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An adaptationist perspective on humor: Humor and mate selection

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AN ADAPTATIONIST PERSPECTIVE ON HUMOR:

HUMOR AND MATE SELECTION

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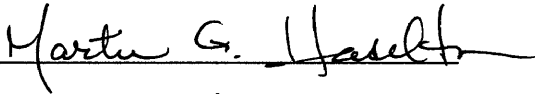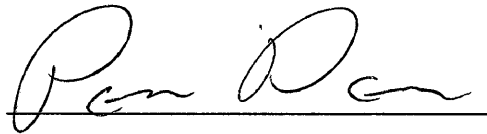Approval Sheet

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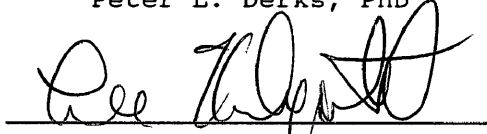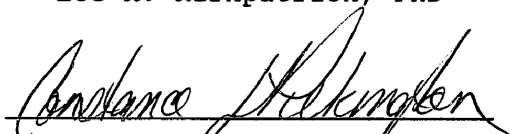Approved, July 1995

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ABSTRACT

This thesis documents an evolutionary psychological analysis of humor. Humor is a multifaceted phenomenon, with an underlying psychology that is complex and likely contains adaptations designed to solve many different adaptive problems. The focus of the present inquiry was on sex differences in humor display. It was hypothesized that over evolutionary history men's ability to successfully generate humor was correlated with their mate value and, as a result, women evolved a preference for humor generation ability in their mates. Three studies were designed to test this adaptationist hypothesis.

Findings include: (1) When the components of the general category "sense of humor" were examined separately, men and women evaluated humor production (making others laugh) and humor appreciation (laughing) differently. For example, men believed that humor production was better than humor appreciation as a strategy for impressing members of the opposite sex. Women, however, believed both strategies to be about equally effective. (2) Humor generating targets were evaluated more positively than humor appreciating targets and targets whose humor behavior was unspecified. This outcome was more consistent for ratings of female targets than it was for ratings of male targets. In addition, men, more than women, rated humor appreciators lower than the other targets.

In general, the findings did not confirm the adaptationist hypothesis. The obtained results and possible threats to validity are discussed. Suggestions for further research are offered.

AN ADAPTATIONIST PERSPECTIVE ON HUMOR:

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INTRODUCTION

This thesis presents an evolutionary analysis of humor. It will (1) show that inquiring about the evolutionary history of humor is not a matter of simple curiosity -- that understanding the evolved design of humor is likely to richly inform humor research across all domains; (2) give a brief overview of the new discipline of evolutionary psychology; (3) document qualities of humor that make humor a good candidate for evolutionary analysis; (4) examine other evolutionary theories of humor; (5) discuss an important quality of humor -- sex differences in humor display -- and outline an adaptationist hypothesis to explain it; and (6) describe and discuss tests of the adaptationist hypothesis. This inquiry is only a first step. It will not explain humor in its many different manifestations. It will, however, provide a foothold so that functional analyses of humor might be more complete in the future.

What is Humor?

Before attempting to explain the existence of humor, it is important to define it. Unfortunately, this is not a simple task. The term "humor" has many different meanings. For example, humor can be defined as a cognitive event characterized by the recognition and/or resolution of incongruity (e.g., Derks, 1995), or humor can be defined as an event followed by laughter or the subjective experience of "funniness." The term humor could also be used to describe persons rather than events: "she is a humorous person." Humor is also difficult to define because it is a summary term that (perhaps falsely) aggregates many, varied phenomena. For example, telling jokes is a display of humor, but so is slipping on a banana peel. Attempts to define humor also encounter the problem of consensus: What is funny to one individual is not necessarily funny to others. Thus, even if the scope of the definition were narrowed (e.g., the term humor describes events that are followed by laughter), it would still be difficult to classify events or people as humorous.

In spite of these problems, people have little difficulty using the term "humor" in everyday discourse. People commonly use the term to describe people, events, and their subjective experiences. The present analysis takes this common understanding of humor as the definition of humor. All inquiries are based on research participants' subjective impressions of what a humorous event or person might be like. The theoretical portion of this paper considers laughter, joking, and funniness as parts of "humor." While this definition might be too broad or imprecise for most humor research, it should be sufficient for this first step in exploring sex differences in humor display.

<div align="center">Why Study Function?</div>

From an evolutionary biological perspective, traits that are universal and very complex are not likely to arise by chance. Instead they are innate, functionally designed adaptations produced by natural selection (e.g., Tooby & Cosmides, 1992). Researchers who adopt an adaptationist perspective assume that complex psychological and morphological attributes exist because they evolved in response to specific problems faced by ancestral populations.

Consider language as an example. Chomsky came upon two facts that led him to conclude that the mental program for developing language was innate. These were that (1) "...virtually every sentence a person utters or understands is a brand new combination of words appearing for the first time in the history of the universe" and (2) children develop the recipes used for building an unlimited set of sentences out of a finite set of words "rapidly and without formal instruction and grow up to give consistent interpretations to novel sentence constructions that they have never before encountered" (Pinker, 1994 p. 22). Based on these observations, Chomsky argued that language could not be purely learned; rather the capacity for language necessarily implied an innate cognitive organ similar in origin and development to that of any physical organ (Pinker, 1994). While Chomsky's argument is not explicitly adaptationist, it does imply specificity of function--the language organ works reliably and quickly because it performs a particular set of actions that a more general processor could not perform. Pinker, following Chomsky, adopts the view that language is the product of a specialized cognitive organ. Pinker goes further than Chomsky and helps to

more fully explain the origin of the capacity to acquire language by examining it in terms of its evolved design (see Pinker, 1994).

Pinker's argument for the existence of a language acquisition module fits the adaptationist model. First, the underlying mechanics of language are vastly complex: "A preschooler's tacit knowledge of grammar is more sophisticated than the thickest style manual or the most state-of-the-art computer language system" (Pinker, 1994, p. 19). And the problem of expedient development of communication skills certainly seems to be an important one. As Chomsky observed, rote memorization of all of the combinations of symbols to communicate even simple ideas would take far more time that a single person has. Indeed, the language acquisition module is so complex and well designed that the probability that such a device could evolve purely by chance -- as an entirely random accumulation of genetically linked characteristics -- is astronomically small.

Second, it is difficult to argue that culture is the sole generative process responsible for the acquisition of language. While the culture in which one develops determines the language one speaks, language is acquired in a reliable (and quick) fashion across all groups in all individuals and there is a universal grammar underlying the structure of any given language.

By noting that the foundations of language are innate and that language it is better thought of as the product of a mental organ with a specific function than purely the product of learning or culture, researchers like Chomsky and Pinker revolutionized the study of language, generating a large number of narrowly targeted studies. The existence of universal grammar, for example, was hypothesized and empirically verified (see Pinker 1994 for a more complete summary). Dennett (1995) argues that the same thing should occur for any trait whose function is better understood:

> "If you know something about the design of an artifact, you can predict its
> behavior without worrying yourself about the underlying physics of its parts.
> Even small children can readily learn to manipulate such complicated objects
> as VCRs without having a clue as to how they work; they just know what will

happen when they press a sequence of buttons, because they know what is designed to happen" (p. 229).

Humor researchers tend not to take a functional approach, at least not with respect to evolved function. Instead of thinking about the reasons why humor looks the way it does, has the effects that it does, or why it might exist, they tend to attempt a dissection in which the whole of humor is broken down into a collection of parts. Presumably, taking a close look at humor will yield some very useful insights. If the inquiry were more functionally directed, however, it might be more efficient: "Thinking about the postulated functions of the parts is making assumptions about the reasons for their presence, and this often permits one to make giant leaps of inference that finesse one's ignorance of the underlying physics, or lower level design elements of the object" (Dennett, 1995, p. 230). Thus, looking at humor data from a functional perspective promises a clearer picture, if not one which is more complete.

Basic Concepts in Evolutionary Psychology

In order to evaluate an adaptationist argument, some basic concepts and assumptions should first be defined.

Natural Selection

Natural selection is the process by which some heritable characteristics replicate more frequently than other "competing" characteristics, leading to successive populations of organisms who possess these more replicable features in a greater proportion than in previous populations. This process is simply one of differential reproductive success: characteristics that self-perpetuate, by enhancing reproductive success (relative to other variants), will continue to be represented in the population, and those that do not will either be present in very low frequencies or will cease to exist entirely.

To date, natural selection is the only validated explanation for "the accumulation of functional design features over successive generations" (Tooby and Cosmides, 1992, p.9). There are of course, random forces which play a critical role in the emergence of features. Genetic mutation, for example, provides the raw material upon which natural selection operates. However, the influence of random forces, when compared to the cumulative non-

chance force of natural selection, appears to play a role of less significance when it comes to understanding why characteristics exist. The probability that an efficient and complex feature of the mind such as the language acquisition device could come to exist by chance is extraordinarily small. Thus, if we wish to understand the intricate coordination of complex features of the human mind (see Barkow, Cosmides, & Tooby 1992; Hirschfeld & Gelman, 1994; and Pinker, 1994), we should come to rely more upon adaptationist analyses of behavior, which ask the functional question "why."

<u>Sexual Selection</u>

Sexual selection, a component process of natural selection, plays a prominent role in understanding human behavior. Sexual selection refers to a specific type of selection -- that which is performed by organisms when they select and compete for mates. Darwin discussed two types of sexual selection, <u>intrasexual</u> and <u>intersexual</u> selection (Symons, 1979). Intrasexual selection occurs when members of the same sex compete for potential mates. Examples include direct combat and, more indirectly, competing displays such as altering one's physical appearance. Intersexual selection refers to choice rather than competition. Intersexual selection occurs when individuals use special criteria in selecting mates. Examples include preferences for characteristics such as youthfulness and beauty or ambitiousness and wealth. Thus, sexual selection affects competition for mates and the display of desirable characteristics (intrasexual selection) and mate preferences (intersexual selection).

Because females are often the choosier of the sexes, sexual selection acts more strongly on female mate preferences and on male competitiveness (Symons, 1979). Female choosiness can be understood in light of Trivers' theory of parental investment (Trivers, 1972). Trivers defines parental investment as "any investment by the parent in an individual offspring that increases the offspring's chances of surviving (and hence reproducing) at the cost of the parent's ability to invest in other offspring" (Trivers, 1972, p. 139). The degree to which sexual selection occurs is directly related to reliable differences in the amount of parental investment provided by males and females. There is a great disparity in human male and female minimum parental investment. The minimum investment provided by females includes a nine month gestation period and up to four years of breast feeding, whereas the

minimum investment for males may be limited to a single mating. Consequently, females are very selective when choosing mates to ensure that their large investment is fruitful: "Females rarely can increase their reproductive success by copulating with many males, but they have a great deal to gain by copulating with fit males and a great deal to loose by copulating with unfit males" (Symons, 1979, p. 24). Female choosiness is manifested in preferences for characteristics that indicate high levels of genetic fitness (e.g., good health) and an ability and willingness to invest resources in offspring. Female choosiness also produces competition between males for access to females. Examples include fighting, verbal derogation of competitors, and competing displays of strength, all of which serve to attract females and to intimidate other males (Symons, 1979).

Though perhaps to a lesser degree, sexual selection also impacts male mate preferences and female competitiveness. Qualities of female appearance and behavior are important criteria used by males to select mates. Evolutionary psychologists contend that these characteristics are associated with present fertility and life-long reproductive value (number of possible future offspring) and male preferences for them are the products of sexual selection (see Buss, 1992; Symons, 1979). In summary, sexual selection is important for understanding sex differences, particularly in the domain of mate choice.

Adaptive Problems

Natural selection and sexual selection occur when genetically linked characteristics are coordinated with solutions to adaptive problems. Adaptive problems are the challenges of survival and reproduction that individuals have faced over the course of evolutionary history; for example, the problems of resource acquisition (the acquisition of food and shelter), the problem of mate selection (choosing a mate who is fertile, healthy, etc.), and the problem of offspring care. A solution to an adaptive problem refers to any heritable quality that enhances reproductive success in a statistically reliable fashion. More specifically, the genes of individuals able to successfully solve adaptive problems will be represented at a higher frequency over successive generations and will, over many generations, stabilize as a fairly universal characteristic of that species. Solutions may be enhanced over time by the gradual accumulation of improvements. The intricate coordination of human cognitive adaptations

with adaptive problems (e.g., the problem of expedient development of language) is best understood as the product of a gradual building process. The adaptive problem concept is important: In order to understand the function of a characteristic, one must identify the adaptive problem for which it is a solution (or partial solution). First, however, in order to understand adaptive problems one must think in terms of the type of environment to which humans are adapted: a natural environment.

Natural Environments

Anthropologists and paleoanthropologists place our hominid ancestors in the Pleistocene era for the majority of human evolutionary history (Tooby & Cosmides, 1992). Individuals during this time were primarily hunter-gatherers, who in some respects lived in a very different type of environment from that of current human experience. An adaptationist argument based only on the currently observed adaptive value of a characteristic is therefore problematic. Instead researchers must think about the advantage such a characteristic conferred upon the bearer in the environment in which humans evolved (for further discussion see Tooby & Cosmides, 1992).

Adaptation Defined

A formal definition of an adaptation serves to summarize the concepts covered thus far.

"...[A]n adaptation is (1) a system of inherited and reliably developing properties that recur among members of a species that (2) became incorporated into the species' standard design because during the period of their incorporation, (3) they were coordinated with a set of statistically recurrent structural properties outside the adaptation (either in the environment or in the other parts of the organism), (4) in such a way that the causal interaction of the two (in the context of the rest of the properties of the organism) produced functional outcomes that were ultimately tributary to propagation with sufficient frequency" (Tooby & Cosmides, 1992, p. 61-62).

