

THE PENNSYLVANIA STATE UNIVERSITY
SCHREYER HONORS COLLEGE

DEPARTMENT OF ANTHROPOLOGY

The social and sexual relationships of sorority women.

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SPRING 2024

A thesis
submitted in partial fulfillment
of the requirements
for a baccalaureate degree
in Biology
with honors in Biological Anthropology

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ABSTRACT

A large body of research has explored the influence of sexual selection on human males, but comparatively little research has focused on sexual selection in females. This disparity is notable because human females exhibit phenotypic evidence of substantial past sexual selection. For example, beginning at sexual maturity females store copious subcutaneous fat on the breasts, hips, and buttocks, which is unique among primates and appears to function at least in part as sexual ornamentation. Females also compete for social status, as well as fight over mates. Yet little research has explored the effects of these or other factors on female mating success, nor the mechanisms (e.g., male mate choice vs. female coercive exclusion of competitors) through which those effects may occur. To address these gaps in knowledge it is necessary to measure female characteristics, including social status, in groups of socially acquainted females, and to evaluate the quality of their male mates directly. Here, I describe such an ongoing study involving women in university social sororities and their male partners. Participants are measured on a battery of anthropometric characteristics; complete a survey targeting self-reported mate value, past mating behavior, and mate preferences; and evaluate the social status of other participants with whom they are familiar. Facial and body images and voice recordings are measured objectively as well as evaluated by raters on attractiveness and social status. These data will be used to investigate the characteristics that predict the quantity and quality of females' mates, as well as the social mechanisms that mediate these relationships.

TABLE OF CONTENTS

LIST OF FIGURES	iii
Figure 1. Procedure flow chart.....	2
Figure 2. Expected relationships of data to mating success and modulators of of the relationships.....	13
 LIST OF TABLES	iv
ACKNOWLEDGEMENTS	v
Chapter 1 Introduction	1
Sexual selection in nonhuman mammals.....	2
Sexual selection in humans.....	5
Human males	5
Human females	8
Chapter 2 Methods	12
Participants.....	12
Procedure	13
Session 1	13
Session 2	15
Optional follow-up survey	16
Chapter 3 Expected results and planned analyses.....	17
Expected Results.....	17
Planned Analyses.....	22
Appendix A Surveys.....	23
Appendix B Voice recording script	92
BIBLIOGRAPHY.....	93

LIST OF FIGURES

Figure 1. Procedure flow chart for sessions 1 and 2..... 13

Figure 2. Expected relationships of data to mating success and mediators of the relationships. 17

ACKNOWLEDGMENTS

I would like to thank Dr. David Puts, my thesis advisor and Principal Investigator, first and foremost, for taking a panicked honors student with a hope of researching evolution in women and guiding her through the development of a real research project. I have no doubt that without your mentorship, I would not have the intimate knowledge of the grueling IRB approval process, how to turn ideas into science, or how to conduct research in any sense of the word. Without your patient guidance, I would not be the graduating scholar that I am, and for that, I thank you.

To the woman who gave me my life's blood, my mother, Melissa, words could never be enough. Your tireless, endless sacrifices you have made time and time again are nothing short of admirable. You have never given me any idea that I could be anything less than who I wanted to be or do whatever I wanted to do. You have filled my life with love, light, and laughter. In my world of self-doubt, I know that there will always be someone in my corner—you. Where you lead, I will follow.

To my wonderful father, I can't express my gratitude to you. You have taught me to dream bigger than the whole sky, and how to chase those dreams endlessly. Without your dedicated support, I would not be able to reach for the stars. I thank you for giving me my steadfast love of Penn State, allowing me to follow in your all-too-large footsteps, and for celebrating and commiserating in the realities of being a Penn State football fan with me. Thank you for teaching me how to work hard and play even harder.

My twin brother, Luke, you are my truest friend. I don't know what I would do without you, and unsurprisingly, can't imagine my life without you either. I have leaned on you probably

more than I should've, but you have always met me with patience and grace. You are, and I say this with my full chest, the funniest person I know. You understand me like no one else could ever dream of and I couldn't be more grateful for it. Thank you for listening to my late-night calls, harassment of Cam Rising, and my deepest insecurities. Womb to tomb.

To my family, it truly takes a village. Without your support, I would not have been able to move 2,000 miles away from home and flourish while doing it. Natalie and Amy, I could not ask for better cousin-roommates; you have truly become the sisters I never had. I love sitting in our tiny apartment late into the evening, cooking, laughing, and creating our own little lives, together. Pat, Karen, CaroLyn, and Steve, I can't thank you enough for allowing me to lean on you when times have been tough, giving me shoulders to cry on, and turning your homes into mine. Your generosity and support have pushed me across the finish line.

My partner, my love, my strength, my best friend, Connor, I don't think I could ever put together a sentence or paragraph that could convey my love for you. We found each other in a place where very little love grows—unrenovated Packer Hall. I truly believe I was meant to be with you. There is no one who has seen me at my most-stripped down and vulnerable and still loved me the way that you do. Thank you for pushing me to be a better person. I can't wait to see where life takes us.

To all of my loved ones, I can't express how grateful I am for you. Your endless support, words of encouragement, and ability to pick me up when I am at my lowest has held me center. Lord knows it has not been an easy ride, so thank you for staying on it.

Standing where I am, four years after I first arrived in the middle of nowhere Pennsylvania, I know that I am not the only person who got me here. I stand on the sustainment of those who gave all I could ever ask for.

Finally, I dedicate this thesis, the culmination of my undergraduate career, to Mildred Allen. In her life, Mildred forged a family that I am truly blessed to be a part of. Nearly all of the people I love and the experiences I have been lucky to have been a direct result of her work as a mother and grandmother. One of two women to graduate with a degree in chemistry in her class at Northwestern, she paved the way so her daughters and granddaughters could pursue higher education in stride. I do admit that I will never be quite to her level. Mildred's incredible life lives on in me, my brothers, my dad, my gaggle of cousins, and my wonderful aunts and uncles. Every time I see color, I think of you, Grandma.

Chapter 1

Introduction

In 1871, Charles Darwin first introduced the idea of sexual selection in his book *The Descent of Man and Selection in Relation to Sex*. Unlike other forms of selection that have been proposed, Darwin described that sexual selection referred specifically to traits that individuals possessed that incurred an advantage over others of their same sex and species during reproduction (Darwin, 1871). Darwin recognized these traits to include weaponry, sexual ornaments, and odors emitted, as well as the female's capacity for choice. It is with this first proposal of sexual selection that our understanding of mechanisms of selection has since grown and deepened.

Sexual selection varies widely across the animal kingdom with many mechanisms influencing the traits developed by each individual species. Female mate choice is perhaps the most extensively studied form of sexual selection. Female preferences for male traits could have evolved because those traits indicate a male's ability to provide indirect (genetic) benefits to offspring; direct benefits, such as territory, resources, or protection; or it may be due to a pre-existing sensory bias (Andersson, 1994). Some of the most obvious outcomes of female mate selection include bright plumage in birds (Mahoney et al., 2022; Loyau et al., 2007), as well as some mating behaviors including the building of intricate nests in bowerbirds (Kelley & Endler, 2012) and the elaborate mating dances of golden-collared manakins (Fusani et al., 2007). Bright plumage and other obvious sexual ornaments were integral to Darwin's development of the theory of sexual selection (Andersson, 1994)

Contest competition is another mechanism in which the competing sex wins mates through the use of force or threat of force against same-sex competitors. In species that exhibit high levels of contest competition, the sex that engages in contests, usually males, tends to have larger body sizes and more aggressive behaviors than the opposite sex (Plavcan, 2012; Puts, 2010). Weaponry is an important indicator of contest competition, and occurs across the animal kingdom, from mammals to reptiles, insects, and birds. Weapons can also be indicators of quality used in female mate choice (Andersson, 1994). Scramble competition occurs when all individuals have potential access to a limited resource, and thus “scramble” to obtain as much of the resource as possible. In contrast to contests, scramble competition may favor smaller body sizes (Andersson, 1994), particularly if food is limited and the male reproductive rate is a function of encounters with fertilizable females (Blanckenhorn et al., 1995).

Sexual selection in nonhuman mammals

Mammals have their own patterns of sexual selection and the traits shaped by it. Sexual size dimorphism favoring males is widespread among mammals, with males being larger in 12 of 20 mammalian orders, and in 30 of 122 families. Larger female size may be due not only to reduced sexual selection on males but also to competition for resources among females or to better provide for offspring (Andersson, 1994). Traits shaped by contest competition are evident not only in larger male body sizes, but also in weaponry. In ungulates, hooved mammals, weaponry in males is common. It comes in the forms of horns, antlers, and tusks, which can be used both against rivals and as displays of strength, but also indicate high genetic quality for females in their mate choice (Andersson, 1994). Chemical signaling, as noted by Darwin, also

plays an important role in sexual selection. In mammals, males tend to produce more and a wider variety of chemical signals than females do (Andersson, 1994). For example, male house mice use chemical signaling to determine who their competitors are, and attack based on whether a scent matches a substrate (Gosling & McKay, 1990). Unlike in birds, coloration due to sexual selection is not common in mammals (Caro, 2005). Outside of non-human primates, there are only a few examples of color as a sexual ornament (Caro, 2005). For example, female lionesses prefer males that have darker manes, as it indicates access to better resources (West & Packer, 2002), while some male ungulates like the eland may turn blue as they reach adulthood or become harem holders, but the reasoning behind the color change is not entirely clear (Caro, 2005).

Non-human primates have sexual selection mechanisms most similar to humans. Like humans, other primates appear to have sexually dimorphic traits, but these do not necessarily mirror the traits expressed by humans. In 42 species studied, evidence suggests that species that are terrestrial have more dimorphism than arboreal species (Andersson, 1994), which does reflect how humans have evolved to live.

