results suggest that males were more or equally selective as females when choosing a long-term partner.

Initially, it was assumed that the unexpected finding regarding the number of attributes acquired originated from the differential influence of the rejection option on males and females. However, this assumption was false (See Table 12). Long-term males evaluated more information when they chose than when they rejected. Furthermore, they evaluated more information than females across temporal conditions. Hence, another explanation is required to account for this result.

Table 12

Mean number of attributes acquired in the long-term condition broken down by gender and choice (choose vs. reject)

	Choose	*Neither*	*TOTAL*
Males	10.04	8.02	9.39
Females	7.29	5.14	6.67
TOTAL	8.64	6.65	8.03

The unexpected finding can be better understood if male search behavior is assessed from an opportunity cost perspective. In Study 1, it was assumed that males would evaluate less information than females because they bear less parental costs and are therefore not required to be as selective as females. However, it is possible that while men do not incur the same level of parental costs as women, they bear other costs. From an opportunity cost perspective, when a male commits to a long-term relationship, he forgoes the opportunity to mate with other females. Evolutionary theory suggests that this is a great 'cost' to males because unlike females they can benefit from numerous mating relationships by expanding their representation in the gene pool. Hence, before a male is willing to bear the 'cost' of a long-term relationship, he must be assured of the accuracy of his decision. Perhaps, males assess more information when searching for a long-term mate to achieve this assurance.

Gender differences in short-term relationships

The comparison of short-term males to short-term females found some support for the parental investment theory. Females searching for short-term mates were more likely to reject a pair of mates. However, comparisons of the number of attributes acquired did not support this contention. No differences was found in the amount of information acquired by males and females searching for short-term mates.

The unexpected result warranted further investigation. Table 13 displays the mean number of attributes acquired by short-term subjects broken down by choice. It is evident that both males and females acquired more information when they chose than when they rejected mates. However, the difference in the number of attributes acquired when choosing and rejecting was far greater for females than for males. Therefore, to some extent, it is reasonable to suspect that the inclusion of the rejection option produced the unexpected finding. Furthermore, the comparison of males and females when they chose a pair of mates (i.e., Choose trials) demonstrated that females evaluated more information when searching for a short-term mate. Hence, there is evidence to support the notion that women are more selective than males. However, what is perplexing is the lack of difference between men and women when they rejected a pair of mates. Clearly, this requires further investigation.

Table 13

Mean number of attributes in the short-term condition broken down by gender and choice (choose vs. reject)

	Choose	*Neither*	*TOTAL*
Males	6.83	4.40	6.47
Females	8.64	4.43	6.08
TOTAL	7.31	4.42	6.30

Selectivity when choosing versus rejecting mates

Selectivity in choosing a mate was also influenced by whether subjects chose or rejected alternatives. Study 1 compared the stopping behavior of individuals when they selected as opposed to when they rejected a pair of mates. The findings of Study 1 supported the hypotheses. Individuals acquired less information and stopped acquiring information at a lower cumulative confidence score when they rejected a pair of mates. This means that individuals are more selective in accepting a mate than they are in rejecting a pair of mates. This supports the notion that the cost of rejecting a pair of unattractive and/or undifferentiated mates is greater than the benefit of searching for more information to justify a choice.

Conclusion

Thus far, it is evident that the hypotheses of Study 1 have received mixed support. While the findings that support the hypotheses can easily be explained via the parental investment theory, the unexpected findings are more difficult to explain. It is believed that many of the unexpected findings resulted from the inclusion of the rejection (i.e., Neither) option. That is, the rejection option produced several unexpected and inconsistent results. From the results of Study 1, it is apparent that males and females react differently to the inclusion of the rejection option. However, this does not hold true for all temporal conditions. When searching for a long-term mate, males appear to be more selective than females when choosing or rejecting mates. However, when searching for a short-term partner, females appear to be more selective when choosing a mate but not in rejecting a mate. What is clear is that the rejection option produced several unexpected yet interesting results and to fully understand search behavior in the context of mate selection, further research is required.

To achieve greater understanding of search behavior in mate selection, an additional study (i.e., Study 2) is proposed. Study 2 also investigates search behavior in the context of mate selection, however with three fundamental differences.

- Study 2 will remove the rejection option. That is, individuals will be forced to choose one of the two mating alternatives. By removing the rejection option, the researcher will be able to investigate search behavior without the 'confound' of the rejection option. It is believed that a clearer understanding of search behavior can be achieved if males and females are forced to treat the problem of searching for a mate in a similar fashion.

- Study 2 will investigate not only the outcome of the search process (e.g., number of attributes), but also the underlying process that governing search behavior. That is, the researcher will evaluate the processes (e.g., use of the core attributes heuristic) used by individuals to reach a final choice.
- Study 2 will investigate the role of self-perception (i.e., self-perceived desirability as a mate) in searching for a partner.

CHAPTER 8

RESEARCH QUESTIONS & HYPOTHESES

Study 2

The theory of sexual selection predicts that the sex providing greater parental investment will be more discriminating in mate selection. Hence, because females are obliged to provide greater investment in offspring they will be more selective than males when choosing a mate. In Study 1, there was evidence to both support and refute this theory. That is, there was evidence to show that males were more selective than females (e.g., number of attributes), that females were more selective than males (e.g., number of rejections) and that males and females did not differ (e.g., cumulative confidence score). The findings regarding the temporal context of the relationship produced similar results. There was evidence to demonstrate that long-term individuals were more selective than short-term subjects and that there was no difference between short- and long-term subjects. Therefore, the researcher was unable to ascertain the effect of gender and temporal condition on search behavior. Hence, Study 2 was proposed to further investigate search behavior in the context of mate selection and resolve the issues put forth in the previous study. In Study 2, the researcher examined the processes used by decisions maker in searching for information about potential mates and in choosing between alternatives. It was believed that search behavior could be better understood if the researcher examined not only the outcome of search (e.g., the number of attributes acquired), but also the processes that produced this outcome.

To understand the search process, the researcher gathered information about several aspects of search behavior. That is, a number of dependent measures were

included in order to investigate search behavior. These measures included the number of attributes acquired, the extent to which individuals use the core attributes heuristic (i.e., CA use), the extent to which individuals use thresholds, the threshold value (where the threshold is established), and the rate of decay of the threshold.

As in Study 1, the effect of gender and temporal condition on search behavior was investigated. Specifically, the relationship between these variables (i.e., gender and temporal condition) and the aforementioned dependent variables was assessed. However, unlike Study 1, no a priori hypotheses were posited about the effect of these variables on search behavior. The researcher did not posit hypotheses because Study 1 did not provide any conclusive results and therefore, the current study serves as an exploratory study into the relationship between gender, temporal condition and search behavior. The researcher also investigated the influence of an additional variable on search behavior. Namely, the effect of self-perception (i.e., self-perceived desirability as a mate) was considered. Hence, Study 2 investigated the effect of three key variables: gender, temporal condition, and self-perception.

In the subsequent sections, a discussion of the dependent measures employed is presented. Namely, a brief explanation of the number of attributes acquired, CA use, threshold use, the threshold value and the rate of decay is presented.

Number of attributes acquired

The number of attributes acquired captures the extent of search undertaken by subjects. That is, the degree of effort a decision maker expends in searching for a partner should be reflected in the amount of information they acquire prior to making a choice.

The influence of gender, temporal condition and self-perception on this variable is considered.

Core attributes heuristic

Study 2 investigated the extent to which decision makers use the core attributes (CA) heuristic (Saad & Russo, 1996). The CA heuristic assumes that the decision maker will stop acquiring information after he/she has evaluated his/her core set of most important attributes. The current study investigates whether gender and temporal condition are associated with CA use.

Threshold use

Study 2 also investigated the extent to which decision makers use a threshold criterion to choose between pairs of mates. It is assumed that individuals acquire information until they exceed a pre-established threshold. However, it is not necessary that the decision maker rely on a threshold. Therefore, the current study investigates the degree of which individuals rely on a threshold when searching for mates and whether threshold use is affected by gender and temporal condition.

While threshold use is not necessarily incompatible with threshold use, it is assumed that decision makers are either one or the other. That is, being more of CA user implies that the individual is less of a threshold user and so forth.

Converging threshold

If decision makers are using the threshold, it is necessary to consider several additional variables. Saad & Russo (1996) proposed the converging threshold model to explain stopping behavior. Within this model, two variables are important: where the decision maker establishes the threshold (i.e., the threshold value) and the rate of decay of the threshold.

Threshold value

Where the decision maker establishes the criterion (i.e., the threshold value) is a cost-benefit decision. The threshold value reflects the degree of differentiation between the mates required by the decision maker. It is assumed that higher threshold values are associated with a greater degree of accuracy and effort in searching for a mate.

Rate of decay

Study 2 also investigates the rate of decay of the threshold. The rate of decay is also a cost-benefit decision. That is, how quickly the threshold converges indicates the degree of accuracy and effort desired by the decision maker. If the threshold converges quickly, it means that the decision maker is sacrificing accuracy in order to expend less effort in searching for a mate. However, if the threshold converges at a slower rate, it means that the decision maker desires a greater degree of accuracy and is willing to expend a greater degree of effort in order to achieve this accuracy.

Thus far, a discussion of the dependent measures used in Study 2 was presented. In the following section, the role of self-perception in mate selection is investigated. Because this variable was not included in Study 1, it is necessary to provide a detailed explanation of its possible effects.

Self-perception

The theory of assortative mating identified self-perception as an important variable that guides mate selection. Hence, Study 2 investigates the role of self-perception in mate selection. Self-perception refers to the degree to which an individual believes he/she possess certain desirable traits (e.g., intelligence, wealth). The effect of this variable on search behavior is unclear. That is, evolutionary theory suggests that search effort may rise or fall with increasing self-perceived desirability as a mate. The rationale for both viewpoints is presented in subsequent sections.

Search effort may increase with higher self-perceived desirability because individuals mate with other individuals that carry mate values similar to their own. Hence, highly desirable individuals mate with other desirable individuals while undesirable individuals mate with other undesirable individuals. However, highly desirable mates are scarce in supply. That is, few individuals possess all the characteristics (i.e., wealth, good looks, intelligence, agreeable personality) that constitute a *desirable* mate. Hence, it is difficult to find mates with a high mate value. Consequently, an individual will need to expend effort in searching for a desirable mate.

However, self-perceived desirability may be associated with lower search effort. Individuals that perceive themselves as desirable will realize that they are scarce in

supply and highly in demand. Hence, they will be assiduously courted by others searching for a mate. Essentially, desirable mates may believe that people will automatically be drawn towards them and hence they have to expend minimal effort in actively searching for a partner.

The current study explores both viewpoints to understand the relationship between self-perception and search behavior. No a priori hypotheses are posited about the influence of this variable. The current study proposes to study the relationship between self-perceived desirability and the number of attributes acquired, the threshold value, and the rate of decay. The researcher focuses on these dependent measures as they can be linked to search effort while CA use and threshold use cannot.

Mate preferences

Much evolutionary research has concentrated on identifying the factors that prospective mates consider important in selection (Buss, 1985; 1992; Buss & Barnes, 1986; Feingold, 1992; Kenrick et al, 1990; Symons, 1979; Townsend & Levy, 1990a; 1990b; Walters & Crawford, 1994). Hence, this study attempts to substantiate the findings of earlier research by exploring gender differences with respect to temporal condition on the importance of traits in potential mates. However, unlike previous research, this study employs the Q-sort method to elicit importance data (See Chapter 5).

Mate preferences are also explored because they demonstrate which characteristics are considered important when searching for a partner. Because mate preferences have been reviewed extensively in the previous chapter, it is unnecessary to explain the rationale for these predictions.

Gender differences with regard to mate preferences

Gender differences in mate selection arise because different selection pressures have acted upon men and women. In the subsequent section, male and female mate preferences are discussed briefly.

Female mate preferences

Because females are required to provide a greater degree of parental investment than males, they value males that are able and willing to share parental costs. Hence, females will value characteristics that signal the ability and willingness to provide resources and protection. Table 14 lists the attributes that will be valued by females more than males.

Table 14

Female mate preferences

	Attributes
Ability to provide resources	Income, occupation, intelligence, ambitiousness
Willingness to provide resources	Kindness, seeks commitment, shows emotional support, shows affection, moral character and the number of children desired
Ability & willingness to protect	Assertiveness, height, physical strength, and self-confidence

However, the importance of these attributes is influenced by the temporal context of the relationship. The traits associated with the ability to provide resources should be valued in both the short- and long-term however. However, the willingness to invest resources will be more important when searching for long-term mates. The ability to provide protection and physical attractiveness will be more important in the short-term. Table 15 presents the predicted female mate preferences broken down by temporal condition.

Table 15

Female mate preferences broken down by temporal condition

Short-term	Long-term	Both conditions
Physical attractiveness		Ability to provide resources
Ability to provide protection		Willingness to provide resources

Male mate preferences

Males are concerned with finding reproductively valuable females and ensuring that the offspring that they provide for are their own. Hence, males value attributes that signal fertility and paternity certainty. Table 16 lists the predicted preferences of males.

Table 16

Male mate preferences

	Attributes
Fertility	Age, health, attractiveness of face, physique (attractiveness of body) and fashion sense
Paternity certainty	Sexual experience and sexual fidelity

The importance of male mate preferences is influenced by the temporal context of the relationship. Males will value physical attractiveness in both the short- and long-term condition. However, the importance of paternity certainty is sensitive to temporal condition. Long-term males will value attributes that signal fidelity while short-term males will value traits that signal promiscuity. Table 17 presents the predicted male mate preferences.

Table 17

Male mate preferences broken down by temporal condition

SHORT-TERM	LONG-TERM	BOTH
	Sexual fidelity	Physical attractiveness
		Sexual experience

CHAPTER 9

METHODOLOGY

Study 2

Study 2 also investigated the stopping behavior of individuals seeking a mate. The effects of gender, temporal condition, and self-perception (i.e., how one perceives oneself as a mate) were considered. The fundamental difference between the two studies was the exclusion of the rejection option (i.e. Neither option) in Study 2. While subjects in Study 1 could reject a pair of mates, subjects in Study 2 were forced to select one of the two alternatives. In addition, in Study 1, the effect of self-perception was not examined.

Study 2 consisted of two parts: a computerized mate selection task and a post-experimental questionnaire. The computerized task was identical to the one used in Study 1 except for the rejection option. That is, in Study 2 subjects were not provided with the Neither option and hence were forced to select one of the two mating alternatives. Because a detailed explanation of DSMAC was presented in Chapter 5, only a brief discussion is included in this chapter. The post-experimental questionnaire was used to gather demographic information, information on the self-perception of subjects along specified attributes, and the minimal degree of desirability they require in a mate on those attributes. The questionnaire is discussed in this chapter as it was not attended to in Chapter 5 and is particularly relevant to Study 2.

