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DOES SHARING FINANCIAL AND CREATIVE RESOURCES WITH
CHILDREN FUNCTION AS EXTENDED PHENOTYPES IN
FEMALE RATINGS OF MALE ATTRACTIVENESS?

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Psychology:
General-Experimental Psychology

by
Margaret Anne Lanier

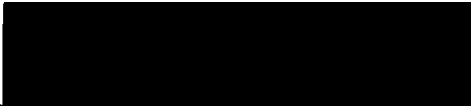
March 2009

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Approved by:




Dr. Robert E. Cramer, Chair, Psychology

3/10/09

Date



Dr. Nodie B. Ullman



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ABSTRACT

Many studies have shown that women are attracted to men with monetary resources, especially when they are willing to share those resources. However, not much attention has been paid to other male attributes, such as creativity, in attraction. This thesis studies how women rate a man's attractiveness, according to his investments of time or money in a related child, an unrelated child, the man himself or another adult. Participants were 191 culturally diverse, heterosexual, unmarried female college students. Results indicated that men were rated as more attractive when they creatively invested in an unrelated child, compared with a related child. Men who financially or creatively helped an unrelated or a related child were rated as more internally than externally motivated. When comparing creative helpers and financial helpers, there were no significant differences in attraction ratings between the two conditions; on some measures, creativity produced stronger ratings on internal or personal attributions. These findings demonstrate that possessing and exhibiting creativity is a powerful tool in attracting females to males---sometimes more powerful than sharing monetary resources.

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CHAPTER ONE

INTRODUCTION

Evolutionary psychologists have studied attraction and mate selection and found that males with monetary resources and the willingness to share those resources attract more females (Buss, 1989, 2003; Buss & Schmitt, 1993). Recently, cognitive psychologists have begun to identify certain mental modules that may serve to signal males' inclusive fitness. These modules express themselves behaviorally as creativity, such as music, art, and writing of poetry and fiction (Miller, 2000). In this thesis, I plan to explore the strength of these "extended phenotypes" (Dawkins, 1999) of creativity, in particular music, by comparing their strength with monetary resources in generating female attraction.

Traditional Approaches to the Study of Interpersonal Attraction

For several decades, social psychologists have studied interpersonal attraction---that is, who is attracted to whom, and why. Attraction is usually conceptualized as an attitude one directs toward another person (Berscheid, 1985). Social psychologists have studied interpersonal attraction because it is one of the

most important aspects of being human. Being able to judge if another individual is good or bad for us is not only important to the individual, but to all of humankind (Berscheid, 1985). Some of the factors social psychologists have found that influence attraction are propinquity or proximity, social asset matching, and similarity of attitudes and beliefs.

Propinquity affects attraction because we are generally attracted only to those persons with whom we come into close contact. Research has shown that proximity is a very important factor in forming friendships. For example, we can predict accurately who college students will like best simply by knowing who lives nearest to them (Newcomb, 1961). Asset matching refers to couples being attracted to one another based on their similar characteristic such as economic status, education level, and physical attractiveness. In fact, research has shown a correlation between the attractiveness of people who are dating or going together (Murstein, 1972).

Propinquity and social asset matching affect friendship choices, but additional factors are needed for a growing friendship or romantic relationship to occur. Studies have shown that if all you know about a person are the opinions they hold on several issues, the more similar

those opinions are to yours, the more you will like the person (e.g., Byrne & Nelson, 1965). Byrne and Clore (1967) argued that we are attracted to others who possess similar attitudes, because similar attitudes provide rewarding validation of a consistent, logical and accurate interpretation of the world. Additional research has confirmed and extended these basic findings (Byrne, 1971; Cramer, Weiss, Steigleder, & Balling, 1985). The predictive factors reported above can explain basic attraction and friendship, but they nonetheless fail to account for other more specific outcomes of human mate selection.

Contemporary Approach to the Study of Interpersonal Attraction

Evolutionary psychologists have attempted to explain many aspects of human mate selection that mainstream social psychology could not. Darwin (1871), for example, was the first to suggest that "female choice" shapes human evolution and mating in a powerful way. A century later, two powerful theories, *parental investment theory* (Trivers, 1972; Symons, 1979) and *sexual strategies theory* (Buss, 1998, 2003; Buss & Schmitt, 1993), help explain why women are the "choosier" sex. The theories' power stems

from linking male and female differences in child conception and rearing to mate choice.

Parental Investment Theory

In his *parental investment theory*, Robert Trivers (1972) expanded upon Darwin's observations about female choice by noting the different levels of investment that males and females typically make in conception and the raising of their offspring. Females are biologically required to make a much larger investment than are males. Women, for example, have a finite number of eggs, which are large and packed with nutrients. If the offspring are to survive, females must nurture the growing fetus internally for nine months and then externally for at least several more years by providing nutrients and protection. In contrast, males have an almost infinite number of sperm, and their investment can be as small as a few minutes of copulation. Since his investment is so small, a male, in theory, will try to mate with as many females as possible because the more females he mates with, the more genetic material he will pass on to future generations. Based on these investment differences, Trivers (1972) concluded that females will be choosier and

males will compete with other males for access to valuable females.

Sexual Strategies Theory

According to *sexual strategies theory* (Buss, 1998, 2003; Buss & Schmitt, 1993) the limitations on the number of offspring each woman can have, and the great investment she must provide each child, have caused women to evolve psychological mechanisms that make them more selective. Because women who were more selective in the ancestral past tended to raise more viable offspring who in turn passed on genetic material to future generations, women today are more attracted to men who present cues that signal they have economic resources, good financial prospects, and high social status. Men must be not only be able to provide resources, but also be *willing to provide* for her and their offspring.

Males' economic and material resources are probably the most obvious basis for female choice in both the animal kingdom and in humans (Buss, 1999). In humans, a male's control of economic resources is an important cue to females that he will be able to care for her and her future offspring. This is especially important when females are looking for a long-term mate. Researchers have

verified the importance of economic resources in female mate choice across a wide variety of cultures (Buss, 1989, 2003).

If a man has not yet accumulated economic resources, his financial prospects or the amount he will be able to earn later can be the next best thing. Kenrick and his associates asked college women what the minimum percentile in earning power women would accept in a prospective husband. They reported that the women wanted a husband who was at least in the seventieth percentile, that is, a prospective mate should be able to make more money than 70 percent of all other potential suitors (Kenrick, Sadalla, Groth, & Trost, 1990).

High social status or "cultural success" (Irons, 1979) was also important to our hunter-gatherer ancestors, and it remains important today. In the ancestral past, women who chose men high in social status benefited from that status and so did their children by enjoying such things as better access to high quality foods and protection from other humans (Smuts, 1985). When it comes to a prospective mate, American women place great value upon professional degrees, family connections, property and inherited wealth, all correlated with high social status. In addition, females see lack of education as a

highly undesirable trait in a prospective mate, especially a long-term mate (Buss & Schmitt, 1993).

Because men are only required to make a small investment and seek to mate as often as possible, they compete with other men for sexual access to valuable females. Attributes that men look for in women to indicate their reproductive value include such things as facial and body symmetry (Grammer & Thornhill, 1994), smooth skin, shiny hair and a specific hip-to-waist ratio of .70 (Singh, 1993). These attributes are, in theory, proximal cues to good health, youth and fertility.