Male non-human primates have significantly more permanent secondary sex traits compared to females. As discussed previously, weaponry is common in species that experience high levels of contest competition. The two most extensively studied secondary sex traits in primates, body size and canine tooth size, are associated with such antagonistic behavior. Larger body size provides advantages in contests. The dimorphism among non-human primates varies by species, with some species experiencing little difference or having females that are larger than the males, and others like gorillas where the males are much larger (Smith & Jungers, 1997). Similarly, canine size is usually larger in males than it is in females (Plavcan, 2012), with the

degree of canine size dimorphism reflecting the level of male intrasexual competition present in a given species (Leutenegger & Kelly, 1977)

Unlike most other mammals, male non-human primates exhibit substantial sex-specific coloration (Caro, 2005; Waitt et al., 2003), although the origins of such dimorphisms are subject to debate. In rhesus macaques, red facial coloration is both mediated by levels of testosterone and fluctuates seasonally, with the most prominence during periods of mating, suggesting that it may be related to genetic and/or mate quality, and was shown to be preferred by females, indicating it may have been selected by female mate choice (Waitt et al., 2003). The bright, distinctive coloration of mandrills, in contrast, is linked more to intrasexual competition among males than it is to female mate choice (Andersson, 1994; Setchell et al., 2008). Similarly, drills experience coloration to their lips and groin areas, and the intensity of coloration is correlated with the dominance rank of the male, but not with increased female attraction or mate choice (Marty et al., 2009). This indicates that male coloration in non-human primates has different functions depending on the species, including communication, signaling of fertility, dominance, and in female mate choice.

In comparison, female non-human primates, with a few exceptions, are smaller than the males of their species, have smaller canines, and do not exhibit permanent secondary sex traits the way that most males do (Andersson, 1994; Plavcan, 2012; Smith & Jungers, 1997). However, in many group-living nonhuman primates, females exhibit genital swellings, changes in facial skin coloration, and other conspicuous phenotypic changes across the ovulatory cycle. In female mandrills, the red facial coloration may advertise fertility by indicating the number of offspring they have and/or their stage in their menstrual cycle (Setchell et al., 2006). Female rhesus macaques also experience changes in facial coloration throughout their cycle, which is

used in male mate choice (Higham et al., 2021). Anogenital swellings have evolved multiple times independently and are associated with primates that live in multi-male, multi-female groups (Dixson, 1983). There is evidence that anogenital swellings are associated positively with male mate choice, correlate with the ovulatory cycles of female primates, indicating it is an honest signal of fertility, and/or are a signal of mate quality (Gesquiere et al., 2007; Higham et al., 2008; Street et al., 2016)

Sexual selection in humans

Sexual selection has likely shaped human phenotypes as well. This includes not only physical traits such as body size, but also behavior, including cultural practices such as polygynous marriage and self-presentation such as the use of makeup (Wilson et al., 2017; Archetti, 2013; Miller, 1999). Human sexual dimorphism is on the low end of the range of polygynous primates but exceeds that of primates with monogamous mating systems (Larsen, 2003; Lassek & Gaulin, 2009). Similar to other species, humans have males as the faster reproducing sex and females as the sex that invests more physiologically, influencing reproductive variance and mating behaviors (Lassek & Gaulin, 2022).

Human males

Males are larger than females across all human societies (Lassek & Gaulin, 2022). Adult males are heavier than adult females, have greater arm muscle mass, and greater muscle mass in

their lower extremities (Lassek & Gaulin, 2009; Puts, 2010). These traits appear to be connected to male-male contest competition. Like most non-human primates, males engage in intrasexual competition, and these contests have influenced many of their sexually selected traits. Adult males exhibit traits that indicate ancestral contest competition including not only their larger physical size and greater muscle mass, but also their larger jaws and brow ridges and facial hair (Lassek & Gaulin, 2009; Puts, 2010). The average adult male is stronger than more than 99.9% of females and is more physically aggressive (Puts, 2010; Smuts, 1992). Males engage in more play fighting (typically as juveniles), commit most same-sex homicides, and commit nearly all killings during warfare (Puts, 2010). Additionally, there are few societies where adult male violence against adult females is uncommon, although this is more likely due to sexual coercion than it is to aggression from male intrasexual competition (Smuts, 1992). While there are some alternative hypotheses to explain ultimate causes of male aggression, there is evidence that male aggression is more frequent in societies where intrasexual competition is higher, such as polygynous societies (Carter & Kushnick, 2018).

Female mate choice has been proposed as a mechanism that has influenced male secondary sex traits. Adult females, around the globe, tend to prefer similar traits, regardless of differences in cultures or expectations (Buss, 1989; Walter et al., 2020). Adult females show preference for mates that have resources, can provide protection for themselves and their offspring, fidelity, and mates of high genetic quality (Puts, 2010). Adult females are the sex that can invest physiologically in offspring, whereas males can invest only “economically” via provisioning, protection, care, and the like. Hence, to the extent that female mate preferences function to gain male investment, these preferences should target economic investment capacity. Consistent with this expectation, adult females show increased preference for economic

investment compared to adult males when evaluating potential mates across cultures (Buss, 1989; Walter et al., 2020). Social prestige and personal wealth are relatively important in female mate choice. Evidence shows that accumulation of wealth was a significant factor in the likelihood of securing a new partner, particularly for adult males (Skjærvø & Røskaft, 2015).

Adult males actively seek status, although what prestige means may differ by society. For example, in a village where there is significant political inequality, political influence is an important measure of dominance and prestige, while in a nearby village with more political equality, a different measure, like material wealth, may be more important (von Rueden & Jaeggi, 2016). Increased mating success is not the only proposed motivation behind status seeking behavior. High status adult males tend to have higher fertility and reduced offspring mortality and may be more able to attract extra-pair mates, which can increase reproductive and mating success outside of long-term partnerships (Skjærvø & Røskaft, 2015). There is evidence that at least some aspect of this behavior was influenced by female mate choice, as adult males use displays of strength and athletic ability compared to a direct competitor if a potential mate is present (Buss, 1988; Buss & Dedden, 1990; Schmitt & Buss, 1996). Status may also serve purposes outside of mating and reproduction, as social network building a reciprocity with others may be of increasing importance as males age (von Rueden & Jaeggi, 2016). However, evidence indicates that success in contests has had more influence in the evolution of these characteristics, as the traits are generally more effective in intrasexual competition rather than female mate choice or mate attraction (Aung et al., 2023).

Human females

Humans are different from other primates in the degree to which adult males invest in mates and offspring, which may form the basis for greater adult female intrasexual competition for males. Human females are unusual in that they have what appear to be permanent sexual ornaments; in adult female non-human primates, ornamentation consists of temporary, estrous cycle-related changes in coloration and anogenital swelling discussed above (Setchell et al., 2006), while adult human females have putative ornamentation including body fat distribution, as well as more subtle changes throughout their menstrual cycle (Dixson, 2022; Puts et al., 2013).

Adult human females are unique in their body composition when compared to males, especially amongst primates (Lassek & Gaulin, 2008). Adult females have more fat on the hips, buttocks, and breasts, which suggests that these tissues may be linked, at least in some part, to sexual selection (Norgan, 1997). The locations of these fatty tissues may also be used in signaling a female's ability to support gestation and lactation, thereby being influenced by male mate choice (Dixson, 2022). The higher levels of fat when compared to other primates may function to support offspring with larger brains as well as in sexual selection (Lassek & Gaulin, 2008; Singh, 1993). Low waist-to-hip ratios (WHR), lower body mass indices (BMI), and smaller waists are associated with lower birth weights and higher rates of infant mortality, while higher BMIs are associated with high fertility in young females (Kalk et al., 2009; Lassek & Gaulin, 2018). However, it has been widely hypothesized that adult female sexual dimorphism plays a role in male mate choice. For example, lower WHR are perceived as more attractive to

males than higher ratios (Singh, 1993b). In 37 cultures tested, males universally showed similar patterns of preferences for attractiveness and youth (Buss, 1989).

Intrasexual competition is less frequent, injurious, and obvious in adult human females than it is in adult males. However, this does not mean that it is unimportant (Fisher & Krebs, 2022). Much of female mating competition appears to take the form of efforts to increase attractiveness to potential mates (Buss, 1988, 1989). In non-human primates, adult females frequently use red/pink facial coloration and anogenital swellings to communicate fertility and mate value. There is evidence that adult human females have similar behaviors and physiologic changes that may represent a leakage of information about ovulatory cycle phase rather than signals (Gangestad & Thornhill, 2008). Adult females tend to engage in self-promoting behaviors, including applying makeup and wearing attractive clothing, more often than males do (Elliot & Niesta, 2008; Elliot & Pazda, 2012; Fisher, 2013). Adult females may use clothing to increase their own feelings of attractiveness as well. For example, high heels are associated with higher values of self-perceived attractiveness and are preferred more by young fertile females (Dixson, 2021). There are also indications that adult females may undergo slight appearance changes during fertile windows to make themselves appear more attractive (Haselton et al., 2007). These facial changes have been linked to female sex hormones like estradiol and progesterone, indicating that these changes may be related to an adult female's apparent fertility (Catena et al., 2019; Puts et al., 2013). However, it has been suggested that these changes may indicate that an individual is experiencing ovulation cycles in general rather than the fertility window alone or that it functions to reduce the number of extra-pair copulations their mate seeks, increase their own extra-pair opportunities, or increase investment (Catena et al., 2019; Puts et al., 2013).

As the sex that invests more physiologically in offspring, adult females have less to gain if they were to engage in overt, aggressive intrasexual competition as adult males do, because they do not necessarily benefit from increased numbers of copulations or sexual partners (Campbell, 2004). Instead, access to resources or a network of cooperative allies for child rearing and the division of labor may benefit adult females and their offspring far more (Kramer, 2023; Prall & Scelza, 2024). For example, adult females in matrilineal societies with more household decision making power, tend to have offspring with more positive outcomes than those in patrilineal societies (Alami et al., 2020; Prall & Scelza, 2024).

Adult females are also more likely to attack their competitors with verbal abuse rather than physical violence. For example, adult females more often derogate competitors with accusations of sexual infidelity, presumably lowering their competitors' perceived mate value. They also engage in gossip and social exclusion to decrease the mate value of their competitors and increase their own (Fisher & Krems, 2022). The physical appearance of intrasexual competitors and one's sexual reputation are also frequent topics of gossip between adult females, which is consistent with physical appearance and apparent fidelity being important values for male mate choice (Campbell, 2004).