Task

As in Study 1, subjects in Study 2 made choices between 15 pairs of competing mates. Subjects were assigned to either the short- or long-term condition. The task took approximately one hour to complete.

Subjects

Subjects were recruited from the campus of Concordia University. Eighty-six subjects participated in the experiment. A 2 × 2 factorial design was implemented. This resulted in four experimental conditions: short-term males (N=21), short-term females (N=22), long-term males (N=24) and long-term females (N=19). Eighty-five subjects completed the computerized mate selection task (i.e., one long-term male withdrew). Seventy-nine subjects completed the post-experimental questionnaire. Subjects received $10 for their participation in the experiment.

Apparatus

Study 2 utilized DSMAC to track the information acquisition behavior of subjects searching for a mate.

Stimulus

The experimental stimulus used in Study 2 was identical to the one used in Study 1. The only difference lay in the removal of the Neither option.

Information integration screen

After an attribute was chosen from the attribute selection screen, subjects viewed the requested item from within the information integration screen (See Figure 13). Participants indicated their preferences for Mate A or B by moving the cumulative confidence bar.

Once the subject entered a cumulative confidence value, they had several options. The subject could click on *Next Piece of Information*, *Past information*, or *Choose*. The discussion of the *Next Piece of Information* and *Past information* was presented in Chapter 5. However, it is important to indicate that in Study 1 subjects had the option to select *Choose* or *Neither*. In Study 2, subjects are forced to make a choice between the two alternatives and are not allowed the option to not choose (See Figure 13 – Appendix C).

Survey Instrument

After subjects concluded the mate selection task, they were required to complete a post-experimental questionnaire. The questionnaire collected data on the subjects' self-perceptions, the subjects' minimum requirements for a mate, and demographics. The survey booklet included the cover letter, the attribute guide and a filler task (see Appendix B).

Self-perception

Subjects were presented with a list of 20 attributes. They were asked to evaluate themselves on these characteristics. The attributes were extracted from the mate selection task. Using a 10-point scale (*1 = low, 10 = high*), the participants rated themselves on each of the characteristics. Subjects also rated their overall desirability. The measure of overall desirability was included because the researcher wanted to investigate the effect of self-perception on search behavior in a mate selection task. Hence, the measure of overall desirability was used to investigate this relationship.

The mate selection task (computer portion) utilized 25 traits. However, the questionnaire included only 20. This was because many characteristics could be measured by objective scales and did not require subjective measures. For example, data pertaining to age, income, occupation, height, and the number of children desired was not prone to subjective self-perception. Hence, this information was collected in the demographics portions of the questionnaire.

Mate evaluation

Subjects also provided their minimal criteria of prospective mates. Using the list of attributes from the self-evaluation, the participants rated their minimum criterion on 20 traits. The minimum criterion was defined as the minimum level of the trait that the individual would find acceptable in a prospective partner. A 10-point scale (1=worst, 10=best) was used to obtain minimum mate ratings. Minimal mate ratings were considered irrelevant for the scope of the current study and therefore are not reported.

Filler task

Because the self-ratings could influence the response to the minimum criterion ratings of potential mates, a filler task separated the two parts of the questionnaire. The task attempted to distract the subjects from the true purpose of gathering self-evaluation and prospective mate evaluation data. The filler task collected information about the subject's hobbies and interests.

Demographics

Demographic data was collected. Information about age, gender, marital status, income, occupation, and ethnic orientation was collected.

CHAPTER 10

RESULTS

Study 2

The objective of Study 2 was to investigate the influence of gender, temporal condition, and self-perception on the stopping behavior of individuals searching for mates. The findings are presented in three sections. First, the effect of gender, temporal condition, and the interaction of gender and temporal condition on the dependent measures is considered. Next, the relationship between search behavior and self-perception (i.e., self-appraised desirability) is considered. Finally, the results regarding mate preferences are presented.

Method of Analysis

Study 2 measured several aspects of stopping behavior. Specifically, the researcher investigated the number of attributes acquired, the use of the core attributes (CA) heuristic, the use of the threshold, the threshold value (i.e., where the threshold is established), and the rate of decay of the threshold. The subsequent sections describe how the dependent measures were derived.

Number of attributes acquired

The number of attributes acquired prior to making was choice was recorded. The number of attributes acquired indicates the effort spent searching for a partner.

Core attributes use

The extent to which the decision maker employs the core attributes heuristic was assessed. CA use was assessed via the following formula:

$$\text{CA use} = (1 - X/12.5) \times 100$$

An interquartile score (denoted by X) represents variability of the stopping points. Hence, if a subjects always stops at X=6, the interquartile = 0. An interquartile score of X = 0 indicated that the subject was a pure CA user (100% CA use). Similarly, an individuals behaving randomly would have an interquartile score of 12.5 (0% CA use) (See Saad, 1994 for a detailed explanation).

Threshold use

The extent to which decision makers rely on thresholds was considered. Threshold use was estimated via the following formula:

$$\text{Threshold use} = (1 - X / 0.1385) \times 100$$

A MAPE (Median Absolute Predicted Error) was denoted by X. MAPE measures the deviation of the (x,y) points for the estimated nonlinear threshold. A MAPE score of 0 indicated that the subject was a pure threshold user (100% threshold use). A MAPE score of 0.1385 indicated that the subject was not a threshold user (0% threshold use). The MAPE value of 0.1385 represents random search behavior (see Saad, 1994 for a detailed explanation).

Convergence of threshold

The converging threshold model was used to assess search behavior. The converging shape of the stopping threshold was modelled as:

$$Y = \alpha - e^{\beta X}$$

Y represents the cumulative confidence score (recorded in DSMAC) while X was the number of attributes acquired prior to making a choice. A nonlinear regression was performed on each subject's data (Marquardt method). The α and β values were estimated from the nonlinear regression (See Saad & Russo, 1996 for a detailed explanation).

Threshold value (α)

The threshold value was denoted by the α value as derived from the nonlinear regression analysis. The α-value indicated where the decision maker establishes the threshold.

Rate of decay (β)

The threshold's rate of decay of the threshold was captured by β. If the estimated β-value was not significantly greater than 0, this implied that the threshold was horizontal. Clearly, the larger the β-value, the greater the convergence of the threshold.

Number of attributes acquired

The number of attributes acquired indicates the degree of effort an individual is willing to expend in searching for a mate. The effect of gender and temporal condition on this dependent measure was investigated. Table 18 presents the mean number of attributes acquired broken down by gender and temporal condition.

Table 18

Mean number of attributes broken down by gender and temporal condition

	MALES		FEMALES		TOTAL	
	Mean	N	Mean	N	Mean	N
Short-term	8.89	21	9.46	22	9.18	43
Long-term	10.24	23	10.84	19	10.51	42
Total	9.59	44	10.10	41	9.84	85

Gender

An ANOVA was performed to assess the effect of gender on the number of attributes acquired. The results revealed no main effect for gender ($F_{1, 81} = 0.381$, $p > 0.10$). Hence, males and females acquired a similar amount of information about prospective mates before making a choice.

Temporal condition

The relationship between the number of attributes acquired and temporal condition and was investigated. The ANOVA did not reveal a main effect for temporal

condition ($F_{1, 81} = 2.036$, $p > 0.10$). Therefore, subjects searching for short- and long-term mates examined a similar amount of information.

Interaction between gender and temporal condition

The researcher also determined whether the relationship between gender and search was moderated by the temporal context of the relationship. The ANOVA indicated that the 2×2 interaction was not significant ($F_{1, 81} = 0.000$, $p > 0.10$). Hence, temporal condition did not moderate the relationship between the number of attributes acquired and gender.

The number of attributes acquired reflected the degree of search effort expended by a decision maker. The results revealed that gender, and temporal condition did not affect the number of attributes acquired. Hence, regardless of the gender of the decision maker and temporal context of the choice, individuals exerted the same amount of effort when searching for a mate.

Core attributes use

Unlike the measure of the number of attributes acquired, the measure of CA use does not reflect the degree of effort exerted by the decision maker. Rather, it is a measure of the extent to which decision makers use the CA heuristic. In the current study, the effect of gender and temporal condition on CA use was investigated. Table 19 displays the mean CA use scores broken down by gender and temporal condition.

Table 19

Mean CA use broken down by gender and temporal condition

	MALES		FEMALES		TOTAL	
	Mean	N	Mean	N	Mean	N
Short-term	68.38	21	73.45	22	70.98	43
Long-term	71.13	23	71.79	19	71.43	42
Total	69.82	44	72.68	41	71.20	85

Gender

The effect of gender on the extent to which decision makers use the CA heuristic was investigated. The ANOVA did not reveal a main effect for gender ($F_{1, 81} = 0.598$, $p > 0.10$). Hence, both males and females were equally likely to use the CA heuristic.

Temporal condition

The effect of temporal condition on CA use was investigated. An ANOVA was performed. There was no main effect for temporal condition ($F_{1, 81} = 0.021$, $p > 0.10$). Hence, subjects searching for long- and short-term mates did not differ in their CA use.

Interaction of gender and temporal condition

The gender × temporal condition for CA use was considered. The interaction of gender and temporal condition was deemed not significant ($F = 0.354$, $p > 0.10$). Hence, temporal condition does not moderate the relationship between gender and CA use.

The investigation of CA use yielded some interesting results. First, it is evident that gender and temporal condition do not influence CA use. That is, all subjects (irrespective of gender and temporal condition) were equally likely to rely on the core attributes heuristic. Second, the aggregate mean CA use (i.e., 71.2%) across all conditions, suggest that subjects rely heavily on the core attributes heuristic. Hence, when searching for mates, individuals have a core set of most important attributes that they evaluate prior to making a choice.

Threshold use

The measure of threshold use reflects the extent to which decision makers rely on a threshold to choose between alternatives. The influence of gender and temporal condition on this dependent measure was assessed. The mean threshold use scores are presented in Table 20.

Table 20

Threshold use broken down by gender and temporal condition

	MALES		FEMALES		TOTAL	
	Mean	N	Mean	N	Mean	N
Short-term	26.27	20	32.69	20	29.48	40
Long-term	32.28	22	28.21	18	30.45	40
Total	29.42	42	30.57	38	29.97	80[2]

[2] When performing this type of non-linear regression, several estimation problems can occur including non-convergence of the algorithm and/or singularity of the Hessian Matrix. Five subjects that yielded such problems were dropped from all results dealing with non-linear estimation of the thresholds.

Gender

The effect of gender on threshold use was considered. The ANOVA revealed no main effect for gender ($F_{1, 81} = 0.047$, $p > 0.10$). That is, men and women were equally likely to be threshold users.

Temporal condition

The relationship between temporal condition and threshold use was investigated. The ANOVA did not reveal a main effect for temporal condition ($F_{1, 81} = 0.020$, $p > 0.10$). That is, subjects seeking long- and short-term mates were equally likely to use the threshold.

Interaction of gender and temporal condition

The researcher investigated whether the relationship between gender and threshold use was moderated by the temporal context of the relationship. The results indicated that the gender × temporal condition interaction was not significant ($F_{1,81} = 0.947$, $p > 0.10$).

The investigation of threshold use also yielded interesting results. First, the results indicated that gender and temporal condition do not affect the degree to which the decision maker relies on the threshold when choosing a mate. Second, the relatively low threshold use score (Total mean = 29.97) suggests that decision makers do not generally establish a threshold criterion when searching for information about a prospective mate.

Threshold value (α)

While the results suggested that individuals searching for mates are not threshold users, the researcher still investigated the variables related to threshold use, namely the threshold value and the rate of decay. In the subsequent section, the effect of gender and temporal condition on where the decision maker establishes the threshold (i.e., α-value) is discussed. Table 21 displays the mean α-values broken down by gender and temporal condition.

Table 21

Threshold value (α) broken down by gender and temporal condition

	MALES		FEMALES		TOTAL	
	Mean	N	Mean	N	Mean	N
Short-term	81.49	20	80.97	20	81.23	40
Long-term	79.07	22	83.07	18	80.87	40
Total	80.22	42	81.96	38	81.05	80

Gender

The effect of gender on where the decision maker establishes the threshold (α - value) was investigated. The ANOVA did not reveal a main effect for gender ($F_{1, 76} = 0.310$, $p > 0.10$). Hence, males and females did not differ in where they established the threshold criterion.

Temporal condition

The influence of temporal condition on the α-value was assessed. The ANOVA did not demonstrate a main effect for temporal condition ($F = 0.003$, $p > 0.10$). Hence, subjects searching for long-term and short-term relationships did not differ in where they established the threshold.

Interaction of gender and temporal condition

The researcher investigated whether the relationship between gender and the α-value was moderated by the temporal context of the relationship. The ANOVA did not reveal a significant interaction ($F = 0.524$, $p > 0.10$). That is, the relationship between the α-value and gender was not moderated by the temporal context of the relationship.

The results indicated that the α-values[3] of subjects were unaffected by gender and temporal condition. That is, where the decision maker established the threshold was not contingent upon the gender of the decision maker or the temporal context of his/her choice. This result was not wholly unexpected as the results regarding threshold use suggested that individuals searching for mates for low threshold users. Hence, because individuals do not use thresholds, where they establish the threshold should not be an important consideration.

[3] The cumulative confidence scores of subjects were assessed. Gender ($F_{1,81} = 0.057$, $p > 0.10$), temporal condition ($F_{1,81} = 0.034$, $p > 0.10$) and the gender × temporal condition ($F_{1,81} = 2.35$, $p > 0.10$) was not significant.

Proportion of decay

Table 22 presents the proportion of subjects that exhibited decaying behavior in each of the four experimental conditions. The analysis revealed that 54.1% (46/85) subjects yielded decaying behavior.

Table 22

Proportion of subjects that decayed

	MALES	FEMALES	TOTAL
SHORT-TERM	52.4%	50.0%	51.2%
LONG-TERM	56.5%	57.9%	57.1%
TOTAL	54.5%	53.7%	54.1%

Rate of Decay

The relationship between the rate of decay of the threshold and gender and temporal condition was also examined. The results in the ensuing sections are based on the responses of these 46 subjects. Table 23 displays the mean decay rates broken down by gender and temporal condition.

Table 23

Mean decay rates broken down by gender and temporal condition

	MALES		FEMALES		TOTAL	
	Mean	N	Mean	N	Mean	N
Short-term	0.242	11	0.241	11	0.242	22
Long-term	0.222	13	0.198	11	0.211	24
Total	0.231	24	0.219	22	0.226	46

Gender

The influence of gender on the rate of the decay (β) of the threshold was examined. The ANOVA did not reveal a main effect for gender ($F_{1, 42} = 0.318$, $p > 0.10$). Hence, the decay rates of males and females did not differ from one another.

