

DEROGATION OF COMPETITORS

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Verbal signals are sometimes used to manipulate the impressions that people form about oneself and others. For the goal of self-enhancement, one can manipulate impressions either by elevating oneself or by derogating others. Five hypotheses about derogation of same-sex competitors were generated from an evolutionary model of human-mate competition. These hypotheses focused on sex differences in the importance that humans attach to external resources, rank, achievements, physical prowess, reproductive value and fidelity. Four studies were conducted to test these hypotheses. In a preliminary study ($N = 80$), subjects nominated intrasexual derogation tactics they had previously observed. Study 1 ($N = 120$) examined estimates of the likelihood that men and women would perform each tactic. Study 2 ($N = 101$) identified the perceived effectiveness of each derogation tactic for men and women. Study 3 ($N = 100$) used act reports based on self-recording and observer-recording to identify the likelihood of specific persons performing each derogation tactic. Although there were variations across studies and several anomalies, results generally supported the hypotheses based on an evolutionary model of human intrasexual mate competition. Discussion focuses on the importance of discourse and impression manipulation in the evolution of human competition.

'Rumor is set in motion and continues to travel by its appeal to the strong personal interests of the individuals involved in the transmission' (Allport & Postman, 1947: 314)

'The blow of the whip raises a welt, but a blow of the tongue crushes bones.'
Ecclesiasticus 28, 17.

Verbal signals and discourse are central to human personal relationships. All sexually reproducing species have elaborate means of

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signaling members of their own species, and this probably reaches a pinnacle of complexity with the evolution of human language. Among humans, discourse is typically essential at all stages of relationships. In mating, for example, discourse is central to initiating, courting and maintaining relationships. The purpose of this article is to examine one form of human discourse that occurs at all stages of mating relationships: derogation of competitors.

Signals as manipulation

Over the past century, the dominant view of animal signals has been that their primary function is to facilitate communication between co-operative members of a species (Dawkins & Krebs, 1978; Parker, 1985). On this account, signals are designed to provide accurate information to others, reducing uncertainty and ambiguity. Recent work in evolutionary biology suggests a less benevolent view. Animal signals generally, and human discourse specifically, may be viewed as evolved forms of manipulation that exploit the sense organs and behavioral machinery of others (Dawkins & Krebs, 1978; Krebs & Dawkins, 1984). The display of anger, for example, rather than functioning to inform others about an internal state, may instead function to manipulate other individuals to back down or to make threats more credible (Hirshleifer, 1987). We intuitively accept this view in the context of advertising or salesmanship (e.g. advertisements are designed to persuade, not to inform). Dawkins & Krebs (1978) argue that this manipulative function is generally characteristic of human and non-human signals.

The Dawkins & Krebs view of animal signals as manipulation does not imply that signals are never informative or accurate. Indeed, natural selection will generally favor adaptations that lead organisms to disregard uninformative signals and selectively attend to informative ones. The central argument of the manipulation view is that signals are designed to influence others in ways that benefit the signaler, sometimes but not always at a cost to the receiver, whether or not the signals provide accurate information. A parent warning a child not to wander off into the woods alone, for example, may be conveying accurate information about objective dangers, but the signal is manipulative — it is designed to benefit the reproductive success of the signaler.

In this example, the signal also benefits the child, and so it may seem strange to label this signal as manipulative. It is classified as manipulative, according to the Dawkins–Krebs view, because the

answer to the question 'For whose reproductive benefit did this form of signalling evolve?' is 'the signaler'.

Where the reproductive interests of two interactants coincide to a large degree, as do parents and children (although see Trivers, 1974, for conditions in which the interests of parents and children conflict), signals will often benefit the receiver as well as the signaler. Where the interests of two interactants conflict, for example, where two men are competing for sexual access to the same woman, signals are predicated to damage the receiver, in addition to benefiting the signaler. The central point is that signals are designed to influence recipients in ways that benefit the signaler, whether or not they are informative or misleading, and whether or not they happen to benefit or damage the receiver.

This view does *not* imply that the signaler is *consciously aware* of the manipulative function of the signal. Indeed, there are grounds for believing that humans not only are often not aware, but may deceive themselves about the purpose of a signal (Trivers, 1985). A signal is classified as manipulative, with Dawkins-Krebs' view, whether or not the signaler is consciously aware of the signal's function.

This challenge to the 'classical' view of the function of animal signals points to an important theoretical and empirical agenda — to chart the ways in which discourse is used by humans to manipulate others to achieve proximate goals that historically have been linked with reproductive success (Buss, 1986). Daly & Wilson (1983) note that kin terms are sometimes used manipulatively to invoke a relationship bond that is not present in order to extract resources. The injunction 'Brother, can you spare some change' illustrates kin-term manipulation. Johnson (1987) and Johnson et al. (1987) describe the manipulation of patriotic feelings through kin-term invocation. Finally, Chagnon (1988) documents kin-term manipulation among the Yanamamo Indians.

Beyond these few fragments, however, little systematic research has been conducted on the *goals* toward which language manipulation will be directed, nor about the *specific forms* that such manipulation will take, nor about the *relationships* within which these forms of manipulation occur (but see Buss et al., 1987 and Cialdini, 1984, for general treatments of influence and manipulation). Darwin's (1871) theory of sexual selection provides an important heuristic for identifying several proximate goals toward which manipulative attempts will be directed.

A theory of intrasexual competition

Selection is expected to favor, *ceteris paribus*, those characteristics that lead to success at *intrasexual mate competition*. Language ability has been proposed as one skill that historically has led to success at intrasexual mate competition (Parker, 1985).

A central component of intrasexual mate competition is rendering oneself more attractive to members of the opposite sex, *relative* to same-sex others who are striving to achieve the same goal (Buss, 1988a). Relative self-enhancement can be achieved through *two basic strategies*: (1) making oneself more attractive or appealing, and (2) rendering the competition less attractive or appealing.

In a series of studies on intrasexual mate competition, Buss (1988a, 1988b) examined tactics that men and women use to make themselves more attractive to potential mates. Tactics such as increasing exposure, acting nice, paying compliments, touching and displaying sophistication were used by both men and women for increasing their attractiveness to members of the opposite sex. Several major sex differences in tactic use were predicted from an evolutionary model of intrasexual mate competition. Men more than women were predicted to display resources. Women more than men were predicted to display signals that are correlated with reproductive value (e.g. by altering appearance cues) and to signal availability or access to that reproductive value. With several exceptions, three empirical studies confirmed these predictions in the context of assessing the perceived effectiveness and reported performance of male and female use of these tactics.

In contrast, there appears to have been no conceptual or empirical work conducted on the second major strategic alternative in intrasexual mate competition — rendering intrasexual competitors less attractive or appealing to members of the opposite sex. The major purpose of this article is to fill these gaps by exploring the use of verbal signals to *derogate intrasexual competitors*.