To express this more generally, an adaptation is a characteristic that evolved in response to an adaptive problem; and function is the way in which a feature confers an advantage upon the bearer in terms of reproductive success in the face of an adaptive problem.

Humor as an Adaptation

Like language, the psychological machinery underlying humor is probably very complex. A person's response to humorous material (jokes or cartoons), for example, is determined by several factors including the incongruousness of juxtaposed stimuli, whether the incongruity between stimuli is resolved and to what degree it is resolved, and the salience of the stimuli in the material (i.e., whether the content of a joke or cartoon is personally relevant) (Derks, 1995). Like language, humor is also universal -- there are no known groups in which humor is absent (Eibl-Eibesfeldt, 1989). These aspects of humor fit two of the components of an adaptation in the formal definition [(1) and (2) above], such that humor is a reliably occurring feature that is part of the common design of members of the species.

In addition to complexity and universality, humor is quite pervasive and, curiously, humor is somewhat costly. Humans use humor in a wide variety of contexts and with high frequency. In a naturalistic diary study, for example, participants reported laughing at least once an hour during at least one-half of their waking hours (Provine & Fischer, 1989). The high frequency of humor display in combination with the fact that humor and laughter require energy expenditure (Averill, 1969; Langevin & Day, 1972) may lead one to think that humor is actually maladaptive. Consider further that humor is not only calorically costly, but if humor is merely a form of play with no reproductive benefits, it has an opportunity cost. Time spent engaging in humor-related activities could be spent on other more essential activities, such as gathering food. Could such a pervasive and costly feature exist if there was not a concomitant advantage? In order for humor to exist as a stable human feature, a fitness benefit must outweigh the fitness cost. Thus, the fact that humor and laughter exist in spite of their costs provides further support for the proposal that humor is an adaptation.

Understanding the fitness benefit will complete a definition of humor as an adaptation. We lack two of components in the formal definition [(3) and (4) above], which correspond to the adaptive problem to which humor is a response. This is the primary task for researchers interested in the function of humor.

Current Research and Theory on the Function of Humor

Few humor researchers would deny that humor is exceedingly complex or that it is universal, and many take an explicitly biological perspective. There are, however, remarkably few adaptationist approaches to humor research. Where such inquiries do exist, they are not founded on current evolutionary biological theory (e.g., Fry, 1977; Morreall, 1989) or the theories appear limited to a limited portion of humor phenomena or lack empirical support (e.g., Alexander, 1986; Weisfeld, 1994). Such theories are consistent with some of the empirical humor literature, but they lack accompanying data to directly support them and they fail to account for important aspects of humor. The following are the two arguments most consistent with the adaptationist principles outlined above.

Alexander (1986) argues that the function of humor lies in group cooperation and status promotion. According to his theory, the display of laughter indicates a status differential favoring the individual making the joke at the cost of the individual serving as the butt of the joke. He argues that the laughers, who possess a higher status, acquire greater fitness benefits than the individuals being laughed at. This results in a reproductive advantage, and subsequent increase in frequency of humor-production qualities over successive generations. In addition to enhancing status, Alexander argues that the use of humor reinforces group cohesiveness. By the ostracism of out-group competitors -- thereby restricting their access to resources -- the fitness of closely related individuals is improved. While the evolutionary scenario suggested by Alexander is feasible, it fails to account for the variety humor "types," many of which do not contain an aggressive component (e.g., puns). In addition, it is difficult to understand how such a complex derogation mechanism could evolve when a simple insult would suffice (Weisfeld, 1994).

Another adaptationist account is provided by Weisfeld. He proposes the following:

"Humor provides the recipient with information or stimulation that later
enhances fitness. Laughter constitutes an evolved rewarding emotional
expression. This expression has the effect -- usually not deliberate -- of
encouraging the humorist to continue to provide the information or
stimulation of humor to the recipient. Laughter in response to wit often
carries a connotation of appreciation or gratitude, i.e., an implied promise to
reciprocate for a favor received." (Weisfeld, 1994, p. 147)

According to this theory, humor facilitates cooperation and the communication of
important information, and by doing so, humor increases the fitness of individuals engaging
in a humor exchange. Weisfeld incorporates a great deal of the existing empirical and
theoretical literature into his argument. Weisfeld's proposal is consistent with literature on the
relationship between humor and play and interest, and also with theoretical accounts of the
phylogenetic heritage of humor. For example, he begins by noting that the two species who
share the capacity for humor -- humans and chimpanzees -- are similarly unique among all
species in their evolved capacity to recognize and reciprocate favors. Thus, humans and
chimps may have faced the same adaptive problems and may share humor as a solution to
some of those problems.

On the surface Weisfeld's argument is appealing. However, it fails to address the fact
that truly important information is usually not conveyed in a joking fashion (people tend to
get serious in such discussions). This theory also does not account for other qualities of
humor. For example, there are sex differences in the display of humor -- males tend to
produce more humor than do females (see below). In fact, the existence of sex differences
may pose a significant problem for this theory. Because cooperation and the communication
of important information are adaptive problems faced equally by men and women, Weisfeld's
theory should predict that there would be no sex differences in the display of humor.

Weisfeld is careful to note that the theory he proposes explains the "fundamental
adaptive value" of humor and may not account for derivative effects. Thus, in spite of the

fact that the information exchange theory does not explain all of the qualities of humor (e.g., sex differences), it is not necessarily falsified. This highlights a very important point. As discussed previously, humor has many different manifestations -- it is even difficult to define. There may be many different adaptations summarized by the category term, "humor." This means that we need not have a single, unitary adaptationist theory of humor. Rather, we may have different theories to explain different manifestations of humor. Thus, Weisfeld's theory (and possibly Alexander's theory) may be correct, but not complete.

Because men and women often faced different adaptive problems over the course of evolutionary history, it is important to address sex differences when attempting to understand the function(s) of a trait like humor. The following several sections describe sex differences in humor display and seek to explain them.

Sex Differences in Humor Display

Overall, men generate more humor than do women. This difference is found cross-culturally (Apte, 1985; Goldstein & McGhee, 1972) and it emerges as early as six years of age (McGhee, 1979). In a recent naturalistic study of small group interactions, comments made by men received laughter from other male and female audience members more often than did female comments. While males elicited more laughter, females were more likely to be the individuals who laughed, regardless of the sex of the speaker. A higher probability of female laughter occurred across all circumstances examined in the study: Females laughed more often in response to a male or female comment, in mixed-sex or same-sex groups, and even in response to their own comments (Provine, 1993). Overall, therefore, males tended to be the "jokers" and females tended to be the "laughers."

Apte (1985) reports a "sexual inequality in humor" based on some cultures' restrictions on the acceptability of joking and, to a lesser extent, laughing by women in public settings. These cultures include the Chamula Indians in Mexico, the Rio Grande Pueblo Indians, ancient Indian culture, and eighteenth century English culture. These cultures' restrictions on female joking and laughing are not absolute. Apte reports that the restrictions are often relaxed as a female ages or after she marries, and the restrictions may be absent in "private," all female, social contexts. Thus, Apte speculates that there is a relationship between

a desire to "sexually control" adolescent girls and the discouragement of such overt displays as joking and laughing, which he suggests may be construed, respectively, as a form of "performance," or as a sign of sexual interest or sexual "looseness." Viewed from an evolutionary perspective Apte's observations make sense. For example, chastity (having had no previous sexual intercourse) is cross-culturally valued more by men than by women in their long-term mates (Buss et al., 1990). Women typically desire long-term relationships to ensure that their offspring are provided with resources and care. If humor displays by women indicate a willingness to engage in short-term matings, then these displays should be discouraged by parents and avoided by unmarried women. Such displays bear fewer consequences to an adolescent girl's character if she is surrounded only by female peers. Similarly, these displays bear fewer consequences for women who are past reproductive age or already married.

Grammer and Eibl-Eibesfeldt (1993) report a similar set of sex differences. They placed pairs of previously unacquainted individuals in an observation room and coded their behaviors. Sex differences in humor display were observed in the mixed sex dyads. Once again, women laughed more than men. Still, however, women in mixed-sex dyads laughed less often than women in same-sex dyads. The researchers found that intense female laughter (vocalized as compared to nonvocalized) was predictive of women's self-reported interest in their co-participants, and that the simultaneous laughter of both individuals was predictive of the co-participants' mutual interest. Grammer and Eibl-Eibesfeldt concluded that male joking and female laughter serve as ritualized signals of sexual interest. A male solicits female response in the form of a joke, quip, or witticism, and a female response of a certain type and magnitude (vocalized laughter) serves to communicate her interest in further interaction. Because joking and laughter are somewhat ambiguous, a potentially high risk mixed-sex interaction between two unacquainted individuals in which any number of undesirable outcomes are possible (e.g., ridicule, embarrassment, or physical harm) is transformed into one in which the parties have expressed mutual interest in a relatively risk-free fashion. These findings resonate with Apte's speculations: Female laughter is predictive of romantic interest and joking can be construed as a form of masculine display.

The Effectiveness of Humor Displays

Buss (1989) used an act nomination procedure to generate a list of mate attraction tactics (participants simply listed acts or tactics which they thought impressed members of the opposite sex). Of all tactics of mate attraction, "displaying a sense of humor" was given the highest ratings of performance frequency by both undergraduate men and women. A similar outcome was obtained using a newlywed sample (the one exception was that for females, "keeping neat and groomed" was given a slightly higher rating). There were no significant sex differences in self-reported frequency of humor use for either sample. In addition, participants in a separate sample rated the effectiveness of the tactics. Displaying a "good sense of humor" was rated the most effective tactic for men and women. Once again, there were no statistically significant sex differences in the ratings given by men and women.

These findings are striking because displaying humor was rated more highly than displaying other characteristics thought to be closely related to mate value. For example, enhancing physical appearance (wearing makeup, keeping hair groomed, exercising and altering appearance in general) and resource display (displaying resources and bragging about resources) were all given lower ratings on frequency of use and perceived effectiveness of use. These findings are also striking because no sex differences were observed. Based on Provine, Apte, and Grammer and Eibl-Eibesfeldt's observations of sex differences, it would be reasonable to expect sex differences in this study as well.

Presumably humor is a frequently used tactic because it is an effective tactic for attracting mates. In other words, if individuals did not actually make choices based on sense of humor, then the tactic would be ineffective and would be used less frequently, or not at all. Mate preferences studies show that this is the case: humor is highly desired in mates (e.g., Buss & Barnes, 1986; DeKay, Buss, & Stone, 1997; Goodwin, 1990; also see Feingold, 1992 for a meta-analysis).

Taken together, the data reported in the tactics of mate attraction study and in the mate preferences studies and argue strongly that sense of humor plays an important role in mate attraction and mate selection for men and for women. However, these findings are mysterious in light of the sex differences observed by other researchers. Why do the sex

differences emerge in humor display (as reported by Apte, Provine, and Grammer and Eibl-Eibesfeldt), but not in the reports of humor display for the purpose of mate attraction? If humor is thought a good (perhaps the best) tactic of attraction by <u>both</u> men and women, why do they display it differently? The converse is equally mysterious: Why are there sex differences in display but not corresponding sex differences in preferences for humor in mates? It seems that sex differences in display would be targeted toward different sex-linked preferences. The answer to these questions may lie in researchers' use of the term "sense of humor."

Differential Display and the Definition of "Sense of Humor"

The term "sense of humor" is vague. It could refer to the ability to elicit laughter, a tendency to laugh, or it could indicate a cheerful and easy-going disposition. Perhaps what is meant when individuals cite "sense of humor" as a preference corresponds to the display differences. That is, sense of humor for males might indicate the ability to make individuals laugh, whereas sense of humor for females might indicate a tendency to laugh. In other words, when a male says he prefers a woman with a sense of humor he might mean someone who laughs frequently or, more specifically, "someone who laughs at my jokes"; and when a female reports that she wants a man with a sense of humor she might mean someone with the ability to elicit laughter from other individuals or, more specifically, "someone who makes me laugh." This may seem a simplistic view; however, in terms of average preferences and behaviors, this proposition seems reasonable. It would provide a way of reconciling the sex differences in humor display with the apparent uniformity of preferences for humor across sex.

If the display of joking ability is stronger female mate preference the question remaining is, <u>why</u>? What might be the adaptive significance of humor display?

Women's Mate Preferences

Mate preferences should correspond to evolutionarily advantageous traits. Due to the large discrepancy in minimum levels of parental investment and differences in reproductive roles for males and females, that which is an evolutionarily advantageous preference for females will often differ from that which is advantageous for males. It is possible for

preferences to exist which have no fitness consequences, but it is unlikely. Using arbitrary criteria as factors in selecting mates, particularly if such criteria are thought to be indispensable requirements, could lead to highly maladaptive outcomes. Therefore, characteristics which are rated highly as mate preferences (like humor) are likely to be fitness-enhancing.

Buss summarizes the evolutionary psychological perspective on female mate preferences:

> "Females should seek to mate with males who show the ability and willingness to invest resources connected with parenting such as food, shelter, territory and protection. These resources provide a selective advantage to females obtaining them because of (a) immediate material advantage to the female and her offspring, (b) increased reproductive advantage to offspring through acquired social and economic benefits, and (c) genetic reproductive advantage for the female and her offspring if variation in the qualities that lead to resource acquisition are partly heritable." (Buss, 1992, p. 251).