Temporal condition

The influence of temporal condition on the β-value (rate of decay) was also investigated. However, the ANOVA revealed no main effect for temporal condition ($F_{1, 42} = 0.286$, $p > 0.10$). Therefore, the decay rates of subjects seeking short- and long-term mates did not differ from one another.

Interaction of gender and temporal condition

A 2 × 2 ANOVA was performed to determine whether the relationship between gender and the rate of decay was moderated by the temporal context of the relationship. The interaction of gender and temporal condition was deemed not significant ($F_{1, 42} = 2.156$, $p > 0.10$). Hence, temporal condition did not moderate the relationship between gender and the rate of decay.

The findings indicated that gender and temporal condition did not affect the rates of decay. Hence, males decayed at the same rate as females and long-term subjects decayed at the same rate as short-term subjects. This was also expected as differences in the rates of decay were not anticipated given that decision makers did not rely on threshold use in choosing mates.

Summary of findings

Study 2 yielded several interesting findings (albeit null) about the effect of gender and temporal condition on search behavior. These findings can be summarized as follows:

- Gender and temporal condition did not affect the number of attributes acquired, CA use, threshold use, the α-value, or the rate of decay (β) of the threshold.
- While subjects relied on the CA heuristic extensively, the number of attributes did not differ across gender or temporal condition. This implies that individuals searching for mates were CA users and the size of their core sets of important attributes did not differ.

Self-perception

Study 2 investigated the relationship between self-perceived desirability as a mate and the effort exerted in searching for a mate. It was unclear whether higher self-perception would be associated with a greater or lesser degree of information search. Hence, no a priori predictions about search behavior were derived. The current research is an exploratory study into this relationship.

Method of Analysis

A correlation analysis was performed to assess the relationship between self-perceived desirability and search behavior. Subjects rated their own desirability as a mate using a 10-point scale in the post-experimental questionnaire (See Chapter 9). Search behavior was assessed via the number of attributes acquired, the threshold value (α), and the decay rate (β). Bivariate correlations were performed for these variables. Partial correlation coefficients were also calculated. It was expected that additional independent variables (e.g., gender, temporal condition) would influence the association between self-perception and search behavior. Hence, it was necessary to perform that correlation analysis while controlling for these independent variables.

Number of attributes

The number of attributes acquired was correlated with the measure of overall desirability (N = 78)[4]. The relationship was deemed marginally significant ($r = 0.213$, $p < 0.10$). Figure 14 plots the mean number of attributes acquired against overall

[4] The data of 78 subjects was used. Six subjects did not complete the questionnaire and one subject did not complete the DSMAC task (but completed the questionnaire).

desirability. It is apparent that as self-perceived desirability rose, the effort expended in searching for a partner also rose.

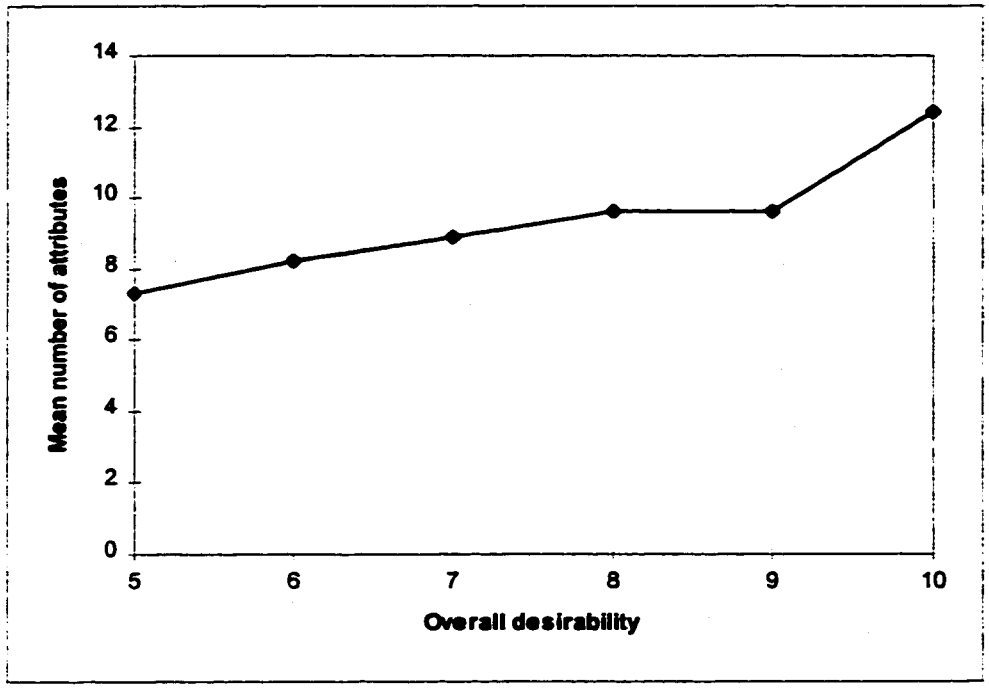

Figure 14: Plot of self-perceived desirability by the number of attributes acquired

Gender

The partial correlation coefficient was tabulated in order to control for the influence of gender on the relationship between self-perception and the number of attributes acquired [5]. The partial correlation revealed a significant relationship between the two variables ($r = 0.343$, $p < 0.05$). Hence, higher self-perceived overall desirability is associated with a greater degree of search effort.

[5]Self-perception is affected by gender ($F = 2.777$, $p = 0.10$) and temporal condition ($F = 10.78$, $p < 0.05$).

Temporal condition

The relationship between the number of attributes acquired and self-perception was assessed while controlling for temporal condition. A significant correlation between the variables was indicated (r = 0.366, $p < 0.05$). Hence, more desirable mates (according to one's self-perception) exert a greater degree of effort in searching for a partner.

Threshold value (α)

The α-value was correlated with self-perceived overall desirability (N=73)[6]. The Pearson's correlation coefficient was not deemed significant (r = 0.072, $p > 0.10$). Hence, differences in self-perception were not associated with differences in threshold values.

Gender

Partial correlation coefficients were calculated in order to control for the effect of gender. Nevertheless, the relationship between the α-value (threshold) and overall desirability was not significant ($r = 0.206$, $p > 0.10$). Hence, differences in self-perceived desirability were not associated with differences in the α value.

[6] Subjects were omitted because they did not complete the questionnaire regarding self-perception and/or because there were problems with the non-linear regression.

Temporal condition

A partial correlation analysis was performed in order to control for the influence of temporal condition. The correlation between the α-value and overall desirability was deemed marginally significant ($r = 0.262$, $p < 0.10$). Hence, higher threshold values are somewhat associated with higher self-perception.

Rate of decay (β)

The relationship between β-value (decay rate) and self-perceived overall desirability (N=46) was assessed. The correlation was not significant ($r = -0.069$, $p > 0.10$).

Gender

A partial correlation was performed in order to control for the effect of gender. However, the relationship between overall desirability and the decay rate (β-value) was deemed not significant ($r = -0.045$, $p > 0.10$).

Temporal condition

A partial correlation between the β-value and overall desirability was calculated while controlling for the influence of temporal condition. However, the relationship between the two variables was deemed not significant ($r = -0.016$, $p > 0.10$).

The researcher was uncertain about the relationship between self-perception and search effort. There is some evidence to suggest that search effort rises with increasing self-perceived desirability as a mate. Individuals that have higher mate values acquired

more information. However, the other dependent measures suggested that self-perception does not influence search behavior.

Mate preferences

The current research investigated mate preferences. It was expected that gender and temporal condition would govern the importance of different attributes. However, before an analysis of the results can be presented, a discussion of the data used and the dependent measure is presented.

Data set

To investigate mate preferences, the researcher combined the data of Studies 1 and 2. This allowed for a larger sample of 120[7] subjects. Furthermore, there was no evidence to suggest that mate preferences would be different across studies. The analysis of the data from Study 1 alone, Study 2 alone, and the combined data from both studies yielded similar results. Hence, in the following sections, the results of the only combined data are presented.

Dependent measure (importance weights)

The importance weights of attributes were elicited via the Q-Sort procedure (See Chapter 9). Hence, the importance weights obtained through the Q-Sort procedure formed the basis of the subsequent analysis. However, importance weights were elicited at two stages in the experimental task: once prior to and once after the choice task.

[7] Importance weights were obtained for 127 subjects (42 from Study 1 and 85 from Study 2). The data of 7 subjects was dropped because they incorrectly entered a weight that did not reflect their preferences.

Because both Q-sort weights yielded similar results, only the results of the first set of Q-sort weights is reported. A 2-way ANOVA was performed for each of the attributes to to assess the effect of gender and temporal condition.

Ability to invest resources

The ability to invest resources was captured by income, occupation, ambitiousness, and intelligence. The mean importance weights for the specified attributes are presented in Table 24. The ANOVA revealed a main effect for gender for income ($F_{1, 119} = 26.559$, $p < 0.001$), occupation ($F_{1, 119} = 10.129$, $p < 0.01$) and ambitiousness ($F_{1, 119} = 6.796$, $p < 0.005$). The ANOVA did not reveal a main effect for intelligence ($F_{1, 119} = 2.368$, $p > 0.10$). Therefore, generally, the results suggest that females value a male's ability to provide resources. The results also revealed that temporal condition and the interaction of gender and temporal condition did not influence the importance of ability to invest (for any of the specified attributes).

Table 24

Mean importance weights of attributes (ability to invest)

	Males		*Females*	
	Short-term	Long-term	Short-term	Long-term
Ambitiousness	40.79	44.27	53.71	57.06
Intelligence	73.69	78.50	83.86	80.41
Income	17.10	22.82	36.93	43.24
Occupation	23.03	24.03	32.93	40.58

The results support the idea the that women are more concerned with their mates' ability to provide resources. The findings regarding income, occupation, and ambitiousness supported this contention. However, the results regarding intelligence did not support the hypothesis. Nevertheless, this results was not surprising. While intelligence is related to the potential to acquire resources, many researchers have shown that it is valued equally by both males and females (Buss, 1985; Buss & Barnes, 1986). From an evolutionary perspective this is likely, as an intelligent individual would have a better chance of survival than an unintelligent individual.

Willingness to invest

The willingness to invest was captured by kindness, seeks commitment, shows emotional support, shows affection, moral character and the number of children desired. Table 25 displays the mean importance weights for each of these attributes. The ANOVA revealed a main effect for gender for kindness ($F_{1, 119}$ =9.059, $p < 0.01$), moral character ($F_{1, 119} = 9.408$, $p < 0.01$), seeks commitment ($F_{1, 119} = 8.184$, $p < 0.01$). The ANOVA did not reveal main effects for gender for the number of kids desired ($F_{1, 119} = 0.385$, $p > 0.10$) and shows affection ($F_{1, 119} = 0.002$ $p > 0.10$) and shows emotional support ($F_{1, 119} = 1.551$, $p > 0.10$). Hence, there is some evidence to show that females are concerned with a male's willingness to provide resources.

It was expected that importance of willingness to invest would be moderated by the temporal context of the relationship. The results also revealed that the gender × temporal condition interaction was significant for moral character ($F_{1, 119} = 7.898$, $p <$

0.01), seeks commitment ($F_{1, 119} = 15.284$, $p < 0.001$) and shows emotional support ($F_{1, 119} = 6.684$, $p < 0.05$). The significant interactions are analyzed further.

Table 25

Mean importance weights of attributes (willingness to invest)

	Males		*Females*	
	Short-term	Long-term	Short-term	Long-term
Kindness	68.79	74.41	83.46	82.72
Moral character	45.14	71.82	69.76	70.93
# of kids desired	19.48	28.44	16.61	25.45
Seeks commitment	25.21	68.62	58.36	63.48
Shows emotional support	48.97	73.24	65.61	67.41
Shows affection	59.28	63.79	66.93	56.55

Moral character

Tukey's comparisons revealed that short-term males were the least concerned with the moral character of their mates. The results regarding the importance of moral character indicated that short-term males valued moral character less than long-term females ($p < 0.005$), long-term males ($p < 0.005$) and short-term females ($p < 0.005$). This is not surprising, as moral character should not be an important consideration to a male that wishes to engage in a casual sexual relationship. However, the other

comparisons did not yield significant results. Long-term females did not differ from short-term females ($p > 0.10$) or long-term males ($p > 0.10$). The lack of difference between long- and short-term females suggests that independent of temporal condition, women are concerned with the moral character of their mates. Long-term males could be concerned with moral character because this trait not only signifies the willingness to invest but also the faithfulness of potential mates. It is likely that high moral character is associated with a greater degree of fidelity.

Seeks commitment

Tukey's multiple comparisons found that short-term males were the least concerned with seeks commitment. They placed lesser importance on this attribute than long-term females ($p < 0.001$), long-term males ($p < 0.001$) and short-term females ($p < 0.001$). Clearly, a short-term male would only be concerned with an uncommitted sexual relationship and would avoid females that are looking for a commitment. The results also found no differences between long-term males and long-term females ($p > 0.10$), and short-term females and long-term females ($p > 0.10$). These findings suggest that males seeking long-term mates also value traits that signal the willingness to commit to the relationship. This is perhaps because seeks commitment also signals the willingness to remain faithful. Females however are less affected by the temporal context of the relationship and find seeking a commitment equally important in all conditions.

Shows emotional support

The findings regarding shows emotional support yielded similar results. Short-term males were the least concerned with finding emotionally supportive males. That is, they valued this attribute less than long-term females ($p < 0.05$), long-term males ($p < 0.005$), and short-term females ($p < 0.05$). Once again, the results show that short-term males do not value traits that indicate the willingness to invest because they are focusing on the short-term. The results also demonstrated no differences between long-term females and long-term males ($p > 0.10$), and long-term females and short-term females ($p > 0.10$). Hence, long-term males are also concerned with the willingness to invest and females are unaffected by the temporal context of the relationship.

The results provide some interesting conclusions about the importance of the willingness to invest for males and females. There is some evidence to suggest that females are more concerned with the willingness to invest. Women placed greater importance on kindness, moral character and seeks commitment. This supports earlier research that demonstrates the female preference for the willingness to invest (Buss & Barnes, 1986; Ellis, 1992). Nevertheless, women did not placed greater importance on the number of kids desired, shows affection and shows emotional support. Perhaps, subjects did not associate these attributes with the willingness to invest.

The importance of the willingness to invest was moderated by the temporal context of the relationship. Specifically, males seeking short-term flings did not place great importance on moral character, commitment or emotional support. The other groups (long-term males, short-term females, and long-term females) valued these

attributes equally. This supports our prediction that females will always value the willingness to invest, but males will value the willingness to invest in long-term relationships when they are also providing a great deal of investment. Furthermore, it is likely that these attributes (moral character, seeks commitment) not only signal a willingness to invest but also the sexual fidelity of partners. It is probable that individuals that desire a commitment and are of strong moral character are less likely to be unfaithful to their mates.