Analyses of nouns that can be used to describe personality show a wealth of derogatory terms (Goldberg, 1980). The English language is replete with terms to describe others as *stupid* (e.g. bird-brain, blockhead, cretin, deadhead, dimwit, dolt, dumbbell, dummy, dunce, fathead, featherbrain, idiot, ignoramus, numbskull, peabrain, pinhead, softhead, thickhead, woodenhead), *deceitful* (e.g. liar, charlatan, faker, hypocrite, imposter, phony, poser, quack, sham, cheater), *selfish* (e.g. bloodsucker, freeloader, gold-digger, leech, moocher, parasite, sponger) and *aggressive*

(e.g. agitator, terrorist, disturber, barbarian, brawler, hood, hooligan, roughneck, ruffian, thug, tough, backbiter, defamer, mud-slinger). The prevalence of these derogatory terms suggest an important, but heretofore relatively unexplored phenomenon.

The present series of studies is guided by the premise that discourse will be used to derogate competitors in the service of intrasexual mate competition. Specific predictions about sex differences in the tactics used to derogate competitors can be generated from an evolutionary model of intrasexual mate competition (Buss, 1987, 1988a, 1988b, 1989a). For a species in which males provide substantial parental investment, females often select mates partly on the basis of their resource provisioning ability (Trivers, 1972). *Homo sapiens* is a species in which males often invest heavily. The greater female valuation of external resources as a mate criterion has been extensively documented within the United States (Buss, 1987; Townsend, 1989), as well as across 37 different cultures (Buss, 1989a). Because mate preferences expressed by one sex can influence the characteristics over which members of the opposite sex compete (Buss, 1988a), men should strive to increase their display of resources and derogate the resource potential of other men during intrasexual competition.

Thus, males more than females are predicted to derogate competitors' resources, as well as the attributes that tend to lead to resource acquisition. These include social status, achievements, ambition, industriousness and physical prowess (Barron, 1966; Darwin, 1871; Willerman, 1979). Physical prowess is likely to have been linked with hunting ability, successful defense of territory and other resources, and successful defense of one's mate and offspring from aggressive conspecifics (Darwin, 1871). This leads to the prediction that males will derogate each other's physical prowess.

For males more than for females, reproductive success historically has been limited by access to reproductively capable females (Trivers, 1972; Williams, 1975; Symons, 1979). Many cues to female reproductive capability are physical ones because of the close association between reproductive capacity and age and health (cf. Cunningham, 1986). Men in human evolutionary history who preferred to mate with women who showed physical cues of *old age* and *disease* (e.g. wrinkled skin, gray hair, open sores) produced few or no children. Men who preferred to mate with women possessing physical cues linked with *youth* and *health* (e.g. clear smooth skin, lustrous hair, full lips, absence of lesions), experienced greater

reproductive success. Because women's reproductive capacity is strongly correlated with age, because physical appearance historically provided the most reliable cues to age, and because standards of a woman's beauty have evolved to correspond to these cues, men have evolved powerful mate preferences for women who are young and physically attractive (Williams, 1975; Symons, 1979; Buss, 1989a).

Because mate preferences by one sex can influence (over ontogenetic or evolutionary time) the characteristics over which members of the opposite sex compete, females are predicted to compete with one another to display appearance cues that are correlated with reproductive capacity, and to derogate each other's appearances in the service of intrasexual competition.

Appearing to be reproductively valuable, however, does not ensure that that value will be delivered to a given man. Two considerations become critical for a man to actualize the promise of a woman's reproductive capacity: (1) cues that a female will or will not have intercourse with him, and (2) cues of paternity confidence. A woman who mates with many men lowers the confidence that any given man can have in his paternity. Such extra-pair copulations can be costly for the long-term mate of such a woman because he risks investing in children who are genetically unrelated to him.

These considerations suggest that females should derogate each other, in the context of intrasexual competition, by manipulating the impressions of males on the dimensions of sexual availability and degree of extra-pair copulations. Females should enhance impressions of their own availability, but not indicate promiscuity or sexual accessibility to a large number of men. They should derogate other females by suggesting that they will not deliver sexually, or that they deliver to too many males.

Evolutionary hypotheses are hypotheses about the past environmental conditions that exerted selection pressure for a sufficiently long time to fashion specific adaptations to those conditions. Human psychological mechanisms are attuned to these historical conditions, whether or not those conditions are still with us today (Cosmides & Tooby, 1987; Symons, *in press*). The hypotheses developed here depend on the assumption that the linguistic content of today's derogation tactics are tied to cues of mate value that existed in human evolutionary history.

In sum, two sets of sex differences in derogation tactics were predicted: (1) males will derogate each other along the dimension of

resources and the physical, psychological and behavioral characteristics that tend historically to have been correlated with resource acquisition, and (2) females will derogate each other along the dimensions of reproductive value, sexual availability and sexual promiscuity. The four studies described below were conducted to provide an exploration of the uncharted domain of derogation of competitors and to test these evolution-based predictions.

Preliminary study: identifying tactics of derogating competitors

The goal of this study was to identify and domain sample the range and topographic diversity of acts that males and females perform to derogate members of their own sex. Toward this end, an act nomination procedure was developed.

Method

Subjects. Subjects were 80 undergraduates enrolled in a large state university. Participation in this study partially fulfilled an experimental requirement for a psychology course.

Nomination of derogation acts. Subjects received the following instructional set: 'In this study, we are interested in the things people do to make others of their same sex *undesirable* to members of the opposite sex. Please think of specific individuals you know (including yourself) of your own sex, and write down five things that they have done (or might do) to make members of their own sex undesirable to members of the opposite sex. Please be as specific as possible . . . [five blank spaces provided]. Now think of specific individuals you know of the opposite sex. Write down five things they have done (or might do) to make members of their own sex undesirable to members of the opposite sex. Please be as specific as possible.'

Classification into tactics. After a large and diverse set of derogation acts was identified, these acts were classified into a set of tactics that could be used for subsequent studies. Toward this end, redundancies were eliminated, as were vague statements. This elimination process resulted in 83 distinct acts of derogation, all of which were retained. Given that little is known about derogation tactics, the authors erred toward 'over-inclusion' so that all acts that showed even partial distinctiveness were retained.

Next, the two authors independently classified acts into tactics. For example, the acts (1) 'She scoffed at her achievements', (2) 'She said that the other woman was a loser' and (3) 'She pointed out how poorly the woman would do professionally' were classified into a single tactic, labeled *Derogate Competitor's Achievements*. The authors then compared classifications, and combined them with the guiding principle of comprehensiveness — all distinct tactics were retained, and those that were identically or similarly worded were combined.

This procedure resulted in 28 distinct tactics. To achieve independent confirmation of the viability of this classification, and the assignment of acts to tactics, five additional psychologists were enlisted, none of whom had prior knowledge of the study or its hypotheses. Acts were typed on to 83 3 × 5 index cards, with one set

containing female-as-actor (e.g. She said the woman was an airhead) and one set containing male-as-actor (e.g. He said the man was an airhead). The list of 28 tactics was provided on a separate recording sheet onto which judges classified acts they believed to be subsumed by each tactic. A 'miscellaneous' category was added, and subjects were encouraged to nominate additional tactics if they felt that the ones provided did not accurately subsume the acts described on the index cards.

A criterion of majority consensus was adopted for the final classification of acts into tactics. Acts that failed to meet this criterion were still included in subsequent studies, but were not used in the analyses based on the tactic level. Sixty-four of the acts met the majority criterion. These acts, and the tactics into which they were judged to belong, are shown in Appendix 1.