These preferences are well documented (see Buss, 1992, 1994). For women, characteristics associated with the ability and willingness of men to invest resources in offspring (e.g., ambition and industriousness, intelligence, kindness, status, financial prospects) are some of the primary criteria by which women evaluate prospective mates.

If the ability to generate humor is a sexually selected trait because it is related to male mate value, it must either be beneficial directly or as an index of other beneficial traits like those listed above. The following section outlines several correlates of humor production that are linked to male mate value.

Correlates of Humor Production: Humor as an Index of Male Mate Value

Intelligence

Humor production is related to creative intelligence (O'Quin & Derks, 1996) and the development of the ability to generate humor tracks language ability and cognitive

development (McGhee, 1971). Thus, the ability to produce humor could be linked to creative solutions to several adaptive problems including resource acquisition, procurement of safe habitat, and elicitation of cooperation from other members of the group.

Cooperation

Humor production may be linked to cooperative abilities directly. Individuals who engage in reciprocally cooperative interactions with others often possess a selective advantage over those who do not (Trivers, 1972). Other theories suggest that humor production promotes in-group cooperation (Alexander, 1984) and facilitates appeasement in challenging or confrontational interactions (Fry, 1977). According to Weisfeld (1994), when a listener laughs at humor produced by a speaker, he or she is signaling appreciation to the speaker for providing important information. This implies that the laugher will later reciprocate the favor. Thus, both humor production and laughter are related to and perhaps facilitate cooperation. To the degree that successful reciprocal exchange is important for acquiring resources or connotes a willingness to invest resources, humor production ability may be an important characteristic for females to seek in a mate.

Health

A considerable amount of research has been devoted to establishing a link between sense of humor and mental health (e.g., Lefcourt & Martin, 1986; Martin & Dobbin, 1988; Martin & Lefcourt, 1983; White & Winzelberg, 1992; Zillman, Rockwell, Schweittzer, & Sundar, 1993). Overall these studies indicate that sense of humor -- including an inclination to generate and appreciate humor -- may function as a moderator of the deleterious effects of stress and pain. Possessing the ability to generate humor could indicate psychological robustness: In the face of stress, effective coping averts distraction or retirement from activities vital to competitive advantage.

Status

Successful humor production may also indicate high status. Hospital employees with higher status (e.g., doctors) tended to feel freer to make jokes and their jokes usually elicited more laughter (Coser, 1960). Humor production can be used to disparage others thereby elevating the status of humorists (Alexander, 1986; Zelvys, 1990). Further, relative to

females, males prefer disparagement humor (Mio & Graesser, 1991) which could indicate a tendency for males to attempt to use humor to express dominance. An absence of humor is linked with social distance (Sherman, 1985). This could be either because eliciting laughter is causally related to success in social situations, or because social success is causally related to the reception of humor. In either case, lacking the ability to elicit laughter is associated with low social success. Overall, laughing at someone's joke or comment is perceived as a compliment (Weisfeld, 1994) and, conversely, not laughing at someone's attempt at humor is perceived as an insult (Derks, Kalland, & Etgen, 1995). When humor is attempted, those receiving laugh "compliments" should be socially successful while those receiving "insults" of non-laughter should not. The female preference criteria summarized above clearly indicate social status as an important trait. To the degree that humor indicates high social status, or promotes increases in social status, it benefits females to favor humor in potential mates.

Deception and Efficiency

Women may be deceived by men's exaggeration of their resource holdings and relative social status (Tooke and Camire, 1991). If humor is a successful index of such traits, it may not be as susceptible to corruption by deception as are "genuine" traits because the display of humor is secure against practices of deception. It is hard to imagine what an unsuccessful humorist could do to deceive a target about his sense of humor. Even if one attempts to tell a joke that was stolen from another source, one still has to "pull it off" by targeting an appropriate audience and circumstance, and by getting the timing right.

Obtaining information about relative mate value in an efficient fashion may have significant fitness consequences. Mate selection may not always be a long deliberative process; in some cases women may make their mate choices quickly (e.g., short-term mate choice). Thus easily and quickly observable indices of mate value are important. Humor may be a more efficient index as compared to direct observation of certain characteristics. For example, effectively gathering information about social status could require systematic observation over time; however, if, in a single episode, an individual could assess relative status by means of noting whose humor attempts are successful and to what degree they are successful, a woman could assess a prospective mate's value quickly.

In summary, the ability to successfully generate humor may serve as an efficient index of certain types of intelligence, an ability to elicit cooperation, effective coping, general health and well being, and social status. Moreover, humor may be a particularly important mate choice criterion because it is not as vulnerable to contamination by deception as other traits, and it is observable given only a short period of time.

Returning to the definition of adaptation, we have already established that humor is a reliably occurring feature that is part of the common design of members of the species, but we lacked sufficient information about the adaptive problem (or problems) to which humor was a response. Weisfeld's theory suggests that humor may have evolved to help solve the problems of information exchange and cooperation, but his theory failed to account for sex differences in humor and humor's emergence as an important factor in mating. Admittedly, the present hypothesis about the function of humor in mate selection provides cannot provide a complete explanation of humor's function. It only explains humor's specific role in mating. Therefore, the adaptation this hypothesis addresses is not humor but a part of humor, specifically, the female preference for males who are successful humor producers. To fulfill all criteria in the definition of adaptation: The adaptive problem to which female preferences for humor is a response is that of obtaining reliable information about prospective mates.

CHAPTER I:

STUDY 1

While a preference for humor in mates was indicated by several of the studies previously discussed, these studies failed to make a distinction between humor production and humor appreciation. As a result, these studies failed to identify sex differences in preferences for humor in mates and in the perceived effectiveness of using sense of humor to attract mates. In contrast, studies that made this distinction showed that women generally laugh more than men and men tend to joke more than women, particularly in mixed-sex interactions.

Study one was designed to replicate the previous studies finding that "sense of humor" is desired in a mate by both men and women. Study 1 was also designed to test the hypothesis that when the distinction between humor generation and humor appreciation is explicit, sex differences in the perceived effectiveness of these displays will emerge such that males select humor generation as a more effective tactic for mate attraction while females select humor appreciation as a more effective tactic for mate attraction. In addition, although it is not directly relevant to the present discussion, Study 1 examined preferences for humor in friends as well as mates.

Method

Participants

Five-hundred and twenty undergraduate students at the College of William & Mary participated in the study. The sample was composed of 191 male and 329 female students in an introductory psychology course.

Materials

Two likert-type items were written to assess the degree to which a "sense of humor" is desired in a friend of the same sex and in a mate. This was followed by a forced choice

participants to choose in whom they valued a sense of humor more, a mate or a friend. In addition, several forced-choice items were constructed with the explicit goal of separating humor appreciation from humor generation within the category of "sense of humor." These items asked participants to choose which was more important ("smiling and laughing" or "making humorous comments") for impressing members of the same and opposite sex and which ("smiling and laughing" or "making humorous comments") was experienced more frequently and enjoyed more. (See Appendix A for all items.)

Procedure

The questions were distributed in a packet containing other unrelated questions in a general testing session. The session was conducted at the end of an introductory psychology lecture. The participants were given ample time to complete the packet and were told that they were not obligated to complete any question they found objectionable. Upon completing the questionnaire, the participants handed their packets to a teaching assistant and left the room.

Results and Discussion

Both men and women reported that sense of humor was a highly important characteristic in friends and romantic partners. On a seven-point scale (ranging from 1 = not very important to 7 = extremely important) the mean rating for friends was 5.59 and the mean rating for romantic partners was 5.69. These values were significantly different from one another ($\underline{F}$ (1, 506) = 6.92, $\underline{p}$ < .01) indicating that a sense of humor is valued slightly more in a mate than in a friend. Men's and women's overall ratings (averaging across friend and romantic partner ratings) did not differ significantly (male $\underline{M}$ = 5.55, female $\underline{M}$ = 5.73; $\underline{F}$ (1, 506) = 3.67, $\underline{p}$ > .05). The interaction of participant sex and type of rating (friend versus romantic partner) was not significant ($\underline{M}$ friend ratings by males = 5.53, $\underline{M}$ friend ratings by females = 5.63; $\underline{M}$ romantic partner ratings by males = 5.57; $\underline{M}$ romantic partner ratings by females = 5.80; $\underline{F}$ (1, 506) = 2.92, $\underline{p}$ > .05). When asked to decide whether humor is more important in a friend or a romantic partner 60.33% of the men and 58.39% of the women reported that humor is more important in friends. The difference between these proportions was not significant ($\underline{X}^2$ (1, $\underline{N}$ = 511) = .18, $\underline{p}$ > .05). The proportions of male and female

participants who decided that a sense of humor was valued more in friends were significantly greater than 50% (for males X^2(1, $\underline{N}$ = 184) = 7.00, $\underline{p}$ = < .01; for females X^2 (1, 327) = 9.00, $\underline{p}$ < .001). In contrast to the analysis of the likert-type item, these findings suggest that humor is deemed more important in friends. In summary, these findings replicate previous studies that showed that males and females did not exhibit differential preferences for generalized sense of humor in mates. In addition, the present findings suggest that generalized sense of humor is valued in both friends and mates. Due to the conflicting results of the forced choice and seven-point scale items, it is unclear whether sense of humor is valued more in friends or in mates.

When participants were asked whether they felt it was more important to make humorous comments or to smile and laugh to impress members of the same sex, about three-quarters of both males (76.00%) and females (75.69%) felt that joking was more important. However, when asked whether joking or laughing was more important to impress members of the opposite sex, 68.80% of the men reported that joking was more important whereas 49.38% of women felt that joking was more important. This difference was significant ($\underline{X}^2$ (1, 498) = 17.93, $\underline{p}$ < .001), confirming the hypothesis that when the distinction between joking and laughing is made explicit, men and women report using humor differently. Note that only in the case of mixed-sex interactions (impressing members of the opposite sex) did the female strategy differ significantly from the male strategy. Perhaps women feel free to exhibit social dominance or "social verve" by joking when around other women, but they defer to men by laughing in mixed sex interactions. Even if this is the case, women think that joking is not as good a strategy as do men for impressing members of the opposite sex. Men, on the other hand, tend to use the same strategy for impressing other men as for impressing women. If humor is a display of valuable characteristics, particularly social status, and if a man's social position is determined by his interactions with the other individuals in the group, then it would be useful to display to both men and women. These tests provide tentative support for the proposal that humor production is a better mate attraction tactic for men than it is for women.

When asked whether laughing or joking was enjoyed more, 73.18% of the men and 58.56% of the women reported that they enjoyed joking more than laughing ($\underline{X}^2$ (1, $\underline{N}$ = 500) = 10.63, $\underline{p}$ < .01). Thus, more men than women claim that they enjoy humor generation more than humor appreciation. Similarly, 54.34% of the men and 38.00% of the women said that they made others laugh more frequently than they laughed themselves ($\underline{X}^2$ (1, 494) = 12.18, $\underline{p}$ < .001). The proportion of men stating that they make others laugh more than they laugh was not significantly different from 50% ($\underline{X}^2$ (1, $\underline{N}$ = 173) = 1.30, $\underline{p}$ > .05), whereas the proportion of women who said that they laugh more than they make others laugh was significantly less than 50% ($\underline{X}^2$ (1, $\underline{N}$ = 321) $\underline{p}$ < .0001). Based on these results we can conclude that about half of men believe they make others laugh more than they laugh themselves and about half of men believe that they laugh more than they make others laugh. In contrast, most women tend to believe that they laugh more often than they make others laugh.

Studies previously discussed showed that women do tend to laugh more often than men, especially in mixed sex interactions (Grammer & Eibl-Eibesfeldt, 1993; Provine, 1993). However, in casual conversation, male and female speakers tend to laugh more than their audience members (those in the surrounding group) and there is often more than one individual laughing at any given humorous comment or event (Provine, 1993). Therefore, while there may be some individuals who do make others laugh more than they laugh themselves, it unlikely that the proportion of these individuals is 50% or greater. Men, more than women, may have exaggerated the rate at which they make others laugh as compared to the rate at which they laugh. Because positive affect is expected to accompany fitness enhancing actions (Nesse, 1990) and because individuals can often be expected to exaggerate qualities that make themselves desirable to others (Tooke & Camire, 1991), these data also provide tentative (although more indirect) support for the hypothesis that humor generation may be more effective as a mate attraction tactic for men than for women.

Conclusion

Sense of humor is valued by men and women in their mates and friends. When components of sense of humor are examined separately, it becomes clear that men and

women evaluate humor production and humor generation differently. Men seem to believe that humor production is better than humor appreciation for impressing members of the opposite sex, whereas women are fairly evenly split. Men, more often than women, believe that they produce humor more often than they appreciate it. Moreover, men, more than women, enjoy humor production over humor appreciation. This first set of tests confirmed speculations that sex differences would emerge in assessments of the effectiveness of humor displays when the distinction between humor production and humor appreciation was made explicit.

CHAPTER II:

STUDY 2

The main hypothesis of this thesis is that the ability to successfully produce humor is an easily and quickly observable, "deception-free" index of male mate value and, for this reason, humor generation is preferred by women. As discussed previously, humor generation may serve as an efficient index of certain types of intelligence (i.e., creative intelligence), an ability to elicit cooperation from others, effective coping (or "psychological health"), general health, and high social status.

Study 1 documented sex differences in the assessment of laughing and joking behavior but did not directly test the main hypothesis. Study 2 was designed to test the main hypothesis more directly by testing the following predictions: (1) Women will evaluate humor-generating male targets more positively as potential mates than non-humor generating targets, and (2) Ratings of social status, intelligence, and overall desirability will be higher for male targets who display humor than males who laugh or who neither laugh nor joke.