Ability to provide protection

Females also value mates that can offer protection to them and their offspring. The ability to provide protection was captured by assertiveness, height, physical strength, and self-confidence. Table 26 displays the mean importance weights for these attributes. The ANOVA did not reveal significant main effects for assertiveness ($F_{1, 119} = 2.649$, $p > 0.10$), height ($F_{1, 119} = 0.834$, $p > 0.10$), physical strength ($F_{1, 119} = 0.293$, $p > 0.10$), and self-confidence ($F_{1, 119} = 0.034$, $p > 0.10$). The gender × temporal condition interaction for height was marginally significant ($F_{1, 119} = 3.639$, $p > 0.10$). However, Tukey's comparisons did not reveal any significant results. The results suggest that gender and temporal condition do not affect the importance of the traits that signal the ability to provide protection. Rather, an observation of the mean weights (see Table 26) suggest that these attributes were generally not considered important (based on a 1-100 scale).

Table 26

Mean importance weights of attributes (ability to provide protection)

	Males		*Females*	
	Short-term	Long-term	Short-term	Long-term
Assertiveness	33.34	34.12	44.18	38.83
Height	14.31	25.50	24.53	21.90
Physical strength	11.17	15.94	16.57	13.52
Self-confidence	65.52	57.79	64.25	60.59

Physical attractiveness

Different selection pressures govern male mate preferences. Males are concerned with the physical attractiveness of their prospective partners. Age, health, attractiveness of face, and physique (attractiveness of body) and fashion sense captured physical appearance. The mean importance weights of these attributes are displayed in Table 27. The ANOVA revealed main effects for gender for attractiveness of face ($F_{1, 119}$=14.601, $p < 0.001$), fashion sense ($F_{1, 119} = 3.930$, $p = 0.05$), and physique ($F_{1, 119} = 36.714$, $p < 0.001$). The effect of gender on age was marginally significant ($F_{1, 119} = 3.768$. $p < 0.10$). No differences were reported for health ($F_{1, 119} = 0.012$, $p > 0.10$). Therefore, it is apparent that males are concerned with a female's physical attractiveness.

Table 27

Mean importance weights of attributes (physical attractiveness)

	Males		*Females*	
	Short-term	Long-term	Short-term	Long-term
Age	25.38	46.26	31.93	23.14
Attractiveness of face	66.76	54.79	51.07	34.28
Fashion sense	40.31	18.21	24.14	18.62
Health	45.34	53.12	48.68	48.66
Physique	60.76	50.76	33.53	23.41

The gender × temporal condition interaction was assessed for these attributes. The interaction was significant for age ($F_{1, 119} = 12.074$, $p < 0.01$) and fashion sense ($F_{1, 119} = 4.355$, $p < 0.05$). The significant interactions were further analyzed using Tukey's comparisons.

Age

The age of females is important because it is linked to their fertility. Tukey's comparison revealed that long-term males valued age more than short-term males ($p < 0.005$). This is perhaps because short-term males are concerned with immediate gratification and long-term males are concerned about propagating their genes. Hence, the age of the female (i.e., fertility) was especially important to long-term males. The findings also demonstrated that long-term males value age more than long-term females

($p < 0.005$). This is because long-term females look to find mates that share parental investment and age does not reflect the ability of a male to share parenting costs. However, long-term males are concerned with fertility and value age. Finally, the results revealed no difference between short-term males and short-term females ($p > 0.10$). This supports the finding by Buss & Schmitt (1993) which suggested that females in short-term relationships seek physical attractiveness in mates as they are not as focused on investment concerns.

Fashion sense

The results regarding fashion sense were somewhat unexpected. The findings indicated that short-term males were the most concerned with fashion sense. They placed greater value on this attribute than short-term females ($p < 0.05$), long-term males ($p < 0.005$) and long-term females ($p < 0.005$). It is not surprising that short-term males value fashion sense more than women as it reflects upon the physical appearance of potential mates. However, it is necessary to consider why short-term males value fashion sense more than long-term males. It is possible that long-term males do not place importance on this trait because it is solely an appearance cue and not related to the fertility of females. That is, a female can be old and unattractive, but well-dressed. However, short-term males interested in casual relationships can focus on this attribute.

The results support research that shows males to be more concerned with the physical attractiveness of their partners (Buss & Barnes, 1986; Kenrick et al, 1990; Symons, 1979). Males placed importance of attractiveness of face, beauty of body, fashion sense, and age. In fact, the only attribute for which no differences were reported

was healthiness. However, there is research to suggest both men and women value good health in potential mates (Buss et al, 1990). Furthermore, it is possible that individuals did not strongly associate good health with good looks.

Fidelity & Promiscuity

Males are also concerned with the sexual fidelity and promiscuity of their mates. That is, males searching for short-term mates look for promiscuous females as they demand little investment and are willing to engage in a sexual relationship. However, males seeking long-term relationships desire fidelity in prospective females because they wish to be assured of the paternity of any offspring. The faithfulness or promiscuity of a prospective partner was described through sexual experience, and sexual fidelity. Table 28 displays the mean importance weights for these attributes. The ANOVA revealed a significant main effect for sexual experience ($F_{1, 119} = 5.483$, $p < 0.05$). Sexual fidelity was not affected by gender ($F_{1, 119} = 1.861$, $p > 0.10$).

The interaction of gender and temporal condition for sexual fidelity was significant ($F_{1, 119} = 8.935$, $p < 0.01$). The significant interaction is further analyzed.

Table 28

Mean importance weights (fidelity)

	Males		*Females*	
	Short-term	Long-term	Short-term	Long-term
Sexual experience	34.76	33.35	20.39	25.61
Sexual fidelity	58.17	81.00	73.86	77.31

Sexual fidelity

The results demonstrated that short-term males valued fidelity less than long-term males ($p < 0.005$), and long-term females ($p < 0.05$). Furthermore, the difference between the importance of sexual fidelity to short-term males and short-term females was marginally significant ($p < 0.10$). It is evident that short-term males do not value faithfulness in a prospective mate. This is because fidelity signals a lack of promiscuity and a desire for commitment that will not be attractive to a short-term male. The other three groups placed greater importance on sexual fidelity. Females value fidelity because it to some extent signals the willingness to invest. Clearly, a faithful male is likely to devote his resources to only one female. Long-term males value fidelity because it provides certainty in paternity.

Individual preferences

Several attributes were included to account for preferences that did not have evolutionary significance, but were considered important in mate selection. These included exciting personality, sense of humor, similarity of interests, and social skills.

The mean importance weights are presented in Table 29. Exciting personality ($F_{1, 119} = 0.086$, $p > 0.10$), sense of humor ($F_{1, 119} = 1.865$, $p > 0.10$), similarity of interests $F_{1, 119} = 0.741$, $p > 0.10$), and social skills ($F_{1, 119} = 1.528$, $p > 0.10$) were not influenced by gender. The interaction of gender and temporal condition was marginally significant for exciting personality ($F_{1, 119} = 3.671$, $p < 0.10$) and was analyzed further.

Tukey's comparison revealed that short-term males placed greater importance on an exciting personality than long-term males ($p < 0.001$) and long-term females ($p < 0.10$). Short-term females also placed greater importance on an exciting personality than long-term males ($p < 0.05$).

Table 29

Mean importance weights of attributes (individual preferences)

	Males		*Females*	
	Short-term	Long-term	Short-term	Long-term
Exciting personality	77.34	50.00	69.75	60.34
Sense of humor	73.07	53.24	75.39	64.21
Similarity of interests	66.38	48.65	53.50	44.93
Social skills	46.03	36.44	34.86	36.97

The results regarding mate preferences generally lent support to the hypotheses. It is evident that females sought mates that exhibited the ability and willingness to invest resources. However, females did not appear to value the ability to protect. The results pertaining to male preferences also yielded favorable results. Males were concerned with

the fertility of their prospective partners. Men were also concerned with the promiscuity and fidelity of their partners. Hence, evolutionary theory was able to predict gender differences in mate preferences.

Summary of findings

The findings of Study 2 provided some interested results. The implications of these findings are discussed in the following chapter. Nevertheless, the key points are summarized in the subsequent section.

- Gender and temporal condition did not influence the search process employed by decision makers in searching for information about prospective mates.
- Self-perceived desirability as a mate was associated with the number of attributes acquired. Higher self-perceptions were associated with a greater degree of search effort.
- Gender and temporal condition affected mate preferences, namely those attributes deemed important.

CHAPTER 11

DISCUSSION

Study 2

To understand the implications of the findings of Study 2, it is necessary to first consider the objectives of this study. Study 2 had two primary objectives. First, the researcher wanted to determine whether evolutionary theory could explain search behavior in the context of mate selection; specifically, whether gender, temporal condition, and self-perception would influence the search process. This was especially important because based on the results of Study 1, the researcher was unable to draw conclusions about the selectivity in mate selection across gender and temporal conditions. Second, the researcher wished to understand the processes employed by decision makers when searching for information about prospective mates. It was believed that search behavior could be better understood if the researcher examined not only the outcome of search but also the processes that produced this outcome. Therefore, the researcher wanted to determine *how* people search for information in the context of mate selection.

In the subsequent sections, the results are discussed with these objectives in mind. First, the results are discussed from an evolutionary perspective. That is, do the findings of Study 2 lend support to evolutionary theory? Second, the results are used to present and overall picture of the processes employed by decision makers when they search for mates. That is, how do individuals search for information when looking for mates?

Evolutionary psychology

The current study employed two evolutionary theories to understand search behavior: the theory of sexual selection and the theory of assortative mating. The results pertaining to gender and temporal condition are most relevant to the discussion of the theory of sexual selection while the results pertaining to self-perception are relevant to the theory of assortative mating.

Theory of sexual selection and parental investment

The theory of sexual selection posits that the sex providing greater parental investment in offspring will be more selective in mate selection (Trivers, 1972). Hence, females should be more selective than males as they provide greater investment. Furthermore, the relationship between gender and selectivity should be moderated by the temporal context of the relationship (Buss, 1985; Buss & Barnes, 1986; Buss & Schmitt, 1993; Kenrick et al, 1990, 1993). However, the findings of Study 2 did not support this viewpoint. It was found that the number of attributes acquired, CA use, threshold use, the threshold value, and the rate of decay were not influenced by gender, temporal condition or the gender × temporal condition interaction. Hence, males and females exhibited similar patterns of search behavior and exerted a similar degree of effort when searching for short- and long-term partners. Hence, it would appear that the theory of sexual selection could not explain search behavior in the context of mate selection.

In the ensuing sections the results pertaining to the number of attributes acquired, the threshold value, and the rate of decay are discussed. These variables are discussed because they can easily be fit within the cost-benefit framework and as a result shed light

upon the selectivity of individuals when choosing a mate selection. CA use and threshold use does not reflect upon selectivity.

Number of attributes acquired

Study 2 found that gender and temporal condition did not influence the amount of information assessed by individuals. This finding was not wholly unexpected. These results concurred with the findings of Study 1. In Study 1, when the researcher considered only the instances in which males and females chose a mate (i.e., Choose trials), no gender differences were reported for the number of attributes acquired. In Study 2, subjects were not allowed a rejection option and therefore individuals always chose between pairs of mates. Hence, it is probable that the results of Study 2 would be similar to the results derived from the Choose trials of Study 1. And indeed, the results support this notion. Hence, in both Studies 1 and 2, gender did not affect search behavior when choosing mates.

The results regarding temporal condition and the gender × temporal condition interaction yielded less favorable results. That is, the results of Study 1 and 2 differed. In Study 1, the researcher found that individuals seeking long-term mates acquired more information than subjects seeking short-term mates. Furthermore, the relationship between the amount of information evaluated and gender was moderated by the temporal context of the relationship. However, the findings of Study 2 did not produce such results. Nevertheless, it is suspected that these conflicting findings resulted because Study 1 was based on the analysis of the combined Choose and Reject trials while Study 2 was only based on Choose trials.

Threshold value and rate of decay

The threshold value and the rate of decay were also not affected by gender or temporal condition. This implied that the degree of effort and accuracy required by males and females (across temporal conditions) did not differ. Hence, the results did not support evolutionary theory because there was no evidence to show that males were less selective than females in mate selection.

While these findings did not support evolutionary theory, they were not surprising. No differences were reported along these dependent measures because individuals searching for mates were low threshold users (Mean = 29.97%).[8] That is, because subjects searching for mates did not consider the degree of differentiation they achieved between alternatives when searching for information, where they established the threshold and the rate of decay of the threshold became less relevant. Given that these measures were not particularly important to decision makers, it is unlikely that differences would be found along these variables.

Mate preferences

Thus far, the researcher has only considered variables that reflect the degree of search effort undertaken by individuals when searching for partners. However, the theory of sexual selection suggests that gender differences will be manifested not only in selectivity but also in mate preferences (Buss & Barnes, 1986; Buss et al, 1990). In Study 2, mate preferences were assessed to test this aspect of evolutionary theory and to

[8] Reported mean for threshold use in Saad (1994) was 40.9 and 41.4 (higher than in this research).

determine what information individuals deem important when searching for information about mates.

The results regarding mate preference yielded favorable results. It is evident that the mate preferences in the context of search were guided by evolutionary theory. Furthermore, the results supported earlier research (Buss & Barnes, 1986; Buss et al, 1990; Ellis, 1992; Feingold, 1992; Kenrick et al, 1990, 1993). Females valued characteristics that signalled the males' ability and willingness to provide resources. Males valued characteristics that signalled fertility and fidelity (promiscuity) in potential mates. A detailed discussion of these findings was presented in Chapter 10.

In this discussion, the researcher considered whether the theory of sexual selection could explain search behavior in the context of mate selection. It is apparent that Study 2 produced mixed results. When the extent of search is considered, it is clear that the theory of sexual selection cannot account for the null findings when comparing across genders. However, with regards to mate preferences, it is evident that the theory predicts well which attributes individuals will deem important when searching for mates. Therefore, there is support for both viewpoints.

Theory of assortative mating

The theory of assortative mating posits that individuals mate based on similarities in mate values. That is, individuals that carry high mate values (i.e., highly desirable) will mate with desirable individuals while people that carry low mate values will mate with undesirable individuals. Nevertheless, the impact of *self-perceived desirability* as a

mate on search effort was unclear. That is, higher self-perception could be associated with a greater or lesser degree of search effort. Study 2 provided an exploratory analysis into this relationship.

Number of attributes acquired

There was evidence to demonstrate that higher self-perceived desirability is associated with a higher degree of search effort. That is, individuals that viewed themselves as desirable mates sought more information about potential partners than those individuals that did not view themselves as highly desirable. This implies that individuals that carry high mate values expend a greater degree of effort in order to secure mates that are equally desirable. However, less desirable individuals recognize that they can only mate with other less desirable individuals and therefore expend lesser effort to find these partners. Therefore, the results regarding the number of attributes acquired suggest that higher self-perceived desirability is associated with higher search effort.