Appendix 1: derogation tactics

SPREAD RUMORS ABOUT COMPETITOR

She would spread false rumors about her.

DEROGATE COMPETITOR'S INTELLIGENCE

She would make her seem dumb.

She would tell others that the woman was stupid.

She would say that the woman was an airhead.

CALL COMPETITOR INSENSITIVE

She would say that the woman was insensitive to other people's feelings.

DEROGATE COMPETITOR'S FINANCIAL RESOURCES

She would tell him that the woman was poor.

She would mention that the woman drove a poor car.

She would tell him that the woman had no money.

CALL COMPETITOR PROMISCUOUS

She would call her a tramp.

She would tell other people that the woman just wanted to get laid.

She would say that the woman had too many past boyfriends.

She would tell everyone that the woman slept around a lot.

She would say that the woman was loose.

CALL COMPETITOR UNPOPULAR

She would say that none of the other girls liked the woman.

She would tell him that everyone else hated the woman.

DEROGATE COMPETITOR'S APPEARANCE

She would laugh at her hair.

She would make fun of her appearance.

She would laugh at her jewelry.

She would mention that her clothes were shabby.

She would tell him that the woman was ugly.

She would say that the woman was fat and ugly.

She would make fun of the size/shape of the woman's body.

She would laugh at her make-up.

She would say that the woman was physically unattractive.

She would laugh at her clothing.

DEROGATE COMPETITOR'S ACHIEVEMENTS

She would scoff at her achievements.

She would say that the woman was a loser.

She would point out how poorly the woman would do professionally.

DEROGATE COMPETITOR'S STRENGTH

She would tell others that the woman was physically weak.

She would tell him that the woman was a wimp.

She would tell people that the woman was a coward.

DEROGATE COMPETITOR'S HABITS

She would tell others that the woman had gross habits.

She would tell people that the woman smoked.

DEROGATE COMPETITOR'S HYGIENE

She would say that the woman never showered.

She would talk about her low level of cleanliness.

DEFEAT COMPETITOR PHYSICALLY

She would physically defeat her.

She would beat her up.

DOMINATE COMPETITOR

She would pretend to control or dominate her in front of the opposite sex.

IGNORE COMPETITOR SOCIALLY

She would ignore her socially.

GET COMPETITOR DRUNK

She would get her drunk.

CALL COMPETITOR EXPLOITATIVE

She would tell others that the woman used people — especially men.

She would say that the woman only wanted money.

She would say that the woman was out to use men.

CALL COMPETITOR BORING

She would say that the woman was boring or uninteresting.

QUESTION COMPETITOR'S SEXUAL ORIENTATION

She would tell him that the woman might be gay.

She would tell guys that the woman was bisexual.

OUTSHINE COMPETITOR IN SPORTS

She would try to outshine her in sports.

SAY COMPETITOR HAS SOCIAL DISEASE

She would tell him that the woman had a social disease.

CALL COMPETITOR SELFISH

She would tell him how selfish and uncaring the woman was.
She would tell him that the woman was very self-centered.

SPEAK OF PREVIOUS PREGNANCY

(F) She would tell him that the woman had had an abortion.
(M) He would tell her that the man had gotten a girl pregnant.

SAY COMPETITOR HAS NO GOALS

She would say that the woman had no goals in life.
She would mention that the woman lacked ambition.

DEROGATE COMPETITOR'S FAMILY

She would make derogatory remarks about her family.

CALL COMPETITOR EMOTIONALLY UNSTABLE

She would say that the woman was emotionally unstable.
She would say that the woman was flighty.
She would say that the woman cried all the time.

CALL COMPETITOR A TEASE

She would say that the woman was just a tease.
She would say that the woman led men on.

QUESTION COMPETITOR'S FIDELITY

She would say that the woman cheats on men.
She would say that the woman couldn't stay loyal to just one guy.

CALL COMPETITOR SEXUALLY INEXPERIENCED

She would tell him that the woman was a virgin.

Study 1: judgments of tactic likelihood in males and females*Method*

Subjects were 120 undergraduates, 60 males and 60 females, none of whom had participated in the preliminary study. Subjects received experimental credit as a partial requirement for completing a course in introductory psychology.

The design was a 2×2 factorial, with the first factor being sex of rater (male, female) and the second factor being sex of actor (he, she). Thirty subjects were randomly assigned to each cell of the 2×2 design.

Subjects received the following instructional set: 'Below is a list of things people sometimes do when they are trying to "put down" members of their own sex to make them undesirable to members of the opposite sex. If a man [woman] were trying to put down another man [woman] to make him [her] undesirable to women [men], what would he [she] be likely to say or do? For each act, write a "7" if a man [woman] would be very likely to perform this act; write "1" if a man [woman] would be very unlikely to perform the act to accomplish this goal; write a "4" if a man [woman] would be somewhat likely to perform the act. Use intermediate numbers for intermediate likelihoods that a man [woman] would perform the act to put down another man [woman] to make that other man [woman] undesirable to women [men].' Half

of the males and half of the females received the male-as-actor version, while the other half of each sex received the female-as-actor version.

Results

Alpha reliability coefficients (Cronbach, 1951) were computed for each cell of the 2×2 design, for male and female raters separately, for male and female actors separately, and for the total set of 120 judges. The reliability of the male judges was 0.94, while that of the female judges was 0.93. Female-as-actor received a 0.97 reliability, while male-as-actor received 0.93. The individual cell reliabilities were 0.85 for male actor/male rater; 0.95 for female actor/female rater; 0.94 for female actor/male rater; and 0.88 for male actor/female rater. The reliability over the set of 120 judges was 0.97. Thus, there appears to be sufficiently high agreement among the judges for highly reliable composite judgments to be obtained.

To test for predicted *sex differences*, 2 (male and female rater) \times 2 (male and female actor) ANOVAs were conducted for each of the 28 tactics. Each tactic consisted of the average, with unit weighting, of all acts subsumed by it based on the preliminary study. Table 1 shows these results in three blocks — those tactics hypothesized to be used more by males than by females, those tactics hypothesized to be used more by females than by males, and those for which no sex differences were predicted.

The first block of results in Table 1 shows the seven derogation tactics that males were hypothesized to use more than females. All seven predictions were confirmed, five strongly and two marginally. Males were judged to derogate other males' financial resources, achievements and goals. Sample acts that illustrate this sex difference and were highly significant were: He would tell her that the other man was poor, He would mention that the man lacked ambition and He would point out how poorly the man would do professionally. These results implicate resources, and cues to resources, as important components of male intrasexual competition.

A second set of predicted sex differences concerned the tactics of dominating other males physically, derogating other males' strength, and outshining them in sports. These results were particularly prominent in such acts as: He would physically defeat him, He would tell her that the other man was a wimp and He would tell people that the man was a coward. These results implicate physical prowess as an important component of male intrasexual competition.

The second block of results in Table 1 shows those for which female likelihood was predicted to be greater than male likelihood. More than males, females were judged to be more likely to derogate the appearance of their intrasexual competitors. This result is especially pronounced in acts showing significant sex differences such as: She would laugh at her hair, She would say that the woman was fat and ugly and She would say that the woman was physically unattractive.