However, despite the indications of adult female intrasexual social competition and sexual ornamentation, there is a lack of evidence that these characteristics and behaviors are predictors for mating success (Brown & Lewis, 2004; Pawlowski et al., 2008; Zhang & Santtila, 2022). The proposed study aims to address this gap in the literature by investigating the anatomical, psychological, and social predictors of adult female mating success. Which individual characteristics predict mating success, and which social outcomes, including status within female social groups and attractiveness to potential mates, mediate these relationships?

Traditional indicators of sexual selection in human females, including body shape (waist-to-hip ratio), body fat percentage, and facial symmetry, will be measured, along with psychological traits, including self-perceived mate value, desired traits in a mate, and sociosexuality.

Additionally, participants will complete a series of surveys to determine their centrality in their social network, social dominance and prestige, attractiveness to males, and the quality of their mate. These measures will be used to analyze predictors of mating success and potential mediators of those relationships. It is expected that traits, like body shape and facial attractiveness, that increase attractiveness to mates will be stronger predictors to mating success. However, social status and intrasexual competition is also plays a role, especially when mediating adult female behavior, so it is also expected that these traits will have a relationship to mating success. In particular, it is expected that low waist-to-hip ratio will have a negative relationship to mating success, while facial femininity, facial symmetry, and vocal attractiveness will have a positive relationship. Additionally, personality traits, namely extraversion, will also have a positive relationship to adult female mating success. See Chapter 3 for further details.

Chapter 2

Methods

Participants

The planned number of female participants who are pledged or initiated members of a National Panhellenic Council chapter at The Pennsylvania State University and report native-English speaking proficiency participated in this institutional review board-approved study is 100. Female participants are being asked to bring a male romantic/sexual partner or friend. An equal number of males are expected to participate. Participants will attend two data collection sessions and will be paid \$20 USD after their participation in these sessions and an additional \$3 for completing an optional follow-up survey. Participants were also allowed to keep clothing provided to them (see Session 1 procedure).

Procedure

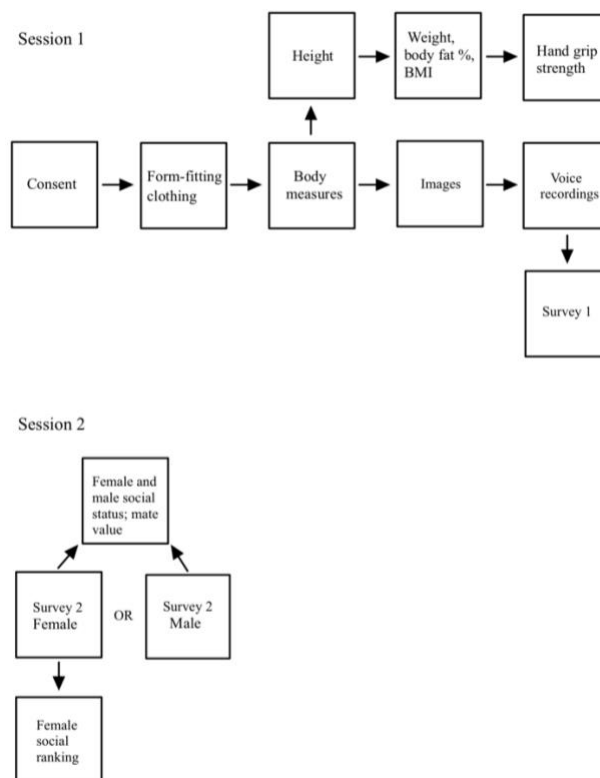


Figure 1. Procedure flow chart for sessions 1 and 2.

Session 1

After participants provide informed consent, they will be provided with standard form-fitting clothing. Female participants will be provided with a black tube top (The Mogen, item # B0CBLXSFWM) and leggings (Campsnaill, item # B0CX97D7WW) for female participants and male participants will be provided with a black tank top (Fruit of the Loom, item #B0C82YG21Z) and boxer shorts (Fruit of the Loom, item #B097C326W1) for male participants. The size range offered is XS-XXL. Participants will be allowed to change in a

private room. They will also be asked to remove all makeup, facial hair, eyeglasses, and jewelry so all redness will subside for facial images.

Anthropometry

Participants will remove shoes and socks. Height will be measured in centimeters using an Invicta Plastics stadiometer. A Tanita Body Composition Analyzer TBF-300 will be used to measure weight, body mass index (BMI; mass in kg/[height in meters]²), and body fat percentage. To measure body fat percentage, the scale will set to each participant's sex assigned at birth, height, and age, and a weight of 0.27kg will be entered to account for the provided clothing. Hand grip strength in kilograms of force will be measured with a Jamar 5030J dynamometer for both hands with the participant's arm making a 90° angle, parallel to the floor while standing.

3D facial images will be taken using a Vectra H2 camera from 1 meter away. 3 images will be collected--1 from the front of the face, and 2 from a 45° angle from the right and left sides. Body images will be taken using an Olympus OM-D E-M1 camera from front, right, left, and back sides. All images will be taken in front of a blank wall with controlled lighting.

Participants will then be allowed to change back into their personal clothing items in a private room before data collection continued.

Voice Recordings

In a separate room, participants will be asked to read a standard script (see appendix B). Recordings will be made using a Shure SM58 vocal cardioid microphone and made in mono at a sampling rate of 44 100 Hz and 16-bit quantization using PRAAT version 6.2.22. Voice files will be recorded on a 6th generation Apple mini iPad. Participants will be instructed to pause briefly before resuming if any obvious mistakes were made, as determined by the researcher.

Session 2

During session 2, all participants will be asked to complete a survey composed of additional demographic information (parental income, current relationship status, academic performance, college major, and expected post-graduation income), the Mate Value Scale (Edlund & Sagarin, 2014), the Sociosexual Orientation Inventory-Revised (SOI-R: Penke & Asendorpf, 2008) as completed in session 1, the Self-Report Measurement of Adult Attachment (Brennan et al., 1998), Marital/Relationship Satisfaction Scale (Brkljačić et al., 2019), Parental Investment Model, (Kenrick et al., 1990), Rosenberg Self-Esteem Scale (Rosenberg, 1979), the Big Five Inventory (John et al., 1991; Rammstedt & John, 2020), and Maternal Investment Scale (Antfolk & Sjölund, 2018). Participants also ranked the perceived social prestige of fraternities on the university's campus as well as the status of a male who is not in a fraternity. The mate value scale asked participants to rate their partner's desirability as well as how they perceived their own. The parental investment model was used to evaluate desired traits in partners for both short-term and long-term relationships. The Big Five Inventory was used to measure the participants' self-reported personality characteristics.

All participants will be asked to complete an additional survey where they will be shown the photographs of the female participants in a randomized order and asked how well they know the person. If they do not, the individual will be skipped and will answer no additional questions. If they do, they will be asked to complete a series of questions targeting dominance and prestige selected from (Cheng et al., 2013) (see supplementary material) using a visual analog scale with endpoints labeled "Not at all" and "Very much" and the midpoint labeled "Somewhat." The three questions targeting prestige are "Members of my group do not want to be like her" (reverse

scored), “Members of my group respect and admire her”, and “Others do not enjoy hanging out with her” (reverse scored). The two questions selected targeting dominance are “She enjoys having control over others” and “She is willing to use aggressive tactics to get her way”. Items were selected because they had high average factor loadings on either dominance or prestige factors across studies 1 and 2 in Cheng et al. and appeared non-redundant. Female participants will also be asked to evaluate other female participants they are familiar with and their male partners on their perceived mate value and formidability, using the same scale as the previous questions. The questions included are “How attractive to the opposite sex for a short-term, purely sexual relationship, such as a one-night stand”; “How attractive to the opposite sex is this person for a long-term, committed relationship such as steady dating or marriage”; “Overall, how good of a ‘catch’ is this person as a romantic partner”; and “How likely would this person be to win a physical fight, such as a fistfight, with someone of the same sex and age”. Male participants will also complete these questions for other male participants they have indicated they are familiar with. Female participants will be asked to rank a random subset of females within their social network in order of overall social status in order from highest to lowest.

Optional follow-up survey

Participants will be given the opportunity to participate in an optional follow-up survey regarding relationship satisfaction one month after participation. Participants will receive an additional \$3 for completing the survey.

Chapter 3

Expected results and planned analyses

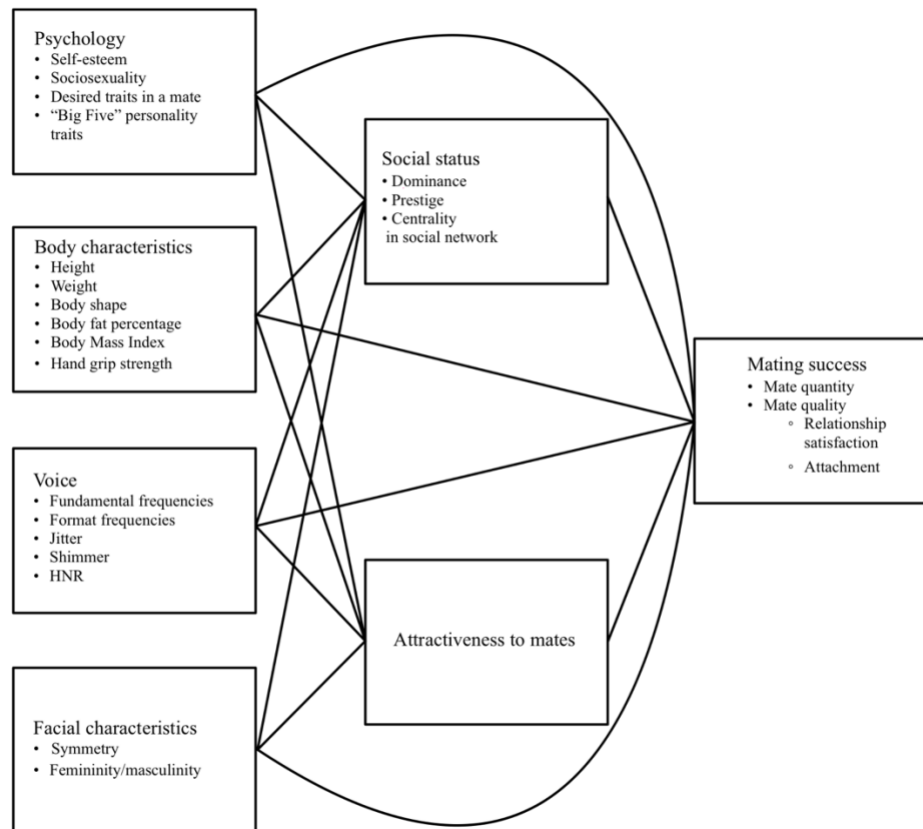


Figure 2. Expected relationships of data to mating success and mediators of the relationships.