Once a woman finds herself attracted to a man because of his economic resources, financial prospects, and high social status, she must decide if he is willing to share them. Some cues that signal a willingness to invest are behaviors that the man engages in, such as buying gifts, dating and traveling. Men can also signal their willingness to invest by paying attention to an infant. Margaret La Cerra (1994) tested the idea that women are more attracted to men who show a willingness to invest in children by creating slides with men in different "investment" conditions. The "investment" conditions included, a man standing alone, a man interacting with a child, a man ignoring a child who is crying, a man and

child simply facing forward, or a man vacuuming. La Cerra found that women rated the man who was interacting with the child as the most attractive, especially as a marriage partner.

Novel Approach to the Study of Interpersonal Attraction

Evolutionary psychologists integrate disciplines such as theoretical biology, behavior genetics, anthropology and ethology to study human mate selection (Miller, 2007; Tooby & Cosmides, 1992). An evolutionary perspective has proven to have such heuristic value that cognitive psychologists are now using it to study mate selection. Miller states "Since evolutionary psychology, we know what the mind is for: reproduction" (2007 p. 546). Since the human brain is the ultimate sexual display, according to this view, women should pay close attention to cues that signal the intellectual capabilities of a potential mate. Men, therefore, should seek ways to display their intellectual capabilities for potential mates (Miller, 2000).

Until about a quarter of a century ago, everyone except biologists largely ignored the idea that mate choice was linked to "indicators" of phenotypic quality. At that time, Amotz Zahavi introduced his *handicap*

principle (Zahavi, 1975). He noted the work of Veblen, (1899) which states that conspicuous consumption (e.g. fresh flowers, expensive wines, and diamond rings) advertises wealth as a tool to attract mates. Zahavi proposed that males display their genetic quality to females by physiologically high-cost signals, that is, signals that take a lot of time and energy to produce, and those that imitators cannot easily fake (Zahavi, 1975, 1997).

Researchers have studied the *handicap principle* in animals and found that some males incur great costs by displaying signals for potential mates. Examples of high-cost signals in the animal kingdom are large, cumbersome peacock's tails, or an intricate and exhausting bird-song concert, which has been known to cause the male bird to die of exhaustion. Nevertheless, these costly signals are good indicators of their producer's genetic quality, and are impossible for low-quality imitators to fake (Zahavi, 1975, 1997).

Human mate choice should also favor cues that indicate phenotypic quality, such as health, fertility and parasite resistance, as well as genotypic qualities (Andersson 1994; Cronin, 1991). In fact, facial and body symmetry, which is known to be attractive to the opposite

sex have been linked to good health, an indication of good gene quality (Gangestad & Thornhill, 1997; Grammer & Thornhill, 1994; Shackelford & Larsen, 1997).

In his *cultural courtship model*, Geoffrey Miller sees the human mind as a courtship machine, rather than a survival machine. He has identified ways men advertise their genetically inherited capacities for behaviors such as language, art and music (Miller, 1997, 1998). More recent research designed within an evolutionary cognitive framework has shown that men will show increased creativity when primed with a cue designed to activate a short or long-term mating goal compared to men primed with a neutral cue (Griskevicius, Cialdini, & Kenrick, 2006).

According to Miller, the human mind is a set of fitness indicators. He argues that the mind's most distinctive capacities evolved through sexual selection as fitness indicators advertising the quality of our genes. For example, during the ancestral past, men began to reveal their fitness for mating through courtship behaviors including creative intelligence. Available females chose those men who revealed their fitness in this way. Therefore, these men passed their creative intelligence to future generations. "The healthy brain theory proposes that our minds are clusters of fitness

indicators: persuasive salesmen like art, music and humor, that do their best work in courtship where the most important deals are made" (Miller, 2000, p. 105).

Miller has studied different forms of creativity such as art, literature and music to determine if they fit the criteria for fitness indicators. He found that in all areas of cultural display, human males out-produced human females by a ratio of about ten to one. He also noticed a predictable pattern of cultural production, like fertility, that begins to rise during puberty, climaxes in the thirties, and then diminishes gradually (Miller, 1999).

As evidence that cultural displays, such as artistic creativity, are likely sexual selection tools, Miller used the 1984 *Tate Gallery Collections* (a collection of almost three thousand pieces of art) to report that men produced eight times the number of pieces of art than were produced by women. Miller found a pattern of male art production, rising in the early twenties, peaking in the artists' mid to late thirties, and then declining gradually through the later years. This pattern correlates with a male's fertility during his life cycle (Miller, 1999).

Miller also explored creativity as a selection tool by looking at literature. Using a random sample from the

1992 *Writer's Directory*, of almost three thousand books published during the twentieth century Miller found that males published over three times as many books as females. Again, the same patterns of age peaks were observed, although the peaks occurred at slightly older ages for writers than for artists (Miller, 1999).

Finally, Miller randomly sampled jazz musicians and composers documented by Carr, Fairweather and Priestly (1988) to determine if musical production fit the same pattern as art and writing as a sexual selection tool. He found that males out-produced females by a 20:1 ratio. The productivity peaks were also similar to those found in art and literature, with productivity peaking sharply at the age of thirty, declining steeply until fifty, then more gradually until about seventy years of age. Similar results were obtained when rock and roll albums and classical music were studied (Miller, 1999).

Miller's theory regarding the purpose of artistic creativity is not without alternative explanation. Contrasting ideas about the purpose of music, in particular, include that its primary purpose was to facilitate social communication, cooperation and group activities (Brown, 2000). According to Brown, "groupishness", a suite of traits that favor the formation

of coalitions, has played a critical role in the invention and perpetuation of music. The concept of "groupishness" is missing from an evolutionary approach to human behavior that favors concepts like *kin selection* and *reciprocal altruism* (Cosmides & Tooby, 1992; Tooby & Cosmides, 1996).

Music as Extended Phenotype

Evolutionary scientists have attempted to explain artistic cultural displays, especially music, in terms of natural selection. Music, in particular, is loud and could have attracted enemies and predators in our ancestral past. It takes time and energy to produce, practice and perform music. This is time and energy that our ancestors could have spent meeting their critical survival needs such as garnering food, shelter, and security. Although explaining sexual selection via natural selection can be challenging, Darwin's (1871) sexual selection theory, can explain such a particularly dangerous, time and energy consuming activity more convincingly (see Miller, 1999).

The human brain is complex and hard to maintain, making psychological adaptations, such as musical creativity, particularly well suited to function as sexually selected indicators. Performing music at a virtuosic level signals excellent brain functioning, which

in turn is a good approximate indicator of the quality of the genome, much of which is heritable (Miller, 2000). Dancing, for example, is a good indicator of such attributes as aerobic fitness, coordination, and health. Rhythm reveals the brain's flexibility and reliability. Singing in key can reveal self-confidence, status, and extroversion, all linked to a male's suitability as a long-term mate. A man who can play an instrument at a virtuosic level signals, via this extended phenotype, his fine motor coordination, as well as the fact that he has had plenty of time to practice, due to possessing social status and resources (Miller, 2000). Both of these factors have already been established as reliable causes of male attractiveness to women (e.g. Buss, 2003).

Problem Statement

As noted above, researchers have performed numerous studies establishing the role of "good financial prospects" or "resource possession" as the most important criteria for women when selecting a prospective mate, especially a long-term mate (Buss, 1989, 1995; Buss & Schmitt, 1993). Miller (2000) acknowledges that no one has yet performed controlled empirical studies to analyze creative factors such as music production as a sexually

selected fitness indicator. The proposed research seeks to remedy this deficiency by examining women's perceptions of a man who possesses musical virtuosity.

