AMERICAN UNIVERSITY OF BEIRUT

THE RELATION BETWEEN COSMETIC SURGERY AND MATE SELECTION IN A LEBANESE SAMPLE

by
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AN ABSTRACT OF THE THESIS OF

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Research on mate selection preferences and the variables affecting mate choice has been extensive in the past years. Yet, little research has been conducted investigating the relation between attractiveness, cosmetic surgery, and mate selection. This relation appears to be affected by culture, specifically by traditional gender role ideologies and values.

This study aims at investigating how cosmetic surgery affects short-term and long-term mate selection, while controlling for the effects of traditional gender ideology and Schwartz's Human Values. Participants (N=299) were selected from the Lebanese community and asked to rate facial pictures for attractiveness. A survey was then filled to measure their beliefs about gender roles and their interest in pursuing a relationship with the person they rated in the picture.

Results showed a high correlation between attractiveness, long-term, and short-term mate selection. Participants were less likely to commit themselves to people who have had cosmetic surgery. Furthermore, as the endorsement of hospitality and honor, which are important Arab values, increased, participants' interest in short-term relationships decreased.

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CHAPTER I

MATE SELECTION

Researchers have been interested over the last decades to find which characteristics people value in potential mates; how these characteristics vary across cultures and sexes; and whether there exist species-typical preferences that transcend cultures and the sexes (Buss et al., 1990). Mating preferences, or the desire for certain characteristics in mates and not others, usually determine the ground rules for mate selection (Buss, 2006). The importance of identifying these mating preferences in humans can help in finding clues to the reproductive histories of species as well as uncovering information about the current directions in sexual selection (Buss et al., 1990).

The interest in mating preferences can be traced back to Darwin's classic 1871 treatise *The Descent of Man and Selection in Relation to Sex*. After introducing the concept of natural selection, Darwin proposed the concept of sexual selection which was regarded as the second process that caused evolutionary change. One of Darwin's key components of sexual selection is inter-sexual selection, defined as the preferential choice of some mating partners over others. The second component, intra-sexual selection, is defined as the competition between members of the same sex for access to members of the opposite sex (Buss & Barnes, 1986; Buss et al., 1990; Buss, 2006). Sexual selection, therefore, depends on the advantages which certain individuals have over other members of the same sex for reproductively relevant resources held by members of the opposite sex (Buss, 2009).

All humans are descendants of a long line of ancestors who succeeded in the complex tasks required for mating successfully. The solutions for successful mating, i.e. solving adaptive problems, are known as sexual mating strategies that humans implement to find a

partner and mate successfully (Buss, 2006). Although a large array of human mating

strategies exists, the focus of the following study will be on strategies related to long-term

and short-term matings. Three levels of analysis should be addressed when dealing with mate

selection: (a) the characteristics that are consensually desired and sought in a potential mate;

(b) the major sex differences that reflect what women or men desire in their partner, as well

as (c) individual differences which are usually affected by culture, gender roles, and

expectations (Buss & Barnes, 1986).

<center>A. Theories of Mate Selection</center>

When trying to examine the origins of sex differences in mate selection, two major

theories emerge: (1) the evolutionary theory which is based on the evolved mating strategies

that differ by sex due to the different adaptive problems our ancestors faced (Buss, 2006), as

well as (2) the social roles theory which is grounded in the social roles model and argues that

sex differences in mate preferences are due to internalized traditional gender role ideologies

which are acquired through the process of socialization (Eagly & Wood, 1999).

1. The Evolutionary Perspective: Sexual Strategies Theory

Evolutionary psychology is an important theoretical perspective in many branches of

psychology and provides a powerful framework for predicting when we should and should

not expect sex differences in mating strategies (Dekay & Buss, 1992). Evolutionary

psychologists believe that there are two types of benefits that mates provide: The genetic

benefits to offspring, i.e., good genes, as well as the material benefits to the perceiver such as

food, care for offspring, and physical protection. Hence, the tendencies to be attracted to

particular traits in individuals of the opposite sex and not others are presumed to have

benefited their bearers. This is because the individual's own reproductive success is affected

by qualities of the individuals with whom they mate. Selection, therefore, can be viewed as a

<center>2</center>

process that favored dispositions to be attracted to mates who possessed qualities that signal delivery of benefits (Gangestad & Scheyd, 2005).

Long-term Mate Selection and Evolutionary Theory. Women and men employ different strategies to achieve the common goal of conception, birth, and survival of their offspring according to the different adaptive problems that each sex faced throughout human history (Buss, 1988). Women, for example, have faced the problem of childbirth as well as securing a reliable supply of resources and protection to carry them through pregnancy and lactation (Buss, 1995). The primary reproductive constraint for men, on the other hand, consists of gaining sexual access to women and finding fertile mates who can carry their offspring (Buss, 1988). In other words, it is proposed that men and women are expected to differ only in the domains where they have faced different adaptive problems over the course of evolutionary history and not in the domains where the sexes have faced the same adaptive problems such as thermal regulation or maintaining body temperature (Dekay & Buss, 1992).

The sexual strategies theory (Buss & Schmitt, 1993), a theory based on evolutionary premises, proposes that because females have a relatively higher parental investment than males due to biological reasons, our female ancestors became very selective about the characteristics they looked for in a mate. In particular, it was adaptive for a female, her offspring, and her genes if she selected a mate who could provide sufficient resources for her and her offspring's survival because females invest more than males by bearing the costs of pregnancy (Kasser & Sharma, 1999). Building on this argument, the sexual strategies theory proposes that "modern-day females desire ambitious, wealthy, and high-status mates, as the preference for these characteristics bore our female ancestors reproductive advantage" (Kasser & Sharma, 1999, p.374).

In other words, and according to the evolutionary perspective and the wealth of evidence that support its claims (Buss & Barnes, 1986; Buss et al., 1990; Buss, Shackelford, Kirkpatrick, & Larsen, 2001; Eastwick & Finkel, 2008; Feingold, 1992; Buss & Schmitt, 1993; Li, Kenrick, Bailey, & Linesnmeier, 2002), human females select partners on the basis of two crucial factors: (a) cues of genetic quality and/or (b) cues that suggest a male's willingness and ability to contribute resources to the female and her offspring. Hence, given that level of resources that parents are willing to invest in their children is likely to be a crucial factor in determining the health and likelihood of survival of those children, females are expected to place high importance in the resources available to their potential mate (Chu, Hardaker, & Lycett, 2007).

Men, on the other hand, are less inclined to pursue a romantic involvement with a female with high socio-economic status (SES) because they link females with high SES to unfaithfulness and less desirability. This finding was demonstrated in a study conducted by Greitemeyer (2007) on a German community sample. Male and female participants were given photographs and descriptions of potential partners who differed in their physical attractiveness and their SES respectively and were then asked to rate the degree to which they would commit themselves into a short-term or a long-term relationship with the person in the photograph. Females reported greater likelihood of romantic contact when the potential partner had a higher rather than a medium SES, whereas males reported greater likelihood of romantic contact when the potential partner had a medium rather than a high SES. It is worth noting that these tendencies were more pronounced when both sexes considered a long-term relationship rather than a one-night stand or short-term relationship (Greitemeyer, 2007).

The mating strategies that characterize males, as opposed to females, is their desire to partners who are "younger than themselves", "good looking", and "physically attractive"

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especially that these characteristics are associated with health, fertility, and reproductive value (Buss, 2006). This is because mating with less fertile women can be costly in lost opportunities, especially in mating systems that require prolonged courtship and discourage multiple matings (Buss, 1988). As for female reproductive value, it is indicated by characteristics of youth and health, and these, argued Buss (2009), are most accurately evaluated from physical appearance and attractiveness. Hence, males are said to be attracted to the opposite sex primarily by visual cues that reflect youthfulness and physical attractiveness which are the characteristics associated with fertility and the capacity to reproduce (Feingold, 1992).

Evolutionary psychology provides a powerful theory about the standards related to attractiveness and beauty: "whatever observable cues are linked with fertility (immediate probability of conception) or reproductive value (future reproductive potential) will evolve to become part of what males find attractive in females" (Buss, 2006, p. 245). The cues to physical attractiveness which men value include full lips, smooth and clear skin, soft hair, absence of sores, white teeth, colorful cheeks and symmetrical features; as well as secondary sexual characteristics including breasts and buttocks, which tend to be cues to youth, sexual maturity, and fecundity (Li & Kenrick, 2006; Zaidel, Aarde, & Baig, 2005).

Li, Bailey, Kenrick, and Linsenmeier (2002) conducted two studies to examine the mating preferences that are deemed necessary for participants and those preferences that they consider as luxuries in order to examine the claims of evolutionary theorists on long-term mate selection. The first community sample included 78 participants while the second sample consisted of 178 college students. Results demonstrated that sex differences in attractiveness and status characteristics are indeed critically important to the mate selection process, as the participants tended to treat these traits as necessities. In line with the previous research, the

results of the study showed that physical attractiveness was rated as a necessity by men when choosing a mate, while status and resources were rated as necessities by women when seeking a long-term partner.

A more comprehensive study investigating mating preferences for both sexes was conducted by Buss (1989) and Buss et al. (1990) who surveyed 10,047 participants spread across 37 different cultures on six continents. Participants were asked to fill a survey which included the ranking and rating of desirable characteristics for choosing mates on a four-point scale ranging from "indispensable" to "unimportant". Results confirmed that compared to males, females in almost every culture showed a greater preference for resource acquisition characteristics such as good financial prospect and good earning capacity; while males showed a greater preference for good looks, physical attractiveness and youthfulness.