Threshold value and rate of decay

Self-perception did not influence the threshold value and the rate of decay of the threshold. Hence, the results suggest that the degree of effort exerted by individuals in searching for partners was not affected by self-perceived desirability. While these results do not concur with the results pertaining to the number of attributes acquired, they are not unexpected. It is believed that no relationship between self-perception, threshold value, and rate of decay was found because subjects were inherently low threshold users.

Therefore, because individuals do not rely on thresholds to make choices, it is unlikely that they would consider where they establish the threshold criterion and the rate of decay of the threshold.

The results suggest that self-perception is associated with search effort. Hence, the theory of assortative mating, to some extent, can explain search behavior in the context of mate selection.

Search processes

Study 2 also investigated the search processes employed by decision makers in searching for a mate. Several dependent variables were assessed in order to understand search behavior. These measures evaluated different aspects of search behavior. Nevertheless, to obtain an overall picture of search behavior in mate selection, it is necessary to integrate the results derived from these measures. Therefore, in the subsequent section, an integrative view of the findings is presented. It is believed that an integrative view will allow the researcher to assess how people search for information in the context of mate selection.

It is evident from Study 2 that individuals searching for information about prospective mates rely heavily on the CA heuristic. That is, they have a core of important attributes that they evaluate when choosing a mate. While the size of the core set (indicated by number of attributes) was unaffected by gender and temporal condition, the composition of the core set was influenced by the latter two variables. That is, males and females considered different attributes important when searching for short- and long-term

relationships (indicated by mate preferences). Hence, the core set of important attributes differed across gender and temporal condition.

Summary

Clearly, while no differences were found in the search behavior of males and females in the context of mate selection, this study provided several interesting results. First, it can be concluded that men and women are, to some extent, similar when searching for mates. That is, both males and females utilize similar strategies to search for information about prospective mates. Nevertheless, differences also exist. Men and women value different traits in prospective mates.

How one perceives oneself also influences search behavior. People that consider themselves desirable mates will expend effort to find equally desirable mates. However, undesirable individuals will realize that they can only mate with other undesirable individuals and will therefore not expend a great deal of effort to find these undesirable mates.

Thus far, the researcher has conducted two studies to understand search behavior in the context of mate selection. Many interesting results have been derived. These findings have been discussed in this chapter and in Chapter 7. Nevertheless, it is also important to consider the implications of these findings for marketing academics and practitioners. These are presented in the subsequent chapter.

CHAPTER 12

GENERAL DISCUSSION

Does man still bear the indelible stamp of his lowly origin? The intent of this research was to draw from evolutionary research to understand search behavior in the context of mate selection and to determine whether the 'lowly origin' of humans affects search behavior. Specifically, the issues involved the following questions: How much information does an individual require about a prospective partner before he/she decides to initiate a mating relationship? Which variables influence the degree of effort that an individual is willing to exert in searching for a partner? Which information will be important to an individual searching for a partner?

This research provided mixed results. As predicted by evolutionary theory, males and females valued different characteristics in prospective mates. Furthermore, females were more likely to reject a pair of mates than males were. There was also evidence to demonstrate that self-perception affected search behavior with higher self-perceived desirability associated with a greater degree of search. Nevertheless, evolutionary theory could not explain other aspects of search behavior. Gender or temporal condition did not affect the amount of information evaluated (in Study 2). Furthermore, it appeared that males and females across temporal conditions employed similar strategies in searching for information about potential mates.

Thus far, the researcher has concluded that evolutionary theory can, to some extent, explain search behavior in mate selection. Nevertheless, evolutionary theory could not explain all aspects of search behavior in the context of mate selection. These results were discussed extensively in previous chapters. However, it is also important to

consider the implications of these findings for researchers and marketing practitioners. These implications are discussed in the subsequent sections.

Research implications

The findings of this research are particularly relevant to consumer researchers for several reasons. First, they provide insight into the consumption behavior of the clients of dating services. This is important as researchers have investigated the dating service industry but not using the information search paradigm. Second, this study marks and initial attempt to integrate the fields of evolutionary psychology and consumer research. The findings of this research suggest that researchers can use evolutionary concepts to understand consumer behavior.

Dating services

In recent years the dating service industry has garnered the interest of marketing academics (Bernard & Adelman, 1990; Bernard, Adelman, & Schroeder, 1991; Hirschman, 1987). Research has examined various aspects of the dating service industry. One stream of research has used the exchange paradigm to explore courtship (Bernard & Adelman 1990; Hirschman 1987). That is, the mating process is described as a process of exchange of resources (e.g., monetary resources for physical attractiveness resources). Another area of research has analyzed personal ads, the primary advertising medium in the mating market (Bernard, Adelman, & Schroeder; 1991; Hirschman, 1987). Finally, the characteristics of the consumers of dating services have been explored (Bernard,

Adelman & Schroeder, 1991). Nevertheless, other aspects of the consumption behavior of dating service consumers have been ignored.

One such area that had been neglected by researchers was the study of the process undertaken by individuals seeking a mate. While much consumer research has focused on information search, no attempt had been made to study search behavior in the context of mate selection. This was surprising as *search* is a key feature of dating services (Ahuvia & Adelman, 1992). That is, clients of a dating service are engaged in the *search* and *evaluation* of mates. Therefore, how they search for information about prospective mates becomes important. This research addressed this neglected area.

Integration of two disciplines

This research also integrated two disparate fields: evolutionary psychology and consumer research. The researcher was successfully able to apply the theories of evolutionary psychology to understand consumer search behavior in the context of mate selection. The implications are great as this research suggests that other researchers can use evolutionary psychology to understand consumption behavior. Evolutionary psychology could explain a multitude of consumption behaviors.

This research and earlier research (Buss & Barnes, 1986; Buss et al, 1990; Kenrick et al, 1990) found that males value physical attractiveness more than females do. Evolutionary psychology could explain why males are more influenced by sexual images in advertising than females are.

Evolutionary psychology has also studied family relationships, namely birth-order effects. Sulloway (1995) suggested that siblings generally compete over parental

investment. Elder children gain parental favor by acknowledging parental authority while younger children gain attention by rebelling against authority. Hence, elder offspring maintain status quo and younger offspring are rebellious and innovative. This has several implications for consumption behavior. First, if elder offspring maintain are similar to their parents, it is likely that their consumption behavior will mimic that of their parents. That is, they will value similar products, similar product attributes, and adopt a similar process of searching for information. Second, if younger children tend to be more open to new ideas, they might also be more accepting new product innovations.

Researchers have also investigated gender differences in spatial abilities. Eals & Silverman (1994) found that females, as compared to males, were more easily able to recall the location of objects. They concluded that this difference arose from gender differences in the division of labor. That is, historically males hunted for prey while females foraged. Hence, the task of women required that they search through dense vegetation for edible plants and recall where objects (i.e., edible vegetation) were located. It is interesting to speculate whether this finding has implications for store design and layout. It is possible that females are better able to recall the layout of a store and to find items in a store. Clearly, if this is the case, retailers should attempt to design the store to accommodate males (e.g., with more maps and directions).

It is evident that evolutionary psychology can be used to explain a wide array of consumer behavior. The current research is only an initial attempt to unite the two theories.

Marketing implications

Why are the results of this research important to marketing practitioners? From a marketing perspective, these results hold particular relevance for the dating services industry. The dating services industry is thriving, yet little is known about this lucrative market (DeWitt, 1992; Goerne, 1992; Sprout, 1997). The results of this study can shed light on the consumption behavior of dating service clients and consequently help dating service providers to design a 'better' service. In the subsequent sections the relevant findings of this research are discussed from a marketing viewpoint.

Mate preferences

Gender differences in mate preferences have several implications for the dating service provider. Because males and females value different traits in potential mates, they should be provided with a different set of information. For example, males are concerned with physical attractiveness cues and are not concerned with resource cues. Hence, dating services should design their services to cater to this male preference by providing information (or a picture) about the physical appearance of candidates and exclude information about income and occupation. On the other hand, females are concerned with resources and should be provided with information about the income and occupation of candidates.

Mate preferences are also influenced by the temporal context of the relationship. Hence, the dating service provider should ascertain the level of commitment the client seeks in a prospective mate. This will allow the service provider to provide information about candidates that is most relevant as stipulated by the temporal context of the

relationship. For example, females looking for casual relationship value physical attractiveness and should be provided with this information. Women seeking long-term commitment are not particularly concerned with good looks and therefore this information should not be provided.

However, it is important to mention that other researchers have drawn similar conclusions (Bernard, Adelman & Schroeder, 1991; Greenlees & McGrew, 1994; Hirschman, 1987). Bernard, Adelman, & Schroeder (1991) and Hirshman (1987) investigated personal ads (an example of a dating service) and found that females marketed themselves by offering physical attractiveness resources and males marketed themselves by offering monetary resources. This suggests that individuals are aware of the characteristics they must advertise to attract a mate. Nevertheless, it is important to assert that the dating service provider should inform candidates of the most effective techniques in attracting mates.

Core attributes heuristic

From the results of this research, it is evident that individuals do not use all the available information in choosing a mate. Rather, they use a subset of important attributes to make a choice. To improve the efficiency of the service, the dating service provider should identify the most important characteristics of each of their clients. This will allow the service provider to only provide information about the characteristics that are most relevant to the decision maker.

Rejection behavior

The dating service provider should also be concerned with the rejection behavior of individuals. It is evident that females are more selective than males are as they are more likely to reject mates and require less convincing to do so. This has several implications for the service provider. First, because female clients will reject more candidates than will male clients, they will perhaps require a larger database of eligible candidates to find a satisfactory partner. Second, because female clients have higher standards than males (as they are more likely to reject mates and require less convincing to do so), the quality of the candidates should be an important consideration. That is, perhaps the quality of mates available to females must be higher than the quality available to males.

Self-perception of desirability as a mate

The dating service provider should also be concerned with the self-perception of their clients. This variable affects the effort the clients will expend in searching for a mate. Clearly, it will be beneficial for the service provider to identify the clients that will be choosy versus the clients that will not be choosy. This will allow the dating service to offer different service packages to different types of consumers. Furthermore, there is evidence to show that the consumers of dating services are not lonely and desperate but exceptionally selective. This would imply that individuals using dating services tend to have higher self-perceptions and therefore are likely to be selective in mate selection. The dating service will need to provide these customers with a high quality of mates, so that they will find an acceptable partner.

Limitations and directions for future research

Thus far, the researcher has considered the implications of this research for academic and marketing practitioners. While this research produced several promising results (e.g., number of rejections, mate preferences), the findings also yielded some unfavorable results. Specifically, there was no evidence to show that males and females differed in the degree of effort exerted in searching for a mate. Nevertheless, this research should only be viewed as a stepping stone for future research. In the subsequent sections, the limitations of this research and areas of further research are discussed.

Consequences of the decision

The current study was able to successfully simulate a computerized dating service. Like clients of dating services, the subjects of this research sought and evaluated information about prospective mates (using the computer interface). However, unlike the clients of dating services, the subjects were not exposed to the consequences of their choice. Specifically, when a client of a dating service commits to a choice, he/she actually has to date his/her selected partner. However, the subjects participating in this research were presented with hypothetical mates that they did not have to date. It is probable that this difference affected search behavior.

This becomes more likely if the main premise of this research is considered. This research assumed that gender differences in search would arise because males and females were required to provide different levels of parental investment. Specifically, females would be more selective because they bare greater parenting costs and have more to lose by mating with an inferior male. However, the subjects participating in this

research, were not expected (in reality) to provide any parental investment. For example, a female subject selecting Mate A in the selection task was not risking becoming impregnated with the child of an inferior male. Perhaps, these subjects would not behave in this manner if parental investment concerns were evident.

Future research should address this concern. It would be interesting to investigate the behavior of individuals actually faced with the repercussions of their decisions. Perhaps, this could be achieved by conducting this experiment with dating service clients and actual mates (rather than hypothetical mates A and B).

Attribute scales

In the current study, scales are employed to define the attributes used to describe mates. For example, facial beauty is captured by a 10-point (1=worst, 10=best) scale while kindness was captured by a 7-point (very unkind to very kind) scale. Although these scales describe the specified attributes, it is unclear whether they communicate the degree to which the mate possesses the characteristic. For example, if facial beauty is considered. It is likely that a male will act differently if he views a photograph of a beautiful female than if he discovers that she is a 9 on a 10-point scale. Essentially, the experiment lacks mundane realism. It is possible that this lack of realism would affect search behavior. Indeed, several subjects suggested that the inclusion of a visual element would help them to process information. One male subject suggested that he might disregard other information (i.e., attributes) if he saw that his mate was attractive. Hence, clearly, how the attributes are represented would affect search behavior.

In the future, it is expected that the DSMAC will include a visual element (Saad & Russo, 1996). That is, if a subject selected facial beauty for evaluation, he/she would see a photograph of mates A and B. It would be interesting to conduct an additional study to see if search behavior is altered by the inclusion of visual cues. Specifically, would men behave in a different manner when they are attracted by visual stimuli?

Sequential binary choice model

In the current study, subjects acquired information *sequentially* and compared two mates (i.e., binary choice) along each attribute. However, in the real world, individuals do not evaluate attributes one at a time. Rather, they are able to process many pieces of information simultaneously. For example, to judge an individual's height, weight, facial attractiveness, and beauty of physique, it is not necessary to go through a series of sequential processing steps. Furthermore, individuals are not limited in the number of mates available. Generally, individuals compare multiple alternatives (i.e., not two) when selecting a partner. Hence, the experimental task used in this study lacks mundane realism.

Sample

The findings of this research cannot be generalized to the population. The sample consisted mostly of students between the ages of 18-25. Indeed, there is some evidence to suggest that age affects mate selection. For example, Kenrick & Keefe (1992) found that young males were willing to mate with slightly older women whereas older men

preferred younger women. Clearly, the age and occupational (i.e., student) status of the subjects will influence their behavior in the context of mate selection.

Socialization theories

The current thesis employed evolutionary theory to understand mate selection. Nevertheless, it is impossible to ignore the role of socialization in producing gender differences. Indeed, there is some evidence to suggest that environmental variables affect mate selection. For example, Buss et al (1990) found cross-cultural differences in the importance of chastity. That is, while males valued this trait more than females did (across cultures), it was apparent that overall, chastity was more important in certain cultures. Similarly, Buss & Angleitner (1989) compared US and German samples and found that German males valued good housekeeping skills more than American males. Liston & Salts (1988) compared US and Malay samples and found that Malays valued religion, parental approval, and chastity more than Americans. Clearly, differences in how individuals are socialized influence mate preferences.