Expected Results

All measures are expected to predict mating success with social dominance and attractiveness to mates mediating those relationships.

Social dominance

Psychological traits are expected to influence social dominance in part via interactions with others in their social network. Denigration of competitors is a proposed aspect of female intrasexual competition, so it is expected that females who compete for the same pool of mates will use others' behaviors to further their own mate value (Fisher & Krems, 2022). Personality traits will likely contribute to an individual's centrality in their social network and their perceived prestige by others. Personality traits like high extraversion, predicted high social status in a similar magnitude for both males and females, so it is expected that females who more exhibit more extroversion will have higher social status within their groups (Anderson et al., 2001; Grosz et al., 2020). Self-esteem may also predict high social status, although it is more likely that high social status contributes to high levels of self-esteem (Gregg et al., 2018). It is expected that females who are both central nodes in their social networks and are strong competitors for mates will have greater mating success (Speed & Gangestad, 1997). It is also important to note that females will likely moderate their level of intrasexual aggression, as they also rely on their relationships with other females to help with important tasks, such as child rearing (Kramer, 2023). Evidence also suggests that more attractive adult females exhibit less "restrictive" sociosexuality, indicating a positive relationship between the two (Fisher et al., 2016). Therefore, it is expected that the psychological and behavioral traits of females will have a moderately positive relationship with mating success when mediated by social status.

Body and facial characteristics are expected to have a relationship to social dominance, with females that have traits that are preferred to mates having stronger perceptions of dominance. This may influence the intrasexual relationships with others within their social network. The physical appearance of other females is often a topic of denigrative discussion

within female social groups, indicating that body and facial characteristics are an important factor in determining the strength of another female competitor (Campbell, 2004). It is expected that females with more facial symmetry, facial femininity, and lower waist-to-hip ratios, will have higher social dominance within the group, as they will be perceived as stronger competition.

Additionally, vocal fundamental frequency, while assumed to be more important in males who experience stronger contest competition, may also influence competition in females. The femininity of an individual's voice, indicated by measures including formant frequencies, may impact other females' perception of their dominance over others, thereby influencing the social status of the individual.

It is expected that body and facial attractiveness, along with behavioral traits will be the most significant predictors of social status within adult female social groups because these traits are also likely to be attractive to mates. Since adult females within social groups, especially highly competitive environments like social sororities, compete for the same pool of mates, it is reasonable to expect that social status within these groups correlates to an individual's strength as a competitor. In other words, the individuals with the traits that are the most attractive to mates, will be perceived as more dominant, prestigious, and influential by other adult females within the group (Fisher & Cox, 2009; Walters & Crawford, 1994). Therefore, social status will have a positive relationship to mating success.

Attractiveness to mates

All humans, prefer traits that do not show gendered diversions, including traits like kindness (Buss, 1989; Kenrick et al., 1990). Therefore, is expected that personality and psychological traits that align with a male mate's preferences will increase an individual

female's mate value, thereby increasing her mating success. Evidence suggests that individuals who exhibit more extraversion will have a positive relationship to mating success, while those who exhibit more neuroticism will consequently have a negative relationship (Alvergne et al., 2010; Anderson et al., 2001; Grosz et al., 2020).

Vocal quality may also contribute to an adult female's attractiveness to a potential male mate (Collins & Missing, 2003). Evidence indicates that formant frequencies are the strongest predictor for vocal attractiveness (Puts et al., 2011, 2016; Xu et al., 2013). There has been some evidence that fundamental frequency affects attractiveness ratings, with lower F_0 being preferred for long-term relationships and high pitch for short-term (Aung et al., 2023), indicating that pitch may be a factor in such ratings, but correlational data available does not suggest such a relationship (Puts et al., 2016). Other measures including jitter, shimmer, and HNR were not significant predictors of attractiveness when entered simultaneously with F_0 and formants in multiple regression models (Puts et al., 2016). Hence, they will not be included as variables in analysis of strength of relationship to attractiveness to mates or mating success.

Evidence suggests that males prefer mates that have traits indicating youthfulness and fertility (Buss, 1989; Walter et al., 2020). Body shape, particularly waist-to-hip ratio, has shown strong evidence for mate choice. It is expected that there will be a negative relationship between waist-to-hip ratios and attractiveness to mates, with those with lower ratios being preferred by males (Singh, 1993b). Additionally, facial femininity, which includes factors like facial symmetry, may indicate higher mate quality, thereby potentially increase a female's mating success (Foo et al., 2017; Rhodes, 2006; Rhodes et al., 1998). Therefore, it is anticipated that facial femininity, facial symmetry, and body characteristics indicating youthfulness and fertility will have a positive relationship with attractiveness to mates, and by extension, will have a positive

relationship with mating success (Brooks et al., 2015; Collins & Missing, 2003; Rhodes et al., 1998; Singh et al., 2010).

For short-term relationships, it is expected that physical attributes indicating youthfulness and appearance will be the strongest predictors of attractiveness to mates for an adult female. This is because short-term relationships are primarily focused on copulation and not companionship or parental investment, so other traits, like personality, will be of less importance to adult males when selecting a mate. For long-term relationships, physical attractiveness will also be important when evaluating what traits predict attractiveness to mates, but I also expect that personality traits will become more important when selecting a mate. Evidence has shown that males and females both show strong preference for personality traits that do not directly correlate to sexual selection, so it is reasonable to assume that, when selecting a long-term partner, adult males will select mates that have values and interests that align with their own (Buss, 1989; Walter et al., 2020). Therefore, it is expected that body and facial characteristics will have a strong, positive relationship to attractiveness to mates for both short-term and long-term pairings while personality/behavioral traits will have a stronger relationship for long-term pairings, and less so for short-term.

Mating success

The data collected is expected to have a relationship with a female's mating success, which will be measured by the quantity of mates and their quality. Quality will be assessed using female mate ratings by the female romantic partner; ratings by sorority sisters who know the man; men's self-ratings; facial, vocal, and body attractiveness ratings, and objective measurements such as height. Male mate value will be determined from these multiple measures via principal components analysis (PCA) for data reduction. Resulting principal components will

be used to produce composite variables that reflect one or more components of male mate value as determined by PCA. It is expected that both social status and attractiveness to mates will be predictors for mating success in adult females (Buss, 1989; Prall & Scelza, 2024; Speed & Gangestad, 1997). While adult females exhibit a surprisingly amount of competition within their social groups, most evidence indicates that attractiveness to mates has been more important in sexual selection in human females (Brooks et al., 2015; Buss, 1989; Fisher & Cox, 2009; Walters & Crawford, 1994). Therefore, I expect that attractiveness to mates will have a stronger relationship with mating success.

Planned Analyses

The data will consist of anthropomorphic measurements, psychological and behavioral traits, and social prestige and dominance rankings of the female participants from others in her social network (sorority chapter). As noted above, data reduction will be performed via PCA to produce composite variables of, for example, female social status or male mate value, in which variables that load heavily onto the same principal component will be standardized and summed.

Because the data will be non-independent, with multiple measurements nested within individuals and individuals nested within social sororities, multilevel modeling will be used to account for this nested structure.

A multiple regression (multivariate) model with both linear and quadratic components will also be employed to determine if there is a curvilinear relationship.

Appendix A

Surveys

Relationships in Sorority Women (Session 1)

Start of Block: Demographics

Q31 Please type participant ID that was given to you

Q1 What is your age?

Q15 What is your biological sex assigned at birth?

- Female (1)
 - Male (2)
 - Intersex (3)
-

Q12 What is your gender?

- Woman (1)
 - Man (2)
 - Non-binary (3)
 - Other (please specify) (4) _____
-

Q42 What is your sexual orientation?

- Heterosexual (straight) (1)
 - Bisexual (2)
 - Homosexual (gay) (3)
 - Other (Please specify) (4) _____
 - Prefer not to answer (5)
-

Q13 What is your race?

- American Indian or Alaska Native (1)
 - Asian (2)
 - Black or African American (3)
 - White or Caucasian (4)
 - Native Hawaiian or other Pacific Islander (5)
 - Two or more (6)
 - Other/unknown (8)
-

Q14 What is your ethnicity?

- Hispanic or Latino (1)
 - Not Hispanic or Latino (2)
-

Q14 What is your **parents'** combined annual household income?

- \$19,999 or less (1)
 - \$20,000 to \$24,999 (2)
 - \$25,00 to \$34,999 (3)
 - \$35,000 to \$44,999 (4)
 - \$45,000 to \$54,999 (5)
 - \$55,000 to \$64,999 (6)
 - \$65,000 to \$74,999 (7)
 - \$75,000 to \$84,999 (8)
 - \$85,000 to \$94,999 (9)
 - \$95,000 to \$104,999 (10)
 - \$105,000 to \$114,999 (11)
 - \$115,000 to \$124,999 (12)
 - \$125,999 to \$134,999 (13)
 - \$145,999 to \$154,999 (14)
 - \$155,000 and over (15)
-

Q18 What parent 1's marital status?

- Married (1)
 - Widowed (2)
 - Divorced (3)
 - Remarried (4)
 - Separated (5)
 - Never married (6)
-

Q19 What parent 2's marital status?

- Married (1)
 - Widowed (2)
 - Divorced (3)
 - Remarried (4)
 - Separated (5)
 - Never married (6)
-

Q20 How large is your household? (the household you primarily live at if multiple households)

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

End of Block: Demographics

Start of Block: Sociosexual Orientation Inventory

Q1 With how many different partners have you had sex within the past 12 months?

- 0 (1)
 - 1 (2)
 - 2 (3)
 - 3 (4)
 - 4 (5)
 - 5-6 (6)
 - 7-9 (7)
 - 10-19 (8)
 - 20 or more (9)
-

Q2 With how many different partners have you had sexual intercourse on one and only one occasion?