In addition to investigating the effects of musical virtuosity on women's mate preferences, the proposed research will examine the role of the musician's relationship to a beneficiary and its effect on mate preference. Previous research has examined a male's willingness to help a child and ratings of his attractiveness (La Cerra, 1994). As noted above, La Cerra found that men who demonstrate a willingness to help a child are rated as more attractive than an inattentive man. Research from our lab has also focused on a male's financial help benefiting a child. Lanier, Hoffman and Cramer (2001), for example, found that a divorced man who spent more time with his child and was willing to provide more personal assistance in caring for his child was rated as more attractive than a man who spent less time with his child and was less willing to assist with child care. Lanier, Hoffman and Cramer (2001) also found that sharing financial resources with a child was positively related to a divorced man's attractiveness. Two studies from our lab (Lanier, Messing & Cramer, 2002; Meteer, Messing & Cramer, 2003) found an interesting caveat to these effects.

Interestingly, a man who helped his own child was rated lower in attractiveness when compared to a man who helped a child who was either less related to him or was unrelated to him.

The proposed research will therefore combine Miller's theory of music as an indicator of genotypic and phenotypic fitness with findings from our lab. Specifically, the proposed research will investigate the individual and combined roles of financial and musical support for a child who varies in biological relationship to a male benefactor on women's ratings of the benefactor's attractiveness.

Miller (2000) suggests that creative resources can be powerful fitness indicators, possibly as powerful as financial and material resources. Earlier research also suggests helping an unrelated child results in more favorable evaluations of the helper than helping a related child. Previous research indicates that this finding is due to the internal, personal attributions compared to external, normative attributions produced by helping an unrelated child. That is, the participant learns something personal about the helper when an unrelated child is the beneficiary (Lanier et al., 2002; Meteer et al., 2003). Based on Miller's fitness speculations and previous

findings from our lab, four primary and two secondary hypotheses will be tested.

Hypotheses

First, participants will rate a man who financially supports an unrelated child more favorably than a man who financially supports a related child. Second, participants will rate a man who musically benefits an unrelated child more favorably than a man who musically benefits a related child. Support for these primary hypotheses will be strengthened by finding support for two secondary hypotheses. Helping an unrelated child is predicted to lead to stronger internal or personal than external or normative attributions for the action. In contrast, helping a related child is predicted to lead to stronger external than internal attributions for the action.

The proposed research is designed to test hypotheses about fitness indicators and their relationship to helping children. La Cerra (1994) found that such help was positively related to a man's attractiveness. Two additional comparisons will examine the possibility that resourceful and helpful men, in general, are attractive. Hypothesis 3 states: Participants will rate a man who financially benefits a child more favorably than a man who

financially benefits either himself or another adult.
Hypothesis 4 states: Participants will rate a man who
musically benefits a child more favorably than a man who
musically benefits either himself or another adult.

CHAPTER TWO

METHOD

Design

This research can be conceptualized as a 4 (resource beneficiary) X 2 (resource type) mixed design. The *a priori* hypotheses, however, do not directly compare levels of the within-subjects variable (i.e. resource type, creative and financial). In order to determine if creative resources are comparable to financial resources in attracting females, exploratory comparisons were made to test if any significant differences existed between them.

Each participant was asked to read eight statements regarding two target men, with one man described as giving financial resources and the other man described as giving creative resources (the within-subject variable). Participants were then asked to indicate to what extent they agreed or disagreed with the statements about the target men.

Each man provides these resources to a beneficiary, one of four different individuals described in the scenarios. Each participant received one of these levels, the between-subject independent variable. The levels of the beneficiary of the resources are the target man

himself, his 10-year-old brother (50% biological relationship), an acquaintance's 10-year-old son (0% biological relatedness) or an elderly man.

The dependent variables are measured by the participant's level of agreement, using a seven-point Likert-type scale, with eight statements about the target men in the scenarios. The measures we were most interested in are the attraction measures: Long-term date, short-term date, and friend/neighbor. We included two statements about the man's internal/external motivations. In one statement, his actions were described as being externally motivated (i.e. resulting from social norms, rules and cultural demands). In the other statement, his actions were described as being internally motivated (i.e. resulting from his unique personal traits). These measures will be used to analyze the secondary hypotheses. Three filler measures were also included as manipulation checks, one stating that the man is generous, and the other two stating that the man is either more feminine than masculine, or more masculine than feminine.

Participants

Participants ($N = 191$) were randomly assigned to one of eight conditions. They were culturally diverse female

college students from California State University, San Bernardino. Participants were recruited through the use of group appeals made in several classes and questionnaires left in an area outside the peer advising office. Participants were offered extra-credit points for participating. The only condition for participation required that the women identified themselves as heterosexual, unmarried, and not living with a male partner. Because eleven participants did not meet this requirement, they were deleted from the study. In previously reported research from our lab, significant results were found when data was collected from approximately 120 to 140 participants using a 2 X 4 design (Lanier et al., 2001; Lanier et al., 2002). However, since this research is based on a 4 X 2 design, a power analysis revealed that at least 180 participants would be needed to obtain the power needed for between-groups comparisons. Participants were treated in accordance with "Ethical Principles of Psychologists and Code of Conduct" (American Psychological Association, 1992).

The women's ages ranged from 18 to 55, mean age = 23.93 years, *SD* = 7.34. Women were Hispanic/Latino (*n* = 74, 38.7%), Caucasian (*n* = 59, 30.9%), Black/African American (*n* = 32, 16.8%), Asian-American (*n* = 8, 4.2%).

Native American ($n = 2, 1.1\%$) and "other" ($n = 15, 7.9\%$)
Women reported their educational background as "Some
college, no degree" ($n = 95, 49.7\%$), "Two-year college-AA
degree" ($n = 65, 34.0\%$), "Four-year college-B.A./B.S.
degree" ($n = 24, 12.6\%$), and "Graduate coursework"
($n = 5, 2.6\%$).

Materials

A demographic questionnaire included items measuring the participant's age, ethnic background, educational background, sexual orientation, current relationship status, and total household income (see Appendix B). Half of the hypothetical vignettes described a single man who either spent \$75.00 per week on himself or on another person. The remaining vignettes described a single man who either increased his own musical virtuosity or shared his talents with another person. For example, one vignette describes a man who shares his financial resources: "*Doug is a single, unattached businessperson in his mid 20's living in Southern California. He spends \$75.00 every week on childcare, clothing and some 'fun things' for his 10-year-old brother*". Another vignette describes a man who shares his creative resources: "*Matt is a single, unattached professional musician in his mid 20's from*

Southern California. He spends four hours every week sharing his extensive musical knowledge teaching his 10-year-old brother to play several musical instruments."

See Appendix D for vignettes.

After reading each vignette the participant completed an 8-item questionnaire using a 7-point Likert-type scale anchored with 1 = "Strongly Disagree" and 7 = "Strongly Agree". The five personal dimensions measured are:

likeability (i.e. a good friend or neighbor), long-term dating partner, short-term dating partner, generosity, and the target's masculinity and femininity. To gauge the target's internal versus external motivations, participants also indicated whether they thought the target's actions resulted from unique personal traits and internal motivations or from social norms, rules and cultural demands. See Appendix C for questionnaire.

Procedure

Participants who signed up for the study were asked to read the Informed Consent. After reading and signing the Informed Consent, each participant was asked to complete a demographic questionnaire. Participants were randomly assigned to one of four resource beneficiary conditions. Participants were then instructed to read a

short vignette about a man sharing either his financial or creative resources. The vignettes were counterbalanced across participants. Participants then responded to the eight statements about the target described above.

It took participants about twenty minutes to complete the questionnaire. After completing this study, participants read a debriefing statement regarding the true purpose of the study. They were given instructions about how to obtain study results if they so desire. See Appendix D for Debriefing Statement.