Nevertheless, social theories cannot account for all gender differences in mate selection. There is much evidence to demonstrate species-typical mate preferences (Buss et al, 1990; Buss, 1991). For example, males across cultures place importance on the physical attractiveness of their partners while females across cultures value resource acquisition potential. It is difficult to use social theories to explain why such differences would exist across cultures. Clearly, individuals from different cultures are socialized in different ways and should therefore have dissimilar mating behavior.

Because both the social role and evolutionary perspective can provide important insights into mate selection, many researchers have emphasized the need to integrate the two perspectives (Archer, 1996; Schaller, 1997). Therefore, it is believed that both nature and nurture influence behavior.

A limitation of the current research is that it does not consider the role of socialization. Perhaps, further researcher could collect data (e.g., BEM sex role inventory) to determine whether social theories can better explain search behavior in the context of mate selection. If the degree of masculinity/femininity (BEM inventory) was associated with search effort and mate preferences, it would indicate that socialization affects search behavior.

Conclusion

This study marked an initial attempt to integrate the fields of evolutionary psychology and consumer research. The researcher was successfully able to demonstrate that the 'indelible stamp of man's lowly origin' does affect consumer behavior. It shall prove to be interesting to see whether the ideas brought forth in this research will be used by other researchers to provide a wide array of explanatory concepts for consumer behavior.

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APPENDIX A - DSMAC Figures

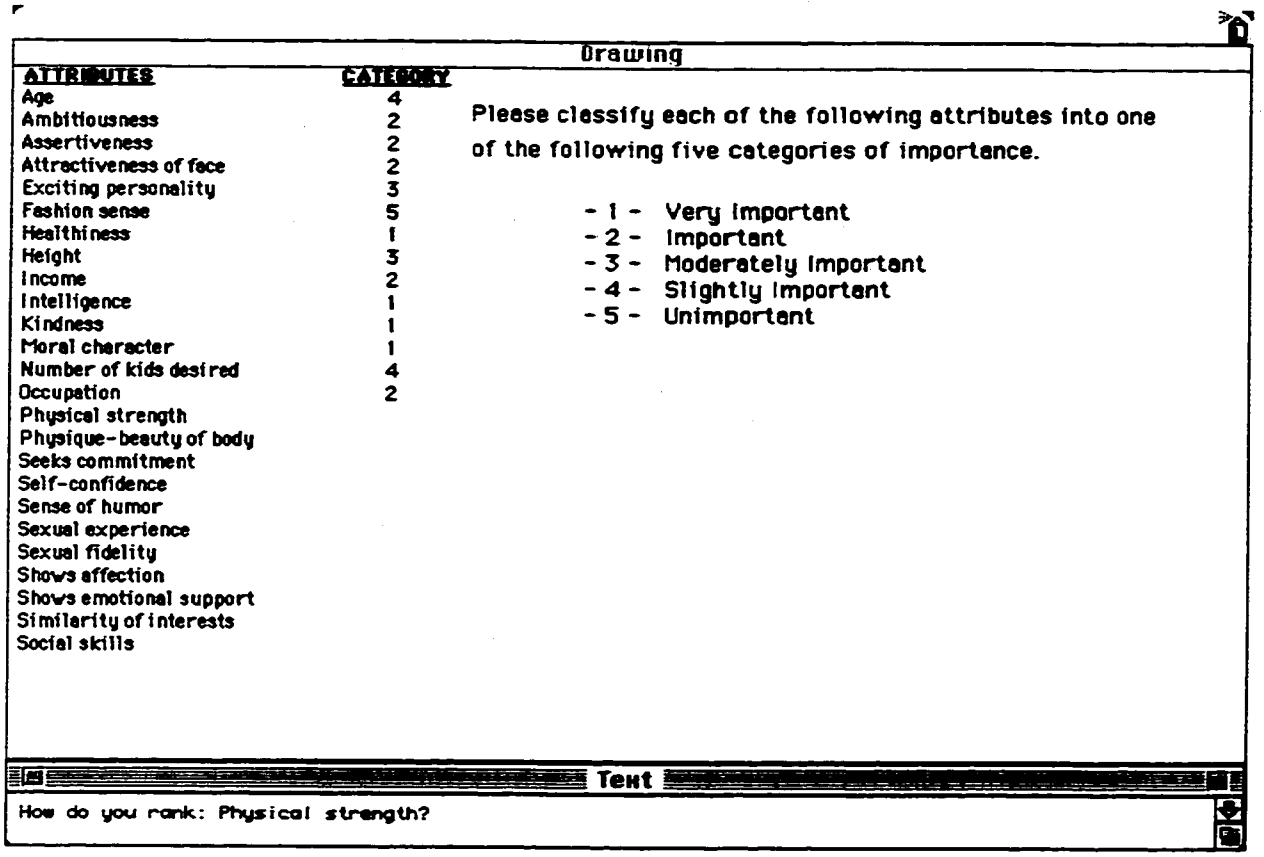

Figure 5: Ranking of attributes. An alphabetical listing of the 25 attributes was presented. Subjects classified the attributes into one of five categories (*very important, important, moderately important, slightly important*, and *unimportant*).

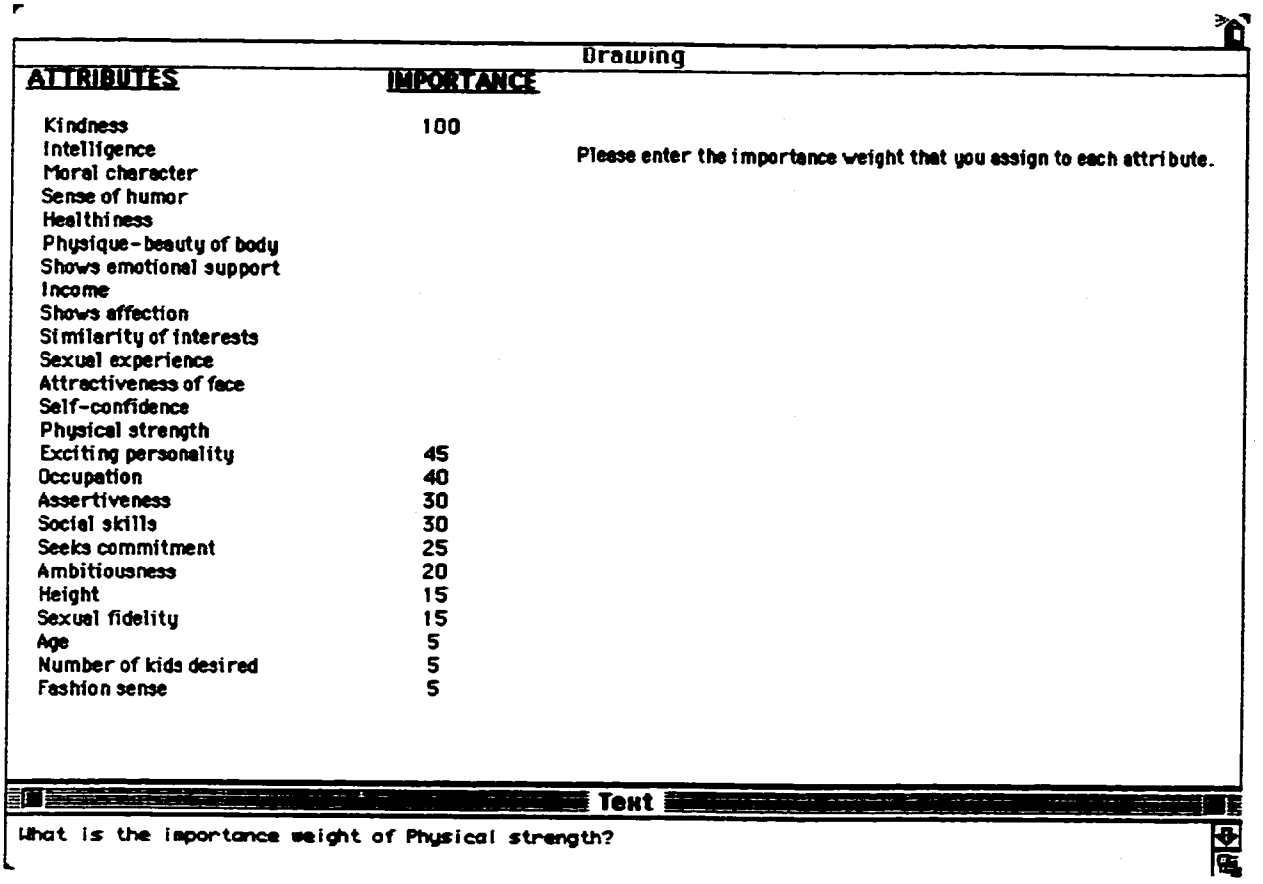

Figure 6: Weighting of attributes. A rank-ordered list of the 25 attributes is presented. Subjects assigned importance weights to each of the attributes. The least important attribute (i.e., *Fashion sense*) and most important attribute (i.e., *Kindness*) automatically receive a weight of 5 and 100 respectively. Subjects work their way up the list, assigning weights that are equal to or greater than the previous one.

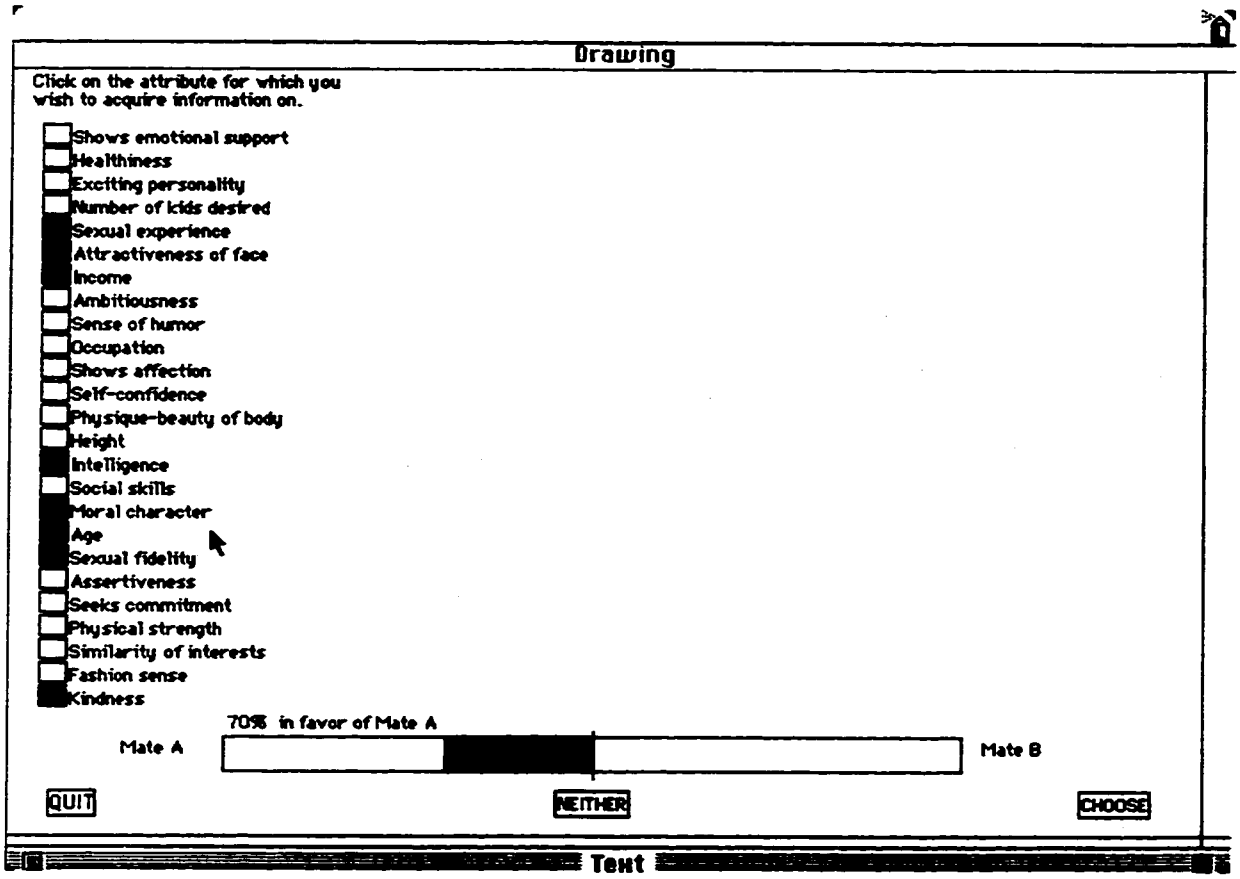

Figure 7: Attribute selection screen. In the attribute selection screen, the subject can acquire information by clicking on the box next to the attribute. The 'blacked out' boxes indicate attributes that have already been viewed by the subject. The cumulative confidence bar is displayed on the bottom of the screen. The cumulative confidence bar is 70% in favor of Mate A.