Also significant were the predictions about tactics that implied lowered paternity confidence — Calling Competitor Promiscuous and Questioning Competitor's Fidelity. Acts subsumed by these tactics that showed significant sex differences included: She would call her a tramp, She would say that she cheats on men and She would tell everyone that the woman slept around a lot.

A third prediction involved derogating other women around implied failure to deliver reproductive value through intercourse. Call Competitor a Tease implies a failure to follow through on implied signals to intercourse. Subjects judged females to be significantly more likely to use this tactic than males.

Finally, several sex differences emerged about tactics for which no predictions

TABLE 1
Sex differences in judged likelihood of performance (N = 120)

Tactic	Males		Females		F	p
	Mean	SD	Mean	SD		
I. Derogation tactics MALES were predicted to perform more often						
Derogate Competitor's Financial Resources	3.53	1.39	2.68	1.18	13.59	0.0001
Derogate Competitor's Achievements	4.42	1.50	4.02	1.12	3.84	0.052
Derogate Competitor's Strength	4.29	1.50	2.39	0.98	66.95	0.0001
Defeat Physically	4.07	1.74	1.96	1.05	66.62	0.0001
Outshine Competitor in Sports	5.70	1.61	3.55	1.44	58.55	0.0001
Dominate Competitor	5.31	1.69	4.00	1.85	17.93	0.0001
Say Competitor Has No Goals	3.74	1.45	3.28	1.30	3.59	0.061
II. Derogation tactics FEMALES were predicted to perform more often						
Call Competitor Promiscuous	3.45	1.12	4.44	1.19	19.74	0.0001
Derogate Competitor's Appearance	3.69	1.22	4.15	1.26	3.04	0.084
Call Competitor a Tease	3.75	1.52	5.09	1.23	28.41	0.0001
Question Competitor's Fidelity	4.73	1.53	5.26	1.13	4.05	0.047
III. Derogation tactics for which no sex differences were predicted						
Spread Rumors About Competitor	4.05	1.79	5.83	1.26	37.76	0.0001
Derogate Competitor's Intelligence	4.35	1.21	4.81	0.91	6.26	0.014
Call Competitor Insensitive	3.95	1.67	4.78	1.35	8.72	0.004
Call Competitor Unpopular	4.89	1.33	4.88	1.43	0.18	NS
Derogate Competitor's Habits	3.55	1.23	3.68	1.21	0.61	NS
Derogate Competitor's Hygiene	3.23	1.59	2.69	1.38	3.92	0.050
Ignore Competitor Socially	4.77	2.01	5.40	1.77	2.73	NS
Get Competitor Drunk	2.98	1.72	2.22	1.40	6.42	0.013
Call Competitor Exploitative	4.35	1.27	5.03	1.16	9.10	0.003
Call Competitor Boring	4.37	1.50	5.12	1.25	8.07	0.005
Question Competitor's Sexual Orientation	3.43	1.69	2.83	1.60	4.45	0.037
Say Competitor Has Social Disease	3.13	1.86	2.57	1.70	3.13	0.080
Call Competitor Selfish	4.60	1.47	4.84	1.08	0.91	NS
Speak of Previous Pregnancy	3.10	1.79	2.55	1.60	3.35	0.070
Derogate Competitor's Family	3.02	1.70	2.88	1.38	0.34	NS
Call Competitor Emotionally Unstable	3.02	1.04	3.86	1.08	18.55	0.0001
Call Competitor Sexually Inexperienced	2.75	1.87	3.02	1.85	2.40	NS

Note: One-tailed probabilities are used for Clusters I and II, those tactics for which directional predictions were made; two-tailed probabilities are used for all other tactics.

were made. Males, when contrasted with females, were judged to be more likely to derogate others by getting them drunk, although this tactic was judged to be unlikely for either sex. Females, more than males, were judged to be likely to derogate competitors by spreading rumors, derogating intelligence, calling competitor insensitive, calling competitor exploitative, calling competitor boring and calling competitor emotionally unstable.

There were seven main effects due to *sex of rater*. Female raters judged six tactics to be more likely to be performed than did male raters: Derogate Competitor's Intelligence ($F = 7.16, p < 0.009$), Derogate Competitor's Achievements ($F = 21.84, p < 0.0001$), Derogate Competitor's Strength ($F = 5.63, p < 0.019$), Call Competitor Boring ($F = 4.53, p < 0.036$), Say Competitor Has No Goals ($F = 10.67, p < 0.001$) and Call Competitor A Tease ($F = 5.15, p < 0.025$). Males judged the tactic Derogate Competitor's Family to be more likely to be performed than did female raters ($F = 5.28, p < 0.023$).

Of the twenty-eight *interactions between sex of rater and sex of actor*, only one reached statistical significance. This is approximately what would be expected by chance alone and therefore will not be interpreted.

Discussion

These results provide powerful support for the evolution-based predictions about sex differences in derogation of intrasexual competitors. Males were judged to be more likely to derogate each others resources, cues to resource acquisition and physical prowess. Females were judged to be more likely to derogate each other's appearance, sexual behavior and fidelity — hypothesized cues to reproductive capacity and delivery of the promise of that capacity. These results, however, provide no information about the effectiveness of the use of each tactic, nor about likelihood that specific individuals will use these tactics. These were the foci of Studies 2 and 3, respectively.

Study 2: judgments about derogation tactic effectiveness

Method

Subjects were 101 undergraduates, 50 males and 51 females, none of whom had participated in any of the other studies. Subjects received experimental credit as part of fulfilling a psychology class requirement.

The design of the study was a 2×2 factorial, in which the first factor was sex of rater (male, female) and the second was sex of actor (he, she). Twenty-five subjects were randomly assigned to each of the four cells, except for the cell of female rater/female actor, which contained twenty-six subjects.

Subjects received the following written instructional set: 'Below are listed acts that a man [woman] might perform in order to derogate or "put down" members of his [her] own sex to make them undesirable to members of the opposite sex. In this study, we are interested in *how effective* each act would be to accomplish the goal of making the other man [woman] undesirable to members of the opposite sex. Please read each act carefully and think about its likely consequences. Then rate each act on how effective it is likely to be in making the other man [woman] undesirable to members of the opposite sex.

'Use this 7-point scale: a "7" means that you feel the act would be *very effective* in achieving this goal; a "1" means that you feel the act would be *not very effective* at

achieving this goal; a "4" means that you feel the act would be *moderately effective* in achieving this goal. Use intermediate numbers for intermediate judgments.'

Following this instructional set were listed the eighty-three derogation acts generated from the preliminary study. Subjects received either the version with all female-as-actor statements, or the version with all male-as-actor statements.

Results

Alpha reliability coefficients were computed for each cell of the 2×2 , as well as for the marginals and all the 101 judges. The cells each showed an alpha reliability of 0.90, except for the male rater/male actor cell, which achieved an alpha of 0.77. Further analyses revealed a single male judge who was uncorrelated with the other judges. Without this judge, the remaining 24 male judges in this cell showed an alpha of 0.80. On the assumption that this judge may have legitimately different perceptions, however, he was retained in subsequent analyses so as not to bias the results one way or another.