CHAPTER THREE

RESULTS

Inspection of Data

An inspection of the data to identify missing values and outliers was performed on the three attraction measures, good friend/neighbor, long-term date, and short-term date, used to test the four primary hypotheses. The measures used to test the two secondary hypotheses, internal and external attributions, were inspected as well. None of the measures inspected yielded more than five percent missing data so an imputation of missing values was not performed (Tabachnick & Fidell, 2001). No outliers were found; standardizing the dependent measures did not yield z-scores exceeding a criterion of ± 3.3 standard deviation units.

Evaluating Statistical Assumptions

The experimental design was a mixed factorial. As noted above the *a priori* hypotheses do not involve comparing levels of the within-subjects variable (i.e. resource type, creative and financial). Therefore, the assumptions underlying a repeated measures analysis were not evaluated. Rather, the general assumptions regarding the normality, homogeneity, and independence of the

measurement errors were evaluated. Five dependent measures used to test the primary and secondary hypotheses were evaluated. Normality and homogeneity of the errors were assumed to have been met because the sample size for the four between-subjects conditions was approximately equal, ranging from 47 to 48, and the degrees of freedom clearly exceeding 20. Since the participants were randomly assigned to each treatment group, and the dependent variables measured are from between-subjects conditions, the measurement errors were assumed to be independent.

Hypothesis 1

It was predicted that a man who financially helped an unrelated child would be rated as more attractive than a man who helped a related child. Cronbach's alpha was computed for the three attraction measures (good friend/neighbor, long-term date, and short-term date), to determine whether they could be combined to simplify the analysis. However, with an alpha = 0.52 for the financial attraction measures, and 0.53 for the creative attraction measures, these items will be evaluated separately. After conducting separate independent samples *t* tests to determine the effect of the recipient's relationship on ratings of attraction, the null hypothesis could not be

rejected using a two-tailed .05 criterion. See Table 1 for means and standard deviations.

Table 1. Means and Standard Deviations of Attraction Ratings for a Man Who Invests Financial or Creative Resources in Beneficiaries

Beneficiary	Resource Type			
	Financial		Creative	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
50% Biological Relationship				
Friend/Neighbor	5.21	1.12	5.66	1.13
Long-term date	4.40	1.65	4.40	1.84
Short-term date	3.98	1.67	3.79	1.56
No Biological Relationship				
Friend/Neighbor	5.36	1.24	5.55	1.00
Long-term date	4.47	1.77	4.38	1.81
Short-term date	3.98	1.81	4.36	1.37
The Man Himself				
Friend/Neighbor	4.63	1.39	4.88	1.39
Long-term date	4.04	1.59	3.96	1.89
Short-term date	3.79	1.76	4.21	1.68
An Elderly Man				
Friend/Neighbor	5.17	1.45	5.35	1.39
Long-term date	4.45	1.41	4.40	1.70
Short-term date	4.29	1.66	3.77	1.45

Hypothesis 2

The second hypothesis predicted that a man who creatively helped an unrelated child would be rated more attractive than a man who helped a related child. After conducting independent samples *t* tests to determine the effect of the recipient's relationship on ratings of attraction, the null hypothesis could not be rejected using a two-tailed .05 criterion on two of the attraction measures, good friend/neighbor and long-term date. As predicted, however, participants rated the man with no biological relationship to the child ($M = 4.36, SD = 1.37$) more favorably than the man who helped his brother ($M = 3.79, SD = 1.56$), for the short-term date, $t(93) = 1.83, p < 0.05, \eta^2 = 0.036$.

Hypothesis 3

The third hypothesis stated that a man who financially helped a child (either an unrelated child or his brother) would be rated as more attractive than a man who financially helped an adult (either himself or an elderly man). The data were analyzed using independent samples *t* tests to compare the combined means for children with the combined means for adults for the three attraction measures, good friend/neighbor, short-term date and long-term date. As predicted, the man who financially

helped children ($M = 5.28$, $SD = 1.17$) was rated more favorably than the man who financially helped adults ($M = 4.90$, $SD = 1.44$) for the good friend/neighbor measure, $t(189) = 2.04$, $p < 0.05$, $\eta^2 = 0.019$.

Hypothesis 4

The fourth hypothesis stated that a man who creatively helped a child (either an unrelated child or his brother) would be rated as more attractive than a man who creatively helped an adult (either himself or an elderly man). The data were analyzed using independent samples t tests to compare the combined means for children with the combined means for adults in the three attraction measures, good friend/neighbor, short-term date and long-term date. As predicted, the man who creatively helped children ($M = 5.61$, $SD = 1.06$) was rated as more attractive than the man who helped adults ($M = 5.11$, $SD = 1.41$) for the good friend/neighbor measure, $t(188) = 2.72$, $p < 0.05$, $\eta^2 = 0.036$.

Secondary Hypothesis 1

It was predicted that a man who helped an unrelated child would lead to stronger internal or personal attributions than external or normative attributions for the altruistic action. This would result in a higher mean

score for Item 7, "This man's actions result from his unique personal traits or internal motivations" than for Item 1, "This man's actions result from social norms, rules and cultural demands". As predicted, participants rated the man as being more internally motivated ($M = 5.09$, $SD = 1.43$) than externally motivated ($M = 3.49$, $SD = 1.78$) when he financially helped an unrelated child, dependent $t(46) = 4.48$, $p < 0.05$, $\eta^2 = 0.303$. Participants also rated the man as being more internally motivated ($M = 5.76$, $SD = 1.12$) than externally motivated ($M = 3.48$, $SD = 1.59$) when he creatively helped an unrelated child, dependent $t(45) = 8.18$, $p < 0.05$, $\eta^2 = 0.59$. See Table 2 for means and standard deviations.

Secondary Hypothesis 2

It was also predicted that a man who helped a related child would lead to stronger external or normative attributions than internal or personal attributions for the altruistic action. This would result in a higher mean score for Item 1 than for Item 7. Unexpectedly, participants rated the man as being more internally motivated ($M = 5.13$, $SD = 1.44$) than externally motivated ($M = 3.81$, $SD = 1.47$) when he financially helped a related child, dependent $t(47) = 3.82$, $p < 0.05$, $\eta^2 = 0.24$.

Moreover, participants rated the man as being significantly more internally motivated ($M = 5.73$, $SD = 1.36$) than externally motivated ($M = 3.33$, $SD = 1.58$) when he creatively helped a related child, dependent $t(47) = 6.53$, $p < 0.05$, $\eta^2 = 0.476$.

Table 2. Means and Standard Deviations of External, Internal, and Generosity Ratings for a Man Who Invests Financial or Creative Resources in Children

Beneficiary	Resource Type			
	Financial		Creative	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
50% Biological Relationship				
External motivations	3.81	1.47	3.33	1.58
Internal motivations	5.13	1.44	5.73	1.36
Generosity	4.94	1.77	5.46	1.52
No Biological Relationship				
External motivations	3.49	1.78	3.48	1.59
Internal motivations	5.09	1.43	5.76	1.12
Generosity	5.00	1.55	5.43	1.14

Exploratory Analysis

Attraction Measures

The research was conceptualized as a 4 (resource beneficiary) X 2 (resource type) mixed design. The primary hypotheses do not directly compare levels of the

within-subjects variable (i.e. resource type, creative and financial). However, in order to determine if creative resources are comparable to financial resources in attracting females, an exploratory 4 X 2 mixed analysis of variance was conducted on the three attraction measures.