Buss's (1990) study also found differences between cultures in mating preferences. These differences occurred mainly in the characteristics related to the domain of traditional gender values such as chastity, housekeeper, as well as for desire for home and children (Buss et al., 1990). The study also included a "Middle Eastern" sample of Iranian and Palestinian Arabs. The Iranian sample showed the lowest commonality with the internationally based means whereby high value was placed on certain desired mate characteristics such as chastity, health, religion, and similar political backgrounds. The Palestinian Arab sample also emphasized culturally acquired values, whereby high emphasis was placed on similar political background, desire for home and children, as well as chastity and religion (Buss et al., 1990). These results reflect the importance of culture when examining individual differences in mating preferences and mate selection.

One of the few studies conducted in the region is Khallad's (2005) survey of mate preferences for long-term relationships within an Arab Jordanian context. The sample

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consisted of 288 Jordanian college students with ages ranging from 18 to 32. The study

confirmed the existence of sex differences in mate preferences within an Arab Jordanian

cultural context; Jordanian participants favored what have been shown to be universally

desirable qualities such as love, kindness, and pleasing disposition but they also valued

traditional mate attributes such as religiosity, neatness and refinement, and desire for home

and children. The study also showed, in line with evolutionary theory, that Jordanian men

and women differed in their judgment of criteria for choosing a long-term mate, whereby

men indicated greater preference than women for mates with attributes associated with

reproductive capacity (such as youth and physical attractiveness), while women placed

greater emphasis than men on qualities indicative of resource acquisition (Khallad, 2005).

Short-term Mate Selection and Evolutionary Theory. When it comes to short-term

mate selection, men tend to be more interested than women in short-term relationships (Li &

Kenrick, 2006). Buss and Schmitt (1993) state that when people were asked how many sex

partners they would ideally like, men would like 18 in their lifetime while women average

around 4.5. Previous evolutionary research (Buss, 2006; Li & Kenrick, 2006) has shown that

men desire more sexual variety, consent to sex with strangers, and have the tendency to let

little time elapse before seeking sexual intercourse with their partner. This is because men,

more than women, are predicted to have evolved a greater desire for casual sex due to

biological differences between the two sexes. For instance, the same act of sex that causes a

woman to invest nine months in pregnancy obligates the man to little or no investment.

According to evolutionary theorists, men ensure their reproductive success by multiplying or

maximizing their chances of reproduction with as many women as possible (Buss & Schmitt,

1993).

Whereas men are physically required to contribute only a few sex cells to offspring, women must provide substantial pre- and postnatal resources if offspring are to survive. Hence, although offspring provide equal reproductive benefits to both parents, they present much higher costs to women if they are the results of uncommitted sex. Therefore, and in reproductive terms, the prospect of a short-term relationship typically has a higher cost-to-benefit ratio for women than for men (Li & Kenrick, 2006). Women who pursue short-term relationships also face the problem of reputational damage because they risk impairing their long-term mate value when they acquire a social reputation as promiscuous (Buss & Schmitt, 1993).

It is also worth noting that when people are asked about which characteristics they look for in short-term partners, both genders consistently show a preference for physical attractiveness over other attributes (Buss, 2006; Li & Kenrick, 2006). This is because regardless of gender, humans tend to associate short-term relationships with attractiveness, hedonism, and pleasure.

2. *The Social Roles Theory*

The social roles theory contends that sex differences in human behavior arise from the contrasting positions of men and women in society. Specifically, they arise from the greater power and status often associated with men's roles as well as from the sex-typed division of labor (Wood & Eagly, 2000). Gender roles theorists portray women as socially and domestically skilled individuals and men as instrumentally competent and assertive individuals (Johannesen-Schmidt & Eagly, 2002).

In the case of mate selection, the social roles theorists argue that females value money, status, and ambition in mates because females in most societies have generally less access to power and resources than males. In fact, the division of labor in most contemporary

societies is such that women spend relatively more time in child-rearing and domestic work than men; whereas men spend relatively more time in paid employment than women. Given this system, women are expected to maximize their outcomes by seeking a mate who is likely to be successful in the economic, wage earning role; i.e. a potentially good provider (Johannesen-Schmidt & Eagly, 2002). In turn, men maximize their outcomes by seeking a mate who is likely to be successful in the domestic role; i.e. a potentially good homemaker. Moreover, according to Eagly and Wood (1999), these culturally expected roles are enhanced by an age difference in which the husband is usually older than the wife because such an age difference supports a patriarchal marital system in which the male has greater resources and power than the female.

This "structural powerlessness" hypothesis predicts that where females have economic equality, the differences between men's and women's mate preferences should diminish (Kasser & Sharma, 1999). The data from Buss's 1990 cross-cultural research were re-examined in a study by Kasser and Sharma (1999). Results showed that when cultures do not provide females with access to resources or educational levels equal to those of males, females tend to value in their mates high levels of the resource-acquisition characteristics of ambition, status, and financial security.

As to why women place less emphasis on physical attractiveness in long-term partners, the socio-cultural perspective argues that this is because women have less access to status, power, and economic resources than men do. Thus, to gain upward mobility by acquiring more resources, women place relatively higher emphasis on status-linked traits in their marriage partners. On the other hand, if the intended mating duration is short-term, then economic constraints should be less relevant and both sexes should be free to prioritize physical quality of their potential short-term mates as men do for long-term mates (Li &

Kenrick, 2006). It is worth noting, nonetheless, that the concept of attractiveness varies

between genders. Women, for instance, consider facial masculinity and bilateral symmetry to

be attributes related to physical attractiveness in men (Li & Kenrick, 2006).

Traditional Gender Ideology. According to the social roles theory, mate preferences

are due to internalized traditional gender role ideologies which are acquired through the

process of socialization. By definition, traditional gender ideology encompasses the

preferences that people might have for the conventional division of labor between male

providers and female homemakers and for the associated patriarchal system that cedes more

power and status to the male provider (Eastwick et al., 2006). These gender roles include the

preferred or desirable attributes of men and women which equip them for the tasks that they

typically carry out. Moreover, gender roles depend on a range of individual, situational, and

cultural conditions and may become internalized and stereotypic by affecting behavior and

becoming part of individuals' self-concepts and personalities (Eagly & Wood, 1999). To

understand gender ideology in terms of preference for traditional social roles is compatible

with the social roles theory contention that the placement of men and women in different

roles underlies many of the sex differences in preferences for mates (Eastwick et.al, 2006).

Hence, it becomes essential to examine the effects of culture when studying mate selection

such as traditional gender role ideologies and values that influence expectations and actual

behavior.

The Ambivalent Sexism Inventory (ASI) (Glick & Fiske, 1996) has been used in

several studies (Eastwick et al., 2006; Johannesen-Schmidt & Eagly, 2002) to assess the

concept of traditional gender ideology. The ASI taps two positively correlated components of

sexism that represent opposite evaluative orientations toward women: Hostile Sexism (HS)

and Benevolent Sexism (BS). HS is defined as the traditional aspect of sexism that fits the

definition of prejudice and involves negative feelings towards women. High scorers on the HS scale are likely to have less favorable attitudes towards women in non-traditional roles such as career women. BS, on the other hand, is defined as the "set of interrelated attitudes towards women that are sexist in terms of viewing women stereotypically and in restricted roles but that are subjectively positive in feeling tone and also tend to elicit behaviors typically categorized as pro-social or intimacy seeking" (Glick & Fiske, 2007, p. 491). In other words, whether benevolent or hostile, both remain forms of sexism and represent psychologically consistent attitudes that function to justify and reinforce traditional gender roles (Eastwick et.al, 2006).

Eastwick et al. (2006) conducted a study on 1,606 males and 2,076 females to assess traditional gender ideology in nine nations by using the ASI. The results showed that to the extent that participants had a traditional gender ideology, they exhibited greater sex-typing of mate preferences: Women who endorsed the traditional gender roles preferred an older mate than did women with less traditional attitudes, whereas men with traditional attitudes preferred a younger mate than did men with less traditional attitudes (Eastwick et al., 2006). Another study (Johannesen-Schmidt & Eagly, 2002) conducted on sample of 198 college students, tested the claim that sex differences in mating preferences reflect the tendency for men and women to occupy different social roles in society. Participants responded to the ASI to assess traditional gender ideology. Both hostile and benevolent sexism were correlated with mate selection criteria that differed between genders. For instance, the more men supported the traditional female role, the more importance they placed on qualities in their mate related to physical attractiveness and younger age. Moreover, women who scored higher on BS attached greater importance to traditional female qualities. These results demonstrated that to the extent that people support the traditional female role, they have preferences for

long-term partners who fit the traditional male-female division of labor where the woman is seen as the home-keeper and male as the main resource provider (Johannesen-Schmidt & Eagly, 2002). Hence, people high on sexism seek more traditional partners.

Schwartz's Values. Despite the extensive literature on mate preferences, gender, and culture, the relationship between individual values and partner preferences has not been directly explored (Goodwin & Tinker, 2002). By definition, values are seen as deeply rooted, abstract motivations that guide, justify, and explain attitudes, norms, opinions, and actions (Davidov, Schmidt, & Schwartz, 2008). Moreover, it has been shown that some mates desire characteristics that are directly linked to values which are acquired culturally such as the desire for "chastity" in certain cultures when looking for long-term partners (Buss, 1990). Goodwin and Tinker (2002) demonstrated in a study conducted on the relation between individual values and partner preferences that values play an important role in the prediction of some partner preferences. For example, the study showed that participants high on values rated to "conservation" seek more traditional partners. Hence, it could be expected that people high on values related to conservation and tradition tend to be more interested in long-term than short-term relationships.

The most comprehensive study of values was conducted over the last decade by Shalom Schwartz (1992) who introduced a model of 10 motivationally distinct values that have been tested across more than 40 cultures and which are presumed to encompass the major value orientations recognized across cultures. The ten basic values are: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, conformity, tradition, and security (Schwartz & Rubel, 2005) (See Fig. 1). Moreover, research in these cultures supports the discrimination of these 10 values and provides evidence for their

predicted associations with numerous attitudes, behaviors, and personality traits (Schwartz &

Rubel-Lifschitz, 2009).