- 0 (1)
 - 1 (2)
 - 2 (3)
 - 3 (4)
 - 4 (5)
 - 5-6 (6)
 - 7-9 (7)
 - 10-19 (8)
 - 20 or more (9)
-

Q3 With how many different partners have you had sexual intercourse without having an interest in a long-term committed relationship with this person?

- 0 (1)
- 1 (2)
- 2 (3)
- 3 (4)
- 4 (5)
- 5-6 (6)
- 7-9 (7)
- 10-19 (8)
- 20 or more (9)
-

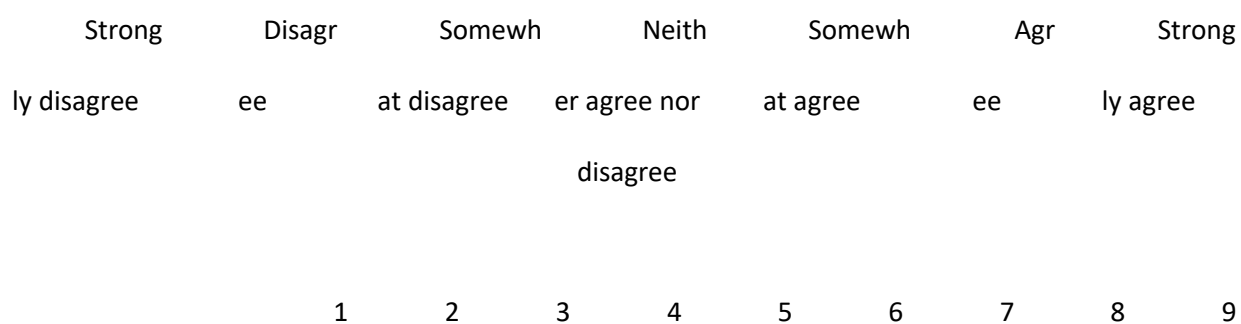
Q4 Sex without love is OK.

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree			
	1	2	3	4	5	6	7	8	9

Click to write Choice 1 ()



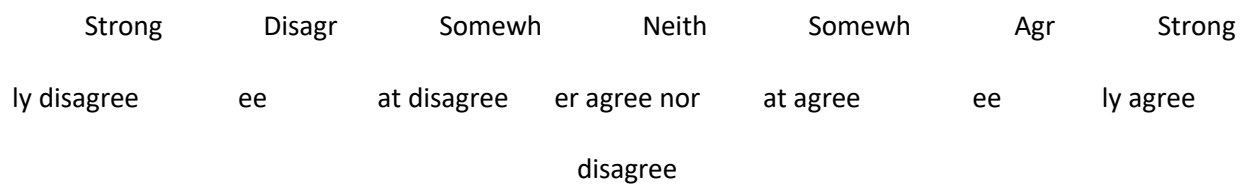
Q5 I can imagine myself being comfortable and enjoying "casual" sex with different partners.



Click to write Choice 1 ()



Q6 I do not want to have sex with a person until I am sure that we will have a long-term, serious relationship.



1 2 3 4 5 6 7 8 9

Click to write Choice 1 ()



Q7 How often do you have fantasies about having sex with someone you are not in a committed romantic relationship with?

- Never (1)
 - Very Seldom (2)
 - About once every two or three months (3)
 - About once a month (4)
 - About once every two weeks (5)
 - About once a week (6)
 - Several times per week (7)
 - Nearly every day (8)
 - At least once a day (9)
-

Q8 How often do you experience sexual arousal when you are in contact with someone you are not in a committed romantic relationship with?

- Never (1)
 - Very Seldom (2)
 - About once every two or three months (3)
 - About once a month (4)
 - About once every two weeks (5)
 - About once a week (6)
 - Several times per week (7)
 - Nearly every day (8)
 - At least once a day (9)
-

Q9 In everyday life, how often do you have spontaneous fantasies about having sex with someone you have just met?

- Never (1)
- Very Seldom (2)
- About once every two or three months (3)
- About once a month (4)
- About once every two weeks (5)
- About once a week (6)
- Several times per week (7)
- Nearly every day (8)
- At least once a day (9)

End of Block: Sociosexual Orientation Inventory

Relationships in Sorority Women (Session 2)

Start of Block: Demographics

ID Please type participant ID that was given to you

Page

Break

Relationship Status Are you currently in a romantic relationship?

- Yes (1)
- No (2)
- Other (please explain) (3) _____
-

Relationship Length How long have you been in a committed relationship with your significant other?

- Less than one year (1)
- 1-2 years (2)
- 3-4 years (3)
- 4+ years (4)
- N/A (5)
-

Relationship Status² How would you describe the relationship you have with the participant you came with today?

- Romantic only (1)
- Romantic and sexual (2)
- Sexual only (3)
- Platonic (4)
- NA (I didn't come with a male partner) (5)

End of Block: Demographics

Start of Block: Status

Sorority Chapter What sorority chapter are you a member of.

- Alpha Delta Pi (1)
- Alpha Omicron Pi (2)
- Alpha Phi (3)
- Alpha Sigma Alpha (21)
- Alpha Xi Delta (4)
- Delta Gamma (5)
- Delta Phi Epsilon (6)
- Delta Zeta (7)
- Gamma Phi Beta (8)
- Kappa Alpha Theta (9)
- Kappa Delta (10)
- Kappa Kappa Gamma (11)
- Omega Phi Alpha (12)
- Phi Sigma Rho (13)
- Phi Sigma Sigma (14)
- Pi Beta Phi (15)
- Sigma Alpha (16)
- Sigma Delta Tau (17)
- Sigma Kappa (18)




_____ Sigma Pi (26)	_____ Sigma Pi (26)	_____ Sigma Pi (26)	_____ Sigma Pi (26)	_____ Sigma Pi (26)	_____ Sigma Pi (26)
_____ Tau Epsilon Phi (TEP) (27)	_____ Tau Epsilon Phi (TEP) (27)	_____ Tau Epsilon Phi (TEP) (27)	_____ Tau Epsilon Phi (TEP) (27)	_____ Tau Epsilon Phi (TEP) (27)	_____ Tau Epsilon Phi (TEP) (27)
_____ Tau Kappa Epsilon (TKE) (28)	_____ Tau Kappa Epsilon (TKE) (28)	_____ Tau Kappa Epsilon (TKE) (28)	_____ Tau Kappa Epsilon (TKE) (28)	_____ Tau Kappa Epsilon (TKE) (28)	_____ Tau Kappa Epsilon (TKE) (28)
_____ Tau Phi Delta (Treehouse) (29)	_____ Tau Phi Delta (Treehouse) (29)	_____ Tau Phi Delta (Treehouse) (29)	_____ Tau Phi Delta (Treehouse) (29)	_____ Tau Phi Delta (Treehouse) (29)	_____ Tau Phi Delta (Treehouse) (29)
_____ Theta Delta Chi (TDX) (30)	_____ Theta Delta Chi (TDX) (30)	_____ Theta Delta Chi (TDX) (30)	_____ Theta Delta Chi (TDX) (30)	_____ Theta Delta Chi (TDX) (30)	_____ Theta Delta Chi (TDX) (30)
_____ Triangle (31)	_____ Triangle (31)	_____ Triangle (31)	_____ Triangle (31)	_____ Triangle (31)	_____ Triangle (31)
_____ Zeta Beta Tau (ZBT) (32)	_____ Zeta Beta Tau (ZBT) (32)	_____ Zeta Beta Tau (ZBT) (32)	_____ Zeta Beta Tau (ZBT) (32)	_____ Zeta Beta Tau (ZBT) (32)	_____ Zeta Beta Tau (ZBT) (32)
_____ Status of someone not in a fraternity (34)	_____ Status of someone not in a fraternity (34)	_____ Status of someone not in a fraternity (34)	_____ Status of someone not in a fraternity (34)	_____ Status of someone not in a fraternity (34)	_____ Status of someone not in a fraternity (34)

Centrality 1 Please use the slider to answer the following statements on how much you agree with them.

Strongly disagree

Strongly agree

1 4 7


I feel connected to my sorority sisters. ()	
My sorority sisters and I share interests and activities, ()	
I feel a strong sense of belonging in my sorority. ()	

End of Block: Status

Start of Block: Academics

GPA What is your GPA?

0 1 1 2 2 3 3 4

. ()	
-------	--

Major What is your major?

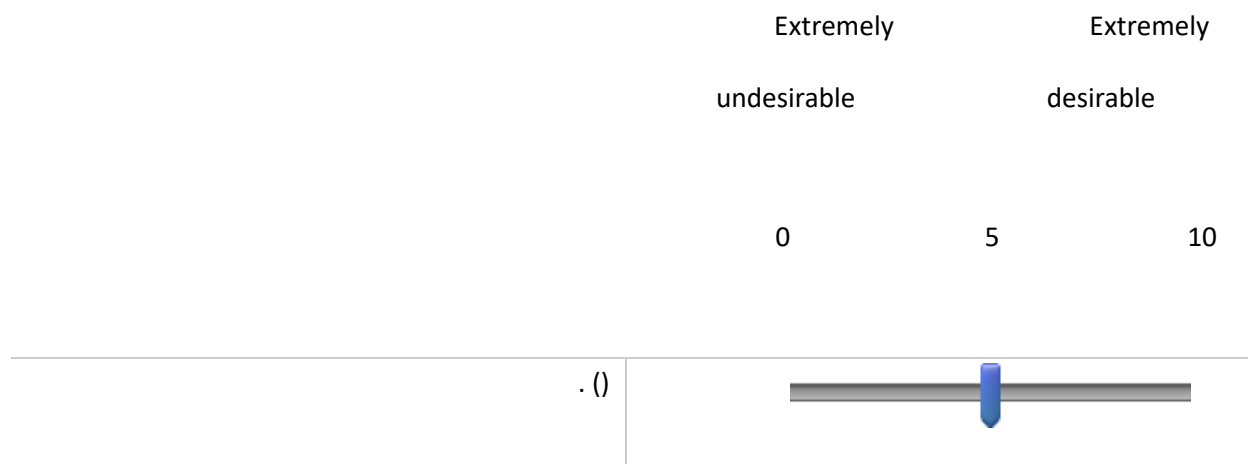
Expt Income What is your expected income post-graduation 5 years from now for your major/career path?