The main hypothesis does not predict an effect of humor display on ratings of women's social status, intelligence, and overall desirability. There are, therefore, no hypotheses about female targets for these assessments. The main hypothesis also does not predict an effect of humor display on men's evaluations of women as potential mates. However, based on previous research suggesting that laughter is a sign of sexual interest, it seems that men should prefer as mates those women who laugh over those women who joke or who neither laugh nor joke.

Method

<u>Participants</u>

One-hundred and fifty-one introductory psychology students at the College of William & Mary (74 males and 77 females) participated. The mean age of the participants was 19 years ($\underline{SD}$ = 1.27).

<u>Materials</u>

The stimuli were six short vignettes describing a fellow William & Mary student who went out to a popular student hang-out on a Friday night and who witnessed a person in a blue shirt sitting with four other individuals. The blue-shirted individual was either (1) a female humor producer, (2) a male humor producer, (3) a female who laughed at the humor of others, (4) a male who laughed at the humor of others, (5) a male who neither laughed nor joked, or (6) a female who neither laughed nor joked. The instructions accompanying the vignettes requested that the participants place themselves in their fellow William & Mary student's shoes and imagine what their perceptions of the blue-shirted individual would be. These vignettes were developed for the present study and had not been used in previous research. (See Appendix B for sample vignettes).

Participants were provided with an open-ended question asking them to describe their perceptions of the individual in the blue shirt (see form in appendix C). This task was designed primarily to encourage the participants to form an impression of the target individual.

The dependent measures for the present study were items designed to more specifically assess the participant's impression of the target individual. The items were designed to be face-valid measures of intelligence (e.g., "This person is intelligent"), social status ("This person is popular socially") desirability as a friend ("This person will grow old with lots of friends"), and desirability as a romantic partner ("If I had the chance, I would be likely to date this person"). In addition, several of the items were designed to be manipulation checks to ensure that the joking and laughing vignettes described an individual who was deemed either a humor producer ("This person would probably make me laugh") or a humor appreciator ("This person would probably laugh at my jokes"). Some of the

items were worded slightly differently for same and opposite sex evaluators. Each item was rated on a 1 to 20 scale, with 1 indicating "I do not at all agree" and 20 indicating "I absolutely agree." (See Appendix D for the complete questionnaire and a description of the wording differences for same and opposite sex evaluators).

Design and Procedure

Participants were tested in groups ranging in size from 20 to 30 in a large classroom on the William & Mary campus. When the participants had all arrived and were seated, packets of materials were distributed containing the vignette and testing materials listed below. The materials were organized so that the participants could turn to successive pages for each phase of the study as the researcher instructed.

In order to minimize interaction between participants, the participants were instructed to sit so that at least one seat separated each individual from the other participants.

Males and females were assigned in roughly equal numbers to one of six conditions corresponding to each of the different types of targets described in the vignettes (male humor production, female humor production, male humor appreciation, female humor appreciation, male control, or female control). Assignment to a condition was accomplished by randomizing the packets of materials with respect to the condition (type of target individual) and passing out packets to participants in the order in which they were seated in the classroom. This procedure was performed separately for the packets designed for male evaluators and for female evaluators. Care was taken to ensure that males received packets designed for males and females received packets designed for females.

Participants first read the vignettes, then wrote a paragraph describing their "perception" of the individual portrayed, and then responded to the questionnaire items.

This study is a 2 x 2 x 3 (sex of target [male/female] by sex of evaluator [male/female] by humor [humor/laughter/control]) factorial design. The general statistical analysis used was a factorial analysis of variance (ANOVA) with three between subjects variables (display type--joke, laugh, control; sex of rater--male, female; and sex of target--male, female). Linear contrasts (Howell, 1992) were computed for a priori predictions.

Except where indicated, all post hoc comparisons were conducted using Tukey's HSD (honestly significant difference) procedure, with alpha held at .05.

Results and Discussion

Dependent Variables

An exploratory factor analysis was performed on the questionnaire data. The method of analysis was Maximum Likelihood with a Varimax rotation. The eigenvalues for the first three factors extracted were 7.56, 1.57, and 1.25; these factors accounted for 75.8 percent of the total variance. The eigenvalue for the next factor dropped to .89. Examination of the rotated factor matrix yielded the following interpretation of the analysis. Items 1 ("This person is intelligent"), 2 ("This person is bright"), and 3 ("This person is creative") comprise the Intelligence factor. Items 4 ("This person is popular socially"), 5 ("Members of the opposite sex will find this individual attractive'), and 11 ("This person probably gets lots of attention when out at local hang-outs on the weekends") comprise the Status factor. Items 8 ("If I met this person, this is a person with whom I'd be likely to form a close relationship"), 9 ("This is a person my friends would like"), and 10 ("If I had the opportunity, I'd like to spend some time getting to know this person") comprise the Friend factor. And, items 15 ("If I had the chance, I would be likely to date this person") and 16 ("If I had the chance, I would be likely to have a romantic relationship with this person") comprise the Romantic Relationship factor. The items for the Friend and Romantic Relationship factors loaded on the same factor in the analysis; however, due to the importance of the conceptual difference between preferences for friends and romantic partners in the present study, these sets of items were treated as separate dependent variables.

The dependent variables were constructed by averaging the items composing each factor. (Refer to Table 1 for the reliabilities and intercorrelations of the dependent variables.) The dependent variables appear to be internally consistent (alphas ranging from .83 to .96). The strongest relationship exists between the Friend and Romantic Relationship variables.

Because all of the items were moderately to highly intercorrelated, a Total variable was computed. All variables had a moderate relationship to the Total variable, which includes all items except 6 and 14. Items 6 and 14 were not included in the Total variable, because

they were essentially unrelated to the other items (item 6 to Total correlation = -.03; item 14 to Total correlation = -.10). The reliability of the Total items was alpha = .96, indicating that the scale is highly internally consistent.

Insert Table 1 about here.

Manipulation Checks

Item 18 ("This person would probably make me laugh") was used to test the effectiveness of the "joke" manipulation. A linear contrast was computed to compare the item 18 scores in the joke condition to the scores in the laugh and control conditions (coefficients: joke, 1; laugh, -.5; control, .5). The contrast was significant (t (148) = 22.92, p < .001)) indicating that the mean in the joke condition (M = 17.34) was significantly greater than the average of the means in the laugh condition (M = 13.06) and the control condition (M = 14.20).

Item 19 ("This person would probably laugh at my jokes") was used to test the effectiveness of the "laugh" manipulation. A linear contrast was computed comparing the item 19 scores in the laugh condition with the scores in the joke and control conditions (coefficients: joke, -.5; laugh, 1; control, .5). This contrast was also significant (t (147) = 2.39, p < .05), indicating that the mean in the laugh condition (M = 16.51) was significantly greater than the average of the means in the joke condition (M = 15.75) and the control condition (M = 13.86).

These manipulation checks show that the participants believed that the target individuals depicted as jokers were likely to be funny in the future, whereas the target individuals depicted as laughers were likely to laugh in the future. Therefore the manipulation of humor disposition in the vignettes (humor generator versus humor appreciator) appears to have been successful.

Intelligence

The analysis for the Intelligence variable yielded a significant main effect for display type and a significant interaction of display type and sex of target (see Table 2 for ANOVA

summary statistics and Table 3 for means). The main hypothesis predicted that men would receive the highest ratings in the joke condition. Men received the highest intelligence ratings in the control condition (M = 14.29) followed by the joke condition (M = 13.58) and the laugh condition (M = 11.25). A post hoc test revealed that the control and joke condition means were significantly higher than the laugh condition mean, but that the control and joke condition means were not significantly different from one another. In partial support of the hypothesis, these results suggest that for men joking may be a better display of intelligence than laughing. However, the high ratings in the control condition were not predicted. The control condition vignette depicts the target man and his surrounding group as "having fun." Because men tend to produce more humor than women and because more men report enjoying humor production (joking) over humor appreciation (laughing), participants may have inferred that the control target was a successful humor producer. Alternatively, the laugh condition may have caused the target to appear unintelligent, whereas the joke and control manipulations may have caused the target to appear of average college-level (i.e., moderate to high) intelligence.

Insert Tables 2 and 3 about here.

The main hypothesis did not predict an effect of humor display on ratings of females' intelligence. Women received the highest ratings in the joke condition (M = 15.21), followed by the control condition (M = 11.57) and laugh condition ratings (M = 11.50). A post hoc test revealed that the joke condition mean was significantly higher than the control and laugh condition means, but that the laugh and control condition means were not significantly different from one another.

In summary, the analysis of the intelligence variable suggests that for men and women joking may be better than laughing as a strategy for displaying intelligence. However, for men the ratings for individuals depicted as humor producers did not differ from ratings within the control condition. Thus moderate tentative support is provided for the hypothesis

that displaying joking ability is indicative of intelligence, but this index is not specific to males.

Status

The analysis of the status variable yielded a significant main effect of display type and of sex of evaluator, and a display by sex of evaluator interaction (see Table 4 for summary ANOVA statistics and Table 5 for means). The differences between overall male and female assessments of status is not presently of interest. However, because mate evaluation is typically a cross-sex evaluation (men evaluate women and women evaluate men), the interaction of women's and men's assessments of status with the type of display is relevant to the present inquiry. Women rated targets similarly in each condition (joke $\underline{M}$ = 16.77, laugh $\underline{M}$ = 16.60, control $\underline{M}$ = 17.05), whereas men seemed to discriminate more based on the type of display depicted (joke $\underline{M}$ = 17.87, laugh $\underline{M}$ = 16.05, control $\underline{M}$ = 16.25). Supporting this interpretation, post hoc tests revealed that there were no significant differences between women's ratings, but that men's ratings of jokers and laughers were significantly different from one another. It may be the case that competition for status occurs between men causing them to attend more to status-linked displays. However, it remains unclear why women would not attend to status cues given the hypothesized importance of status in mate selection.

Insert Tables 4 and 5 about here.

The main hypothesis predicted that target men in the joke condition would be evaluated as highest in status. Ratings in the joke condition were highest ($\underline{M}$ = 16.39), followed by the ratings in the control ($\underline{M}$ = 16.23) and laugh conditions ($\underline{M}$ = 14.52). A linear contrast comparing the ratings in the joke condition to the laugh and control conditions (coefficients: joke, 1; laugh, -.5; control, -.5), was not significant ($\underline{t}$ (73) = .636, $\underline{p}$ > .05), failing to support this hypothesis. Post hoc tests indicated that none of the pairs of means were significantly different from one another.

The main hypothesis did not predict an effect of display type on ratings of female's status. The order of the means observed for ratings of men was also observed for ratings of women. The ratings in the joke condition were highest ($\underline{M}$ = 17.87) followed by the ratings in the control ($\underline{M}$ = 16.25) and laugh conditions ($\underline{M}$ = 16.05). The linear contrast used for testing the hypothesis for ratings of men was significant for ratings of women, ($\underline{t}$ (72) = 2.26 $\underline{p}$ < .05). Post hoc tests indicated that only the ratings in the joke and laugh conditions were significantly different from one another.

In summary, the main hypothesis was not supported by the analysis of the status variable. The effect predicted for ratings of men was instead observed for ratings of women: Female humor producers are viewed as higher in status than those who laugh and those who do not display humor.

Desirability as a Friend

The analysis of the Friend variable yielded a significant main effect of sex of evaluator and a significant sex of target by sex of evaluator interaction (see Table 6 for summary ANOVA statistics and Table 7 for means). Overall, female evaluators rated targets as more desirable as a friend than did male evaluators (female $\underline{M}$ = 13.42, male $\underline{M}$ = 11.77). With respect to the sex of evaluator by sex of target interaction, female evaluators appeared to be more interested in males as friends than did male evaluators (female $\underline{M}$ = 13.42, male $\underline{M}$ = 11.77). Because this difference was not predicted it requires a post-hoc contrast. To correct for inflated probability of a type one error in post hoc tests, a Bonferroni correction for multiple comparisons was calculated before this difference was tested. The Bonferroni correction yielded a corrected alpha of .008 (with 4 cells, there are 6 possible comparisons; .05/6 = .008). These means were significantly different at this corrected alpha level (t (74) = 3.18, p = .002).

Insert Tables 6 and 7 about here.

Ratings of target men were highest in the control condition ($\underline{M}$ = 13.27), followed by the joke ($\underline{M}$ = 12.08) and laugh conditions ($\underline{M}$ = 11.32). Post hoc comparison of the individual means indicated that none of these values differed significantly from one another. As was observed for the intelligence and status variables, ratings of target women were highest in the joke condition ($\underline{M}$ = 14.89), followed by the control ($\underline{M}$ = 12.29) and the laugh condition ($\underline{M}$ = 11.67). According to the post hoc comparisons of means, the joke condition ratings differed from the control condition ratings and from the laugh condition ratings, but the control and laugh condition ratings did not differ from one another. Thus, it appears women who generate humor are preferred as friends over women who appreciate humor and over those women who were depicted as neither laughers nor jokers.

Desirability as a Romantic Partner

The analysis of the Romantic Relationship variable yielded a significant main effect of display type, a significant interaction of display type by sex of evaluator, and a significant interaction of sex of target by sex of evaluator (see Table 8 for ANOVA summary statistics and Tables 9 for means). Individuals depicted as jokers received the highest ratings ($\underline{M}$ = 14.13), followed by those in the control ($\underline{M}$ = 13.23) and laugh ($\underline{M}$ = 11.78) conditions. According to post hoc comparisons of the means, only the joke and laugh condition ratings differed from one another. Overall, humor producers appear to be more desirable as potential mates than those who laugh.