Figure 1

Schwartz's Values
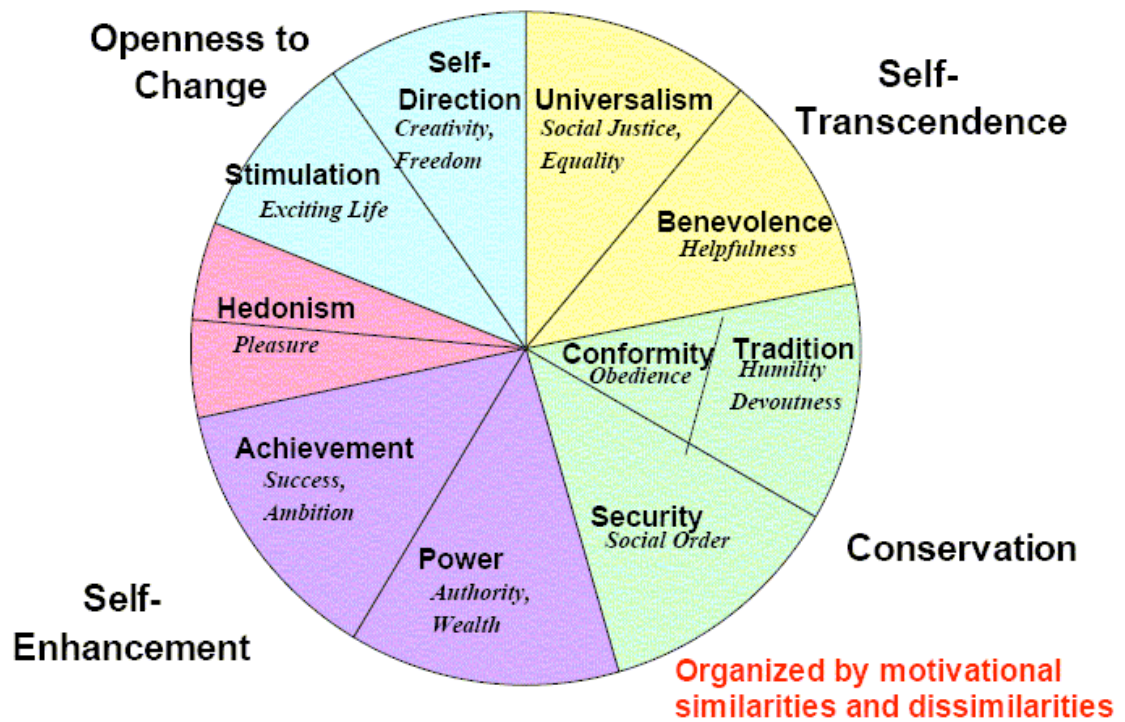
The 10 values are grouped to form higher order values. These include (1) openness to

change with the components stimulation, self-direction, and hedonism; (2) self-enhancement

with the components achievement and power; (3) conservation with the components security,

tradition, and conformity; and (4) self-transcendence with the components universalism and

benevolence. The four values can be organized along two dimensions. Dimension one

compares openness to change (independent action, thought, and change) versus conservation

(submission and self-restriction); while dimension two contrasts self-transcendence with self-

enhancement (values which emphasize the pursuit of success and dominance over others) (Goodwin & Tinker, 2002). Drawing from this theory, it is expected that people who endorse traditional values would be more interested in seeking long-term relationships whereas people high on openness to change values are expected to be more interested in pursuing short-term relationships.

CHAPTER II

COSMETIC SURGERY

Regardless of the extent to which people can possess the signals that have been associated with high mate value (especially those associated with physical attractiveness), these signals are vulnerable to deception. This is because humans have found innumerable ways of modifying their bodies to achieve this effect (Gangestad & Scheyd, 2005). Therefore, many females are choosing to undergo cosmetic surgery procedures to increase their mate value and "appeal" more to mates especially that, as mentioned earlier, beauty and attractiveness signal health and fertility; the highly desirable qualities that males look for in potential female mates. This is due to the fact that women's perceptions of men's preferences play an important role in shaping the ideal female beauty (Khalaf & Gagnon, 2006). Hence, it becomes essential to examine how cosmetic surgery, which directly influences physical attractiveness (an important characteristic in mating preferences), affects decisions related to mate selection.

A. Importance and Popularity

One of the debated, and at times tabooed, types of services that promote "beauty" is cosmetic surgery (Askegaard, Gersten, & Langer, 2002). Each year, tens of thousands of

persons undergo elective cosmetic surgery to alter their physical appearance (Sarwer, Wadden, Pertschuk, & Whitaker, 1998). Cosmetic surgery continues to grow in popularity in the United States, perhaps stimulated by the impressive physical rejuvenations exhibited by media figures. The American Society of Plastic and Reconstructive Surgeons reported over 1.7 million people who had undergone elective cosmetic surgery in 2003 (Henderson-King & Henderson-King, 2005; Sansone & Sansone, 2007).

Numerous factors may be contributing to the increasing popularity of cosmetic surgery such as self-presentational concerns and self-esteem (Culos-Reed, Brawley, Martin, & Leary, 2002). Moreover, it has been demonstrated that in almost every significant domain of life, attractive people get better outcomes than unattractive people. For instance, studies have shown that good-looking people have more friends, better social skills, and a more active sex-life than unattractive people (Willis & Todorov, 2006). Other reasons that are attributed to the rise in the demand on cosmetic surgery include advances in surgical procedures, lower costs, as well as increased emphasis on physical appearance. Furthermore, individuals are increasingly exposed to the possibility of cosmetic surgery through their social networks (Henderson-King & Henderson-King, 2005). "Media coverage of cosmetic surgery is now a commonplace, as advertisements promise enhanced attractiveness, magazines tout the latest developments in surgical procedures, and television reality shows celebrate physical makeovers" (Henderson-King & Henderson-King, 2005, p.138).

B. Cosmetic Surgery in Lebanon

Although no official figures are available, demand on cosmetic surgery in Lebanon has been on the rise especially in recent years (Nasrallah, 2007). Perhaps the popularity of cosmetic surgery procedures is also encouraged by the competitive prices in the Lebanese

market. As in Western markets, cosmetic surgery for the Lebanese appears to be evolving from a luxury service to a matter of "maintenance" (Ohrstrom, 2007). The First National Bank (FNB) in Lebanon started a one-of-its kind loan in the region for plastic surgery using an advertising campaign "Beauty is no longer a luxury" (Ghazal, 2007). As Firas Abi Farraj, branch manager at FNB, puts it: "the loan started after a lot of studies confirmed to us that the demand on plastic surgery is increasing tremendously each year" (Firas Abi Farraj, personal communication, January 9, 2009).

C. Cosmetic Surgery and Evolutionary Theory

Although no studies that link cosmetic surgery and evolutionary theories have been conducted, a relation between the two can be proposed. First, cosmetic surgery advertises physical attractiveness which in turn is an indicator of health and fertility according to the evolutionary literature on mate selection. Hence, when physical attractiveness is resulting from surgical procedures, then it is not natural and thus stops being an indicator of health. Consequently, it can be expected that when people look for partners, especially long-term mates, their interest in dating people who have undergone cosmetic surgery will decrease because the physical attractiveness is resulting from cosmetic surgery (faked beauty) as opposed to the desired natural physical attractiveness.

CHAPTER III

OVERVIEW AND HYPOTHESES

A. Aim of the Study

The importance of this study lies in understanding the effects of cosmetic surgery on ratings of attractiveness and mate selection preferences, an under-researched area. The worldwide increasing demand on cosmetic surgery and the wide-spreading tips on beauty standards make this research project contemporary. Moreover, the inclusion of cosmetic surgery as a variable that could enhance or reduce the chances of choosing a long-term or short-term partner has not been researched in the literature before. This will help in investigating evolutionary principles which are related to attractiveness and mate selection. For instance, the study will explore whether using cosmetic surgery procedures will affect the levels of perceived attractiveness in the potential long-term or short-term mate across genders. Moreover, gender role ideology including levels of sexism and endorsement of values will be examined to find out how they affect mating preferences. This study is also of value because of the lack of research on mate selection, attractiveness, and cosmetic surgery in Lebanon.

B. Overview of Design

Facial pictures of males and females were taken from the website flickr.com after obtaining the authorization to use the selected photos in this research. Each picture had a before and after condition. The after condition was a replication of the before condition in

addition to simple cosmetic enhancements (e.g. make-up). For the pictures to suit the purpose

for this study, a plastic surgeon was contacted to manipulate the original pictures through the

use of imaging software in order to reflect changes in the facial features similar to those

which occur when cosmetic surgery is performed.

Because one goal of the study is to uncover how people react to faked beauty

(cosmetic surgery), participants were assigned to and asked to rate one of the following three

conditions: the original picture (before manipulation, BM), the modified picture without

informing the participant of the manipulation (non informed condition, NIC), or the modified

picture with the participant's knowledge of the manipulation (informed condition, IC).

Participants in IC were shown the photo with an instruction on the bottom of the photo

specifying that the person in the picture has undergone cosmetic surgery.

The present study investigated the relation between attractiveness, cosmetic surgery,

and mate selection while examining the effects of sexism and values. The independent

variables are cosmetic surgery (3 levels: BM, NIC, and IC) and gender (2 conditions). The

dependent variables are attractiveness, long-term mate selection, and short-term mate

selection. As for the covariates, they included Benevolent Sexism (BS), Hostile Sexism (HS),

and Schwartz's values.