When the good friend/neighbor measure was tested, a main effect was found for resource type, $F(1, 186) = 7.49$, $p < 0.05$, partial $\eta^2 = 0.04$. The creative helper received higher ratings than the financial helper on the good friend/neighbor measure. To understand this finding more explicitly, mean comparisons between financial and creative resources at each level of the resource beneficiary yielded two significant differences. Helping a brother and an unrelated child creatively resulted in higher ratings on the good friend/neighbor measure than did helping financially, $t(186) = 2.28$, $p < 0.05$, $\eta^2 = 0.008$, $t(186) = 1.92$, $p < 0.05$, $\eta^2 = 0.005$, respectively. However, when controlling Type 1 error at 0.05 for the four comparisons using Dunn's method, the differences were not reliable, $t_{\text{critical}} = 2.54$. Significant differences were not found for the resource beneficiary main effect or the interaction, $F_s(3, 186) < 1$, $p > 0.05$.

The long-term date measure yielded no main effect for either resource type, $F(1, 186) < 1, p > 0.05$, or resource beneficiary $F(3, 186) = 1.05, p > 0.05$. The interaction was not significant either, $F(3, 186) < 1, p > 0.05$. The short-term date measure, however, produced more interesting results. Although, the main effects for resource type and resource beneficiary were not significant, $F(1, 187) < 1, p > 0.05$ and $F(3, 187) < 1, p > 0.05$, respectively, the interaction was, $F(3, 187) = 3.14, p < 0.05$, partial $\eta^2 = 0.048$. Mean comparisons between the two resource types at each level of the resource beneficiary variable yielded one significant difference. Helping an elderly man financially resulted in higher ratings on the short-term date measure than did helping creatively, $t(187) = 2.01, p < 0.05$, $\eta^2 = 0.023$. However, when controlling Type 1 error at 0.05 for four multiple comparisons using Dunn's method the difference was not reliable, $t_{\text{critical}} = 2.54$.

Generosity and Attribution Measures

A series of exploratory 4 (resource beneficiary) X 2 (resource type) mixed analyses of variance were also conducted on three additional measures, the helper's generosity, as well as the helper's internal and external

motivations. These analyses were performed to determine if helping creatively differed from helping financially. The generosity measure yielded a main effect for resource type $F(1, 186) = 8.01, p < 0.05, \eta^2 = 0.04$. The creative helper ($M = 5.14$) received higher ratings than the financial helper ($M = 4.78$) on the generosity measure. To understand this finding more clearly, mean comparisons between financial and creative resources at each level of the resource beneficiary yielded one significant difference. Helping a brother creatively resulted in higher ratings on generosity ($M = 5.46$) than did helping financially ($M = 4.94$), $t(186) = 2.04, p < 0.05, \eta^2 = 0.0004$. However, when controlling Type 1 error at 0.05 for four multiple comparisons using Dunn's method the difference was not reliable, $t_{\text{critical}} = 2.54$.

The main effect for resource beneficiary was also significant, $F(3, 186) = 16.96, p < .01, \eta^2 = 0.22$. An inspection of the means suggests, not surprisingly, that devoting financial and creative resources to oneself produces lower ratings of generosity, smallest $t(186) = 3.73, p < 0.01, \eta^2 = 0.068$. The interaction between resource beneficiary and type was not significant, $F(3, 186) < 1, p > 0.05$.

The external motivation/social norms measure yielded a main effect for resource type, $F(1, 187) = 31.22$, $p < 0.01$, $\eta^2 = 0.14$, and an interaction, $F(3, 187) = 12.20$, $p < .01$, partial $\eta^2 = 0.16$; the main effect for resource beneficiary was not significant, $F(3, 187) < 1$, $p > 0.05$. The resource type main effect revealed that the financial helper ($M = 3.85$) received higher ratings than the creative helper ($M = 3.23$) on the measure of external motivation/social norms. To understand the interaction more explicitly, mean comparisons between financial and creative resources were performed at each level of resource beneficiary. The comparisons yielded one significant difference. When he helped himself financially ($M = 4.63$) the helper received higher attributions for external motivations than when he helped himself creatively ($M = 2.90$), $t(187) = 6.42$, $p < 0.01$, $\eta^2 = 0.185$. This outcome remained significant when a Type 1 error rate of 0.05 was controlled for four comparisons, $t_{critical} = 2.54$. The effect size revealed that 18.5% of the variance in attributions for external motivations was accounted for by the variation in the type of help given, creative or financial.

The internal motivation/personal traits measure yielded a main effect for resource type, $F(1, 185) = 40.57, p < 0.01, \text{partial } \eta^2 = 0.18$. This main effect revealed that the creative helper ($M = 5.67$) was viewed as more internally motivated than the financial helper ($M = 5.06$). To understand this effect more clearly, mean comparisons between financial and creative resources were conducted at each level of the resource beneficiary; three significant differences were found. The creative helper was viewed as more internally motivated than the financial helper when an unrelated child was helped, $M = 5.76$ vs $M = 5.11, t(185) = 3.19, p < 0.01, \eta^2 = 0.053$, when an elderly man was helped, $M = 5.62$ vs $M = 5.15, t(185) = 2.34, p < 0.05, \eta^2 = 0.029$, and when the helper focused resources on himself, $M = 5.69$ vs $M = 4.85, t(185) = 4.22, p < 0.01, \eta^2 = 0.084$. With a $t_{\text{critical}} = 2.54$ two of these outcomes (i.e., man devotes resources to an unrelated child and himself) remained significant when a Type 1 error rate of 0.05 was controlled for four comparisons. The main effect for resource beneficiary and the interaction were not statistically reliable, for the main effect, $F(3, 185) < 1, p > 0.05$, and for the interaction, $F(3, 185) < 1, p > 0.05$.

CHAPTER FOUR

DISCUSSION

The discussion is organized around a review of the results and then a thorough examination of the findings. In addition, the discussion will focus on the social psychological implications of the findings and the possibilities for future research.

Review of the Results

Hypothesis 1

Helping an unrelated child financially, compared to helping a related child (a brother), was expected to increase participant's ratings of a man's attractiveness. No evidence supporting this hypothesis was found. For each of the three attraction measures, good friend/neighbor, long-term date, and short-term date, financial benevolence shown to a related and unrelated child produced equal ratings of a man's attractiveness.

Hypothesis 2

Helping an unrelated child creatively, compared to helping a related child, was expected to increase participant's ratings of a man's attractiveness. The man who creatively helped an unrelated child was, as expected, rated more attractive as a short-term date than a man who

helped his brother. The effect size revealed that 3.6% of the variance in attraction was accounted for by the variation in the man's relationship to the person helped. The other two attraction measures, unfortunately, did not yield significant differences.

Hypothesis 3

Depending on group assignment participants read about a man who financially helped a related child, an unrelated child, an elderly man, or about a man who spent financial resources on himself. It was predicted that helping children financially, compared to helping adults (i.e., the elderly man and himself), would produce an increase in attraction ratings. As predicted, a man who helped children was rated as more attractive, in terms of being a good friend or neighbor, than a man who helped adults. The effect size revealed that 1.9% of the variance in attraction was accounted for by the variation in the man's relationship to the person helped, adult or child. The other two attraction measures, unfortunately, did not yield significant differences.

Hypothesis 4

Depending upon group assignment participants read about a man who creatively helped a related child, an unrelated child, an elderly man, or about a man who

invested creative resources in himself by routinely practicing musical instruments. It was predicted that helping children creatively, compared to helping adults, would produce an increase in attraction ratings. The findings paralleled those found for Hypothesis 3. As predicted, a man who helped children was rated as more attractive, in terms of being a good friend or neighbor, than a man who helped adults. The effect size revealed that 3.6% of the variance in attraction was accounted for by the variation in the man's relationship to the person helped, adult or child. The other two attraction measures, short-term and long-term date, did not yield significant differences.