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Insert Tables 8 and 9 about here.

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The display type by sex of evaluator interaction mirrors the effect found for the status variable. Females appear to discriminate less across condition (joke $\underline{M}$ = 13.31, laugh $\underline{M}$ = 13.31, control $\underline{M}$ = 13.34) than do males (joke $\underline{M}$ = 14.96, laugh $\underline{M}$ = 10.31, control $\underline{M}$ = 13.10). Post hoc tests of the differences between means indicated that while none of the female's ratings differed, men's ratings in the joke condition were significantly higher than their ratings in the laugh condition.

The sex of evaluator by sex of target interaction, though not of interest in the present study, indicated that women believed female targets were more desirable ($\underline{M}$ = 14.67) than were male targets ($\underline{M}$ = 12.00). However this was not the case for male evaluators, who gave female targets ($\underline{M}$ = 12.36) and male targets ($\underline{M}$ = 13.17) more similar ratings. Bonferroni corrected t-tests were conducted to test this interpretation (with 4 cells there are 6 possible comparisons; minimum $\underline{p}$ = .05/6 = .008). The test comparing women's ratings of women to women's ratings of men was significant ($\underline{t}$ (75) = 2.80, p = .007), whereas the test comparing men's ratings of women to men's ratings of men was not (t (72) = 2.37, $\underline{p}$ = .008), thus supporting this interpretation of the interaction.

The main hypothesis predicted that women's ratings of men would be highest in the joke condition. This pattern was not observed. Instead women's ratings were highest in the laugh condition (M = 12.50) followed by the control (M = 12.19) and joke (M = 11.31) conditions. Post hoc tests revealed no significant differences between these means. Men's ratings of women fit the pattern predicted for women's ratings of men. Men's self-reported romantic interest was highest in the joke condition ($\underline{M}$ = 14.92) followed by the control ($\underline{M}$ = 11.54) and laugh conditions ($\underline{M}$ = 10.63). A linear contrast analysis (coefficients: joke, 1; laugh, -.5; control, -.5) confirmed that the joke rating was higher than the average of the control and laugh condition ratings. A post hoc test of the differences between these means, however, indicated that none of the pairs of means differed significantly from one another. The tentative hypothesis that men would prefer women who laughed was not supported.

In summary, based on type of humor display, women appear to discriminate less than do men. In addition, although the difference was not significant, women's interest in men who laughed was higher than women's interest in men who joked. These data provide a significant challenge to the hypothesis that females select mates based on their ability to successfully produce humor. Men, on the other hand, seemed to prefer humor-producing women. This effect was also unanticipated.

Total

Because all of the assessments included in the total variable have a positive valence (this person is intelligent, this person has good judgment, members of the opposite sex will

find this individual attractive, etc.), the Total variable can be conceptualized as a measure of the evaluator's overall liking of the target. In addition, the factors derived from the factor analysis were all highly intercorrelated, so the Total variable could also be conceptualized as a summary measure.

The analysis of the Total variable yielded a significant main effect of display type, and significant interactions of display type by sex of evaluator, and display type by sex of target (see Table 10 for ANOVA summary statistics and Tables 11 and 12 for means). Individuals in the joke condition again received the highest ratings (Joke $\underline{M}$ = 14.83, Laugh $\underline{M}$ = 12.78, Control $\underline{M}$ = 13.81).

Insert Tables 10 through 12 about here.

The interaction of display type and sex of evaluator mirrored that found for the Status variable and the Romantic Relationship variable. Men appeared to discriminate more based on the type of display (Joke $\underline{M}$ = 15.08, Control $\underline{M}$ = 13.33, Laugh $\underline{M}$ = 11.58), whereas women's ratings varied little with display type (Joke $\underline{M}$ = 14.54, Control $\underline{M}$ = 14.02, Laugh $\underline{M}$ = 13.92). Post hoc tests supported this interpretation of the interaction. None of the mean ratings by women differed, whereas all of men's mean ratings differed significantly from one another.

With respect to the interaction of display type by sex of target, the female target in the joke condition received the highest ratings ($\underline{M}$ = 15.71) followed by targets in the control ($\underline{M}$ = 13.06) and laugh ($\underline{M}$ = 13.01) conditions. Male targets, on the other hand, received the highest ratings in the in the control ($\underline{M}$ = 14.56) and joke ($\underline{M}$ = 13.95) conditions, followed by ratings in the laugh condition ($\underline{M}$ = 12.54). Post hoc tests revealed that the ratings of females in the joke condition differed from ratings of females in the control and laugh conditions, but that the laugh and control condition ratings did not significantly differ from one another. None of the ratings of men differed from one another. The main hypothesis predicted that men who joked would be viewed most positively. On the contrary, these findings suggest that this is the case for women, but not for men.

Alternative Explanations and Additional Analyses

It is possible that the specific setting in which the targets were depicted may have affected the results, and this may be the reason why the hypotheses were not confirmed. In order to investigate this possibility, several follow-up analyses were conducted.

Site-Specific Attributions

The open-ended question data were examined in order to investigate the possibility that there were any effects of the setting in the vignette that may have confounded the results or limited the generalizability of the results. The open-ended question data suggested that a specific crowd frequents Paul's Deli. the local site in which the hypothetical events were depicted. Many participants described the target individual as a "snobby Greek type," referring to the individual's presumed membership in a fraternity or sorority. In addition, Paul's Deli becomes a bar in the evenings and it is a place where students commonly meet for drinks. Several participants attributed the behavior of the target individual to drinking or drunkenness. About 60 percent of the citations of drinking occurred in the laughing condition, and about 17 and 23 percent occurred in the joking and control conditions, respectively. Based on these data, it appears that the behavior of laughers was thought most likely to be influenced by drinking alcoholic beverages. Thus, the manipulation of humor disposition may be confounded with presumed drunkenness. Two follow-up analyses were conducted to further examine this possibility.

Obnoxiousness

Because individuals who are drunk are often perceived as obnoxious, item 6 ("This person is obnoxious") may serve as a rough proxy for perceptions of drunkenness. The analysis of this item yielded a significant main effect of sex of target and of display type (see Table 13 for ANOVA summary statistics). Male targets were perceived as more obnoxious than female targets (male target $\underline{M}$ = 9.41; female target $\underline{M}$ = 7.94). Overall, laughers and jokers (laugh $\underline{M}$ = 9.96; joke $\underline{M}$ = 9.11) were perceived as more obnoxious than controls (M = 6.96). A post hoc test confirmed that ratings for targets in the laugh and joke conditions were greater than the ratings in control condition, but that the laugh and joke ratings were not different from one another.

Insert Table 13 about here.

Inspection of the means as a function of sex of target and display type (see Table 14), indicated that both male and female targets were perceived as most obnoxious in the laugh condition (female laugh $\underline{M}$ = 9.40; male laugh $\underline{M}$ = 10.60; female joke $\underline{M}$ = 8.00; male joke $\underline{M}$ = 10.28; female control $\underline{M}$ = 6.48; male control $\underline{M}$ = 7.50). Post hoc tests indicated that for ratings of women, only the laugh and control means differed significantly from one another. According to the post hoc test, none of the mean assessments of male targets differed from one another. Although the differences between mean ratings of men were not statistically significant, these assessments may shed light on the fact that males in the control condition were perceived as the most desirable mates. If they were the only individuals who were perceived as sober or were perceived as the least obnoxious, it would not be surprising to find that they were preferred most as potential mates.

Insert Table 14 about here.

Attributions of Drinking and Drunkenness

The Total data were reanalyzed omitting the data from participants who suggested that the target individual was drinking or was drunk (removed $\underline{n}$ = 26). The analysis yielded no new significant effects (see Table 15 for ANOVA summary statistics), and an inspection of the means for the reduced data set indicate little change beyond that which would be expected by chance (see Table 16). This test failed to conclusively demonstrate that attributions of drinking or drunkenness had an effect on the raters' perceptions of the targets. However, it is possible that more individuals believed that the targets were drinking than those whose data were omitted. The basis for removing participants data from the new analysis was the open-ended question data. It is likely that some participants believed that the targets were drinking but failed to mention this in their open-ended response. Consequently the possibility that

perceptions of drinking may have played a role in the outcome of the study cannot be ruled out.

_____

Insert Tables 15 and 16 about here.

_____

Summary of Findings and Conclusions

The analyses conducted in Study 2 all yield similar conclusions. When the data were averaged across sex, targets in the joke condition were given higher ratings on intelligence, status, desirability as a romantic partner, desirability as friends, and overall likeability. When the data were analyzed separately for male and female targets, the main hypothesis (humor production ability is an index of male mate value) received little support. Ratings of female targets fit the pattern predicted for male targets. Across all factors, female targets in the joke condition were evaluated most positively. Evaluations of male targets were more mixed. Male targets in the joke condition were viewed as more intelligent than laughers, but this rating did not differ from the mean rating of male targets in the control condition. Male targets also received the highest status ratings in the joke condition; however, this rating was not significantly different from the ratings in the laugh and control conditions. Counter to the hypothesis, Romantic Relationship and Friend factor ratings were not highest for male targets in the joke condition. The results for male targets may have been obtained because humor disposition is not relevant to male mate value, or because the humor manipulation for male targets is somehow ineffective and is therefore unable to successfully measure discrimination among men's different humor dispositions.

Another unanticipated finding was the interaction of sex of evaluator and humor display. For the Status, Romantic Relationship, and Total variables, women tended to discriminate less across condition than did men. On each of these variables, men's ratings were lowest for targets in the laugh condition. A tentative conclusion combining this finding and the findings above is that people (men and women) tend to like jokers but men dislike laughers.

It remains unclear whether the specific setting of Study 2 may have affected the results. It is possible, for example, that a true effect of humor display may have been canceled out by the participants' belief that the jokers and laughers were drunk. Study 3 was designed to eliminate this potential confound and attempt to replicate the effects observed in Study 2.

· CHAPTER III:

STUDY 3

Study 3 was designed as a follow-up to Study 2. Study 3 used the exactly the same materials as Study 2, with a modified vignette. Study 3 had three main goals. First, to minimize the possibility of confounding alcohol consumption and humor disposition, the target individual was placed in a setting on campus where alcohol is not consumed. Second, in order to broaden the participants' impression of the type of student depicted (e.g., "greek type"), the setting selected was a general setting where a wide cross-section of the student body can be found. Third, the words used to describe laughter in the vignettes was changed in order to minimize the perceived obnoxiousness of target (or his or her table mates) and to make the situation seem more realistic. Study 3 was designed to test the same predictions as were tested in Study 3.

Method

Participants

A total of 85 students (44 females and 41 males) from the College of William & Mary participated in the study. The mean age of the participants was 19.14 (SD = 1.22), with ages ranging from 18-22. None of the participants in the follow-up study had participated in the previous study.

Materials

As discussed above, the vignettes used in Study 2 were slightly modified. The modified vignette placed the target in the U. C. (University Center) cafeteria, a popular place where a wide cross-section of the student body can be found. This setting is not a place where alcohol is consumed. In addition, the wording used to describe laughter was altered. Instead of stating that the joker "had everyone in tears," the modified vignette states that the joker "had everyone laughing and smiling." Similarly, the laugher is no longer described as

40

"in tears with laughter," but rather "laughing and smiling." (See Appendix E for sample vignettes.) The time period for the open-ended response was reduced from five to two minutes. In the debriefing following Study 2, participants indicated that they had a difficult time writing for more than a few minutes. (See Appendix F for the open-ended question form.) The dependent measures were identical to those used in Study 2 (see Appendix D).

Design and Procedure

Because fewer participants were available for Study 3, a repeated measures design was used in order to increase statistical power. A repeated measures design introduces demand characteristics, such that participants are no longer blind to the experimenter's manipulation. In this study, participants would be able to see that one vignette described a laugher and the other a joker. It is unclear what participants would infer about the control target. Not only would inclusion of a control condition further tax participants (they would have to complete the same set of materials three separate times instead of two), but it would encourage speculation about the hypotheses in the study and exacerbate the demand characteristics of the study. For these reasons the control condition was dropped from Study 3.

Half of the participants evaluated same sex targets, while the other half evaluated opposite-sex targets. The method of testing (in groups of 20 to 30) and the presentation of the materials (in collated packets) were the same as in the previous study. The materials were collated in counterbalanced orders (half presented the joke vignette first; half presented the laugh vignette first). The order of materials was (1) first vignette, (2) open-ended question, (3) questionnaire, (4) second vignette, (5) open-ended question, (6) questionnaire.

The follow-up study was a repeated measures design, with one repeated factor (vignette type -- joke or laugh), and three between subjects factors, sex of evaluator (male, female), sex of target (male, female), and order of presentation (joke first, laugh first). The general statistical analysis was a mixed model factorial ANOVA.

Results and Discussion

Open-ended Question

The data from the open-ended question did not indicate participant perceptions of a limited population (fraternity or sorority "snobs"), nor did the data indicate that the

participant attributed the joking or laughing behavior to drinking alcoholic beverages. Thus, the modifications to the vignettes from Study 2 appear to have succeeded in eliminating, or at least minimizing, those perceptions.

Dependent Measures

The data were factor analyzed using the same procedure as in the preceding study. For the present study, however, two analyses were conducted, one for the laugh condition data and one for the joke condition data. For the laugh data, four factors were extracted with eigenvalues greater than one. The values were 5.98, 2.13, 1.34, and 1.20; these factors accounted for 71.0 percent of the total variance. The eigenvalue for the next factor dropped to .84. Examination of the rotated factor matrix yielded an interpretation parallel to that in the preceding study. For this analysis however, the friend items (8, 9, and 10) and the romantic relationship items (15 and 16) loaded on separate factors, nicely supporting the rationale for separating them in the previous study.