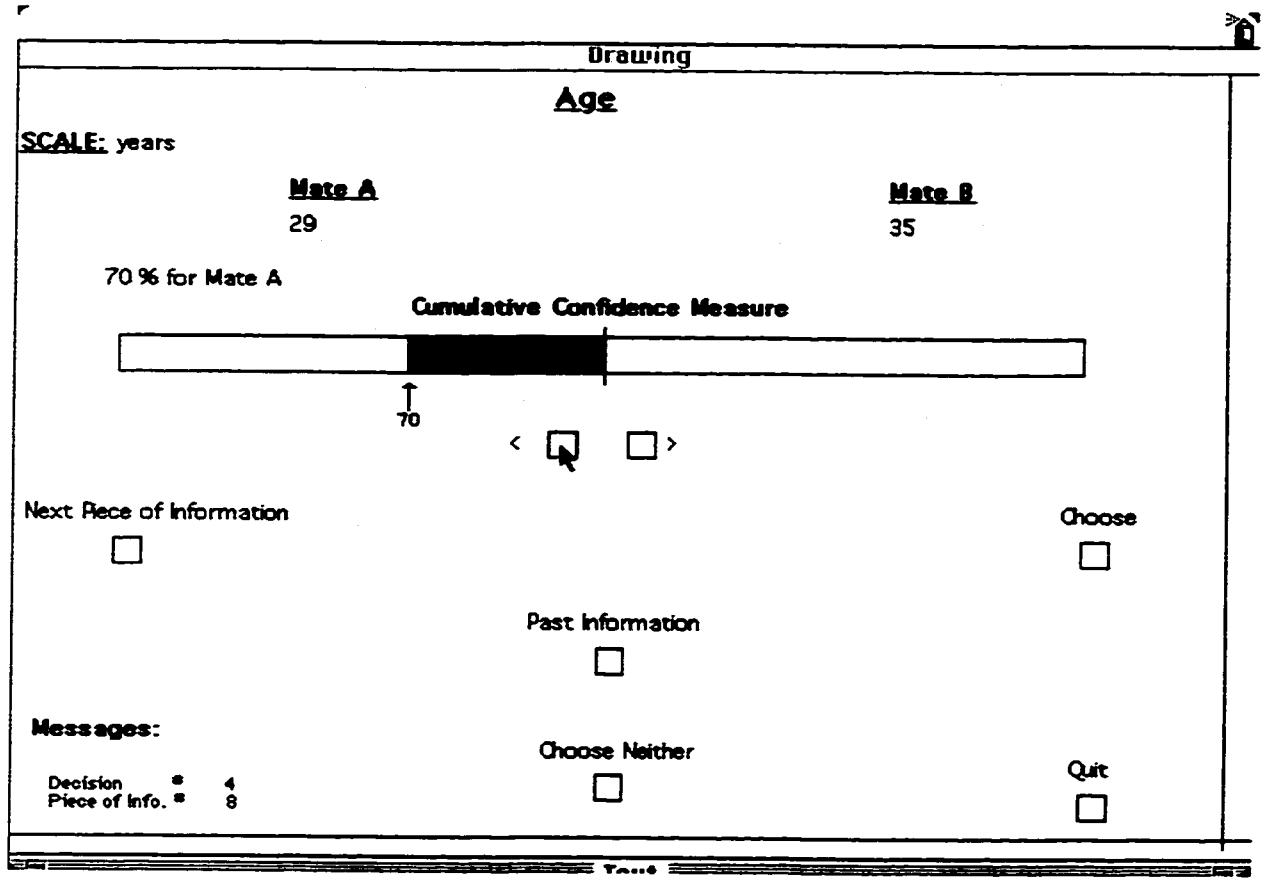

Figure 8: Information integration screen. When a subject clicks on an attribute, he/she views the information integration screen. The information integration screen displays several pieces of information. The attribute (i.e., *age*) and the attribute scale (i.e., *years*) is presented on the top of the screen. The attribute values for the two mates are also presented (i.e., *29* and *35*). The cumulative confidence bar is displayed at the center of the screen. A cumulative confidence score of 70% in favor of A means that there is a 30% (1 – 0.70) chance of preference reversal. The subjects can also click on *Next Piece of Information* to acquire additional information about the mate pairs. The subjects can click on Choose or Neither to indicate whether they have acquired enough information to select Mate A or select *Neither* of the alternatives. The subjects can go to the Past Information screen by clicking on Past Information.

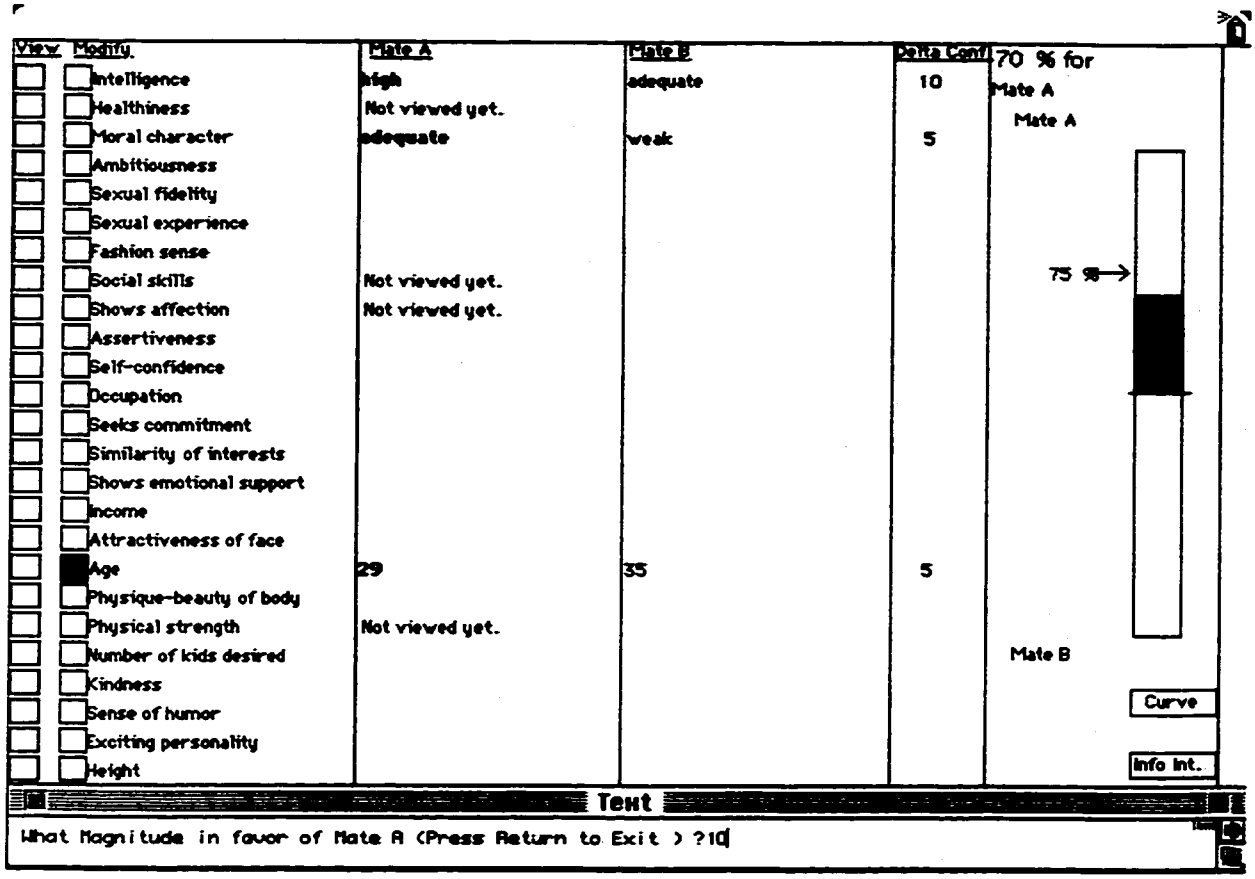

Figure 9: Past Information Screen. Subjects can re-evaluate previously acquired information. Subjects can click on the View box next to a specified attribute to view the attribute values and the delta confidence. If the subject clicks on an attribute that he/she has no previously evaluated, a message (i.e., not yet viewed) indicates that this attribute has not been evaluated. The subject can also Modify previously acquired information by clicking on the Modify box. Once, the subject clicks on Modify he or she is asked to specify a new delta confidence value.

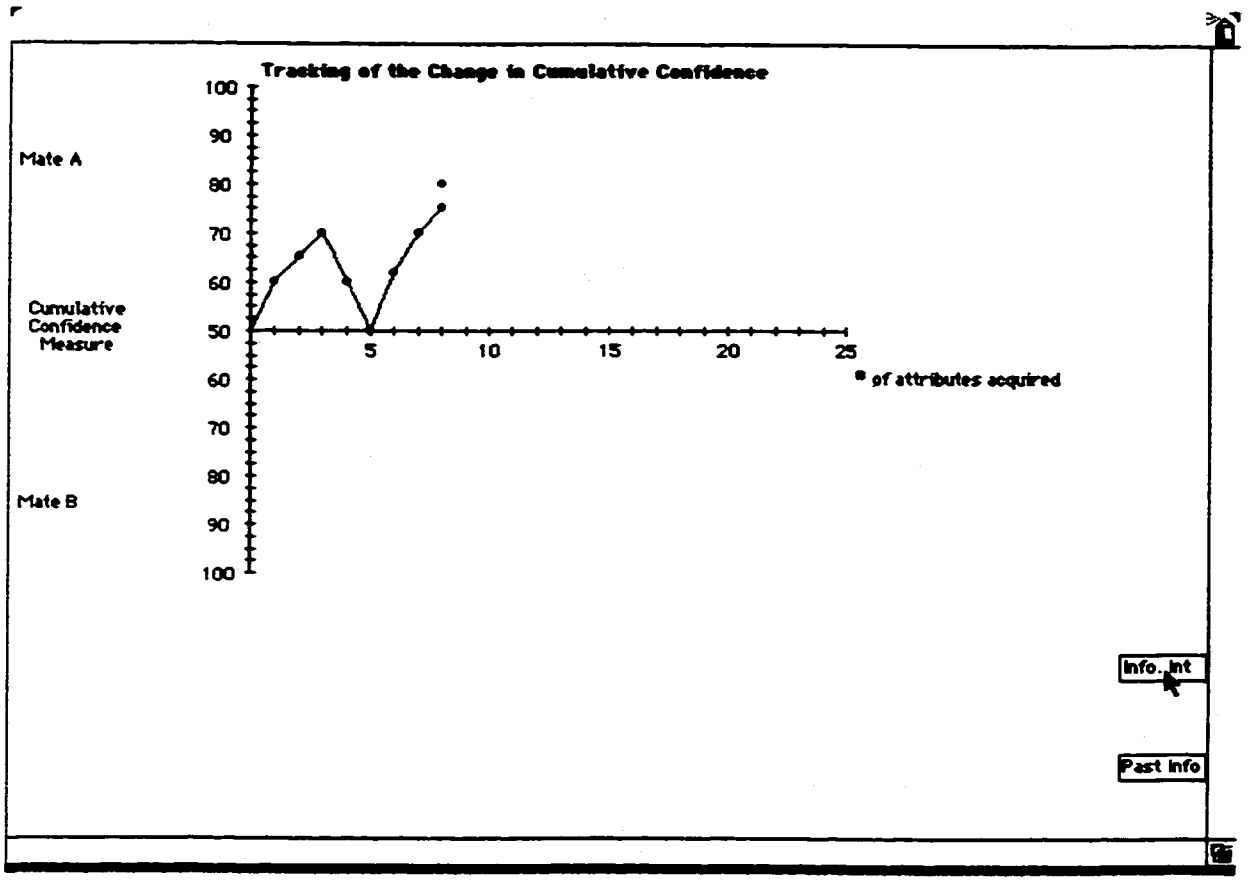

Figure 10: Backtracking curve. The tracking curve illustrates the changes made to the cumulative confidence made during the trial.

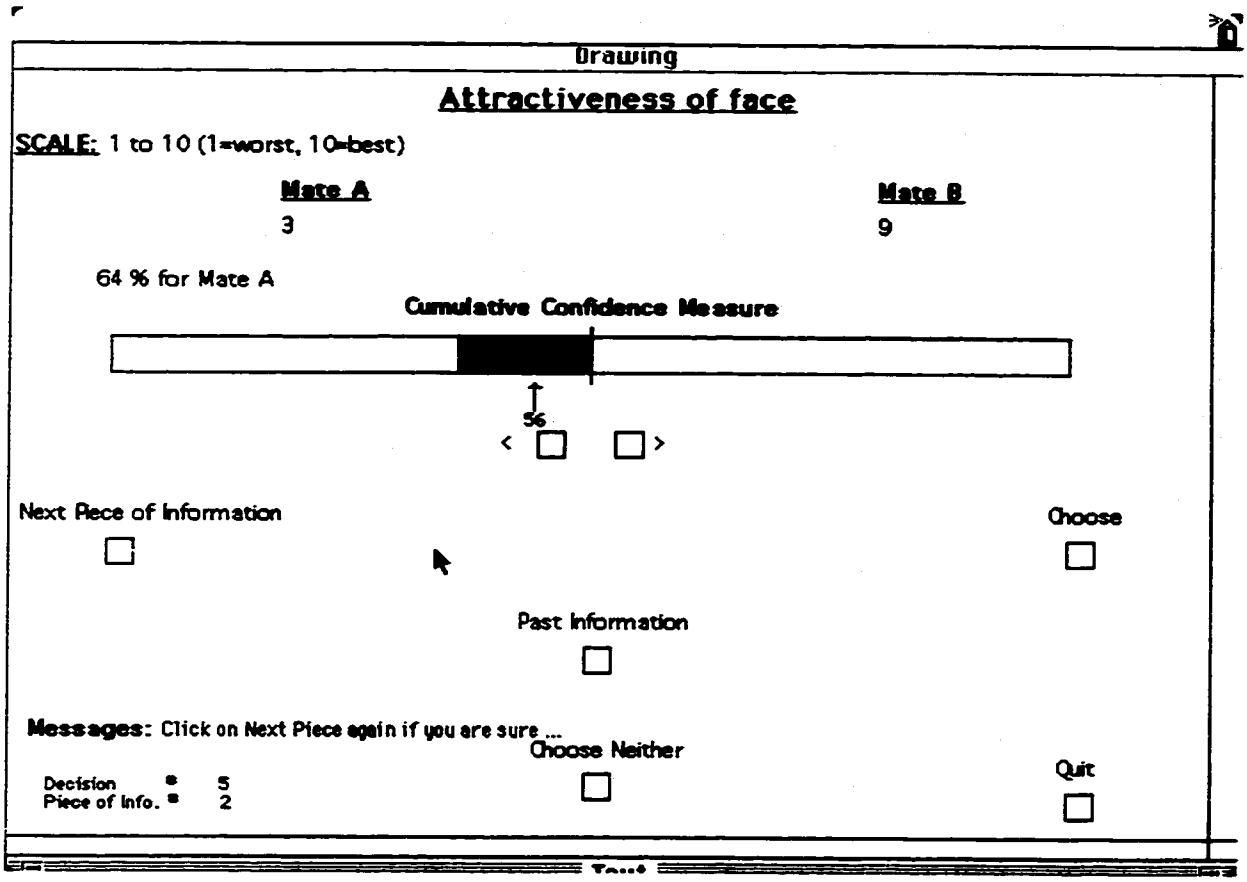

Figure 11. Directionality. Directionality was implemented for specified attributes. That is, the DSMAC flagged changes in cumulative confidence that were contrary to expectations. For example, the subject acquires information about the *attractiveness of face* of a potential mate and learns that Mate A is a 3 and Mate B is a 9. That is, Mate B is superior to Mate A. However, the subjects moves the cumulative confidence bar towards Mate A indicating that he/she favors Mate A. Consequently, the DSMAC flags this change in cumulative confidence and produces a warning message asking the subjects to "click on next piece if you are sure".

Appendix B

Finding your mate is becoming increasingly difficult. Hence, commercial institutions, such as professional matchmaking services, have sprung up to facilitate the process of finding a mate. But what do people look for in a mate? What qualities do they find important? How can dating services improve the quality of their service by providing 'better' information? This study attempts to answer these questions.

The experiment employs a user-friendly computer interface to explore your mate preferences. Your task will be to select a mate for a long-term relationship that could potentially lead to marriage. You will be presented with profiles of pairs of mates. The mates will be defined by 25 characteristics. The interface allows you to acquire information about that prospective mate until you feel that you are ready to make a choice. You will be allowed a practice session to acquaint yourself with the interface. Please do not hesitate to ask questions.