C. Relevant Hypotheses

To examine the earlier mentioned relation between attractiveness, short-term and long-term mate selection, and cosmetic surgery, several hypotheses are proposed:

1. Correlations between the Dependent Measures

According to the evolutionary principles on mate selection, males prioritize physical attractiveness in the potential long-term female partner. When it comes to short-term mate selection, however, both sexes value physical attractiveness. Hence,

Hypothesis 1a: The higher the ratings of attractiveness, the more male participants will be interested in a long-term relationship with the potential partner.

Hypothesis 1b: The higher the ratings of attractiveness, the more participants will be interested in a short-term relationship with the potential partner.

2. Differences across Conditions with regard to:

a. Attractiveness

Cosmetic surgery advertises beauty which constitutes physical attractiveness. Moreover, according to the evolutionary perspective, the reason males seek physically attractive mates is because beauty and attractiveness advertise health and fertility. Drawing from this conclusion, we can predict the following hypotheses which are related to the participants' reactions towards the people who have had cosmetic surgery, i.e., faked beauty:

Hypothesis 2a: Participants in NIC and IC will give higher ratings of attractiveness than the participants in BM.

b. Long-term Mate Selection:

Hypothesis 2b: Participants in NIC will be more interested in a long-term relationship than participants in BM and in IC.

The previous predictions affirm the evolutionary theories behind mating strategies, i.e. preferring partners who are naturally more attractive, rather than those who manipulated their appearance by cosmetic surgery procedures.

c. Short-term Mate Selection:

According to the literature on short-term mate selection, both males and females emphasize physical attractiveness when choosing a short-term partner. However, if the intended mating is not for reproductive purposes (long-term), then natural versus surgical physical attractiveness stop being the issue of concern. Hence,

Hypothesis 2c: Participants in NIC and IC will be more interested in a short-term relationship than participants in BM.

3. Covariates

Analysis will also reveal whether any of the covariates such as Hostile Sexism, Benevolent Sexism, and Schwartz's values have any effects on ratings of attractiveness and mate selection across conditions.

According to the literature, culture does play a role in partner preferences. For example, some cultures value chastity and traditional gender roles when selecting partners. Hence, it is expected that:

Hypothesis 3a: The higher the participants' level of sexism (BS and HS), the more they would be interested in pursuing a long-term relationship.

Hypothesis 3b: The higher participants endorse values related to openness to change, the more they would be interested in short-term relationships.

Hypothesis 3c: The higher participants endorse values related to conservation and Arab emic, the less they would be interested in short-term relationships.

CHAPTER IV

METHODOLOGY

A. Research Design

The questionnaire battery included a cover page introducing the study and assuring the anonymity and confidentiality of participants' responses, four scales measuring the different constructs under study, and a last page that included demographic information. The questionnaire was presented to the participants in Arabic.

B. Translation of Scales

The four self-report measures were translated into Arabic using the translation and back-translation technique. The questionnaire was first translated to Arabic by an independent specialized translator and by the author. A back translation from Arabic to English was also done by another independent translator. The versions were compared and a finalized version was agreed upon.

C. Scales

1. Measure of attractiveness

Facial attractiveness has been assessed numerously in previous studies by using a one-item Likert-type scale ranging usually from 1 to 7 (Thornill & Grammer, 1999; Kalick, Zebrowitz, Langlois, & Johnson, 1998; Langlois & Roggman, 1990) or from 1 to 10 (Greitenmeyer, 2007). In this study, the presented pictures were rated on three items inspired from Greitenmeyer (2007), namely: (1) I find the person in the picture to be attractive; (2) The person in the picture is pleasing to look at; and (3) This person is handsome / beautiful. The items were rated on a 10-point Likert-type scale (1 being very unattractive and 10 being very attractive). Hence, higher scores on the scale predict high attractiveness while low scores predict unattractiveness. (See Appendix A)

2. Mate selection measure

Interest in long-term and short-term relationships was assessed in previous studies (Greitenmeyer, 2007) by using the following item: "what is the likelihood of you entering into a long-term romantic relationship with the potential partner" (p. 183). Hence, two items inspired by Greitenmeyer (2007) were used in this study to examine the willingness of participants in pursuing a long-term or short relationship with the potential mate presented in the picture: (1) How desirable is the person in the picture for you as a long-term partner?; (2) what is the likelihood of you entering into a long-term relationship with the potential partner in the picture? The same two items were used for short-term mate selection. The items were answered on a Likert-type scale ranging from 1 to 10 where 1 is "not at all" and 10 is "very much". It was also important that the participants answer items related to interest in short-term or long-term mating under the premise that the potential partner in the picture would

definitely want a relationship with them. Moreover, participants were asked to answer this scale regardless of their current romantic involvement with someone. (See Appendix A for the full scale items)

3. The Ambivalent Sexism Inventory (ASI) (Glick & Fiske, 1996)

This 22 item inventory was published by Glick and Fiske (1996) and is considered an overall measure of sexism, with hostile and benevolent components. It has been used in several studies to measure traditional gender ideologies (Eastwick et al., 2006; Johannesen-Schmidt & Eagly, 2002). The scale consists of 22 items which participants rate on a 1 to 5 Likert-type scale (1 meaning disagree strongly and 5 meaning agree strongly). As for the reliability analysis, the Cronbach Alpha coefficients ranged from .83 to .92 for the total items of the inventory (Glick & Fiske, 1996). The scale was also used in Lebanon in a study by Rebeiz and Harb (2010) and hence can be used in the present study. (See Appendix A for the full scale items)

4. Schwartz Value Inventory

The 21 item survey which was used in this study is derived from the earlier 40-item Portrait Values Questionnaire (PVQ; Schwartz et.al 2001) based on Schwartz's theory on values (Schwartz, 1992). The scale has been validated empirically and could be used cross-culturally (Davidov, Schmidt, & Schwartz, 2008). Moreover, it has been used in numerous studies including the European Social Survey (ESS) to assess human values across cultures. The scale includes portraits of 21 different people. Each portrait describes a person's goals, aspirations, or wishes that point implicitly to the importance of a value. Respondents' own values are inferred from their self-reported similarity to people described in terms of particular values (Davidov, Schmidt, & Schwartz, 2008). The participants were asked to answer the question "How much like you is this person" on six labeled responses ranging

from "not like me at all" to "very much like me". Two additional items (hospitality and honor) related to locally relevant values (Arab emic) were added to the scale. This is because the values of hospitality and honor have been shown to be of importance in Arab culture (Harb & Smith, 2008). (See Appendix A for the full scale items)

5. Demographic Information

Participants were also asked to complete background information by identifying their gender, age, marital status, monthly income, and educational level (See Appendix A).

D. Pilot Study

Two pilot studies were conducted after the approval of the Institutional Review Board. Before beginning the process of actual data collection for the study, it was essential to validate the strength of the stimulus being used. Hence, the pictures of five males and six females, including pictures of Lebanese males and females, were presented to a small sample of AUB students (40 females and 13 males) along with a short questionnaire that included the attractiveness measure and the mate selection measure. Analysis revealed which pictures had significant differences in attractiveness levels between the before and after conditions. Results showed that mate selection positively correlated with attractiveness whereby the more the picture was attractive, the more likely the participants were interested in a long-term relationship with the person in the picture. The pictures of the male and female which had significant differences between the before and after conditions, were selected to be used in the actual study (See Appendix E for the stimulus).

In the second pilot study, the complete battery was piloted first through a small Lebanese community sample (N=30) with 5 participants in each condition. The pilot study

was conducted to specify the time needed to fill the questionnaire, and detect any vagueness in the instructions or the translated items.

The average time needed for the participants to complete the survey was around 10-15 minutes. Almost all participants had no problems with understanding the items of the scales in the complete battery. Hence, the same format of the questionnaire was used in the data collection process for the main study.

E. Main Study

1. Procedure

The questionnaire battery was administered to the participants. Data collection extended over a two weeks period during the month of April 2010.

The battery of measure comprised a cover page, five scales and a demographic sheet. Participants were first asked to read the cover page containing general information about the study, assurance of confidentiality and anonymity, and contact information in case they needed any clarification about the study and its results. Afterwards, the stimulus (a colored A4 vignette of the potential partner) was shown to the participants and they were then asked to fill the scales. The vignette in IC included instructional manipulation to inform participants that the person in the picture had undergone cosmetic surgery.

2. Sample Characteristics

The sample comprised 299 participants (149 males and 150 females). Participants were recruited randomly and unaccompanied from several public areas such as malls and coffee shops in the greater Beirut area. They were approached and asked if they would like to participate in a study concerning attitudes and beliefs about attractiveness. Moreover, each participant was allocated randomly to a condition. For instance, the first participant rated BM, the second rated NIC, while the third rated IC, and so on.

Participants' ages ranged from 18 to 25 (M = 21.14, SD = 2.03). 38.1% of the sample was in a romantic relationship, 52.5% were single, and 6% married. The majority of the sample (64.5%) was compromised of university students. In addition, 40.8% had a monthly income between 201 and 500$ while 39.1% had a monthly income between 501 and 1000$. Participants' gender, marital status, educational level, monthly income, and citizenship are presented in Table 1.

Table 1

Number and Percentages of Participants as per Demographic Information

Demographics	Categories	N	%
Gender	Male	149	49.8
	Female	150	50.2
Marital Status	Single	157	52.5
	Married	18	6.0
	In a Relationship	114	38.1
Educational Level	Graduate Studies	8	2.7
	University	193	64.5
	Secondary	40	13.4
	Intermediate	2	0.7
	Technical	53	17.7
Monthly Income	$ 3001-5000	2	0.7
	$ 2001-3000	1	0.3
	$ 1501-2000	4	1.3
	$ 1001-1500	22	7.4
	$ 501-1000	117	39.1
	$ 201-500	122	40.8
	Less than $ 200	20	6.7
Citizenship	Lebanese	256	85.6
	Bi-Nationality	36	12.0

CHAPTER V

RESULTS

In this section, preliminary testing of outliers and normality assumptions will be reported along with the psychometrics of the attractiveness scale, the long-term and short-term mate selection scales, as well as the ASI and the Human Values Scale. Reliability analysis, scale descriptives, and the correlation matrix between variables will follow. Finally, the MANCOVA analysis of the data will be presented.