Over both male and female actor versions, male raters achieved a reliability of 0.94, while females achieved a reliability of 0.93. Female-as-actor, across both sets of raters, achieved an alpha of 0.97; the corresponding male-as-actor received an alpha of 0.93. The total of all judges indicated an alpha reliability coefficient of 0.97. Thus, there was sufficient agreement among the judges to receive a high level of composite reliability with respect to the derogation effectiveness judgments.

Two-by-two ANOVAs were conducted for each of the twenty-eight tactics. Table 2 shows the results, at the tactic level, of the main effects for *sex differences in actor derogation effectiveness*. The first block in Table 2 shows the results for those tactics that were predicted to be more effective for males than for females. Tactics judged to be more effective for males than for females included derogating a competitor's financial resources, strength and goals, and defeating competitor physically. The predicted sex difference about derogating a competitor's achievements did not achieve statistical significance, although it was in the predicted direction.

The second block of results in Table 2 shows the tactics that were predicted to be more effective for females than for males. Derogating a Competitor's Appearance and Calling a Competitor a Tease were non-significant, while Calling Competitor Promiscuous and Questioning a Competitor's Fidelity were *significant in the direction opposite to that predicted*. Derogating a competitor's promiscuity and infidelity were judged to be more effective tactics for men than for women.

The third block of results show those tactics for which no sex differences were predicted. Of these seventeen tactics, five showed significant sex differences, all in the direction of greater judged effectiveness for males than for females: Calling Competitor Insensitive, Calling Competitor Unpopular, Calling Competitor Exploitative, Calling Competitor Selfish, and Speaking of Prior Pregnancy.

There were 9 significant main effects due to *sex of rater*, where approximately 1.5 would be expected by chance alone. For 8 of these, female raters judged the tactic to be more effective than did male raters: Call Competitor Insensitive ($F = 7.70, p < 0.007$), Call Competitor Promiscuous ($F = 4.41, p < 0.038$), Call Competitor Exploitative ($F = 3.99, p < 0.049$), Question Competitor's Sexual Orientation ($F = 6.32, p < 0.014$), Call Competitor Selfish ($F = 12.44, p < 0.001$), Say Competitor Has No Goals ($F = 6.44, p < 0.013$), Call Competitor a Tease ($F = 5.13, p < 0.023$) and Question Competitor's Fidelity ($F = 6.59, p < 0.012$). Male raters, in contrast,

TABLE 2
Sex differences in effectiveness judgments ($N = 101$)

Tactic	Males		Females		F	p
	Mean	SD	Mean	SD		
I. Derogation tactics MALES were predicted to perform more often						
Derogate Competitor's Financial Resources	2.88	0.88	2.07	0.88	19.99	0.0001
Derogate Competitor's Achievements	3.31	1.08	3.06	1.02	1.05	NS
Derogate Competitor's Strength	3.16	1.08	2.25	0.95	18.05	0.0001
Defeat Physically	3.02	1.44	1.99	0.97	16.12	0.0001
Outshine Competitor in Sports	3.35	1.74	2.76	1.51	3.10	0.081
Dominate Competitor	4.00	1.66	3.42	1.55	3.25	0.075
Say Competitor Has No Goals	3.99	1.55	3.27	1.39	6.44	0.007
II. Derogation tactics FEMALES were predicted to perform more often						
Call Competitor Promiscuous	4.56	1.16	3.92	1.13	8.29	0.005
Derogate Competitor's Appearance	3.19	0.96	3.12	1.03	0.43	NS
Call Competitor a Tease	4.64	1.50	4.53	1.21	0.34	NS
Question Competitor's Fidelity	5.74	1.16	4.95	1.23	13.47	0.0001
III. Derogation tactics for which no sex differences were predicted						
Spread Rumors About Competitor	4.59	1.99	4.66	1.55	0.50	NS
Derogate Competitor's Intelligence	3.83	0.96	3.85	1.16	0.01	NS
Call Competitor Insensitive	5.00	1.73	4.18	1.69	6.56	0.012
Call Competitor Unpopular	4.22	1.32	3.47	1.30	7.75	0.006
Derogate Competitor's Habits	4.51	1.13	4.07	1.30	2.47	NS
Derogate Competitor's Hygiene	4.88	1.37	4.93	1.47	0.01	NS
Ignore Competitor Socially	3.10	1.74	2.92	1.71	0.76	NS
Get Competitor Drunk	2.47	1.27	2.66	1.27	0.67	NS
Call Competitor Exploitative	5.40	1.00	4.61	1.30	11.74	0.001
Call Competitor Boring	4.37	1.39	4.12	1.57	0.92	NS
Question Competitor's Sexual Orientation	5.61	1.40	5.07	1.60	3.37	0.069
Say Competitor Has Social Disease	5.55	1.54	5.43	1.67	0.09	NS
Call Competitor Selfish	5.10	1.14	4.09	1.25	22.65	0.0001
Speak of Previous Pregnancy	5.37	1.87	4.18	1.67	11.24	0.001
Derogate Competitor's Family	2.35	1.32	2.40	1.20	0.01	NS
Call Competitor Emotionally Unstable	4.10	1.04	3.85	1.05	1.61	NS
Call Competitor Sexually Inexperienced	2.00	1.47	2.17	1.45	1.91	NS

Note: One-tailed probabilities are used for Clusters I and II, those tactics for which directional predictions were made; two-tailed probabilities are used for all other tactics.

judged only one tactic to be more effective than did female raters: Dominate Competitor ($F = 7.88, p < 0.006$).

There were 8 significant *interactions between sex of rater and sex of actor*, where approximately 1.5 would be expected by chance alone. Although these significant interactions were not predicted in advance, they were particularly revealing about perceptions of derogation tactics, and so are shown in Table 3.

TABLE 3
Judgments of derogation tactic effectiveness: interactions between sex of rater and sex of actor

		Rater		
		M	F	
<i>Derogate competitor's intelligence</i>				
Actor	M	4.17	3.50	$F = 5.63, p < 0.02$
	F	3.67	3.99	
<i>Derogate competitor's financial resources</i>				
Actor	M	3.16	2.60	$F = 5.57, p < 0.02$
	F	1.95	2.21	
<i>Derogate competitor's appearance</i>				
Actor	M	3.45	2.95	$F = 5.58, p < 0.02$
	F	2.92	3.33	
<i>Derogate competitor's achievements</i>				
Actor	M	3.64	2.99	$F = 11.90, p < 0.001$
	F	2.70	3.42	
<i>Dominate competitor</i>				
Actor	M	5.00	2.96	$F = 17.69, p < 0.0001$
	F	3.14	3.59	
<i>Ignore competitor socially</i>				
Actor	M	3.56	2.60	$F = 6.64, p < 0.012$
	F	2.52	3.33	
<i>Call competitor boring</i>				
Actor	M	4.56	4.19	$F = 6.44, p < 0.013$
	F	3.50	4.62	
<i>Outshine competitor in sports</i>				
Actor	M	3.52	3.19	$F = 4.44, p < 0.038$
	F	2.23	3.27	

All but one of these significant interactions take the form of males judging the tactic to be more effective for male actors, and females judging the tactic to be more effective for female actors. Derogating a competitor's intelligence, appearance, achievements and interest value; and dominating, ignoring and outshining a competitor are all seen by males as more effective male derogation tactics, whereas they are seen by females as more effective female derogation tactics. This raises the intriguing possibility that males and females have fundamentally different perceptions of

derogation tactic effectiveness, perhaps reflecting a 'sexocentric' bias in either exposure to, familiarity with, understanding of, or interpretation of, these tactics.