Secondary Hypothesis 1

It was predicted that helping an unrelated child, either financially or creatively, would lead to higher internal than external motivational ratings for the helper's action. Internal motivations include among other factors (e.g., skills, abilities) individual personality traits. In contrast, social norms, rules or cultural demands are recognized as external motivations (Kelley, 1972). As predicted, men who financially helped an unrelated child were rated as more internally motivated than externally motivated. The effect size revealed that

30.3% of the variance in ratings of internal motivation was accounted for by the variation in the man's relationship to the person helped, an unrelated child. This represents a strong effect indeed for relationship between internal motivation and the man's relationship to the person helped. Similar findings were found for the creative helper. Higher internal ratings than external ratings were given to the man who helped an unrelated child creatively. The effect size revealed that a very robust 59% of the variance in ratings of internal motivation was accounted for by the variation in the man's relationship to the person helped, an unrelated child.

Secondary Hypothesis 2

It was predicted that helping a related child, the man's brother, either financially or creatively, would lead to higher external than internal motivational ratings for the helper's action. Unfortunately, a man who financially helped a related child was rated as responding because of his personality traits more than on the basis of social norms or rules. The effect size revealed that 24% of the variance in internal/external motivation was accounted for by the variation in the man's relationship to the person helped, a related child. Corresponding results were found for the creative helper, higher

internal than external ratings were given to the man who helped a related child. The effect size revealed that 47.6% of the variance in internal/external motivation was accounted for by the variation in the man's relationship to the person helped, a related child. Consistent with the effects of the *correspondence bias* in social psychology, participants held the man personally responsible for his altruism, especially when his help included creative resources.

Exploratory Analysis: Attraction Measures

As noted above the research was conceptualized as a 4 (resource beneficiary) X 2 (resource type) mixed design. The primary hypotheses, however, did not compare levels of the within-subjects variable (i.e. creative and financial resources). In order to determine if creative resources were comparable to the well-understood role of economic stability and financial resources in attracting females, an exploratory 4 X 2 mixed analysis of variance was conducted on the three attraction measures. The main effect for resource type was statistically significant. The creative helper was rated more favorably as a good friend/neighbor than was the financial helper. Mean comparisons at the each level of the resource beneficiary were conducted. There were, however, no significant

differences between a man helping financially and a man helping creatively after adjusting for multiple post hoc comparisons using Dunn's method.

For the long-term date measure no significant main effects or interaction was found. The short-term date measure, however, did yield a significant interaction between resource beneficiary and resource type. Mean comparisons between the types of help provided at each level of the beneficiary yielded only one significant difference. Helping an elderly man financially produced higher ratings as a short-term date than helping creatively. This outcome was not statistically reliable after controlling the Type 1 error rate.

Exploratory Analysis

Generosity Measures

To determine if ratings for helping financially differed from ratings of helping creatively on perceived generosity and motivation, a series of exploratory 4 X 2 mixed analyses of variance were conducted. The results indicated that the participants rated the creative helper as more generous than the financial helper. Mean comparisons at each level of the resource beneficiary indicated that a man who helped his brother creatively was

rated as more generous than a man who helped financially. This difference, however, did not remain significant after controlling for the Type 1 error rate. Finally, the main effect for resource beneficiary was also significant. As one might expect a man who "helped himself" was rated as less generous than a man who helped another person. The effect size revealed that 6.8% of the variance in generosity was accounted for by the variation in the man's relationship to the person helped, himself or another person.

Attribution Measures

Two interesting effects were found when the helper's motivations were measured. The man who helped financially was rated as more externally motivated or adhering to social norms than the man who helped creatively. The effect sizes revealed that, 4.0% of the variance in attributions for internal motivations were accounted for by the variation in the type of help given, creative or financial. A significant difference was also found when the man helped himself. When he helped himself financially, as opposed to helping himself creatively, he was rated as more externally motivated. The effect size revealed that 18.5% of the variance in attributions for

internal motivations was accounted for by the variation in the type of help given, creative or financial.

Consistent with the results reviewed above, the man who helped creatively was rated as more internally motivated than the man who helped financially. When this effect was looked at more closely, two significant differences were found. That is, the creative helper was rated as more internally motivated than the financial helper when the beneficiary was an unrelated child or the man himself. The effect sizes revealed that 5.3% and 8.4%, respectively, of the variances in attributions for internal motivations were accounted for by the variation in the type of help given, creative or financial

Examination of the Findings

Hypothesis 1

The prediction that a man who financially helped an unrelated child would be rated as more attractive than a man who financially helped a related child was not supported. This specific prediction was based on prior research from our lab where a man was rated as more attractive when he financially helped an unrelated child than when he helped a related child (Lanier et al., 2001, 2002; Meter et al., 2003). Two reasons for the

contradiction might be that in the earlier research the helper was 1) helping *his own child* and not his brother, and 2) described as *divorced* and not single. In fact, one reason for conducting the present research was to test the resource-attraction hypotheses eliminating the helper's "negative" personal characteristic of being divorced from the manipulated scenarios. It was also important in the present research to maintain the same 50% degree of biological relationship between the helper and the related child. As a result, the relationship between the helper and the "related child" was changed from father and son as in the earlier research to brothers as in the present research.

It is possible that by describing a related child as a brother, as in the present research, that a salient socio-psychological distinction between the related and unrelated child beneficiaries was not produced. That is, although a helper's brother and biological child share 50% of their genes with the helper, their socio-psychological distinctions are not equivalent. In the earlier research (Lanier et al., 2001, 2002; Meteer et al., 2003) the socio-psychological distinctions produced significant differences in the helper's attractiveness rating when

helping a related and an unrelated child; not so in the present research.

Hypothesis 2

The prediction that a man who musically helped an unrelated child would be rated as more attractive than a man who helped a related child was only partially supported. Like the man who helped financially, the man who helped creatively was not rated as more attractive on two measures (i.e., good friend/neighbor; long term date) when he helped an unrelated child compared to when he helped his brother. The discussion of these failures to find significant differences is analogous to the discussion above for Hypothesis 1.

Helping an unrelated child musically, compared to helping a younger brother, did produce higher ratings of the man's short-term date potential. This supported prediction was based on previous findings from our lab (Lanier et al., 2001, 2002; Meteer et al., 2003) and the expectation that men who display non-financial resources including musical virtuosity would be attractive to females (Miller, 2000). Their attractiveness to women was expected to be similar to men who in previous research provided financial resources exclusively (Buss, 1989, 1995; Buss & Schmitt, 1993). This support for Hypothesis 2

suggests that men who display non-financial resources like musical skill when helping an unrelated child will be seen by women as romantically attractive, at least as a short-term date.

Hypothesis 3

The prediction that a man who financially helped a child (the man's brother and an unrelated child) would be rated as more attractive than a man who helped an adult (himself and an elderly man) was partially supported. Participants rated a man who financially helped a child as a better good friend/neighbor than a man who financially helped an adult. This prediction was based on research indicating that a man who is shown helping a child is particularly attractive (La Cerra, 1994).

According to La Cerra (1994), a man demonstrates his willingness to provide resources, and therefore to be a good potential mate, when he directs his attention and help toward a child in particular. Direct resource contributions to interested women during the dating/mating process are not necessarily required (e.g., *the puppy in the park* phenomenon, see C. Hoffman, personal communication). Rather, a potential mate's ability and willingness to provide for her and her children can be inferred from a man's interactions with children.

Hypothesis 4

The prediction that a man who musically helped a child (the man's brother and an unrelated child) would be rated as more attractive than a man who musically helped an adult (himself and an elderly man) was supported on the good friend/neighbor measure. This specific result is among the most important found in this research because the finding clearly shows that contributing financial and non-financial resources can produce equivalent attraction responses in women.