A. Preliminary Analysis

Analysis of missing values indicated a random pattern whereby none of the variables had more than 5% of missing values. Univariate outlier analysis of all the variables using box plots and z-scores revealed the absence of univariate outliers. Inspection of multivariate outliers through Mahalanobis distance using SPSS SYNTAX, with $p < .005$ criterion, indicated the presence of one multivariate outlier having a value greater than $\chi^2 (8) = 20.27$. The outlier was deleted.

B. Psychometrics

The factor structure of the ASI (BS and HS) scale was examined.

1. ASI

The determinant and Bartlett's Test of Sphericity for the ASI ($X^2 (231) = 1340.512$, p<.001) were adequate, indicating that the correlation matrix is factorable and there are no multicollinearity or singularity problems. Furthermore, Kaiser-Meyer-Olkin showed good sampling adequacy (KMO = .80).

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A 2-component exploratory factor analysis with principle axis factoring extraction and oblimin rotation was conducted on the 22 items of the ASI scale.

The Factor analysis yielded adequate rotation matrices. Four items (2, 6, 7, and 18) were not included in subsequent analysis because (1) they did not load on the BS nor on the HS factors, (2) they loaded on the other factor, or (3) were double-barreled (See appendix B for the stucture matrix for factor loadings).

C. Reliability Analysis

Reliability analysis revealed the scales to display good internal consistency. The scales had Cronbach Alpha Coefficients above .7.

Table 2

Reliability Analysis of the Scales

Scale	Cronbach α
Attractiveness	.92
Hostile Sexism	.76
Benevolent Sexism	.82

D. Scale Descriptives

The means and standard deviations of the variables attractiveness, long-term mate selection and short-term mate selection are presented in Table 3 and figures 2 and 3 by the gender of the participant and the condition they rated.

Table 3 *Scale Descriptives*

Variables rated by participants	Before (BM)		After (NIC)		After (IC)	
	Mean	SD	Mean	SD	Mean	SD
Attractiveness (Males)	4.48	1.83	7.61	1.18	5.09	1.25
Attractiveness (females)	2.60	1.43	5.77	1.56	2.85	1.13
LTMS (males)	4.26	1.89	6.79	2.14	3.95	1.47
LTMS (females)	3.18	2.00	5.30	1.68	3.13	1.16
STMS (males)	6.43	2.37	7.95	2.28	6.80	1.78
STMS (females)	3.52	1.79	6.00	1.85	4.99	1.43

Note: N= 299; Attractiveness, Long-term mate selection (LTMS), and Short-term mate selection (STMS) scored on a 10 point scale with 1 = not at all and 10 = very much.

Figure 2

Male ratings of attractiveness, and interest in short and long-term mating across
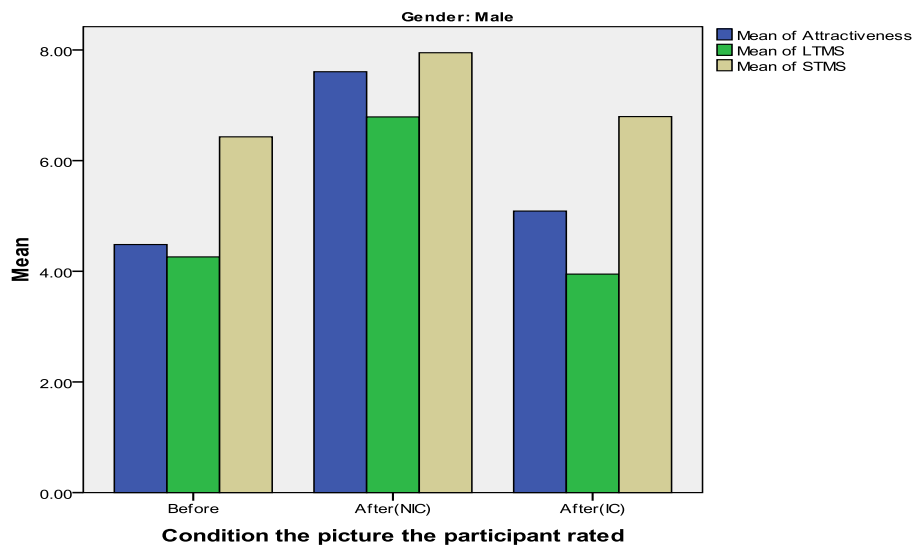
conditions

Figure 3

Female ratings of attractiveness, and interest in short and long-term mating across
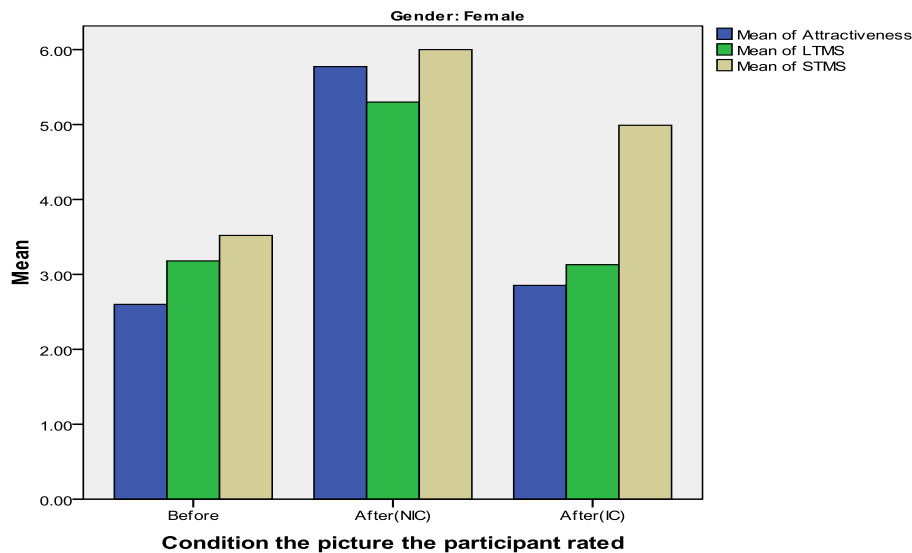
conditions

Males who rated condition one (BM) had a mean of attractiveness below the midpoint indicating that these participants saw the female picture without manipulation as not attractive; males who rated NIC were above the midpoint, indicating that they saw the picture as attractive. As for the males who rated IC, on average, were at the midpoint of the scale, indicating that they saw the picture as neither attractive nor unattractive. Females also followed the same pattern in rating attractiveness across the three conditions.

Regarding long-term mate selection, males who rated BM had a mean slightly below the midpoint suggesting that they are not very interested in a long-term relationship with the female they rated in the picture. On the other hand, males who rated NIC had a mean, on average, well above the midpoint, indicating that they are very interested in pursuing a long-term relationship with the female they rated. As for the males who rated IC, they had a mean well below the midpoint, suggesting that they are not likely to show interest in a long-term relationship with the female in that condition. It is worth noting that the males' interest in a

long-term relationship with the female in IC dropped well below the mean of the before condition. Again, females showed a similar response pattern for interest in long-term mate selection across the three conditions.

For short-term mate selection, the means for males were well above the midpoint in all three conditions. These means indicate that males, regardless of whether the female has undergone cosmetic surgery or not, are very interested in short-term relationships. Females, on the other hand, were not interested in a short-term relationship with the male in BM. They were more interested, however, in a short-term relationship with the male in NIC and neutral with respect to IC.

As for the variables Benevolent Sexism (BS), Hostile Sexism (HS), and Schwartz higher order values (Openness to Change, Self-Enhancement, Self-Transcendence, Conservation, and Arab emic); the means and standard deviations are presented in Table 4 by gender.

Table 4

Scale Descriptives

	Males		Females	
	Mean	SD	Mean	SD
Benevolent Sexism	2.79	.59	2.05	.56
Hostile Sexism	2.37	.50	3.28	.50
Arab Emic	4.77	1.03	4.77	1.23
Openness to Change	4.56	.86	4.40	.81
Self-Transcendence	4.10	1.00	4.09	.82
Self-Enhancement	4.30	.70	4.08	.82
Conservation	3.59	.82	3.77	.94

Note: N= 299; BS and HS scored on a 1 to 5 Likert-type scale, with 1= strongly disagree and 5 = strongly agree; while Schwartz Values scored on 1 to 6 Likert-type scale with 1 = not like me at all and 6 = like me very much.

Regarding Benevolent Sexism, the means for males and females were below the midpoint. This suggests that both genders in the sample, regardless of the condition they were in, are moderately low on BS.

The means for Hostile Sexism differed between males and females whereby males had a mean below the midpoint and hence were low on hostile sexism, while females had a mean above the midpoint and hence, the females in the sample have higher levels of HS than males.

As for Schwartz higher order values, a similar response pattern was seen across genders. The sample appeared to be above the midpoint on all values, with the lowest mean for conservation (3.59 for males and 3.77 for females) and the highest means for Arab emic values (4.77 for males and females). These means indicate a similar overall endorsement of Schwartz's values, with the sample being highest on Arab emic values (hospitality and honor).

E. Correlation Matrix

The Pearson correlations between the main variables are displayed in Table 5 for males and Table 6 for females.