Furthermore, the experimenter will provide you with a 10-15 minute demonstration of the interface. Then, you will make choices between 15 pairs of mates. The demo will familiarize you with the interface.

Moreover, as in all psychology experiments, you are free to withdraw from the experiment at any point. If you choose to withdraw, your responses will be dropped from the analysis. Furthermore, withdrawal does not result in any negative consequences. All responses are strictly confidential. There are no physical or psychological risks associated with participation in this study.

Consent-Agreement

I have carefully read the above statement. I understand that I can withdraw from the experiment at any stage without suffering any disadvantage. I understand that my responses will remain confidential. I understand that the results of this study may be published. I know that there are no psychological or physical risks associated with participating in this study. Hence, I am consenting to participate in the experiment of my own will and will receive $10 for my participation.

Name (print)	Signature	Date

Attribute guide

This guide was developed to explain the attributes (characteristics) used to define the mates. Each characteristic is listed along with a brief description of what it means. This is designed to clarify the meaning of the attributes. However, if you feel that the description is insufficient, please do not hesitate to ask for clarification. The attributes are listed in alphabetical order.

Age - the age of the prospective mate.

Ambitiousness - whether the prospective mate has goals and ambitions and whether he/she will work hard to achieve these goals.

Assertiveness - whether the prospective mate is self-assured and determined in his/her dealing with other people.

Attractiveness of face - the overall beauty and attraction of the facial features.

Exciting personality - whether the individual displays spontaneity, extroversion, and charm or he/she is boring and uninteresting.

Fashion sense - whether the person is well-dressed and displays a sense of style that is appropriate for the occasion.

Healthiness_ - whether the person has a healthy lifestyle (i.e. adequate amount of exercise, proper nutrition, etc.)

Height - how tall the prospective mate is

Income - the annual salary of the prospective mate

Intelligence - the intelligence (sharpness & brightness) of the mate

Kindness - whether the person is kind, considerate, and understanding.

Moral character - whether the person displays strong values & principles and is guided by these principles.

Number of children desired - whether the mate wants no children to several children.

Occupation - the profession of the mate

Physical strength - how physically strong and powerful the person is.

Physique (beauty of body) - the attractiveness of the physique(figure) of the mate.

Seeks commitment - whether the partner desires a committed, serious relationship.

Self-confidence - whether the prospective mate has confidence in himself.

Sense-of-humor - how witty & funny the individual is.

Sexual experience - the number of people the person has engaged in sexual relationships with in the past

Sexual fidelity - in the future, the likelihood that the prospective mate will be faithful to you (i.e. not engage in sexual relationships with others)

Shows affection - whether the person is affectionate and loving.

Shows emotional support - whether the person is supportive in hard times.

Similarity of interests - whether the person shares similar hobbies & interests

Social skills - whether the person is friendly, sociable, interesting to talk to.

Part I.

For a long-term relationship (e.g. marriage partner) how do you think you measure up? Please evaluate yourself on the following characteristics.

	Low									High
1. **Affectionate**	1	2	3	4	5	6	7	8	9	10
2. **Ambitiousness**	1	2	3	4	5	6	7	8	9	10
3. **Assertiveness**	1	2	3	4	5	6	7	8	9	10
4. **Attractiveness of face** (facial beauty)	1	2	3	4	5	6	7	8	9	10
5. **Exciting personality**	1	2	3	4	5	6	7	8	9	10
6. **Emotionally supportive**	1	2	3	4	5	6	7	8	9	10
7. **Fashion sense**	1	2	3	4	5	6	7	8	9	10
8. **Healthiness**	1	2	3	4	5	6	7	8	9	10
9. **Height**	1	2	3	4	5	6	7	8	9	10
10. **Intelligence**	1	2	3	4	5	6	7	8	9	10
11. **Kindness**	1	2	3	4	5	6	7	8	9	10
12. **Moral character**	1	2	3	4	5	6	7	8	9	10
13. **Physical strength**	1	2	3	4	5	6	7	8	9	10
14. **Physique** (attractiveness of body)	1	2	3	4	5	6	7	8	9	10
15. **Seek commitment**	1	2	3	4	5	6	7	8	9	10
16. **Self-confidence**	1	2	3	4	5	6	7	8	9	10
17. **Sense of humor**	1	2	3	4	5	6	7	8	9	10

18. **Social skills** 1 2 3 4 5 6 7 8 9 10

19. **Sexual fidelity** (past relationships) 1 2 3 4 5 6 7 8 9 10

20. **Sexual fidelity** (future relationships) 1 2 3 4 5 6 7 8 9 10

21. **Sexual experience** 1 2 3 4 5 6 7 8 9 10

How desirable do you think <u>you</u> are as a long-term mate?

Very undesirable 1 2 3 4 5 6 7 8 9 10 Very desirable

Part II

Please answer the following question regarding your hobbies & interests.

1. Do you participate in sporting/athletic activities? _____ Yes _____ No

If yes, which activities do you participate in (check all that apply)?

- ☐ Aerobics
- ☐ Baseball
- ☐ Basketball
- ☐ Curling
- ☐ Cycling
- ☐ Football
- ☐ Golf
- ☐ Hockey
- ☐ Martial arts
- ☐ Roller-blading/skating
- ☐ Soccer
- ☐ Skiing
- ☐ Snowboarding
- ☐ Swimming
- ☐ Track & field
- ☐ Volleyball
- ☐ Water sports
- ☐ Other _____

2. Do you enjoy watching movies? _____ Yes _____ No

If yes, which type of movies do you watch (check all that apply)?

- ☐ Action
- ☐ Animated (cartoon)
- ☐ Comedy
- ☐ Documentary
- ☐ Drama
- ☐ Horror
- ☐ Mystery/suspense
- ☐ Romantic comedy
- ☐ Romance
- ☐ Other _____

3. List your 3 favorite movies this year?

_____

_____

_____

4. Approximately how many hours a week do you listen to the radio?

[] 0 - 3 hours
[] 4 - 7 hours
[] 8 - 11 hours
[] 12 - 15 hours
[] 16 - 19 hours
[] 20 - 23
[] 24 - 27
[] 28 - 31
[] 32 +

5. Which radio station do you listen to most often?

_____

6. What type of music do you listen to?

[] Classical
[] Country/Western
[] Dance/party music
[] Folk
[] Hard rock/heavy metal
[] Instrumental
[] Pop/rock
[] Jazz
[] Rap
[] Rhythm & Blues
[] Other _____

7. Approximately, how many hours of television do you watch per week?

[] 0 - 5 hours
[] 6 - 10 hours
[] 11 - 15 hours
[] 16 - 20 hours
[] 21 - 25 hours
[] 26 - 30 hours
[] 31 - 35 hours
[] 36 - 40 hours
[] 41 - 45 hours
[] 46 +

8. List your three favorite TV shows.

_____

_____

_____

9. Do you participate in work-related or school-related extracurricular activities?

_____ Yes _____ No

10. If yes, which activities do you participate in?

_____ _____

_____ _____

_____ _____

11. Do you participate in volunteer activities? _____ Yes _____ No

12. If yes, how many hours a week do you volunteer? _____

13. How many times a week do you go out for entertainment purposes?

- ☐ 0 times
- ☐ 1 time
- ☐ 2 times
- ☐ 3 times
- ☐ 4 times
- ☐ 5 times
- ☐ 6 times
- ☐ 7 times

14. When you go out, where do you like to go (check all that apply)?

- ☐ Movies
- ☐ Concerts
- ☐ Bars/clubs
- ☐ Cafés
- ☐ Restaurants
- ☐ Theater/Opera
- ☐ Sporting events (e.g. hockey game)
- ☐ Pool halls
- ☐ Arcade
- ☐ Other _____

15. In your spare time, what other activities do you like to participate in?

- ☐ Acting/theater (amateur)
- ☐ Arts & Crafts
- ☐ Auto repair/repair work
- ☐ Carpentry/woodwork
- ☐ Cooking
- ☐ Gardening
- ☐ Music (play instrument)
- ☐ Music (singing)
- ☐ Dance
- ☐ Writing
- ☐ Sewing/knitting
- ☐ Reading
- ☐ Collecting (coins, stamps, etc.)
- ☐ Other _____

Part III

Please answer the following questions..

Age: _____

Gender:

Male _____ **Female** _____

Marital status: _____

Ethnic orientation (e.g. Greek-Canadian, Francophone, Anglophone, Chinese, Vietnamese): _____

- **Program of study:** _____
- **What is your current occupation:** _____
- **What is your current annual income:** _____
- Once you finish your education, what will be your future profession?

_____

- Once you finish your education, what do you anticipate your future earnings to be in:

1 year _____

5 years _____

10 years _____

25 years _____

Part IV.

In a perfect world, the 'ideal' mate would be one that possesses all traits that make a mate desirable. However, in the real world, nobody is perfect. Hence, people look at the overall package and determine desirability by observing how a person rates on a combination of traits. Keeping this in mind, what is the minimum criterion (i.e., the minimum level of the trait that is acceptable) on each of the following traits for choosing a partner for a long-term relationship (potential marriage partner)?

	Low									High
1. **Affectionate**	1	2	3	4	5	6	7	8	9	10
2. **Ambitiousness**	1	2	3	4	5	6	7	8	9	10
3. **Assertiveness**	1	2	3	4	5	6	7	8	9	10
4. **Attractiveness of face** (facial beauty)	1	2	3	4	5	6	7	8	9	10
5. **Exciting personality**	1	2	3	4	5	6	7	8	9	10
6. **Fashion sense**	1	2	3	4	5	6	7	8	9	10
7. **Height**	1	2	3	4	5	6	7	8	9	10
8. **Healthiness**	1	2	3	4	5	6	7	8	9	10
9. **Intelligence**	1	2	3	4	5	6	7	8	9	10
10. **Kindness**	1	2	3	4	5	6	7	8	9	10
11. **Moral character**	1	2	3	4	5	6	7	8	9	10
12. **Physical strength**	1	2	3	4	5	6	7	8	9	10
13. **Physique** (attractiveness of body)	1	2	3	4	5	6	7	8	9	10
14. **Seek commitment**	1	2	3	4	5	6	7	8	9	10
15. **Self-confidence**	1	2	3	4	5	6	7	8	9	10

16. **Sense of humor** 1 2 3 4 5 6 7 8 9 10

17. **Emotionally supportive** 1 2 3 4 5 6 7 8 9 10

18. **Social skills** 1 2 3 4 5 6 7 8 9 10

19. **Sexual fidelity** (past relationships) 1 2 3 4 5 6 7 8 9 10

20. **Sexual fidelity** (future relationships) 1 2 3 4 5 6 7 8 9 10

21. **Sexual experience** 1 2 3 4 5 6 7 8 9 10

22. What is the minimum level of education you desire in a long-term mate?

_____

23. How old should your long-term mate be?

_____

On the following scale, please indicate the minimum level of desirability you require in a long-term mate.

Very undesirable 1 2 3 4 5 6 7 8 9 10 Very desirable

APPENDIX C

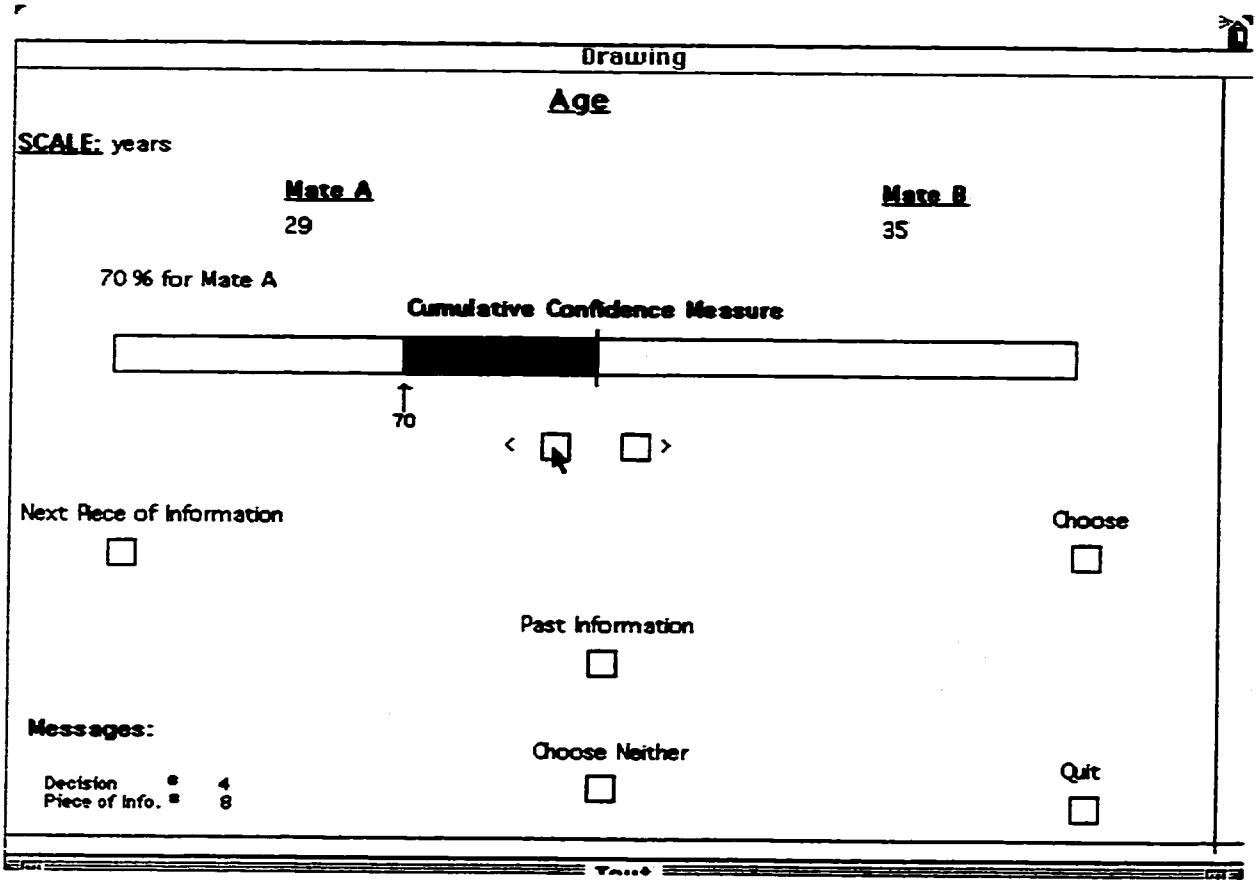

Figure 13. Information integration screen. When a subject clicks on an attribute, he/she views the information integration screen. In Study 1, subjects had the option to choose or select Neither. However, this option has been removed in this study. Hence, a subject cannot reject the alternatives (i.e., Mate A or B). In other words, this is a forced choice paradigm.