Again, this prediction was based on La Cerra's (1994) research that suggested that a man helping a child is particularly attractive to women, and the Miller (2000) research suggesting that a man's musical propensity serves as an extended phenotype signaling a man's date/mate potential. Miller (2000) suggested that extended phenotypes including musical skill attract females just as appreciably as a man's financial altruism. Interestingly, a man who creatively helped a child compared to an adult in the present research produced a stronger attraction difference than a man who helped the recipients financially.

Secondary Hypothesis 1

The prediction that a man who helped an unrelated child would be rated as more internally motivated than externally motivated was supported in the present research. This prediction stemmed from earlier findings that suggest helping an unrelated child results in more favorable evaluations than helping a related child (Lanier et al., 2002; Meteer et al., 2003). In the previous research, the helper was described as a divorced man financially helping either his own biological child or an unrelated child. Why was the man helping an unrelated child viewed so favorably? The present research speculated that the favorable ratings may have been due to the possibility that helping an unrelated child reveals more about the helper's internal, personal motives. That is, the participant learns something personal and positive about the helper when an unrelated child is the beneficiary (Lanier et al., 2002; Meteer et al., 2003). In the present research, the man helping an unrelated child was rated as more internally than externally motivated, whether he was contributing financially or musically. In fact, the man who creatively helped an unrelated child produced stronger ratings for internal or personal attributions than the man who helped financially.

Secondary Hypothesis 2

Helping a related child was expected to lead to stronger external than internal attributions. That is, helping a related child would signal the participants that the man knows what he "should or ought" to do. The hypothesis that helping a related child would lead to stronger external than internal attributions was, however, not supported for either creative or financial help. The participants gave stronger internal than external attributions for both the financial and creative benefactor.

Doing what is expected does not normally reveal much information about someone's personal traits or motives. In previous research a divorced man was rated as less attractive when he helped his own child than when he helped an unrelated child (Lanier et al., 2002; Meteer et al., 2003). One reason for this outcome was the possibility that helping a related child would be viewed by the participants as doing something a father was "supposed to do." In the present research, however, the related child was described as a younger brother, not the benefactor's biological child. Recall, that the helper's biological relationship to his child and younger brother is 0.50. Perhaps, helping a younger brother is viewed as

more informative about the helper's personal traits and motives in a way that helping a biological child is not.

APPENDIX A
INFORMED CONSENT

Informed Consent

The study in which you are invited to participate is designed to investigate male attractiveness. Margaret Lanier, a master's student working under the supervision of Dr. Robert Cramer, is conducting this study. You can participate if you are a heterosexual, unmarried female not currently living with a male partner. This study has been approved by the Department of Psychology Institutional Review Board Sub-Committee of the California State University, San Bernardino, and a copy of the official Psychology IRB stamp of approval should appear somewhere on this consent form. The university requires that you give consent before participating in this 20 minute study.

In this study you will be asked to answer some general demographic questions about yourself and then read two short vignettes describing different men. Your responses will be held in the strictest of confidence by the researchers. As no identifying information will be collected for this study, any information you provide will be anonymous and your name will not be reported with your responses. All data will be reported in group form only. At the study's conclusion, you may receive a report of the results.

Your participation in this experiment is completely voluntary. Although there are no foreseeable risks to you by participating in this study, you are free to withdraw at anytime during the study without penalty. After filling out the questionnaire you will receive a debriefing statement describing the study in more detail. If you are a CSUSB student, you may receive X points of extra credit in a selected Psychology class at your instructor's discretion. If you have any questions regarding the study or if you would like a report of the results, please contact Professor Robert Cramer at (909)537-5576 or rcramer@csusb.edu.

By placing a mark in the space below, I acknowledge that I have been informed of and understand the nature and purpose of this study, and freely consent to participate. I also acknowledge that I am at least 18 years of age.

Give your consent to participate by making an X here _____

Today's date is _____

APPENDIX B
DEMOGRAPHIC QUESTIONNAIRE

Demographic Questionnaire

Please complete the following:

1. Age: _____
2. Ethnic background (check which one best describes you):
 Native American
 Asian-American
 Black/African American
 Caucasian
 Hispanic/Latino
 Other (please specify) _____
3. Educational background (check highest level of education completed):
 Some college, no degree
 Two-year college-A.A. Degree
 Four-year college-B.A./B.S. degree
 Graduate coursework
4. Please estimate your total monthly household income in whole dollars.
\$ _____
5. Please estimate the monthly salary in whole dollars earned by people in each of the following job descriptions. (Place the estimated monthly salary in whole dollars in the blank next to each job description.)
\$ _____ Lawyer
\$ _____ School teacher
\$ _____ Business person
\$ _____ Medical doctor
\$ _____ Professional musician
\$ _____ Construction worker
\$ _____ Real estate agent
6. Sexual orientation (check which best describes you):
 Heterosexual
 Homosexual
 Bisexual
7. Current marital status (check which one applies):
 Married
 Single, living with significant other
 Single, not living with significant other

Do you have children? ___ No ___ Yes

APPENDIX C
STATEMENTS

READ THE DESCRIPTION IN THE BOX VERY CAREFULLY

Directions: Below is a list of statements describing the man about which you have just read. Please use the scale next to each statement to rate your level of agreement or disagreement with the statement. Circle the number on the scale that represents you level of agreement or disagreement with the statement.

	Strongly Disagree	1	...	2	...	3	...	4	...	5	...	6	...	7	Strongly Agree
1. This man's actions result from social norms, rules and cultural demands.		1		2		3		4		5		6		7	
2. This man is generous with his personal resources.		1		2		3		4		5		6		7	
3. This man is more feminine than masculine.		1		2		3		4		5		6		7	
4. Based on what I have read about this man and assuming there is nothing inhibiting me, he has potential as a short-term dating partner.		1		2		3		4		5		6		7	
5. Based on what I have read about this man, he would be a good friend or neighbor.		1		2		3		4		5		6		7	
6. This man is more masculine than feminine.		1		2		3		4		5		6		7	
7. This man's actions result from his unique personal traits or internal motivations.		1		2		3		4		5		6		7	
8. Based on what I have read about this man and assuming there is nothing inhibiting me, he has potential as a long-term dating partner.		1		2		3		4		5		6		7	

APPENDIX D

VIGNETTES

Vignettes

Creative Condition

1. Doug is a single, unattached man in his mid 20's from Southern California. He spends four hours every week sharing his extensive musical knowledge while teaching his ten-year-old brother to play several musical instruments.
2. Doug is a single, unattached man in his mid 20's from Southern California. He spends four hours every week sharing his vast musical knowledge while teaching an acquaintance's ten-year-old son to play several musical instruments.
3. Doug is a single, unattached man in his mid 20's from Southern California. He spends four hours every week increasing his vast musical knowledge and practicing several musical instruments.
4. Doug is a single, unattached man in his mid 20's from Southern California. He spends four hours every week sharing his vast musical knowledge while teaching an unrelated elderly man at a local nursing home to play several musical instruments.

Financial Condition

1. Matt is a single, unattached man in his mid 20's from Southern California. He spends \$75.00 every week on childcare expenses, clothing and some "fun things" for his ten-year-old brother.
2. Matt is a single, unattached man in his mid 20's from Southern California. He spends \$75.00 every week on childcare, clothing and some "fun things" for an acquaintance's ten-year-old son.
3. Matt is a single, unattached man in his mid 20's from Southern California. He spends \$75.00 every week on an exercise club membership, a personal trainer and grooming products.
4. Matt is a single, unattached man in his mid 20's from Southern California. He spends \$75.00 every week on recreation expenses, personal items and the grooming needs of an unrelated elderly man in a local nursing home.