Table 5

Pearson Correlations between the Variables (Males)

	Attractiveness	Short- Term Mate Selection	Long- Term Mate Selection	Benevolent Sexism	Hostile Sexism
Short- term Mate Selection	0.41**				
Long- term Mate Selection	0.65**	0.32**			
Benevolent Sexism	-0.14	0.10	-0.20*		
Hostile Sexism	0.14	-0.08	0.18*	-0.30**	

**. Correlation is significant at the level of $p < 0.01$

Short-term mate selection positively correlates with attractiveness for males ($r = .41$, $p < .01$), whereby the higher the attractiveness level, the more likely the participant is interested in a short-term relationship with the person in the picture (hypothesis 1b).

Long-term mate selection was also positively correlated with attractiveness ($r = .65$, $p < .01$) indicating that the more the female in the picture is rated as attractive, the more likely the male participants are interested in a long-term relationship with her (hypothesis 1a).

Contrary to the literature, a negative correlation was found between HS and BS in male participants ($r = -.30$, $p < .01$). This result suggests that as the levels of BS increase, those of HS decrease.

Table 6

Pearson Correlations between the Variables (Females)

	Attractiveness	Short- Term Mate Selection	Long- Term Mate Selection	Benevolent Sexism	Hostile Sexism
Short- term Mate Selection	0.61**				
Long- term Mate Selection	0.77**	0.60**			
Benevolent Sexism	-0.04	0.18*	-0.10		
Hostile Sexism	0.14	0.16*	0.05	0.22**	

**. Correlation is significant at the level of $p < 0.01$

For females, short-term mate selection positively correlates with attractiveness ($r = .61$, $p < .01$), whereby the higher the attractiveness level, the more likely the participant is interested in a short-term relationship with the person in the picture (hypothesis 1b).

Long-term mate selection was also positively correlated with attractiveness ($r = .77$, $p < .01$) indicating that the more the male in the picture is rated as attractive, the more likely the female participants are interested in a long-term relationship with him.

BS and HS were positively correlated for females (r = .22, p < .01). This result, in line with the literature, suggests that as the levels of BS increase, those of HS increase as well.

It is also worth noting that BS and HS were positively correlated with short-term mate selection for females while being positively correlated with long-term mate selection for females. Hence, sexism is correlated with long-term mate selection for males, and short-term mate selection for females.

As interesting as these results seem to be, correlation analysis fails to test whether group means differ (Field, 2005). Hence, a MANCOVA was conducted to examine whether means of participants differ on attractiveness, short-term, and long-term mate selection while controlling for the effects of BS, HS, and Schwartz's values.

F. MANCOVA

1. Statistical Assumptions

The aim of the present study was to evaluate how cosmetic surgery affects ratings of attractiveness and interest in short-term and long-term mate selection while controlling for traditional gender role ideologies. Hence, a 2 (gender) x 3 (condition) multivariate analysis of covariance (MANCOVA) was conducted, with attractiveness, short-term mate selection, and long-term mate selection as dependent variables; and benevolent sexism (BS), Hostile Sexism (HS), and Schwartz's higher order values (openness to change, conservation, self-enhancement, self transcendence, and Arab values) as covariates.

The assumptions of MANCOVA were examined. The assumptions of independence of observations, random sampling, as well as multivariate normality of the dependent variables (DV's) were met. The assumption of homogeneity of covariance matrices, however, was not met because Box's test, which tests the null hypothesis that the variance-covariance

matrices are the same across groups (Field, 2005), revealed a result of $F(30, 172733.34) = 3.60$, $p < .01$. Furthermore, the result of Levene's test showed that the assumption of the equality of error variances was not met for each of the three DV's (For attractiveness: $F(5, 291) = 4.40$, $p < .05$; for short-term mate selection: $F(5, 291) = 2.69$, $p < .05$; for long-term mate selection: $F(5, 291) = 2.59$, $p < .05$). The analysis was carried out because MANCOVA is robust to most violations of assumptions when the sample size is large (Tabachnick & Fidell, 2007).

2. Multivariate Main Effects

The MANCOVA analysis for the sample shows a significant multivariate effect for "gender" with Pillai's Trace $= .27$ and $F(3, 282) = 34.08$, $p < .01$, $\eta^2 = 0.27$. Significant multivariate effects were also found for the variable "condition" with Pillai's Trace $= .50$ and $F(6, 566) = 31.64$, $p < .01$, $\eta^2 = 0.26$).

As for the covariates, a main multivariate effect was detected for "Arab emic values (hospitality and honor)" with Pillai's Trace $= .05$ and $F(3, 282) = 4.44$, $p < .01$, $\eta^2 = 0.24$. Moreover, a main effect was also detected for "BS" with Pillai's Trace $= .03$ and $F(3, 282) = 3.00$, $p < .05$, $\eta^2 = 0.03$.

Figure 4 shows the significant effects of the covariates (BS, HS, Schwartz's Values, education and income) on the DV's (Attractiveness (Att), long-term (LTMS) and short-term mate selection (STMS)).

Figure 4: Parameter Estimates (See Appendix C) of the significant effects of the Covariates on the DV's
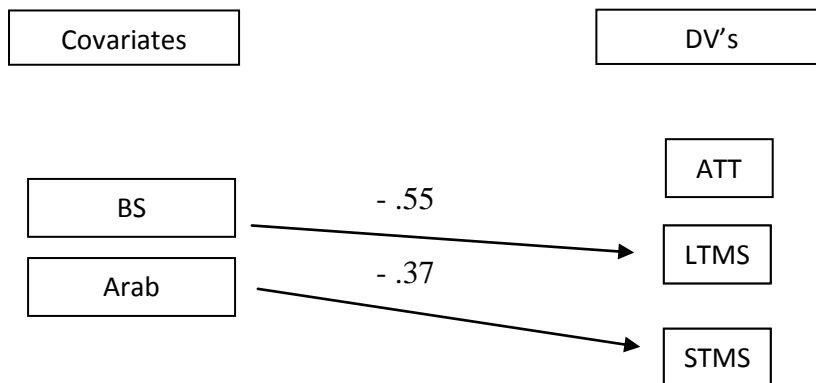
Tests of between-subjects effects indicate significant main effects for BS on long-term mate selection with $F(1, 284) = 6.38$, $p < .01$, $\eta^2 = 0.24$. Hence, the greater the levels of BS, the less the participants were interested in long-term relationships ($\beta = -.55$). Hence, hypothesis 3a was not confirmed. Hospitality and honor (Arab emic values) also had a significant main effect on short-term mate selection with $F(1, 284) = 7.68$, $p < .01$, $\eta^2 = 0.26$. This finding shows that the more participants endorsed the Arab emic values, the less interested they were in pursuing short-term relationships ($\beta = -.37$). Hence, hypothesis 3c was confirmed. Results showed that conservation, openness, and self-transcendence did not have main effects on long-term and short-term mate selection. Hence, hypothesis 3b was not confirmed.

Although the interaction between gender and condition was not significant, both variables were highly significant and had a main effect on all three DV's (attractiveness, short-term mate selection, and long-term mate selection). Gender had a significant main effect on attractiveness with $F(1, 284) = 97.18$, $p < .01$, $\eta^2 = .26$; on long-term mate selection with $F(1, 284) = 38.74$, $p < .01$, $\eta^2 = .15$; and on short-term mate selection with $F(1, 284) = 38.85$, $p < .01$, $\eta^2 = .12$. As for the main effect of the variable condition on attractiveness, it

has an $F(1, 284) = 129.46$, $p < .01$, $\eta^2 = .48$; on long-term mate selection with $F(1, 284) = 53.85$, $p < .01$, $\eta^2 = .31$; and on short-term mate selection with $F(1, 284) = 21.02$, $p < .01$, $\eta^2 = .12$.

Hence, males had higher means than females on ratings of attractiveness, and interest in long-term and short-term mate selection. Moreover, the scores on attractiveness, long-term and short-term mate selection differed for each of the three conditions (BM, NIC, and IC).

3. Pairwise Comparisons

A post-hoc test using Sidak's adjustment for multiple comparisons showed that participants in NIC gave higher ratings of attractiveness than participants in BM with $t = 3.16$, $p < .01$, $r = .22$. Moreover, participants gave higher ratings for the attractiveness of NIC than IC with $t = 2.71$, $p < .01$, $r = .19$. Thus, hypothesis 2a was not fully confirmed.

As for long-term mate selection, participants were more interested in a long-term relationship with the persons in NIC than BM with $t = 2.39$, $p < .01$, $r = .17$. Furthermore, respondents also showed more interest a long-term relationship with the persons in NIC than IC with $t = 2.51$, $p < .01$, $r = .17$. Hence, hypothesis 2b was confirmed.

For short-term mate selection, participants were more interested in pursuing a short-term relationship with the persons in NIC than BM with $t = 1.64$, $p < .01$, $r = .12$ and were also more interested in a short-term relationship with persons in NIC than persons in IC with $t = 1.12$, $p < .01$, $r = .08$. Hence, hypothesis 2c was also confirmed (check Appendix D for the table of Pairwise Comparisons results for condition). Nonetheless, the literature reports that males are more interested in short-term relationships than females and are predicted to express a greater desire for a variety of casual sexual partners and devote more effort to finding these partners (Geary, Vigil, & Byrd-Craven, 2004). Hence, it is expected that when gender differences across conditions are examined for interest in short-term relationships,

males, regardless of the condition, will still be interested in pursuing short-term relationships. This was shown in the means for short-term mate selection, whereby the means for males were well above the midpoint in all three conditions; and hence, male participants, regardless of whether the female has undergone cosmetic surgery or not, were very interested in short-term relationships. Female participants, on the other hand, showed lower means regarding their interest in short-term relationships across the three conditions (check Table 3 p.26) which is in line with the literature on female's interest in short-term relationships (Buss, 2006).

CHAPTER VI

DISCUSSION

The literature on evolutionary psychology has constantly documented the importance of attractiveness in predicting the likelihood of choosing a potential mate. The present study provided the first examination of its kind of the multivariate effect of attractiveness and cosmetic surgery on short-term and long-term mate selection in a sample of Lebanese participants.