Table 4 shows the ten acts judged to be most effective at derogating competitors for men and for women. Topping both lists is mention of a girlfriend or boyfriend, which implies *prior heterosexual commitment*. Exploitation is a second major theme, with two acts involving 'using' members of the opposite sex and one involving sexual exploitation. Lack of fidelity is a third theme, with acts of cheating and failing to stay loyal to one person. Questioning someone's sexual orientation is a fourth theme that includes suggestions of both homosexuality and bisexuality.

Implying that a competitor has a social disease made the top ten for both sexes. For only the male-as-actor set, implying that a competitor indulged in attacking members of the opposite sex was in the top ten in effectiveness. In contrast, false rumors, frigidity and failure to take showers made the female-as-actor top ten, but not the corresponding male list. In sum, the acts judged to be most effective at derogating competitors for both sexes are those suggesting prior commitment, exploitation, sexual infidelity, non-modal sexual orientation and social disease. All seem to imply inability to devote resources to a single mate. The similarity between the sexes in the acts judged to be most effective is worthy of note, and will be taken up in the general discussion.

Discussion

The results from Study 2 corroborate the results from Study 1 in providing strong support for the set of hypotheses surrounding male intrasexual derogation. Effective male derogation tactics, in contrast to effective female derogation tactics, were those that involved manipulating impressions of the other's resources and physical prowess. Although this *relative* sex difference emerged for tactic effectiveness, the absolute value of the judgments for the effectiveness of a male derogating another male's financial resources was not high. One speculation is that, because cash economies were not present in our environment of evolutionary adaptedness, females focused on *behavioral* cues to a male's willingness and ability to invest parentally. Perhaps the great judged effectiveness of derogating a competitor by calling him exploitative, unfaithful and speaking of prior pregnancy (that he got another female pregnant) provide more powerful cues to a male's unwillingness or inability to invest than does direct financial capacity. These speculations must await direct evidence on the cues used by females as signs of male parental investment.

The results about hypothesized effectiveness of female derogation tactics were not supported in two cases, and were significant in the opposite direction in two cases. This predictive failure warrants closer scrutiny. One speculation is that the explanation resides in the crucial conceptual distinction between a short-term and long-term mate (Buss, 1988; Buss & Schmitt, under review; Kenrick et al., 1990; Symons, 1979). Males and females may differ in the degree to which they are oriented toward short-term mating opportunities. If males are more oriented toward short-term mating partners, then the implication that a female might be promiscuous or lacking in fidelity may not render her highly undesirable. In contrast, if females are more oriented toward long-term mating partners, then the implication that a male is promiscuous and lacks fidelity could provide a powerful cue that he will distribute his resources, attention and investment more widely (Buss, 1988b). This sex difference in orientation toward short- versus long-term mates thus could account for these predictive reversals.

TABLE 4
Top ten acts judged most effective (N = 101)

Act	Males		Females	
	Mean	SD	Mean	SD
<i>For males</i>				
1. He would say that the man had a very serious girlfriend.	6.04	1.26	5.78	1.28
2. He would tell others that the man used people — especially women.	6.00	1.25	4.82	1.57
3. He would say that the man cheats on women.	5.98	1.18	4.96	1.36
4,5. He would tell girls that the man was bisexual.	5.76	1.58	4.92	1.77
4,5. He would say that the man attacked women.	5.76	1.46	2.65	1.39
6. He would say that the man was out to use women.	5.71	1.32	4.61	1.32
7. He would tell her that the man had a social disease.	5.55	1.54	5.43	1.67
8. He would say that the man couldn't stay loyal to just one girl.	5.49	1.46	4.92	1.37
9. He would tell other people that the man just wanted to get laid.	5.47	1.73	3.70	1.82
10. He would tell her that the man might be gay.	5.45	1.53	5.22	1.68
<i>For females</i>				
1. She would say that the woman had a very serious boyfriend.	6.04	1.26	5.78	1.28
2. She would tell him that the woman had a social disease.	5.55	1.54	5.43	1.67
3. She would say that the woman never showered.	5.06	1.78	5.22	1.83
4. She would tell him that the woman might be gay.	5.45	1.53	5.22	1.68
5. She would say that the woman cheats on men.	5.98	1.18	4.96	1.36
6. She would tell guys that the woman was bisexual.	5.76	1.58	4.92	1.77
7. She would say that the woman couldn't stay loyal to just one guy.	5.49	1.46	4.92	1.37
8. She would tell others that the woman used people — especially men.	6.00	1.25	4.82	1.57
9. She would spread false rumors about her.	4.59	1.99	4.66	1.55
10. She would say that the woman was out to use men.	5.71	1.32	4.61	1.32

Another hypothesis (not necessarily contradictory to the first) centers on Trivers' (1972) prediction that the sex that invests the most in offspring (typically but not always females) will generally be choosier about mates than the sex investing less. Concomitantly, competition becomes keener among members of the sex investing less. Derogation tactics generally may be more effective for males simply because female thresholds for *excluding* a potential mate are lower, making it easier for a derogation tactic to push a competitor over the exclusion threshold. It is also possible that all these evolution-based hypotheses could be wrong.

The current study cannot confirm or falsify these alternative interpretations, in part because the phrase 'undesirable to the opposite sex' was used, and the nature and duration of the relationship remained unspecified. Future research could explore this predictive failure by varying the length of relationship involved in the derogation tactic, and by examining the effects of derogation tactics on mating thresholds.

Study 3: performance assessments of derogation tactics

This study was designed to test the hypotheses about sex differences in the context of assessing the likelihood of derogation tactics used by specific persons. Two data sources were used — self-reports of likelihood and spouse-observer reports of likelihood. The latter data source was used because it was reasoned that spouses would have access to a reasonable sample of a subject's behavior within this domain to yield accurate data.

Method

Subjects were 100 individuals composing 50 newly-wed couples. Subjects were part of a larger study. Each couple was paid \$30.00 and received individual feedback in return for their participation. Further details of this sample may be obtained from Buss (1989b).

Subjects completed the self-report version of the Derogation Tactics form at home in their spare time. Approximately a week later, subjects participated in a laboratory session in which they completed an act report of derogation tactics about their spouse's behavior. Spouses were separated for the duration of the testing session to preserve independence of responses and to prevent influence.

The instructional set for the self-reported act report was as follows: 'Below is a list of things that people sometimes do when they are trying to put down members of their own sex to make them undesirable to members of the opposite sex. If you were trying to put down another man [woman] to make him [her] undesirable to women [men] what would you be likely to say or do? For each act, write a "7" if you would be very likely to perform the act; write "1" if you would be very unlikely to perform the act; write "4" if you would be "somewhat likely" to perform the act. Use intermediate numbers for intermediate likelihoods that you would perform the act to put down another man [woman] to make him [her] undesirable to women [men].'

This list was followed by the eighty-three acts of derogation generated by the preliminary study. During the testing session, the spouse-observer act reports were structured in a parallel manner to the self-recording act reports. Instructions were altered so that they read 'your wife' or 'your husband' rather than 'you'. The eighty-three acts were phrased in the appropriate third-person singular for this phase of the study.