The factor analysis of the joke data yielded the same outcome. Four factors with eigenvalues greater than one were extracted. These values were 7.17, 1.58, 1.25. and 1.03. These factors accounted for 73.6 percent of the total variance. The eigenvalue for the next factor dropped to .78. Examination of the rotated factor matrix yielded the same interpretation for the joke data as the laugh data. Once again, the friend items and the romantic relationship items loaded on separate factors. Based on these analyses, the same dependent variables were constructed for the present study as for the preceding study. Refer to Tables 17 and 18 for the reliabilities and intercorrelations of the derived factors. As in the previous study, the reliabilities of the Total scale were high (alpha for Total in the "joking" data = .92; for the laugh data alpha = .90).

Insert Tables 17 and 18 about here.

A factorial ANOVA was conducted on each of the manipulation checks and for each of the four dependent variables discussed above. For the present inquiry only the effects involving display type will be discussed; however, the analyses of the between subjects effects

are presented in the tables. The interaction of sex of target and display type was not significant in any of the following analyses. However, because this is one of the effects that pertains directly to the main hypothesis, tables of means for the Intelligence, Status, Romantic Relationship and Total variables will be presented as a function of sex of target and display type.

Manipulation Checks

As in the previous study, the manipulation checks indicated that the participants attended to the content of the vignettes with respect to display type. The analysis for the laugh manipulation check ("This person would probably laugh at my jokes") indicated that target individuals who were depicted as laughers were predicted to be the most likely to laugh at the rater's jokes (laugh $\underline{M}$ = 16.01; joke $\underline{M}$ = 13.86; see Table 19 for ANOVA summary statistics). The manipulation check for joking ("This person would probably make me laugh") indicated that target individuals depicted as successful jokers were predicted to be the ones most likely to make the rater laugh (joke $\underline{M}$ = 15.94; laugh $\underline{M}$ = 11.64; see Table 20 for ANOVA summary statistics).

Insert Tables 19 and 20 about here

Intelligence

The analysis for the Intelligence variable yielded a significant main effect of display type (see Table 21 for ANOVA summary statistics). Overall, as in the previous study, the intelligence ratings indicate that joking is a better strategy than laughing for displaying intelligence (joke $\underline{M}$ = 13.81; laugh $\underline{M}$ = 11.78). This difference, however, is not sex specific. Men and women who joke are rated as higher in intelligence (see Table 22). Thus, once again support is provided for the hypothesis that displaying joking ability is indicative of intelligence.

Insert Tables 21 and 22 about here

Status

The analysis of the Status variable yielded a significant main effect of display, and a significant interaction of display type and order of presentation (see Table 23 for ANOVA summary statistics and Tables 24 and 25 for means). Overall, jokers were given higher ratings. However, this effect was moderated by the effect of order of presentation. When the joking vignette was presented first, the laugher received lower ratings (see Table 24). Thus, it appears that when laughing is presented in contrast to joking, laughers are viewed as lower in status.

As in the previous study, jokers were rated as higher in status. Again, however, this index is not specific to male targets (see Table 25). While this provides support for the hypothesis that the ability of an individual to joke successfully indicates social status, the fact that this index was not sex-specific was unanticipated.

Insert Tables 23 through 25 about here.

Desirability as a Friend

The analysis for the Friend variable yielded a significant effect of display type (see Table 26 for ANOVA summary statistics). Again, targets in the joke condition received higher ratings (joke $\underline{M}$ = 13.64; laugh $\underline{M}$ = 12.40).

Insert Table 26 about here.

Desirability as a Romantic Partner

The analysis for the Romantic Relationship variable yielded no significant effects involving display type (see Table 27 for ANOVA summary statistics). However, an inspection of the means indicates that targets in the joke condition were given higher ratings overall

(joke $\underline{M}$ = 14.02; laugh $\underline{M}$ = 13.14) and, while the difference for male targets was small (joke $\underline{M}$ = 13.59; laugh $\underline{M}$ = 13.34), the difference for female targets was larger (joke $\underline{M}$ = 14.38; laugh $\underline{M}$ = 12.88; also see Table 28). However, a Bonferroni corrected t-test comparing the mean ratings of the female targets (with 4 cells, there are 6 possible comparisons: minimum $\underline{p}$ required for significance = .05/6 = .008) fell just short of statistical significance ($\underline{t}$ (42) 2.72, p = .009).

_____

Insert Tables 27 and 28 about here.

_____

As in the previous study, the differences between ratings of male targets in the different display conditions were non-significant; however, in the previous study the laugh mean was higher than the joke mean. In the previous study, differences between the ratings of female targets in the joke condition were higher than the average of the ratings in the laugh and control conditions. Thus, the results of this study, though non-significant, replicate the Study 2 finding that women who joke are preferred as mates. These results do not, however, indicate that men who laugh are preferred over men who joke.

Total

Because all of the dependent variables were highly intercorrelated, as in the previous study, the Total variable can be conceptualized as a summary measure or as an overall index of the target's likeability. The analysis of the Total variable yielded a significant main effect of display type (see Table 29 for summary ANOVA statistics). Targets who were depicted as jokers were given more positive ratings than targets who were depicted as laughers (joke $\underline{M}$ = 14.12; laugh $\underline{M}$ = 12.81). Inspection of the means separated as a function of the sex of target and display type confirmed that the magnitude of the difference between ratings of male jokers and laughers is similar to the magnitude of the difference between female jokers and laughers (see Table 30)

Insert Tables 29 and 30 about here

Summary of Findings and Conclusion

Study 3 replicated the effect of humor display found in Study 2. Overall, people who joke are perceived as more intelligent, higher in status, and more desirable as friends than people who laugh. In addition, although the effect fell just short of significance in Study 3, women who joke may be perceived as more desirable as romantic partners. Based on the non-significant (and somewhat contradictory) results from study 2 and 3, it remains unclear whether men who joke are perceived to be more desirable as mates.

CHAPTER IV

GENERAL DISCUSSION AND CONCLUSIONS

The main hypothesis was two-faceted. The first part proposed that the ability to successfully generate humor is an index of characteristics valued by women in mates. This was supported by the findings in Studies 2 and 3, which indicated that individuals who joke are perceived as more intelligent and higher in status than non-jokers. The second part of the hypothesis proposed that women would desire as mates those men who generate humor over men who appreciate humor. The second part of the hypothesis was not supported. On the contrary, female humor producers were preferred over laughers, but this effect was not observed for male humor producers.

A possible threat to the validity of the obtained results is the artificial nature of the vignettes. Because the target individuals presented in the scenarios were engaging in exactly the same behavior (jokers and laughers were described exactly the same way regardless of whether they were males or females), sex differences in display that would be identified in a naturalistic study (e.g., Grammer & Eibl-Eibesfeldt 1993; Provine, 1993) are not represented. It may be the case, for example, that while women often generate humor in social settings, it may be somewhat rare to find women who display joking behavior like that described in the scenarios. The target in the joke scenario was described as "making a lot of funny comments" and "having everyone in tears with laughter" (or "having everyone smiling and laughing" in Study 3). Perhaps the joking women were perceived as particularly competent and were therefore more desirable (intelligent, high in status, etc.) than the laughers. If this is true it may help to explain why joking women were preferred. This line of reasoning does little to salvage the hypothesis that male jokers should be preferred. Nevertheless, if the scenarios artificially equated men and women, the results reported here may differ significantly from naturally occurring perceptions of men's and women's humor behavior.

Variables that were not examined in the present set of studies are short-term versus long-term mating orientation and long-term versus short-term mate choice. Evolutionary psychologists are becoming increasingly interested in these distinctions, finding that men and women vary in their mating orientation (Gangestad & Simpson, 1990) and that men's and women's mate preferences vary depending on whether they are seeking long-term or short-term mates (Buss & Schmitt, 1993). Men tend to seek signs of sexual accessibility (such as a reputation for being sexually experienced) in short-term mates, while they seek signs of sexual fidelity and intelligence in a long-term mate. Women seek the potential for immediate resource gain in short-term mates, but desire signs of long-term resource potential in potential long-term mates.

The Romantic Relationship dependent measure (Studies 2 and 3) included items assessing the raters' interest in having a "romantic relationship" with and "dating" the target individual. This measure does not explicitly state whether the target should be evaluated as a long-term partner or only a short-term sex partner, and it is therefore unclear how the participants interpreted these items. Future research should make this distinction explicit. One possibility is that laughing women may be viewed as more sexually available (Apte, 1985 Grammer & Eibl-Eibesfeldt, 1993), and therefore desirable more as short-term mates, while joking women, because they are perceived as more intelligent, may be more desirable as long-term mates. For women's evaluations, a possibility is that the laugher might be perceived as more attractive in a long-term context, while the joker might be perceived as more attractive in a short-term context. Women place a premium on kindness and commitment in long-term mates (Buss, 1994), while they prefer signs of an extravagant lifestyle in short-term mates (Buss & Schmitt, 1993). Laughers might be perceived as kinder than jokers (e.g., they were nice to the jokers by laughing at their jokes), whereas jokers, who were perceived as higher in status (and possibly drunk), might be perceived as having a more extravagant lifestyle than laughers. Ironically, it might it may ultimately turn out that failing to make the distinction between short-term and long-term desires may have concealed

important underlying sex differences in much the same way as failing to distinguish laughing and joking in sense of humor concealed them.

In spite of the mixed support for the main hypothesis from Studies 2 and 3, some of the results from Study 1 indicate that the role different humor displays play in human mating should be further explored. First, more than 50% of men (but not women) believed that humor production was a better strategy than laughing for impressing members of the opposite sex. This suggests that men attempt to display humor production (more than humor appreciation) to attract mates. Again, however, the distinction between short-term and long-term mate attraction should have been made explicit in this question. Perhaps men would report joking as the more effective strategy for attracting short-term mates, and report laughing as the more effective strategy for attracting long-term mates. Second, more men than women believed that they produced more humor (made others laugh) than they appreciated (laughed at others' jokes). Provine (1993) found that male and female speakers tended to laugh at their own funny comments in addition to the comments of others. Therefore, while it may be true that men generate more humor than women, it is highly unlikely that a greater proportion of men make others laugh more than they laugh themselves. Men may therefore be exaggerating, and it seems reasonable that men would exaggerate the abilities that women find attractive. (However, again this begs the question of whether men are attempting to attract short-term or long-term mates.) Third, men, more than women, reported enjoying humor production over humor appreciation. If women and men both benefit from humor production, why do women prefer humor production less than do men? These sex differences seem inconsistent with the results obtained in Studies 2 and 3, which suggested that male jokers were not evaluated differently from female jokers. Once again, specifying the temporal context of mate attraction (short versus long-term) may help to clarify this apparent inconsistency.

If the hypothesis proposed in this thesis is further investigated, researchers should consider each of the following recommendations. (1) As discussed above, future studies should use more ecologically valid methods, such as video taped humor-producing and

humor-appreciating targets or perhaps naturalistic observation. (2) Variation in mating strategies (short-term versus long-term mating orientation) should be assessed in future studies and used as a possible moderating variable. (3) Targets should be evaluated both as short-term and long-term mates. As noted above, this third suggestion seems critical to incorporate into future studies of humor and mate attraction.

As noted in the introduction, this is a first attempt at an adaptationist analysis of humor. The focus of this set of studies was on a very small part of the phenomenon of humor--its role in mate selection. While these studies were not conclusive and pose many new avenues for investigation within this specific domain, humor researchers should continue to ask adaptationist questions about humor in its many different manifestations. If we understand what the function of humor is, we are likely to answer the questions posed by the present inquiry and many more.

APPENDIX A

QUESTIONNAIRE FOR STUDY 1

On a scale of 1 to 7 (1 = not very important to 7 = extremely important),

please indicate the following:

___1. How important is it for your good friends (of the same sex) to possess a good sense of humor?

___2. How important is it for your romantic partner to possess a good sense of humor?

In whom do you value a good sense of humor more?
(although this may be a very difficult choice, <u>please</u> choose only one)

       ___a. Good Friends (of the same sex)
       ___b. Romantic Partner

       3. Imagine that you are at a party with several attractive members of the <u>opposite sex</u> whom you would like to impress.

       In your interactions with them, do you feel it is more important to exhibit a good sense of humor by making humorous comments that elicit laughter or by smiling and laughing at the humorous comments of others? (Check one.)

       ___a. Smile and laugh at the comments
       ___b. Make humorous comments that elicit laughter

       4. Now imagine that you are at a party with several attractive members of the <u>same sex</u> whom you would like to impress.

In your interactions with them, do you feel it is more important to exhibit a good sense of humor by making humorous comments that elicit laughter or by smiling and laughing at the humorous comments of others? (Check one.)

       ___a. Smile and laugh at the comments
       ___b. Make humorous comments that elicit laughter

5. In your everyday experience, which do you enjoy more? (Check one.)

___a. laughing at the humorous comments/jokes of others
___b. making others laugh

6. In your everyday experience, which tends to occur more frequently? (Check one.)

___a. laughing at the humorous comments/jokes of others
___b. making others laugh

APPENDIX B

SAMPLE VIGNETTES FROM STUDY 2

[Note: There was one of each of the following three types for male/female, female/male, and female/female evaluations as well. In total there were twelve different vignettes -- one for each condition.]

male/male/humor

This is an excerpt from an interview with a William & Mary student like you. Try and put yourself in the student's shoes and imagine how you would perceive the person he describes.