A. Overview of the Main Findings

1. Attractiveness

Prior research had indicated that attractiveness does affect mate selection (Buss et. al, 1990). In the present study, the Lebanese sample showed the same universal pattern whereby attractiveness was positively correlated to both long-term and short-term mate selection (hypotheses 1a and 1b). This means that the more the persons in the pictures were rated as

attractive, the more male and female participants were interested in pursuing short-term and long-term relationships with them.

It is worth noting that as the ratings of attractiveness increased, females showed more interest in long-term relationships. According to the literature on evolutionary psychology and mate selection, females place more emphasis on cues related to resource acquisition in their long-term partners than on cues related to physical attractiveness (Buss, 2006). Since no cues of resources were given in this study, however, female participants' decisions appeared to be based on the physical attractiveness of the potential partner advertised in the vignette rather than resource acquisition characteristics.

Regarding ratings of attractiveness per assigned condition, participants rated NIC as more attractive than BM. This result was hypothesized because the picture in NIC was manipulated with imaging software to make the person more attractive. Interestingly, when the participants were informed that the beauty of the person in the picture is not natural and is due to cosmetic surgery procedures (IC), the ratings of attractiveness dropped. Hence, participants in NIC gave higher ratings of attractiveness than those in IC. This finding might be because participants could have felt deceived or lied at, i.e., the attractiveness advertised by the vignettes was due to surgical procedures and was not real or natural physical attractiveness (and hence not an indicator of health and fertility).

2. Mate Selection

Regarding the relation between mate selection and the condition the participants were assigned to, results revealed that participants were generally less interested in a long-term relationship with the person in BM than NIC. Moreover, they were also less interested to pursue a long-term relationship with the person in IC than NIC (hypothesis 2b). These results were also true for short-term mate selection (hypothesis 2c). These findings are in line with

the literature, whereby attractiveness plays a crucial role in both long-term and short-term

partner preferences (Li & Kenrick, 2006). However, as hypothesized, when the participants

were informed that the attractiveness in the picture is due to cosmetic surgery, i.e., not

natural, they became significantly less interested in pursuing a long-term relationship with

that person.

Furthermore, the means that male participants had on their interest in long-term

relationship with the female in IC dropped lower than the means of the female stimulus in

BM (4.26 for BM and 3.95 for IC). This might be due to the emphasis males place on natural

physical attractiveness which signals health and fertility (Buss & Barnes, 1986) rather than

being deceived by fake attractiveness resulting from cosmetic surgery. This effect was not

observed for female participants especially that according to the literature, females depend on

cues about resources when selecting long-term partners (Buss, 2006). In the present study, no

cues of resources were given, and hence the means of LTMS for female participants

remained similar in both BM and IC.

3. Gender Role Ideologies and Schwartz's Values

In the current study, gender role ideology was measured by the levels of BS and HS

that participants endorsed. as well as the higher order Schwartz's values (openness to change,

conservation, self-enhancement, self-transcendence, and Arab emic values).

Results showed, in line with the literature, that BS and HS were positively

correlated for females whereby the higher the levels of HS, the higher those of BS. A

negative correlation was found between BS and HS for male participants. This means that as

the male participants' levels of BS increase, the lower they would be on HS. This finding

could be due to the unclear distinction of the types of sexism in Lebanese males, whereby

hostile sexism is seen as the only form of sexism. Benevolent sexism, on the other hand, could be associated with the "honorable" attitude that Lebanese males have towards females. For instance, the act "rescuing a woman before a man in an accident", which is an actual item in the ASI, is usually regarded by Lebanese males as an act of honor and respect towards females rather than a form of sexism.

Moreover, sexism (BS and HS) were differentially correlated to long-term and short-term mate selection across genders in this study. Thus, results showed that sexism affects long-term mate selection for males and short-term mate selection for females. This finding could be related to the emphasis males place while looking for long-term female partners. Nonetheless, further investigation and research is needed in this area to examine how levels of sexism affect mate selection (long-term and short-term).

Although it was hypothesized that higher levels of sexism will result in a higher interest in long-term mate selection (3a), results showed that the higher the BS levels, the less interest participants had in long-term mate selection. This might be because BS and HS differed across genders in this study.

As for the Schwartz Values Scale, the items of the scale were combined into the higher-order structure, i.e., the original four dimensions in addition to the Arab emic dimension. Only the values related to Arab emic (hospitality and honor) showed a negative correlation with short-term mate selection (hypothesis 3c). This result suggests that the more participants endorse the Arab emic values, the less they were interested in short-term relationships.

Conservation, openness to change, self-enhancement, and self-transcendence did not affect interest in long-term and short-term mate selection. Hence, hypothesis 3b was not confirmed. Since the literature lacks studies that examine the effects of values on mate

selection, more research is needed in this area to determine how personal values affect mating preferences in long-term and short-term contexts.

B. Implications of the Findings

In line with previous research, mate selection appeared to be affected by ratings of attractiveness whereby the higher the ratings of attractiveness were, the more the participants showed interest in long-term and short-term relationships.

Nonetheless, no research to date has investigated the effects of cosmetic surgery on mate selection. Hence, the novelty of this study and its significant contribution to the literature should be emphasized. For instance, the finding that attractiveness ratings and interest in mate selection decrease when the participants are informed that the person in the picture have had cosmetic surgery is a novel finding in the evolutionary psychology literature. Most importantly, the study demonstrated that cosmetic surgery can backfire. This was shown in the way participants' ratings of attractiveness dropped in IC, along with their interest in pursuing long-term and short-term relationships with people who have undergone cosmetic surgery procedures.

Moreover, and also in line with previous research, specific cultural values revealed to play a role in decision making regarding mate selection. This was demonstrated in the negative correlation between Arab values and interest in short-term mate selection, whereby the more the participants endorsed the values related to Arab culture, the less they were interested in pursuing short-term relationships. Hence, the study highlighted the importance that Arab emic values have in selecting long-term and short-term mates.

C. Limitations of the Study

Although the present study provided several interesting and novel findings, a number of limitations need to be addressed. First, the size and nature of the sample limits the possible generalizations of the results and affects ecological validity. The sampling did not take into consideration the different regions in Lebanon and the pluralistic Lebanese society. Moreover, the sample was treated as one homogenous group, without considering distinctions between Christian and Moslem Lebanese, or distinguishing between the various sectarian groups found in each religion.

Another important limitation which must be addressed is related to the stimulus being used. In the current study, the manipulated stimulus was not "real"; i.e., the original pictures were manipulated by the use of imaging software to reflect changes similar to those which occur when cosmetic surgery is performed. Hence, the results would have been more accurate if actual pictures of people who have had cosmetic surgery were used in the study. Moreover, the results might have been affected if the manipulation done to the pictures accentuated cosmetic surgery more rather than reflecting minor and natural changes.

Another limitation which many studies on mate selection encounter is also related to the stimulus being used. This is because picture vignettes are being used to study mating preferences instead of studying actual mating behavior in humans. Hence, participants may have projected their ideal mate preferences which could be different than their actual mating behavior.

Finally, since BS and HS differed across genders in this study, it is recommended that the analysis is carried out per gender and not on the overall participants in order to find out how levels of sexism (BS and HS) affect interest in long-term and short-term mate selection.

D. Future Research Grounds

No previous research have investigated the effect of cosmetic surgery on attractiveness and mate selection in the Lebanese context, while controlling for the effect of gender role ideology and values. Hence, it is recommended that future researchers conduct in-depth qualitative studies that might be useful in understanding why participants view people who have had cosmetic surgery (IC) as less attractive and less desirable than the other conditions (BM and NIC). It is also recommended that a larger and more representative sample be used to have a clearer view of the attitudes of the Lebanese community towards mate selection and cosmetic surgery. In sum, replication of the current study on larger and more representative samples is needed to validate the novel results.

Finally, it is also recommended to further develop the analysis of the results in order to examine gender differences across conditions for short-term mate selection. This is because it has been documented that males have a different strategy than females when seeking short-term mates (Buss, 2006). Moreover, analysis across genders could have been beneficial in finding out how BS and HS are affecting long-term and short-term mate selection.

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Appendix A

Investigator :	Dr. Charles Harb
Co-Investigator:	Nabil El Salibi, B.A.
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You are being asked to participate as a volunteer in a research conducted at the American University of Beirut investigating attitudes and beliefs concerning attractiveness between the sexes. Please read the following information about the study in order to decide whether or not you would like to participate. If you have any question or need clarification, do not hesitate to ask.

The study aims to explore your attitudes and beliefs about different issues pertaining to attractiveness and mate selection. You will be asked a series of questions about these diverse issues.

Please read and consider each question carefully, but do not agonize over your answers. There are no right or wrong answers, and first impressions are usually fine. Just think about what best reflects your own opinions or feelings.

All of the data collected will be treated in the strictest **confidence** and will be analyzed only by the investigator. Note that this is an **anonymous** questionnaire and your name will not be recorded in the data files nor will it be passed on to anyone.

Your participation is **voluntary** and you have the right to withdraw from the study at any time without giving a reason. Please note that you will not be compensated for participating in this study.

This research has been approved by the chair of the Department of Psychology and the Institutional Review Board of the American University of Beirut. Any questions you might have can be directed at the principle investigator, Dr. Charles Harb, who can be reached at 01- 350 000 ext. 4371, the co-investigator, Nabil El Salibi at nge06@aub.edu.lb, or the Institutional Review Board- Dr. Ibrahim Salti at 01- 350 000 ext. 4914.

THANK YOU FOR YOUR COOPERATION

1. After seeing the pictures, read the items below carefully and answer by circling the number that best describes your opinion. Use the key below.