Results

Alpha reliability coefficients were computed on the composite derogation tactics for those that contained two or more acts. These coefficients ranged from 0.67 to 0.94 for the self-reported tactics and from 0.66 to 0.96 for the observer-reported tactics, with mean reliabilities of 0.81 and 0.82, respectively, suggesting adequate composite reliability.

For each of the twenty-eight derogation tactics, a 2 (sex of rater) \times 2 (sex of target) ANOVA was conducted. Main effects due to *sex of target* (about which the hypotheses were formulated) are shown in Table 5.

Of the seven tactics for which male likelihood was predicted to be greater than female likelihood, two showed statistically significant sex differences in the predicted direction, whereas four just missed conventional significance levels. Of the four tactics for which female likelihood was predicted to be greater than male likelihood, all were in the predicted direction, two significantly so, one just missing conventional significance and the fourth not coming close to significance. Of the tactics for which no sex differences were predicted, only 'Call Competitor Emotionally Unstable' showed a significant likelihood difference, with females showing higher likelihood frequencies.

Of the 28 tactics 13 (about 46 percent) showed significant effects due to *sex of rater*. In all of these, male raters judged the likelihood to be higher than did female raters. This rater difference pervaded assessments of all 28 tactics. Indeed, male raters judged all tactics to be more likely to be performed than did female raters.

Only 2 of the 28 interaction terms proved significant beyond the 0.05 level. Approximately 1.5 would be expected to be significant by chance alone, so these two were not interpreted.

Discussion

Several points are noteworthy about these results. First, they provide only partial confirmation of the central hypotheses, in contrast to the Study 1 likelihood judgments, which provided strong support for the central hypotheses. Second, it is clear that the sexes in this study differ far less in reported likelihood of performance than they do in judgments of likelihood for 'men' and 'women' in general. This overall difference in sex difference magnitude between Study 1 and Study 3 could be accounted for by the following possibilities: (1) sexes differ only modestly in performance (Study 3), but this difference is magnified by 'stereotypes' of what men and women are likely to do (Study 1); (2) the particular sample used in this study (married couples) may show weaker sex differences because they are not in direct intrasexual competition anymore due to their marital status; perhaps performance assessments of an unmarried sample would show stronger sex differences (but see Buss, 1988b, for studies of intrasexual competition in the context of retaining acquired mates).

General discussion

Conclusions and anomalies

What general conclusions can be drawn from the results of these three studies? First, strong support is provided across studies for greater male than female likelihood and effectiveness of derogation

TABLE 5
Sex differences in reports of performance (N = 100)

Tactic	Males		Females		F	p
	Mean	SD	Mean	SD		
I. Derogation tactics MALES were predicted to perform more often						
Derogate Competitor's Financial Resources	1.65	1.78	1.44	1.23	2.08	NS
Derogate Competitor's Achievements	2.67	1.81	2.30	1.50	2.94	0.088
Derogate Competitor's Strength	2.02	1.86	1.59	1.13	7.05	0.009
Defeat Physically	1.57	1.87	1.28	1.21	5.87	0.016
Outshine Competitor in Sports	2.96	1.68	2.33	1.47	1.53	0.065
Dominate Competitor	2.04	1.59	1.68	1.44	3.00	0.085
Say Competitor Has No Goals	2.84	1.76	2.43	1.48	2.87	0.092
II. Derogation tactics FEMALES were predicted to perform more often						
Call Competitor Promiscuous	1.98	1.16	2.45	1.66	5.76	0.017
Derogate Competitor's Appearance	2.04	1.27	2.44	1.82	4.40	0.037
Call Competitor a Tease	2.21	1.44	2.58	1.54	2.73	0.100
Question Competitor's Fidelity	2.37	1.36	2.49	1.62	0.27	NS
III. Derogation tactics for which no sex differences were predicted						
Spread Rumors About Competitor	1.43	0.89	1.67	1.23	2.43	NS
Derogate Competitor's Intelligence	2.71	1.50	2.82	1.61	0.26	NS
Call Competitor Insensitive	2.75	1.70	2.97	1.74	0.74	NS
Call Competitor Unpopular	2.17	1.58	2.28	1.70	0.26	NS
Derogate Competitor's Habits	2.11	1.30	2.24	1.59	0.47	NS
Derogate Competitor's Hygiene	1.79	1.39	1.82	1.61	0.03	NS
Ignore Competitor Socially	3.24	1.57	3.60	1.56	1.51	NS
Get Competitor Drunk	1.45	1.70	1.23	1.19	2.28	NS
Call Competitor Exploitative	2.61	1.40	2.62	1.64	0.00	NS
Call Competitor Boring	3.33	1.50	2.96	1.51	—	NS
Question Competitor's Sexual Orientation	1.62	1.58	1.21	1.25	1.30	0.198
Say Competitor Has Social Disease	1.18	1.14	1.06	1.52	—	0.217
Call Competitor Selfish	3.30	1.38	2.76	1.64	0.13	0.895
Speak of Previous Pregnancy	1.24	1.45	1.30	1.58	0.31	NS
Derogate Competitor's Family	1.35	1.34	1.51	1.79	1.22	NS
Call Competitor Emotionally Unstable	1.83	1.29	2.28	1.81	7.43	0.007
Call Competitor Sexually Inexperienced	1.39	1.63	1.24	1.02	2.32	NS

Note: One-tailed probabilities are used for Clusters I and II, those tactics for which directional predictions were made; two-tailed probabilities are used for all other tactics.

tactics that impugn a competitor's resources, cues to resource acquisition and physical prowess. These results add to a growing body of literature that suggests that females attach greater importance to a mate's resources, and that this emphasis ramifies through the matrix

of male intrasexual competition, from attracting mates to guarding mates to derogating competitors (Buss, 1988a, 1988b, 1989a).

Second, support is found across two of the three studies for greater female likelihood of tactics that derogate the other women's appearance and promiscuity. These tactics are presumed to impugn a woman's reproductive value and the target male's access to that reproductive value. These data also support a growing body of findings on the importance that males attach to female appearance and fidelity in mate selection criteria — effects that in turn permeate female intrasexual competition in the arenas of attracting mates, retaining mates and derogating other women.

One major empirical anomaly was that these predicted female derogation tactics were *not* judged to be more effective when performed by women than by men. Indeed, two of these tactics — calling the competitor promiscuous and questioning the competitor's fidelity — showed significantly greater judged effectiveness when performed by males than by females. If females are generally more oriented toward long-term mates and males more oriented toward short-term mates, female promiscuity may be less of a drawback for a male, for whom female promiscuity may signal at least some probability that he will gain sexual access. This would diminish the effectiveness of a female derogating other women by reference to promiscuity. For women seeking long-term mates, however, a man's promiscuity may signal diffusion of commitment and resources across multiple women. In this context, male derogation of another male by reference to promiscuity would acquire increased effectiveness. Future research is needed to determine whether this hypothesis, or another, can adequately account for this empirical anomaly.