"I walked into Paul's deli early on Friday night. The place wasn't too packed. I sat down and did some people-watching while I waited for my friends to arrive. Looking around, I noticed a guy in a blue shirt sitting with four people at a table nearby. By most people's standards, he would probably be considered nice-looking. Some of the people at the table were trading jokes, apparently. It looked like they were having fun. The guy in the blue shirt must have had a really great sense of humor, he seemed to be making a lot of funny comments. He had everyone in tears with laughter."

male/male/laughter

This is an excerpt from an interview with a William & Mary student like you. Try and put yourself in the student's shoes and imagine how you would perceive the person he describes.

"I walked into Paul's deli early on Friday night. The place wasn't too packed. I sat down and did some people-watching while I waited for my friends to arrive. Looking around, I noticed a guy in a blue shirt sitting with four people at a table nearby. By most people's standards, he would probably be considered nice-looking. Some of the people at the table were trading jokes, apparently. It looked like they were having fun. The guy in the blue shirt must have had a really great sense of humor, he was laughing at everyone's jokes. He was in tears with laughter."

male/male/control

This is an excerpt from an interview with a William & Mary student like you. Try and put yourself in the student's shoes and imagine how you would perceive the person he describes.

"I walked into Paul's deli early on Friday night. The place wasn't too packed. I sat down and did some people-watching while I waited for my friends to arrive. Looking around, I noticed a guy in a blue shirt sitting with four people at a table nearby. By most people's standards, he would probably be considered nice-looking. It looked like they were all having fun."

APPENDIX C

OPEN-ENDED QUESTION FROM STUDY 2

Please use the following space to write a paragraph describing your impressions of the individual in the blue shirt. Try to be as detailed as possible. Because you haven't been given much information, you will have to use your best intuitions. You will have five minutes to write.

APPENDIX D

QUESTIONNAIRE FROM STUDIES 2 AND 3

Here are some items related to comments frequently made about the depicted individual (in the blue shirt). On a scale of 1 to 20 (1 meaning I do not at all agree, to 20 meaning I absolutely agree) rate the individual on each item.

1. ___ This person is intelligent.

2. ___ This person is bright.

3. ___ This person is creative.

4. ___ This person is popular socially.

5. ___ Members of the opposite sex will find this individual attractive.

6. ___ This person is obnoxious.

7. ___ This person has good judgment.

8. ___ If I met this person, this is a person with whom I'd be likely to form a close relationship.

9. ___ This is a person my friends would like.

10.___ If I had the opportunity, I'd like to spend some time getting to know this person.

11.___ This person probably gets lots of attention when out at local hang-outs on the weekends.

12.___ This person will be successful professionally.

13.___ This person will grow old with lots of friends.

14.___ This person probably has lots of material wealth.

15.___ If I had the chance, I would be likely to date this person.

16.___ If I had the chance, I would be likely to have a romantic relationship with this person.

[for same sex evaluators]

15.___ If members of the opposite sex evaluated this person, they would report that they would be likely to date this person.

16.___ If members of the opposite sex evaluated this person, they would report that they would be likely to have a romantic relationship with this person.

17.___ This person has a good sense of humor.

18.___ This person would probably make me laugh.

19.___ This person would probably laugh at my jokes.

APPENDIX E

SAMPLE VIGNETTES FROM STUDY 3

[Note: There was one of each of the following two types for male/female, female/male, and female/female evaluations as well. In total there were eight different vignettes -- one for each condition.]

male/male/humor

This is an excerpt from an interview with a William & Mary student like you. Try and put yourself in the student's shoes and imagine how you would perceive the person he describes.

"I walked into the U C cafeteria one afternoon to meet some friends and get something to eat. The place wasn't too packed. I sat down and did some people-watching while I waited for my friends to arrive. Looking around, I noticed a guy in a blue shirt sitting with four people at a table nearby. By most people's standards, he would probably be considered nice-looking. Some of the people at the table were trading jokes, apparently. It looked like they were having fun. The guy in the blue shirt must have had a really great sense of humor, he seemed to be making a lot of funny comments. He had everyone at the table smiling and laughing."

male/male/laughter

This is an excerpt from an interview with a William & Mary student like you. Try and put yourself in the student's shoes and imagine how you would perceive the person he describes.

"I walked into the U C cafeteria one afternoon to meet some friends and get something to eat. The place wasn't too packed. I sat down and did some people-watching while I waited for my friends to arrive. Looking around, I noticed a guy in a blue shirt sitting with four people at a table nearby. By most people's standards, he would probably be considered nice-looking. Some of the people at the table were trading jokes, apparently. It looked like they were having fun. The guy in the blue shirt must have had a really great sense of humor, he was laughing and smiling at his friend's jokes."

APPENDIX F

OPEN-ENDED QUESTION FROM STUDY 3

Please use the following space to write a paragraph describing your impressions of the individual in the blue shirt. Try to be as detailed as possible. Because you haven't been given much information, you will have to use your best intuitions. You will have two minutes to write.

TABLE 1

RELIABILITY COEFFICIENTS FOR THE DERIVED FACTORS
AND DERIVED FACTOR INTERCORRELATIONS

	I	P	F	R	T**
Intelligence (I)	.8296	.4555*	.5213*	.5170*	.7825*
Status (P)		.8640	.3765*	.5122*	.7236*
Friend (F)			.8874	.6042*	.7688*
Romantic Relationship (R)				.9190	.7601*
Total (T)					.9620

Note: alpha reliability coefficients are listed on the diagonal.

*   p < .001
**   Total variable includes all items except items 6 and 14.

TABLE 2

ANALYSIS OF VARIANCE FOR THE
INTELLIGENCE VARIABLE (ITEMS 1, 2, AND 3).

Source	SS	DF	MS	F	p
Display (D)	2039.97	2	1019.99	10.72	.000
Target (T)	30.00	1	0.00	0.32	.575
Sex of (S) evaluator	17.35	1	17.35	.18	.670
D x T	1124.55	2	562.27	5.91	.003
D x S	415.47	2	207.74	2.18	.117
T x S	57.59	1	57.59	.61	.438
D x T x S	82.96	2	41.48	.44	.648

TABLE 3

MEAN ASSESSMENTS OF INTELLIGENCE AS A FUNCTION OF
DISPLAY TYPE AND SEX OF TARGET.

	Joke	Laugh	Control	Mean
Female Target	15.21 (25)	11.50 (25)	11.57 (25)	12.77
Male Target	13.57 (25)	11.25 (25)	14.29 (26)	12.64
Mean	14.42	11.40	12.93	

Note. N's are given in parentheses. Means presented are
unweighted. Total values were divided by 3 to keep scale
constant across factors. Scale ranges from 1 to 20 with 20
meaning "I absolutely agree".

TABLE 4

ANALYSIS OF VARIANCE FOR THE
STATUS VARIABLE (ITEMS 4, 5, AND 11).

Source	SS	DF	MS	F	p
Display (D)	745.39	2	372.70	4.08	.019
Target (T)	315.26	1	315.26	3.45	.065
Sex of (S) evaluator	453.58	1	453.58	4.97	.027
D x T	159.82	2	79.91	0.87	.419
D x S	657.47	2	328.73	3.60	.030
T x S	101.37	1	101.37	1.11	.294
D x T x S	241.55	2	120.77	1.32	.270

TABLE 5

MEAN ASSESSMENTS OF STATUS AS A FUNCTION OF
DISPLAY TYPE AND SEX OF EVALUATOR.

	Joke	Laugh	Control	Mean
Female Evaluator	16.77 (26)	16.60 (25)	17.05 (26)	16.81
Male Evaluator	16.39 (24)	13.97 (25)	15.40 (25)	15.65
Mean	17.14	15.32	16.23	16.32

Note. N's are given in parentheses. Means presented are
unweighted. Total values were divided by three to keep scale
constant across factors. Scale ranges from 1 to 20 with 20
meaning "I absolutely agree".

TABLE 6

ANALYSIS OF VARIANCE FOR THE FRIEND VARIABLE (ITEMS 8, 9, AND 10).

Source	SS	DF	MS	F	p
Display (D)	872.71	2	436.35	2.92	.057
Target (T)	166.96	1	166.96	1.12	.292
Sex of (S) evaluator	921.46	1	921.46	6.18	.014
D x T	886.62	2	443.31	2.97	.054
D x S	775.19	2	387.60	2.60	.078
T x S	887.53	1	887.53	5.95	.016
D x T x S	90.44	2	45.22	.30	.739

TABLE 7

MEAN ASSESSMENTS OF DESIRABILITY AS A FRIEND
AS A FUNCTION OF SEX OF TARGET AND SEX OF EVALUATOR.

Target	Male	Female	Mean
Female Evaluator	12.97 (37)	13.87 (38)	13.42
Male Evaluator	12.94 (38)	10.61 (38)	11.77
Mean	12.95	12.25	12.60

Note. N's are given in parentheses. Means presented are
unweighted. Total values were divided by three to keep scale
constant across factors. Scale ranges from 1 to 20 with 20
meaning "I absolutely agree".

TABLE 8

ANALYSIS OF VARIANCE FOR THE ROMANTIC RELATIONSHIP VARIABLE (ITEMS 15 AND 16).

Source	SS	DF	MS	F	p
Display (D)	140.59	2	70.29	4.00	.020
Target (T)	32.64	1	32.64	1.86	.175
Sex (S)	12.22	1	12.22	0.70	.406
D x T	34.65	2	17.32	0.99	.376
D x S	139.36	2	69.68	3.97	.021
T x S	113.60	1	113.60	6.47	.012
D x T x S	34.77	2	17.38	0.99	.374

TABLE 9

MEANS FOR THE ROMANTIC RELATIONSHIP VARIABLE AS A FUNCTION OF
DISPLAY, SEX OF EVALUATOR, AND SEX OF TARGET.

		Joke	Laugh	Control	Mean
	TARGET				
	Female	15.31 (13)	14.12 (13)	14.58 (13)	14.67
FEMALE EVALUATOR					
	Male	11.31 (13)	12.50 (12)	12.19 (13)	12.00
	Mean	13.31	13.31	13.34	
	TARGET				
	Female	14.92 (12)	10.63 (12)	11.54 (12)	12.36
MALE EVALUATOR					
	Male	15.00 (13)	9.89 (12)	14.62 (13)	13.17
	Mean	14.96	10.31	13.10	
Overall Mean		14.13	11.78	13.23	13.05

Note. N's are given in parentheses. Means presented are
unweighted. Total values were divided by 2 to keep scale
constant across factors. Scale ranges from 1 to 20 with 20
meaning "I absolutely agree".

TABLE 10

ANALYSIS OF VARIANCE FOR THE TOTAL VARIABLE
(ALL ITEMS EXCEPT 6 AND 14).

Source	SS	DF	MS	F	p
Display (D)	30458.67	2	15229.34	7.40	.001
Target (T)	1326.28	1	1326.28	0.64	.423
Sex of (S) evaluator	7311.16	1	7311.16	3.55	.062
D x T	15820.93	2	7910.46	3.84	.024
D x S	14994.98	2	7497.49	3.64	.029
T x S	487.13	1	487.13	0.24	.627
D x T x S	2649.70	2	1324.85	0.64	.527

TABLE 11

MEANS FOR THE TOTAL VARIABLE AS A FUNCTION OF DISPLAY, SEX OF
EVALUATOR, AND SEX OF TARGET.

		Joke	Laugh	Control	Mean
	EVALUATOR				
	Female	15.45 (13)	13.72 (13)	13.53 (13)	14.24
FEMALE TARGETS					
	Male	15.97 (11)	12.30 (12)	12.59 (12)	13.62
	Mean	15.71	13.01	13.06	13.93
	EVALUATOR				
	Female	13.64 (13)	14.15 (12)	14.50 (13)	14.10
MALE TARGETS					
	Male	14.26 (13)	10.92 (12)	14.00 (13)	13.06
	Mean	13.95	12.54	14.56	13.58
Overall Mean		14.83	12.78	13.81	13.80

Note. N's are given in parentheses. Means presented are
unweighted. Total values were divided by 17 to keep scale
constant across factors. Scale ranges from 1 to 20 with 20
meaning "I absolutely agree".

TABLE 12

MEANS FOR TOTAL VARIABLE AS A FUNCTION OF
DISPLAY TYPE AND SEX OF EVALUATOR.

	Joke	Laugh	Control	Mean
Female Evaluator	14.54 (26)	13.92 (25)	14.02 (26)	14.16
Male Evaluator	15.08 (23)	11.58 (25)	13.33 (25)	13.28
Mean	14.81	12.53	13.68	13.72

Note. N's are given in parentheses. Means presented are
unweighted. Total values were divided by seventeen to keep
scale constant across factors. Scale ranges from 1 to 20
with 20 meaning "I absolutely agree".

TABLE 13

ANALYSIS OF VARIANCE FOR THE OBNOXIOUSNESS VARIABLE (ITEM 6).

Source	SS	DF	MS	F	p
Display (D)	242.40	2	121.20	6.26	.002
Target (T)	81.93	1	81.93	4.23	.041
Sex of (S) evaluator	0.28	1	0.28	0.01	.905
D x T	10.66	2	5.33	0.28	.760
D x S	89.70	2	44.85	2.32	.102
T x S	43.71	1	43.71	2.26	.135
D x T x S	111.97	2	55.99	2.89	.059

TABLE 14

MEAN ASSESSMENTS OF OBNOXIOUSNESS AS A FUNCTION OF
DISPLAY TYPE AND SEX OF TARGET.

	Joke	Laugh	Control	Mean
Female Target	8.00 (25)	9.40 (25)	6.48 (26)	7.96
Male Target	10.28 (25)	10.60 (25)	7.50 (26)	9.46
Mean	9.14	10.00	7.00	8.66

Note. N's are given in parentheses. Means presented are
unweighted. Scale ranges from 1 to 20 with 20 meaning "I
absolutely agree".