Not at all				Neutral					Very much
1	2	3	4	5	6	7	8	9	10

	Not At all				Neu-tral					Very Much
1. I find the person in the picture to be attractive	1	2	3	4	5	6	7	8	9	10
2. The person in the picture is pleasing to look at	1	2	3	4	5	6	7	8	9	10
3. This person is handsome/beautiful	1	2	3	4	5	6	7	8	9	10

2. Read the items below and take into consideration that your answers must be irrespective of whether you are currently in a romantic relationship. Assume also that the person in the picture is very much willing to be your romantic partner. Use the key below.

	Not At all				Neu-tral					Very Much
1. How desirable is the person in the picture for you as a long-term relationship partner?	1	2	3	4	5	6	7	8	9	10
2. What is the likelihood of you entering into a long-term relationship with the potential partner in the picture?	1	2	3	4	5	6	7	8	9	10
3. How desirable is the person in the picture for you as a short-term relationship partner?	1	2	3	4	5	6	7	8	9	10
4. What is the likelihood of you entering into a short-term relationship with the potential partner in the picture?	1	2	3	4	5	6	7	8	9	10

3. Below is a series of statements concerning men and women and their relationships in contemporary society. Please indicate the degree to which you agree or disagree with each statement. Use the key below:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

	SD	A	N	A	SA
1. No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman.	1	2	3	4	5
2. Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for "equality."	1	2	3	4	5
3. In a disaster, women ought not necessarily to be rescued before men.	1	2	3	4	5
4. Most women interpret innocent remarks or acts as being sexist.	1	2	3	4	5
5. Women are too easily offended.	1	2	3	4	5
6. People are often truly happy in life without being romantically involved with a member of the other sex.	1	2	3	4	5
7. Feminists are not seeking for women to have more power than men.	1	2	3	4	5
8. Many women have a quality of purity that few men possess.	1	2	3	4	5
9. Women should be cherished and protected by men.	1	2	3	4	5
10. Most women fail to appreciate fully all that men do for them.	1	2	3	4	5
11. Women seek to gain power by getting control over men.	1	2	3	4	5
12. Every man ought to have a woman whom he adores	1	2	3	4	5
13. Men are complete without women.	1	2	3	4	5
14. Women exaggerate problems they have at work	1	2	3	4	5
15. Once a woman gets a man to commit to her, she usually tries to put him on a tight leash.	1	2	3	4	5
16. When women lose to men in a fair competition, they typically complain about being discriminated against.	1	2	3	4	5
17. A good woman should be set on a pedestal by her man	1	2	3	4	5
18. There are actually very few women who get a kick out of teasing men by seeming sexually available and then refusing male advances.	1	2	3	4	5
19. Women, compared to men, tend to have a superior moral sensibility.	1	2	3	4	5
20. Men should be willing to sacrifice their own well being in order to provide financially for the women in their lives.	1	2	3	4	5

21. Feminists are making entirely reasonable demands of men	1	2	3	4	5
22. Women, as compared to men, tend to have a more refined sense of culture and good taste.	1	2	3	4	5

3. Here we briefly describe some people. Please read each description and think about how much each person is or is not like you. Put an X in the box to the right that shows how much the person in the description is like you.

	HOW MUCH LIKE YOU IS THIS PERSON?					
	Very much like me	like me	some-what like me	a little like me	not like me	not like me at all
1. Thinking up new ideas and being creative is important to him. He likes to do things in his own original way.	☐	☐	☐	☐	☐	☐
2. It is important to him to be rich. He wants to have a lot of money and expensive things.	☐	☐	☐	☐	☐	☐
3. He thinks it is important that every person in the world be treated equally. He believes everyone should have equal opportunities in life.	☐	☐	☐	☐	☐	☐
4. It's important to him to show his abilities. He wants people to admire what he does.	☐	☐	☐	☐	☐	☐
5. It is important to him to live in secure surroundings. He avoids anything that might endanger his safety.	☐	☐	☐	☐	☐	☐
6. He thinks it is important to do lots of different things in life. He always looks for new things to try. He likes surprises	☐	☐	☐	☐	☐	☐
7. He believes that people should do what they're told. He thinks people should follow rules at all times, even when no-one is watching.	☐	☐	☐	☐	☐	☐
8. It is important to him to listen to people who are different from him. Even when he disagrees with them, he still wants to understand them.	☐	☐	☐	☐	☐	☐
9. It is important to him to be humble and modest. He tries not to draw attention to himself.	☐	☐	☐	☐	☐	☐
10. He likes to 'spoil' himself. Having a good time is very important to him.	☐	☐	☐	☐	☐	☐
11. It is important to him to make his own decisions about what he does. He likes to be free to plan and not depend on others.	☐	☐	☐	☐	☐	☐
12. It's very important to him to help the people around him. He wants to care for other people.	☐	☐	☐	☐	☐	☐
13. Being very successful is important to him. He hopes people will recognize his achievement.	☐	☐	☐	☐	☐	☐
14. It is very important to him that his country be safe. Government should insure safety against threats. The state should strongly defend its citizens.	☐	☐	☐	☐	☐	☐
15. He likes to take risks. He is always looking for adventures. It is important to him to have an exciting life.	☐	☐	☐	☐	☐	☐
16. It is important to him always to behave properly. He wants to avoid doing anything people would say is wrong.	☐	☐	☐	☐	☐	☐
17. It is important to him to get respect from others. He wants people to do what he says.	☐	☐	☐	☐	☐	☐

	HOW MUCH LIKE YOU IS THIS PERSON?					
	Very much like me	like me	some-what like me	a little like me	not like me	not like me at all
18. It is important to him to be loyal to his friends. He wants to devote himself to people close to him.	□	□	□	□	□	□
19. He strongly believes that people should care for nature. Looking after the environment is important to him.	□	□	□	□	□	□
20. He thinks it is best to do things in traditional ways. It is important to him to keep up the customs he has learned.	□	□	□	□	□	□
21. He seeks every chance he can to have fun. It is important to him to do things that give him pleasure.	□	□	□	□	□	□

4. Demographic Information

Gender   □ Female   □ Male

Age   …………………. In years

Citizenship   □ Lebanese   □ Two nationalities (Please Specify)
                                          …………………………………….

Relationship Status   □ Single   □ Married   □ In a romantic relationship

Education Level   □ Elementary   □ Intermediate   □ High School   □ Technical

                      □ University   □ Graduate Studies

Monthly Income   □ Less than 200$ □ 201 – 500$ □ 501- 1000$ □ 1001- 1500$

                      □ 1501- 2000$ □ 2001- 3000$ □ 3001- 5000$ □ More than 5000$

Appendix B

Structure Matrix of the ASI

Item number in ASI Scale	Component	
	HS	BS
1. A man is not truly complete as a person unless he has the love of a woman	.61	
2. Women seek special favors under the guise of asking for "equality"	.45	
3. In a disaster, women ought not necessarily to be rescued before men.	.46	
8. Many Women have a quality of purity that few men possess.	.56	
9. Women should be cherished and protected by men.	.67	
12. Every man ought to have a woman whom he adores.	.71	
13. Men are complete without women.	.62	
17. A good woman should be set on a pedestal by her man.	.65	
20. Men should be willing to sacrifice their own well-being in order to provide financially for women.	.48	
21. Feminists are making entirely reasonable demands of men.	-.47	
22. Women, as compared to men, tend to have a more refined sense of culture and good taste.	.64	
19. Women, compared to men, tend to have a superior moral sensibility.	.53	-.51
6. People are happy in life without being romantically involved with a member of the other sex.		
7. Feminists are not seeking for women to have more power than men.		
18. Women get a kick out of teasing men by seeming sexually available and refusing male advances.		
4. Most women interpret innocent remarks or acts as being sexist.		.60
5. Woman are too easily offended		.54
10. Most women fail to appreciate fully all that men do for them.		.66
11. Women seek to gain power by getting control over men.		.49
14. Women exaggerate problems they have at work.		.72
15. Once a woman gets a man to commit to her, she usually tries to put him on a tight leash.		.74
16. When women lose to men in a fair competition, they complain about being discriminated against.		.67

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Appendix C

Parameter Estimates for the effects of the covariates on the DV's

	Dependent Variable		
Covariate	Attractiveness	LTMS	STMS
Benevolent Sexism	*-.10*	-.51	.11
Hostile Sexism	*.44*	.37	-.07
Openness to Change	*-.08*	-.05*	.00
Conservation	*-.20*	-.02	-.23
Self-Enhancement	*.11*	-.10	.02
Self-Transcendence	*.24*	.22	.34
Arab Emic	*.03*	-.21	-.33

Appendix D

Pairwise Comparisons for Condition

Dependent Variable	(I) Condition	(J) Condition	Mean Difference (I-J)	Std. Error	Sig.[a]
Mean of Attractiveness	Before	After(NIC)	-3.16[*]	.22	.00
		After(IC)	-0.45	.23	.15
	After(NIC)	Before	3.16[*]	.22	.00
		After(IC)	2.71[*]	.22	.00
	After(IC)	Before	0.45	.23	.15
		After(NIC)	-2.71[*]	.22	.00
Mean of LTMS	Before	After(NIC)	-2.39[*]	.26	.00
		After(IC)	0.12	.28	.96
	After(NIC)	Before	2.39[*]	.26	.00
		After(IC)	2.50[*]	.27	.00
	After(IC)	Before	-0.12	.28	.96
		After(NIC)	-2.50[*]	.27	.00
Mean of STMS	Before	After(NIC)	-1.64[*]	.29	.00
		After(IC)	-0.52	.31	.27
	After(NIC)	Before	1.64[*]	.29	.00
		After(IC)	1.12[*]	.30	.00
	After(IC)	Before	0.52	.31	.27
		After(NIC)	-1.12[*]	.30	.00

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. Adjustment for multiple comparisons: Sidak.

Appendix E