- \$19,999 or less (1)
- \$20,000 to \$24,999 (2)
- \$25,000 to \$34,999 (3)
- \$35,000 to \$44,999 (4)
- \$45,000 to \$54,999 (5)
- \$55,000 to \$64,999 (6)
- \$65,000 to \$74,999 (7)
- \$75,000 to \$84,999 (8)
- \$85,000 to \$94,999 (9)
- \$95,000 to \$104,999 (10)
- \$104,999 to \$114,999 (11)
- \$115,000 and over (12)

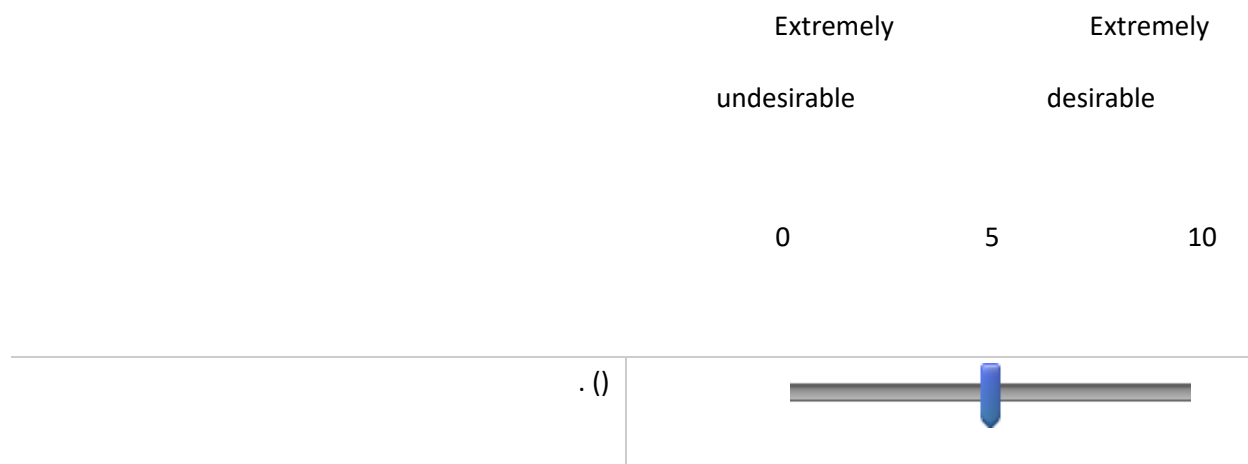
End of Block: Academics

Start of Block: Mate Value Scale

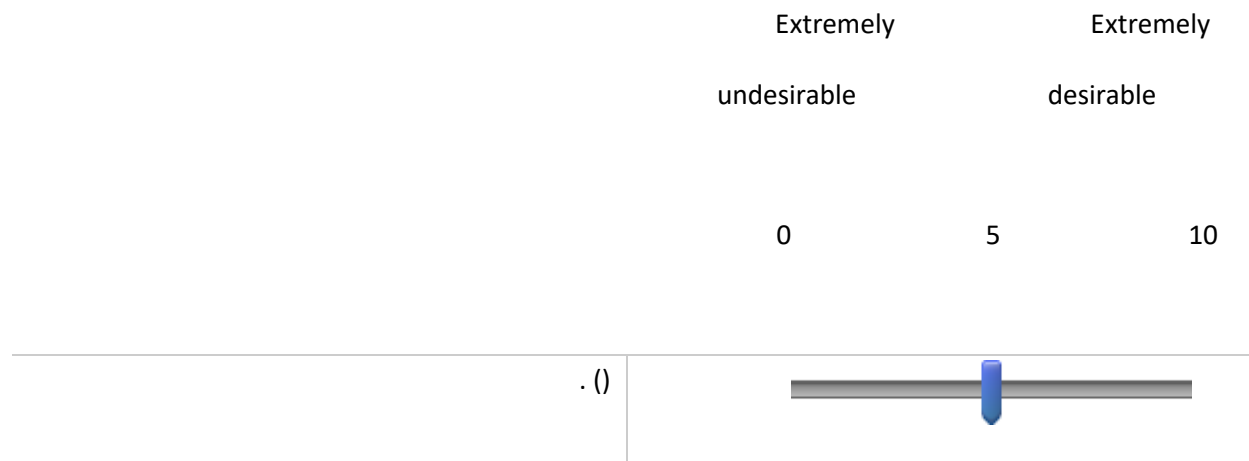
MV1 Overall, how would you rate your level of desirability as a partner on the following scale?



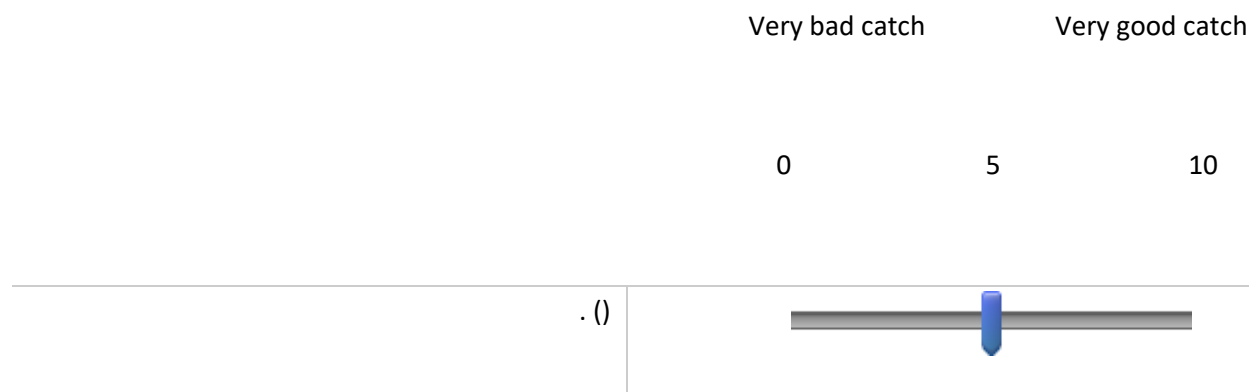
MV2 Overall, how would members of the opposite sex rate your level of desirability as a partner on the following scale?



MV3 Overall, how do you believe you compare to other people in desirability as a partner on the following scale?



GoodCatch Overall, how good of a catch are you?



PayinAttention Please select "strongly agree" to show you are paying attention to this question.

- Strongly agree (4)
- Agree (5)
- Disagree (6)
- Strongly disagree (7)

End of Block: Mate Value Scale

Start of Block: Self Esteem

SelfEsteemInv Below is a list of statements dealing with your general feelings about yourself.

Please indicate how strongly you agree or disagree with each statement.

Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree			
	1	2	3	4	5	6	7

<p>On the whole, I am satisfied with myself. ()</p>	
<p>At times I think I am no good at all. ()</p>	
<p>I feel that I have a number of good qualities. ()</p>	
<p>I am able to do things as well as most other people. ()</p>	
<p>I feel I do not have much to be proud of. ()</p>	
<p>I certainly feel useless at times. ()</p>	
<p>I feel that I'm a person of worth, at least on an equal plane with others. ()</p>	
<p>I wish I could have more respect for myself. ()</p>	
<p>All in all, I am inclined to feel that I am a failure. ()</p>	
<p>I take a positive attitude toward myself. ()</p>	

High social status ()	
Wealthy ()	
Good earning capacity ()	
Intelligent ()	
Good sense of humor ()	
Ambitious ()	
Wants children ()	
Kind and understanding ()	

ParentalInvModelLT Consider the criteria you would use in choosing a partner for involvement in a **long-term relationship** (such as steady dating).

Give the minimum percentiles you would prefer for each characteristic.

Better than 0% of

people

Better than 100%

of people

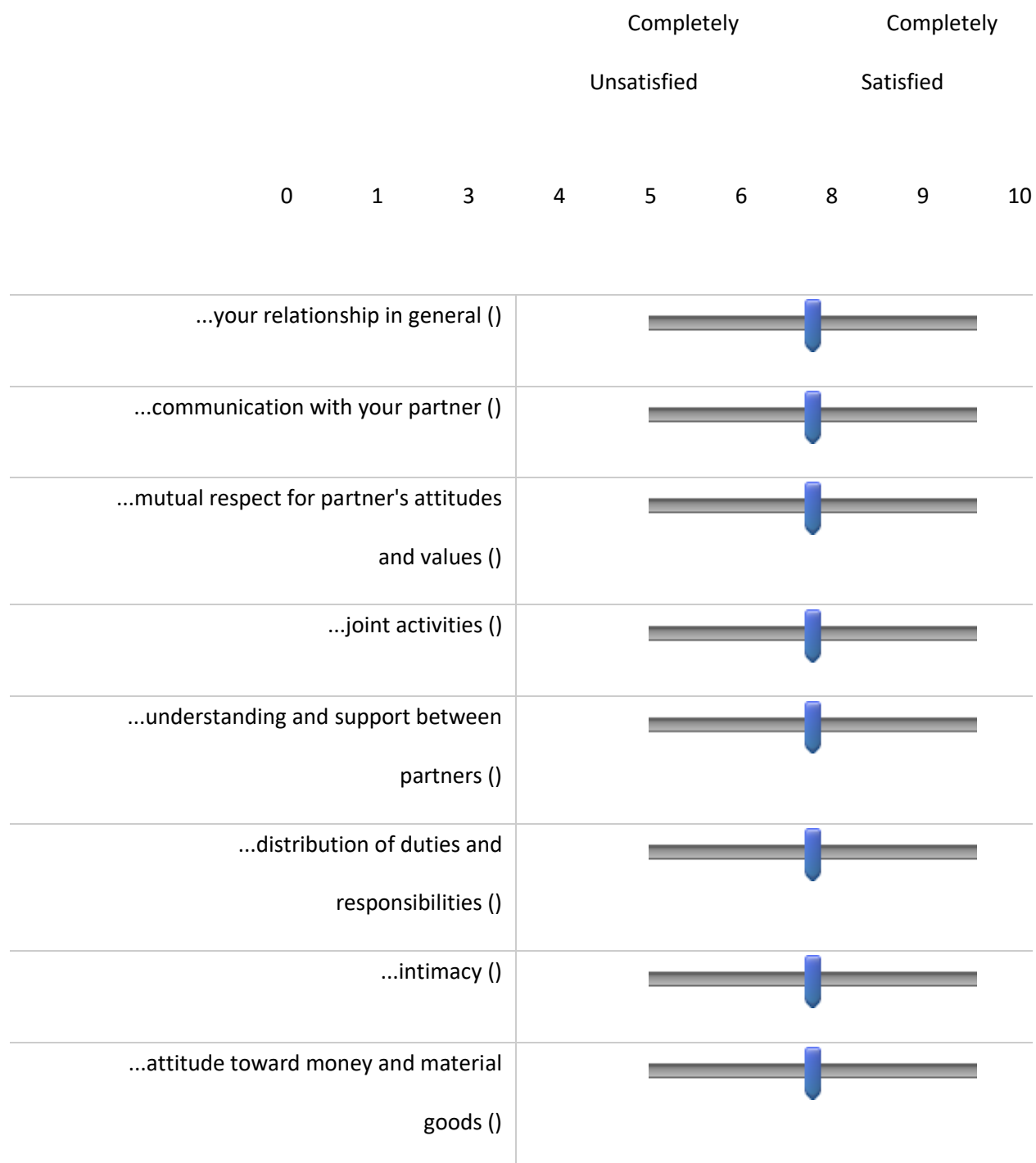
(1 2 3 4 5 6 7 8 9 10
0 0 0 0 0 0 0 0 0 0