TABLE 15

ANALYSIS OF VARIANCE FOR THE TOTAL VARIABLE WITH DATA
FOR PARTICIPANTS MAKING ATTRIBUTIONS OF DRINKING AND DRUNKENNESS
EXCLUDED

Source	SS	DF	MS	F	p
Display (D)	80.60	2	40.30	5.62	.005
Target (T)	5.61	1	5.61	0.78	.378
Sex (S)	27.76	1	27.76	3.87	.052
D x T	40.52	2	20.26	2.83	.063
D x S	82.28	2	41.14	5.74	.004
T x S	0.04	1	0.04	0.00	.944
D x T x S	1.96	2	.98	0.14	.873

TABLE 16
MEANS FOR THE TOTAL VARIABLE AS A FUNCTION OF
DISPLAY, SEX OF EVALUATOR, AND SEX OF TARGET
FOR THE FULL AND REDUCED DATA SET.

		Joke	Laugh	Control	Mean
	EVALUATOR				
	Female	15.45 (13)	13.72 (13)	13.53 (13)	14.24
		15.46 (12)	*14.43 (8)*	*13.54 (11)*	*14.48*
FEMALE TARGETS					
	Male	15.97 (11)	12.30 (12)	12.59 (12)	13.62
		15.97 (11)	*11.43 (7)*	*13.24 (11)*	*13.55*
	Mean	15.71	13.01	13.06	13.93
		15.72	*12.93*	*13.39*	*14.01*
	EVALUATOR				
	Female	13.64 (13)	14.15 (12)	14.50 (13)	14.10
		13.35 (11)	*14.38 (9)*	*14.50 (13)*	*14.07*
MALE TARGETS					
	Male	14.26 (13)	10.92 (12)	14.00 (13)	13.06
		14.48 (10)	*10.75 (9)*	*13.97 (12)*	*13.07*
	Mean	13.95	12.54	14.56	13.68
		13.91	*12.56*	*14.24*	*13.58*
Overall Mean		14.83	12.78	12.66	13.42
		14.82	*12.74*	*13.90*	*13.80*

(See following page for table note.)

NOTE FOR TABLE 16

<u>Note.</u> N's are given in parentheses. Means presented are unweighted. Total values were divided by 17 to keep scale constant across factors. Scale ranges from 1 to 20 with 20 meaning "I absolutely agree". Values from the reduced data set are italicized.

TABLE 17

RELIABILITY COEFFICIENTS FOR THE LAUGH ASSESSMENT DERIVED FACTORS
AND DERIVED FACTOR INTERCORRELATIONS

	I	P	F	R	T**
Intelligence (I)	.8632	.3273*	.4360*	.3273*	.7020*
Status (P)		.8355	.3794*	.5274*	.7047*
Friend (F)			.7982	.4972*	.7381*
Romantic Relationship (R)				.4972	.7453*
Total (T)					.9046

Note: alpha reliability coefficients are listed on the diagonal.

*   p < .001
**   Total variable includes all items except items 6 and 14.

TABLE 18

RELIABILITY COEFFICIENTS FOR THE JOKE ASSESSMENT DERIVED FACTORS
AND DERIVED FACTOR INTERCORRELATIONS

	I	P	F	R	T**
Intelligence (I)	.8711	.5544*	.4999*	.6364*	.7947*
Status (P)		.8535	.8780*	.5704*	.7617*
Friend (F)			.8391	.6364*	.8345*
Romantic Relationship (R)				.9193	.7269*
Total (T)					.9229

Note: alpha reliability coefficients are listed on the diagonal.

* p < .001
** Total variable includes all items except items 6 and 14.

TABLE 19

ANALYSIS OF VARIANCE FOR THE "LAUGH" MANIPULATION CHECK
(ITEM 19)

Between Subjects Effects

Source	SS	DF	MS	F	p
Sex (S)	6.34	1	6.34	.34	.563
Order (O)	.27	1	.27	.01	.905
Target (T)	6.23	1	6.23	.33	.567
S x O	11.39	1	11.39	.61	.439
S x T	4.24	1	4.24	.23	.637
O x T	9.17	1	9.17	.49	.487
S x O x T	46.42	1	46.42	2.47	.120

Tests Involving the Within Subject Variable

Source	SS	DF	MS	F	p
Display (D)	198.66	1	198.66	20.12	.000
S x D	1.11	1	1.11	.11	.738
O x D	5.00	1	5.00	.51	.479
T x D	2.38	1	2.38	.24	.625
S x O x D	.06	1	.06	.01	.938
S x T x D	.00	1	.00	.00	.995
O x T x D	38.19	1	38.19	3.87	.053
S x O x T X D	3.88	1	3.88	.39	.533

TABLE 20

ANALYSIS OF VARIANCE FOR THE "JOKE" MANIPULATION CHECK
(ITEM 18)

Between Subjects Effects

Source	SS	DF	MS	F	p
Sex (S)	12.66	1	12.66	.69	.410
Order (O)	64.26	1	64.26	3.48	.066
Target (T)	2.12	1	2.12	.11	.736
S x O	11.26	1	11.26	.61	.437
S x T	72.07	1	72.07	3.90	.052
O x T	13.48	1	13.48	.73	.396
S x O x T	4.68	1	4.68	.25	.616

Tests Involving the Within Subject Variable

Source	SS	DF	MS	F	p
Display (D)	780.31	1	780.31	63.32	.000
S x D	10.50	1	10.50	.85	.359
O x D	8.44	1	8.44	.68	.411
T x D	.04	1	.04	.00	.957
S x O x D	2.81	1	2.81	.23	.634
S x T x D	19.81	1	19.81	1.61	.209
O x T x D	26.99	1	26.99	2.19	.143
S x O x T x D	1.32	1	1.32	.11	.744

TABLE 21

ANALYSIS OF VARIANCE FOR THE INTELLIGENCE VARIABLE
(ITEMS 1, 2, AND 3).

Between Subjects Effects

Source	SS	DF	MS	F	p
Sex (S)	19.14	1	19.14	1.22	.273
Order (O)	.00	1	.00	.00	.989
Target (T)	5.73	1	5.73	.36	.548
S x O	16.15	1	16.15	1.03	.314
S x T	.00	1	.00	.00	.991
O x T	3.99	1	3.99	.25	.616
S x O x T	29.06	1	29.06	1.85	.178

Tests Involving the Within Subjects Variable

Source	SS	DF	MS	F	p
Display (D)	172.31	1	172.31	52.15	.000
S x D	.01	1	.01	.00	.967
O x D	6.47	1	6.47	1.96	.166
T x D	2.16	1	2.16	.65	.422
S x O x D	.20	1	.20	.06	.809
S x T x D	.97	1	.97	.29	.589
O x T x D	.03	1	.03	.01	.921
S x O x T x D	.07	1	.07	.02	.886

TABLE 22

MEAN ASSESSMENTS OF INTELLIGENCE
AS A FUNCTION OF DISPLAY TYPE AND SEX OF TARGET.

Condition	Joke	Laugh	Mean	N
Female Target	13.73	11.48	12.61	43
Male Target	13.89	12.08	12.99	41
Mean	13.81	11.78	12.80	

Note. Means presented are unweighted. Total values were divided by three to keep scale constant across factors. Scale ranges from 1 to 20 with 20 meaning "I absolutely agree".

TABLE 23

ANALYSIS OF VARIANCE FOR THE STATUS VARIABLE
(ITEMS 4, 5, AND 11).

Between Subjects Effects

Source	SS	DF	MS	F	p
Sex (S)	.51	1	.51	.04	.837
Order (O)	67.00	1	67.00	5.63	.020
Target (T)	4.66	1	4.66	.39	.534
S x O	23.87	1	23.87	2.00	.161
S x T	14.62	1	14.62	1.23	.271
O x T	2.72	1	2.72	.23	.634
S x O x T	2.12	1	2.12	.18	.674

Tests Involving the Within Subjects Variable

Source	SS	DF	MS	F	p
Display (D)	220.91	1	220.91	53.78	.000
S x D	8.17	1	8.17	1.99	.163
O x D	146.32	1	146.32	35.62	.000
T x D	6.22	1	6.22	1.51	.222
S x O x D	.05	1	.05	.01	.908
S x T x D	.67	1	.67	.16	.686
O x T x D	8.06	1	8.06	1.96	.165
S x O x T x D	4.22	1	4.22	1.03	.314

TABLE 24

MEANS FOR THE STATUS VARIABLE AS A FUNCTION OF DISPLAY TYPE AND
ORDER OF PRESENTATION.

	Joke	Laugh	Mean	n
Order One	16.38	15.95	16.17	42
Order Two	16.98	12.81	14.90	42
Mean	16.68	14.38	15.53	

Note. In order one the laughing vignette was presented
first; in order two the joking vignette was presented first.
 Scale ranges from 1 to 20 with 20 meaning "I absolutely
agree".

TABLE 25

MEAN ASSESSMENTS OF STATUS
AS A FUNCTION OF DISPLAY TYPE AND SEX OF TARGET.

Condition	Joke	Laugh	Mean	n
Female Target	16.647	14.68	15.66	42
Male Target	16.98	12.81	14.90	42
Mean	12.95	12.25	15.52	

Note. Means presented are unweighted. Total values were divided by three to keep scale constant across factors. Scale ranges from 1 to 20 with 20 meaning "I absolutely agree".

TABLE 26

ANALYSIS OF VARIANCE FOR THE FRIEND VARIABLE
(ITEMS 8, 9, AND 10).

Between Subjects Effects

Source	SS	DF	MS	F	p
Sex (S)	1.59	1	1.59	.08	.772
Order (O)	20.30	1	20.30	1.08	.302
Target (T)	34.94	1	34.94	1.86	.177
S x O	78.96	1	78.96	4.20	.044
S x T	88.15	1	88.15	4.69	.033
O x T	18.62	1	18.62	.99	.323
S x O x T	16.29	1	16.29	.87	.355

Tests Involving the Within Subjects Variable

Source	SS	DF	MS	F	p
Display (D)	65.32	1	65.32	11.43	.001
S x D	.13	1	.13	.02	.880
O x D	7.34	1	7.34	1.29	.261
T x D	1.03	1	1.03	.18	.673
S x O x D	.88	1	.88	.15	.696
S x T x D	.22	1	.22	.04	.847
O x T x D	.65	1	.65	.11	.736
S x O x T x D	1.97	1	1.97	.35	.558

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TABLE 27

ANALYSIS OF VARIANCE FOR THE ROMANTIC RELATIONSHIP VARIABLE (ITEMS
15 AND 16).

Between Subjects Effects

Source	SS	DF	MS	F	p
Sex (S)	35.14	1	35.14	1.49	.226
Order (O)	94.82	1	94.82	4.02	.048
Target (T)	1.03	1	1.03	.04	.835
S x O	102.33	1	102.33	4.34	.041
S x T	32.38	1	32.38	1.37	.245
O x T	12.94	1	12.94	.55	.461
S x O x T	1.72	1	1.72	.07	.788

Tests Involving the Within Subjects Variable

Source	SS	DF	MS	F	p
Display (D)	32.86	1	32.86	2.95	.090
S x D	8.26	1	8.26	.74	.392
O x D	5.48	1	5.48	.49	.486
T x D	16.41	1	16.41	1.47	.229
S x O x D	4.06	1	4.06	.36	.548
S x T x D	8.56	1	8.56	.77	.384
O x T x D	16.41	1	16.41	1.47	.229
S x O x T x D	19.87	1	19.87	1.78	.186

TABLE 28

MEANS FOR THE ROMANTIC RELATIONSHIP VARIABLE AS A FUNCTION OF
DISPLAY TYPE AND SEX OF TARGET.

Condition	Joke	Laugh	Mean	n
Female Target	14.38	12.88	13.63	43
Male Target	13.59	13.43	13.47	41
Mean	14.02	13.14	13.55	

Note. Total values were divided by 2 to keep scale constant across factors. Scale ranges from 1 to 20 with 20 meaning "I absolutely agree".

TABLE 29

ANALYSIS OF VARIANCE FOR THE TOTAL VARIABLE.

Between Subjects Effects

Source	SS	DF	MS	F	p
Sex (S)	.02	1	.02	.00	.964
Order (O)	6.94	1	6.94	.74	.391
Target (T)	5.20	1	5.20	.56	.458
S x O	40.14	1	40.14	4.30	.042
S x T	10.29	1	10.29	1.10	.297
O x T	.07	1	.07	.01	.930
S x O x T	14.96	1	14.96	1.60	.210

Tests Involving the Within Subjects Variable

Source	SS	DF	MS	F	p
Display (D)	95.65	1	95.65	37.62	.000
S x D	.14	1	.14	.05	.817
O x D	.14	1	.14	.06	.814
T x D	1.48	1	1.48	.58	.448
S x O x D	.06	1	.06	.02	.880
S x T x D	3.21	1	3.21	1.26	.264
O x T x D	2.50	1	2.50	.98	.324
S x O x T x D	1.99	1	1.99	.78	.379

TABLE 30

MEANS FOR THE TOTAL VARIABLE AS A FUNCTION OF DISPLAY TYPE AND SEX
OF TARGET.

Condition	Joke	Laugh	Mean	n
Female Target	14.13	12.52	13.33	43
Male Target	14.11	13.10	13.61	41
Mean	14.12	12.81	13.47	

Note. N = 84. Scale ranges from 1 to 20 with 20 meaning "I absolutely agree".

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