REFERENCES

- American Psychological Association. (1992). Ethical principles of psychologists and code of conduct. *American Psychologist, 47*, 1597-1611.
- Andersson, M. (1994). *Sexual selection*. Princeton University Press.
- Bercheid, E. (1985). Interpersonal attraction. In G. Lindzey, & E. Aronson (Eds.), *The handbook of social psychology* (3rd ed., Vol.3, pp. 413-484). New York: McGraw-Hill.
- Brown, S. (2000). Evolutionary models of music: From sexual selection to group selection. *Perspectives in Ethology, 13*, 231-281.
- Buss, D. M. (1989). Sex differences in human mate preferences: evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences, 12*, 1-49.
- Buss, D. M. (1995). Evolutionary psychology: a new paradigm for psychological science. *Psychological Inquiry, 6*, 1-30.
- Buss, D. M. (1998). Sexual strategies theory: Historical origins and current status. *Journal of Sex Research, 35*, 19-33.

- Buss, D. M. (1999). *Evolutionary psychology: The new science of the mind*. Boston: Allyn and Bacon.
- Buss, D. M. (2003). *The evolution of desire* (Rev. ed.). New York: Basic Books.
- Buss, D. M., & Schmitt, D. P. (1993). Sexual Strategies Theory: A contextual evolutionary analysis of human mating. *Psychological Review*, *100*, 204-232.
- Byrne, D. (1971). *The attraction paradigm*. New York: Academic Press.
- Byrne, D., & Nelson, D. (1965). Attraction as a linear function of positive reinforcement. *Journal of Personality and Social Psychology*, *1*, 659-663.
- Cosmides, L., & Tooby, J. (1992). Cognitive adaptations for social exchange. In J. H. Barkow, L. Cosmides, & J. Tooby (Eds.), *The adapted mind: Evolutionary psychology and the generation of culture* (pp. 163-228). Oxford, England: Oxford University Press
- Cramer, R. E., Weiss, R. F., Steigleder, M. K., & Ballin, S. S. (1985). Attraction in context: Acquisition and blocking of person-directed action. *Journal of Personality and Social Psychology*, *49*, 1221-1230.

- Cronin, H. (1991). *The ant and the peacock: Altruism and sexual selection from Darwin to today*. Cambridge, UK: Cambridge University Press.
- Darwin, C. R. (1871). *The descent of man and selection in relation to sex*. London: John Murray.
- Dawkins, R. (1999). *The extended phenotype: The long reach of the gene*. Oxford University Press: Oxford.
- Gangestad, S. W., & Thornhill, R. (1997). Human sexual selection and developmental stability. In J. A. Simpson, & D. T. Kenrick (Eds.), *Evolutionary social psychology* (pp. 169-195). Mahway, NJ: Erlbaum.
- Grammer, K., & Thornhill, R. (1994). Human facial attractiveness and selection: The role of averageness and symmetry. *Journal of Comparative Psychology* 108, 233-242.
- Griskevicius, V., Cialdini, R. B., & Kenrick, D. T. (2006). Peacocks, Picasso, and parental investment; The effects of romantic motives on creativity. *Journal of Personality and Social Psychology*, 91, 63-85.

- Irons, W. (1979). Cultural and biological success. In N. A. Chagnon & W. Irons (Eds.), *Natural selection and social behavior* (pp. 257-272). North Scituate, MA: Duxbury Press.
- Kelley, H. H. (1972). Attribution in social interaction. In E. E. Jones, D. E. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), *Attribution: Perceiving the causes of behavior* (pp. 1-26). Morristown, NJ: General Learning Press.
- Kenrick, D. T., Sadalla, E. K., Groth, G., & Trost, M. R. (1990). Evolution, traits, and the stages of human courtship: Qualifying the parental investment model. *Journal of Personality*, 58, 97-116.
- La Cerra, M. M. (1994). *Evolved mate preferences in women: Psychological adaptations for assessing a man's willingness to invest in offspring*. Unpublished doctoral dissertation, Department of Psychology, University of California, Santa Barbara.
- Lanier, M. A., Hoffman, C. D., & Cramer, R. E. (2001, May). *Personal and financial generosity increases divorced father's attractiveness*. Poster session presented at the 81st annual Western Psychological Association's Convention, Maui, HI.

- Lanier, M. A., Messing, J. T., & Cramer, R. E. (2002, April). *Effects of helping children on perceived attractiveness of divorced men*. Poster session presented at the 82nd the Western Psychological Association, Irvine, CA.
- Meteer, J., Messing, J. T., & Cramer, R. E. (2003, May). *Helping children and the attractiveness of divorced men*. Poster session presented at the 83rd Western Psychological Association, Vancouver, B.C., Canada.
- Miller, G. F. (1997). 'Protean primates: The evolution of adaptive unpredictability in competition and courtship', in Whiten, A. and Byrne, R. W. (Eds.), *Machiavellian Intelligence II: Extensions and Evaluations* (Cambridge: Cambridge University Press), pp. 87-129.
- Miller, G. F. (1999). Sexual selection for cultural displays. In R. Dunbar, C. Knight, & C. Power (Eds.) *The Evolution of Culture* (pp. 71-91). Rutgers University Press: New Brunswick, N.J.
- Miller, G. F. (2000). *Evolution of human music through sexual selection*. In N.L Wallin, B. Merker and S. Brown (Eds.) *The Origins of Music* (pp. 229-360). Cambridge, Massachusetts: The MIT Press.

- Miller, G. F. (2007). Reconciling evolutionary psychology and ecological psychology: How to perceive fitness affordances. *Acta Psychologica Sinica*, 39, 546-555.
- Murstein, B. I. (1972). Stimulus-value role: A theory of marital choice. *Journal of Marriage and the Family*, 32, 465-481.
- Newcomb, T. M. (1961). *The acquaintance process*. New York: Holt, Rinehart, and Winston.
- Shackelford, T. K., & Larsen, R. J. (1997). Facial asymmetry as indicator of psychological, emotional, and physiological distress. *Journal of Personality and Social Psychology*, 72, 456-466.
- Singh, D. (1993). Adaptive significance of female physical attractiveness: Role of waist-to-hip ratio. *Journal of Personality & Social Psychology*, 65, 293-307.
- Smuts, B. B. (1985). *Sex and friendship in baboons*. New York: Aldine Publishing Company.
- Symons, D. (1979). *The evolution of human sexuality*. New York: Oxford University Press.
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Boston: Allyn and Bacon.

- Tooby, J., & Cosmides, L. (1992). Psychological foundations of culture. In J. Barkow, L. Cosmides, and J. Tooby, (Eds.) *The adapted mind* (pp. 19-136). New York: Oxford University Press.
- Tooby, J., & Cosmides, L. (1996). Friendship and the banker's paradox: Other pathways to the evolution of adaptations for altruism. *Proceeding of the British Academy, 88*, 119-143.
- Trivers, R. L. (1972). Parental investment and sexual selection. In B. Cambell (Ed.), *Sexual selection and the descent of man* (pp. 136-179). New York: Aldine de Gruyter.
- Veblen, T. (1899). *The theory of the leisure class: An economic study of institutions*. New York: Macmillian.
- Zahavi, A. (1975). Mate selection: A selection for handicap. *Journal of Theoretical Biology, 53*, 205-214.
- Zahavi, A. (1997). *The Handicap Principle: A Missing Piece of Darwin's Puzzle*. New York: Oxford University Press.