End of Block: Parental Investment Model

Start of Block: Relationship Satisfaction

RelationSatisfaction In your relationship, how satisfied are you regarding...



End of Block: Relationship Satisfaction

Start of Block: Sociosexual Orientation Inventory

SexPartn12m With how many different partners have you had sex within the past 12 months?

- 0 (1)
 - 1 (2)
 - 2 (3)
 - 3 (4)
 - 4 (5)
 - 5-6 (6)
 - 7-9 (7)
 - 10-19 (8)
 - 20 or more (9)
-

SexPartnOneOccasion With how many different partners have you had sexual intercourse on one and only one occasion?


- 0 (1)
 - 1 (2)
 - 2 (3)
 - 3 (4)
 - 4 (5)
 - 5-6 (6)
 - 7-9 (7)
 - 10-19 (8)
 - 20 or more (9)
-

SexPartnShortTerm With how many different partners have you had sexual intercourse without having an interest in a long-term committed relationship with this person?

- 0 (1)
- 1 (2)
- 2 (3)
- 3 (4)
- 4 (5)
- 5-6 (6)
- 7-9 (7)
- 10-19 (8)
- 20 or more (9)
-


SexWithoutLoveOK Sex without love is OK.

Strong ly disagree	Disagr ee	Somewh at disagree	Neith er agree nor disagree	Somewh at agree	Agr ee	Strong ly agree			
			1	2	3	4	5	6	7

Click to write Choice 1 ()	
-----------------------------	--

CasualSexComfort I can imagine myself being comfortable and enjoying "casual" sex with different partners.

Strong	Disagr	Somewh	Neith	Somewh	Agr	Strong		
ly disagree	ee	at disagree	er agree nor	at agree	ee	ly agree		
			disagree					
		1	2	3	4	5	6	7

Click to write Choice 1 ()	
-----------------------------	--

LTSeriousSexComfort I do not want to have sex with a person until I am sure that we will have a long-term, serious relationship.

Strong Disagr Somewh Neith Somewh Agr Strong
 ly disagree ee at disagree er agree nor at agree ee ly agree
 disagree

1 2 3 4 5 6 7 8 9

Click to write Choice 1 ()



SexFantasyNonCommit How often do you have fantasies about having sex with someone you are not in a committed romantic relationship with?

- Never (1)
 - Very Seldom (2)
 - About once every two or three months (3)
 - About once a month (4)
 - About once every two weeks (5)
 - About once a week (6)
 - Several times per week (7)
 - Nearly every day (8)
 - At least once a day (9)
-

SexArousalNonCommit How often do you experience sexual arousal when you are in contact with someone you are not in a committed romantic relationship with?

- Never (1)
 - Very Seldom (2)
 - About once every two or three months (3)
 - About once a month (4)
 - About once every two weeks (5)
 - About once a week (6)
 - Several times per week (7)
 - Nearly every day (8)
 - At least once a day (9)
-

SpontaneousSexFant In everyday life, how often do you have spontaneous fantasies about having sex with someone you have just met?

- Never (1)
- Very Seldom (2)
- About once every two or three months (3)
- About once a month (4)
- About once every two weeks (5)
- About once a week (6)
- Several times per week (7)
- Nearly every day (8)
- At least once a day (9)

End of Block: Sociosexual Orientation Inventory

Start of Block: Attachment Scale

AttachmentInventory Using the slider, report how much you agree with each of the following statements

(Note: if you do not currently have a romantic/sexual partner, respond with how you predict you would

feel about the following questions if you were to be/ever have been in a relationship)

Strong	Disagr	Somewh	Neith	Somewh	Agr	Strong			
ly Disagree	ee	at Disagree	er Agree nor	at Agree	ee	ly Agree			
			Disagree						
			1	2	3	4	5	6	7

I prefer not to show a partner how I feel deep down. ()	
I am very comfortable being close to romantic partners. ()	
Just when my partner starts to get close to me I find myself pulling away. ()	
I get uncomfortable when a romantic partner wants to be very close. ()	
I don't feel comfortable opening up to romantic partners. ()	
I want to get close to my partner, but I keep pulling back. ()	
I am nervous when partners get too close to me. ()	
I feel comfortable sharing my private thoughts and feelings with my partner. ()	
I try to avoid getting too close to my partner. ()	
I find it relatively easy to get close to my partner. ()	

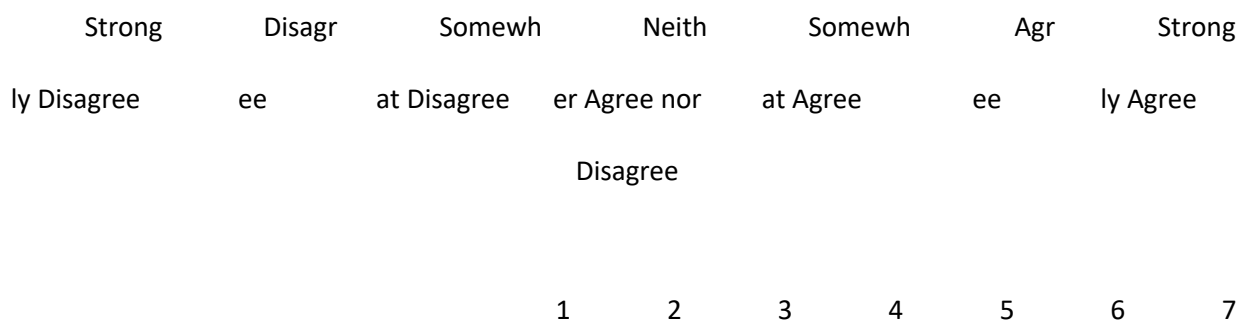
I find it difficult to allow myself to
depend on romantic partners. ()













End of Block: Attachment Scale

Start of Block: Big Five Inventory

BigFiveInventory I see myself as someone who...



... is reserved ()	
... is generally trusting ()	
... tends to be lazy ()	
... is relaxed, handles stress well ()	
... has few artistic interests ()	
... is outgoing, sociable ()	
... tends to find fault with others ()	
... does a thorough job ()	
... gets nervous easily ()	
... has an active imagination ()	

End of Block: Big Five Inventory

Start of Block: Number of Potential Conceptions

NumbPotentialConcept With how many members of the opposite sex have you had sex?

End of Block: Number of Potential Conceptions

Start of Block: F001

Q1 Please answer the questions below based on the woman you see.



Q2 How well do you know this person? (If you do not know this person?)

- I do not know this person (1)
- I know this person by sight (2)
- We know each other casually (3)
- We are friends (4)
- We are very good friends (5)

End of Block: F001

Start of Block: F001 Questions

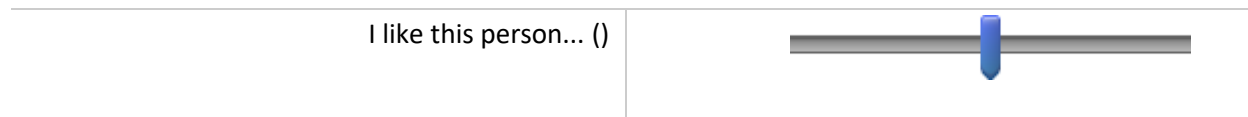
Q3 How much do you like the person shown in the picture?

Dislike a great

Like a great deal

deal

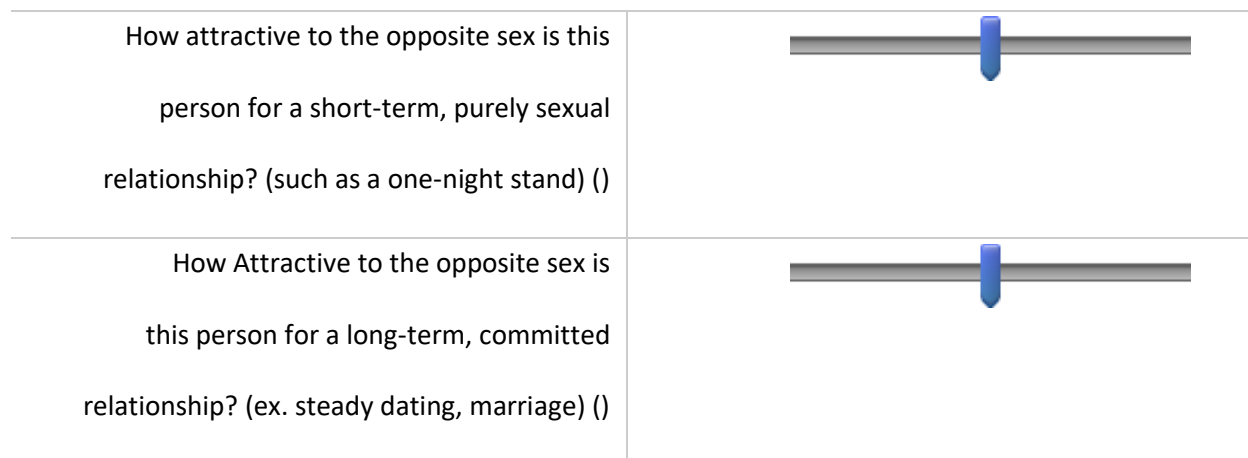
1 4 7



Q4 Please answer the following questions about this person's attractiveness.