A second anomalous finding pertains to the large sex differences found in Study 1 on estimates that 'men' and 'women' would perform each tactic, combined with the smaller (but still consistent) findings from Study 3 on reports of likelihood of performance by specific males and females. If Study 1 is interpreted as a study of stereotypes, then one hypothesis to account for this discrepancy is that sex-role stereotypes magnify whatever small sex differences happen to exist (cf. Hinde, 1984). Alternatively, the Study 3 sample of married couples may show smaller sex differences due to their marital status, which may attenuate the necessity for derogation tactics generally. The present series of studies cannot disentangle these two possibilities.

Another important result is that, despite a model and findings that stress sex differences, men and women show much similarity in derogation tactics. The correlations across means for the two sexes were +0.45 (likelihood, Study 1), +0.82 (effectiveness, Study 2), +0.87 (self-reported performance, Study 3) and +0.65 (partner-reported performance, Study 3). These findings suggest that observed sex differences must be interpreted within the context of an overall similarity between men and women, particularly in the effectiveness and performance of derogation tactics.

Implications

Given these anomalies and qualifications, what are the implications of the results? At a general level, they provide support for Dawkins & Krebs' (1978) suggestion that animal signals function as manipulation, at least in the context of human intrasexual mate competition. These studies uncovered a wealth of verbal tactics that are used in the service of intrasexual derogation, and many were clearly deceptive rather than informative. The acts 'He spread false rumors about him', 'She would tell the woman that she looked good before going out, when actually she looked unappealing' and 'He would make smart sarcastic remarks that seemed innocent' all explicitly involve deceptive communication. Many more derogation acts are likely to be either deceptive or difficult for the target to verify such as impugning intentions (e.g. he just wants to get laid) and implying a social disease (who wants to find out?). Still others may capitalize on *informational ambiguity* (e.g. he *might* be gay), *predictive uncertainty* (e.g. pointed out how poorly his competitor would do professionally) and *prior behavior that could be difficult to substantiate* (e.g. he had too many past girlfriends). Thus, many derogation tactics are either informationally deceptive, or exploit various forms of informational uncertainty as would be expected on a manipulative, rather than communicative, account of human discourse.

Another interesting linguistic feature of these derogation tactics is that many involve sweeping inferences about personality dispositions. Particularly emphasized are the low ends of each dimension of the five-factor model of personality documented by Norman (1963), Goldberg (1981), McCrae & Costa (1985), Digman & Inoye (1986) and others. Derogation tactics involve implying that a competitor is weak, wimpy, cowardly and lacking ambition (**low Surgency**); insensitive, selfish, uncaring, inconsiderate and self-

centered (**low Agreeableness**); cheating, disloyal, exploitative, loose and undisciplined (**low Conscientiousness**); emotionally unstable, flighty and prone to cry (**low Emotional Stability**); and dumb, stupid, boring and an airhead (**low Intellectance–Openness**). These results acquire special importance when juxtaposed with recent findings that *high* ends of each of these dimensions (Surgent, Agreeable, Conscientiousness, Stability, Openness) are especially valued in potential mates (Botwin & Buss, in preparation). These results contribute to a cumulating body of knowledge that places personality generally, and the use of trait descriptive words specifically, in functional context (Buss, under review).

Another implication of these results is that they support the hypothesis that human males and females carry out different reproductive strategies, and that the sex differentiated use of derogation tactics are components of these strategies. They support the general notion that male intrasexual competition, relative to female intrasexual competition, involves resources and cues to resource acquisition. Female intrasexual competition, perhaps no less intense than male intrasexual competition, centers more on appearance, fidelity and sexual access, which provide cues to possession and delivery of reproductive value.

Although these studies and subsequent results were generated by, and interpreted within the context of, an evolution-based model of intrasexual competition, alternative theoretical possibilities should be noted and the status of the evolutionary model clarified. This evolutionary model of human intrasexual competition performs two scientific functions: (1) it is *heuristic* in leading to important domains of scientific inquiry that heretofore have gone almost completely unexplored, and (2) it is *predictive* in generating several specific hypotheses about the *content* of the tactics that will be used to derogate intrasexual competitors.

The heuristic function is at least as important as the predictive function and the predictive function contains noteworthy limitations. From a predictive standpoint, this evolutionary model generated specific predictions about only eleven of the twenty-eight derogation tactics. The remaining eighteen tactics, for which no predictions were generated, await a more comprehensive model of derogation of competitors. From a heuristic standpoint, however, the model did guide this series of studies toward (1) the domain of discourse as a tool used to manipulate rather than communicate with others, and (2) the domain of intrasexual competition as a

particularly important arena within which derogation should occur because of the high reproductive stakes involved in successful competition for mates and the inherent conflict entailed by that competition.

This evolution-based model is neutral regarding the *ontogenetic origins* of observed sex differences. Cultural stereotypes about men and women and differential socialization could play a critical role in the ontogeny of these sex differences. Alternatively, men and woman may simply observe or intuit the mate preferences that are held by the opposite sex, and exploit this knowledge by attributing to competitors the *opposite* of such desirable qualities. This evolution-based model does *not* imply genetic sex differences as direct *causal* forces behind the ontogeny of sex differences in the derogation tactics used (see Tooby & Cosmides, 1990, for a discussion of reactive heritability and related issues). It also does not imply that these sex differences are intractable, invariant or inevitable. It does imply that the *content* of derogation tactics is not arbitrary. It does imply that sex differences in reproductive strategy (e.g. in mate preferences), however discerned by the opposite sex (e.g. through socialization, stereotypes or observation), will be exploited by males and females in the service of intrasexual competition.

The evolution-based model is clearly limited in its *generality* (e.g. tactics for which no predictions were made), its articulation of the *proximate ontogenetic origins* of these sex differences and its *failure to incorporate a parameter* based on sex-differentiated proclivities to short-term versus long-term relationships. Despite these limitations, it provides heuristic and predictive power and a foundation for developing a more complete model of human intrasexual competition.

These sex differentiated derogation tactics presumably work because they exploit *psychological mechanisms* of the opposite sex that predispose females and males to be sensitive to resources and reproductive value, respectively (cf. Cosmides & Tooby, 1987; Symons, 1987; Tooby & Cosmides, 1989). A male conveying to a female that another male lacks ambition would be effective only if the female were predisposed to reject males who carry cues to low resource acquisition potential. Similarly, a female mentioning to a male that her competitor is fat, ugly and unattractive could work only if males were predisposed to reject females displaying these cues — cues in this case that might carry low status as well as low reproductive value. Future research could more directly examine

the nature of the psychological mechanisms that are exploited in the service of intrasexual competition.

Another important research direction involves studying the use of derogation tactics across the lifespan. The subjects for the current studies ranged from eighteen to thirty-eight, probably the peak period of human competition over mates (cf. Daly & Wilson, 1988). Needed is research on when derogation tactics emerge in life (e.g. at what age do boys impugn one another with terms like 'sissy'), whether they decline in use outside the envelope of peak intrasexual competition and whether different forms of derogation become more frequently used at middle and older ages.

These studies of tactics used to derogate competitors represent just a first step toward understanding the role of discourse in manipulating conspecifics. Success at intrasexual competition remains but one goal toward which such tactics are directed. Nonetheless, these studies and the array of results obtained from them highlight rich and largely unexplored patterns of goal-directed interpersonal influence, and thus take us one step closer to understanding the dynamics of social interaction.

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