Very Unattractive Very Attractive

0 5 10





Q5 Please answer the following questions about this person.

	Very Bad or Unlikely	4	Very Good or Likely
	1		7
Overall, how good of a "catch" is this person as a romantic partner ()			
How likely would this person be to win a physical fight, such as a fistfight, with someone of the same sex and age? ()			

Q6 Please answer the following questions about this person.

Strongly disagree		Strongly Agree
1	4	7

She enjoys having control over others. ()	
She is willing to use aggressive tactics to get her way. ()	

Q7 Please answer the following questions about this person.




Strongly disagree

Strongly Agree

1

4

7

Members of my group do not want to be like her. ()	
Members of my group respect and admire her. ()	
Others do not enjoy hanging out with her. ()	

End of Block: F001 Questions

Start of Block: F002

Q1 Please answer the questions below based on the woman you see.



Q2 How well do you know this person?

- I do not know this person (1)
- I know this person by sight (2)
- We know each other casually (3)
- We are friends (4)
- We are very good friends (5)

End of Block: F002

Start of Block: F002 Questions

Q3 How much do you like the person shown in the picture?


Dislike a great
deal

Like a great deal



1

4

7

I like this person... ()	
--------------------------	--

Q4 Please answer the following questions about this person's attractiveness.



	Very Unattractive	Very Attractive
	0	5 10
How attractive to the opposite sex is this person for a short-term, purely sexual relationship? (such as a one-night stand) ()		
How Attractive to the opposite sex is this person for a long-term, committed relationship? (ex. steady dating, marriage) ()		

Q5 Please answer the following questions about this person.

	Very Bad or Unlikely	4	Very Good or Likely
	1		7
Overall, how good of a "catch" is this person as a romantic partner ()			
How likely would this person be to win a physical fight, such as a fistfight, with someone of the same sex and age? ()			

Q113 Please answer the following questions about this person.

Strongly disagree		Strongly Agree
1	4	7

She enjoys having control over others. ()	
She is willing to use aggressive tactics to get her way. ()	

Q7 Please answer the following questions about this person.




Strongly disagree

Strongly Agree

1

4

7

Members of my group do not want to be like her. ()	
Members of my group respect and admire her. ()	
Others do not enjoy hanging out with her. ()	

End of Block: F002 Questions

Start of Block: F003

Q1 Please answer the questions below based on the woman you see.



Q2 How well do you know this person? (If you do not know this person?)

- I do not know this person (1)
- I know this person by sight (2)
- We know each other casually (3)
- We are friends (4)
- We are very good friends (5)

End of Block: F003

Start of Block: F003 Questions

Q91 How much do you like the person shown in the picture?


Dislike a great
deal

Like a great deal



1

4

7

I like this person... ()	
--------------------------	--

Q92 Please answer the following questions about this person's attractiveness.



	Very Unattractive	Very Attractive
	0	10
How attractive to the opposite sex is this person for a short-term, purely sexual relationship? (such as a one-night stand) ()		
How Attractive to the opposite sex is this person for a long-term, committed relationship? (ex. steady dating, marriage) ()		

Q93 Please answer the following questions about this person.

	Very Bad or Unlikely	4	Very Good or Likely
	1		7
Overall, how good of a "catch" is this person as a romantic partner ()			
How likely would this person be to win a physical fight, such as a fistfight, with someone of the same sex and age? ()			

Q94 Please answer the following questions about this person.

Strongly disagree		Strongly Agree
1	4	7

She enjoys having control over others. ()	
She is willing to use aggressive tactics to get her way. ()	

Q95 Please answer the following questions about this person.




Strongly disagree

Strongly Agree

1

4

7

Members of my group do not want to be like her. ()	
Members of my group respect and admire her. ()	
Others do not enjoy hanging out with her. ()	

End of Block: F003 Questions

Start of Block: F004

Q1 Please answer the questions below based on the woman you see.



Q2 How well do you know this person?

- I do not know this person (1)
- I know this person by sight (2)
- We know each other casually (3)
- We are friends (4)
- We are very good friends (5)

End of Block: F004

Start of Block: F004 Questions

Q98 How much do you like the person shown in the picture?


Dislike a great
deal

Like a great deal



1

4

7

I like this person... ()	
--------------------------	--

Q99 Please answer the following questions about this person's attractiveness.



	Very Unattractive	Very Attractive
	0	10
How attractive to the opposite sex is this person for a short-term, purely sexual relationship? (such as a one-night stand) ()		
How Attractive to the opposite sex is this person for a long-term, committed relationship? (ex. steady dating, marriage) ()		

Q100 Please answer the following questions about this person.

	Very Bad or Unlikely	4	Very Good or Likely
	1		7
Overall, how good of a "catch" is this person as a romantic partner ()			
How likely would this person be to win a physical fight, such as a fistfight, with someone of the same sex and age? ()			

Q101 Please answer the following questions about this person.

Strongly disagree		Strongly Agree
1	4	7

She enjoys having control over others. ()	
She is willing to use aggressive tactics to get her way. ()	

Q102 Please answer the following questions about this person.




Strongly disagree

Strongly Agree

1

4

7

Members of my group do not want to be like her. ()	
Members of my group respect and admire her. ()	
Others do not enjoy hanging out with her. ()	

End of Block: F004 Questions

Start of Block: F005

Q1 Please answer the questions below based on the woman you see.



Q2 How well do you know this person?

- I do not know this person (1)
- I know this person by sight (2)
- We know each other casually (3)
- We are friends (4)
- We are very good friends (5)

End of Block: F005

Start of Block: F005 Questions

Q103 How much do you like the person shown in the picture?


Dislike a great
deal

Like a great deal



1

4

7

I like this person... ()	
--------------------------	--

Q104 Please answer the following questions about this person's attractiveness.



	Very Unattractive	Very Attractive
	0	10
How attractive to the opposite sex is this person for a short-term, purely sexual relationship? (such as a one-night stand) ()		
How Attractive to the opposite sex is this person for a long-term, committed relationship? (ex. steady dating, marriage) ()		

Q105 Please answer the following questions about this person.

	Very Bad or Unlikely	4	Very Good or Likely
	1		7
Overall, how good of a "catch" is this person as a romantic partner ()			
How likely would this person be to win a physical fight, such as a fistfight, with someone of the same sex and age? ()			

Q106 Please answer the following questions about this person.

Strongly disagree		Strongly Agree
1	4	7

She enjoys having control over others. ()	
She is willing to use aggressive tactics to get her way. ()	

Q107 Please answer the following questions about this person.




Strongly disagree

Strongly Agree

1

4

7

Members of my group do not want to be like her. ()	
Members of my group respect and admire her. ()	
Others do not enjoy hanging out with her. ()	

End of Block: F005 Questions

Start of Block: F006

Q1 Please answer the questions below based on the woman you see.



Q2 How well do you know this person?

- I do not know this person (1)
- I know this person by sight (2)
- We know each other casually (3)
- We are friends (4)
- We are very good friends (5)

End of Block: F006

Start of Block: F006 Questions

Q108 How much do you like the person shown in the picture?


Dislike a great
deal

Like a great deal



1

4



7

I like this person... ()	
--------------------------	--

Q109 Please answer the following questions about this person's attractiveness.



	Very Unattractive	Very Attractive
	0	10
How attractive to the opposite sex is this person for a short-term, purely sexual relationship? (such as a one-night stand) ()		
How Attractive to the opposite sex is this person for a long-term, committed relationship? (ex. steady dating, marriage) ()		

Q110 Please answer the following questions about this person.

	Very Bad or Unlikely		Very Good or Likely
	1	4	7
Overall, how good of a "catch" is this person as a romantic partner ()			
How likely would this person be to win a physical fight, such as a fistfight, with someone of the same sex and age? ()			

Q111 Please answer the following questions about this person.

	Strongly disagree		Strongly Agree
	1	4	7

She enjoys having control over others. ()	
She is willing to use aggressive tactics to get her way. ()	

Q112 Please answer the following questions about this person.




Strongly disagree

Strongly Agree

1

4

7

Members of my group do not want to be like her. ()	
Members of my group respect and admire her. ()	
Others do not enjoy hanging out with her. ()	

End of Block: F006 Questions

Start of Block: VisualPauseSeparator

VisualPause Please click the arrow to move to the next section.

End of Block: VisualPauseSeparator

Start of Block: ValidatingUnknownWomen

ValidationIGNORE Please select which women you do not know at all.

- Image:Women1.jpeg (1)
- Image:Women10.jpeg (2)
- Image:Women11.jpeg (3)
- Image:Women12 (4)
- Image:Women13.jpeg (5)
- Image:Women14.jpeg (6)

End of Block: ValidatingUnknownWomen

Start of Block: Ranking Sorority Sisters

Carry Forward Unselected Choices from "Please select which women you do not know at all."



RankSorority Please put these people in order of overall social status in your group from highest to lowest.

- _____ Image:Women1.jpeg (1)
- _____ Image:Women10.jpeg (2)
- _____ Image:Women11.jpeg (3)
- _____ Image:Women12 (4)
- _____ Image:Women13.jpeg (5)
- _____ Image:Women14.jpeg (6)

End of Block: Ranking Sorority Sisters

Appendix B

Voice recording script

1	"When sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors."
2	<p>Say each of the following words, pausing briefly between each:</p> <p>"Beat Bit Bet Bait Bat But Bout Bite Boot Boat Bought"</p>
3	<p><u>Pretending that you are speaking to a romantic interest or friend, say the following sentence:</u></p> <p>"Would you like to go on a date with me tonight?"</p>
4	Speak freely about your plans for the day for 15-30 seconds

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