

Strategic Self-Promotion and Competitor Derogation: Sex and Context Effects on the Perceived Effectiveness of Mate Attraction Tactics

David P. Schmitt and David M. Buss
University of Michigan (Ann Arbor)

In this article, 7 evolutionary hypotheses about the context-specific nature of mate attraction effectiveness were empirically tested and supported. In the context of short-term mating, for example, men have faced the adaptive problem of finding sexually accessible women. As a result, men express a preference for sexual availability in short-term mates. In Studies 1 and 2, separate groups of undergraduate participants judged sexual availability tactics as most effective when used by women seeking short-term mates, confirming the hypothesized link between the judged effectiveness of mate attraction tactics used by one sex and the expressed mate preferences of the other. Showing resource potential was judged most effective for men seeking a long-term mate, whereas giving resources immediately was judged most effective for men seeking short-term mates, confirming the hypothesized importance of temporal context in mate attraction effectiveness. Discussion focuses on the context-specificity of human mating psychology and on linking evolutionary and traditional approaches to romantic attraction.

When people become romantically interested in another person, they sometimes change the way they act in an effort to attract that person. For example, they might try to minimize the impression of their negative qualities while maximizing the perception of their positive attributes. Strategic behavioral shifts of this sort are designed to increase romantic attraction. The same actions, though, are not invariably effective in all situations. Specific acts of attraction that are effective in one context can become ineffective or even repulsive in other contexts. Whether a particular act of attraction is effective or not depends on at least three key contexts: (a) the mate preferences of the desired partner, (b) the type of relationship sought with the partner, and (c) whether there are rivals trying to attract the potential partner.

In this article, we examine the context-dependent effectiveness of attraction behaviors, specifically taking into account the sex of the actor, the temporal context of the sought-after relationship, and whether the behavior was intended to promote oneself or derogate a competitor. We present our findings in light of seven hypotheses derived from an evolutionary theory

of human sexual strategies (Buss & Schmitt, 1993). We begin with the general hypothesis that the mate preferences of one sex strategically influence the acts of mate attraction that are effective in the other sex.

Sex as a Moderator of Attraction Effectiveness

Mate preferences can provide an important basis for predicting the content of effective acts of mate attraction. Charles Darwin (1871) cogently integrated the expression of mate preferences with the emergence of strategic acts of mate attraction in his theory of sexual selection. Darwin distinguished between two related, yet conceptually independent, processes involving mate preferences and attraction behavior. Mate preferences drive the process of intersexual selection, the exertion of preferential choice by members of one sex for members of the opposite sex who possess desirable characteristics. Tactics of mate attraction involve intrasexual selection, the competition between members of one sex for mating opportunities with members of the opposite sex.

Sexual selection theory predicts that these two processes are related: The mate preferences of one sex are hypothesized to influence the form and content of intrasexual competition exhibited by the other sex. Moreover, an individual should be particularly effective in competition when he or she uses attraction tactics that directly embody or fulfill the characteristics preferred by the opposite sex. Certain acts and tactics of mate attraction, therefore, can be strategic solutions to the adaptive problems posed by the evolved preference mechanisms of the opposite sex.

For example, men possess evolved mate preferences for cues to reproductive value (Buss & Schmitt, 1993). One powerful cue to reproductive value in women is physical attractiveness

David P. Schmitt and David M. Buss, Department of Psychology, University of Michigan (Ann Arbor).

This research was supported by National Institute of Mental Health Grant MH44206, a fellowship from the Center for Advanced Study in the Behavioral Sciences, National Science Foundation Grant BNS87-00864, and the Gordon P. Getty Trust.

Correspondence concerning this article should be addressed to David P. Schmitt, who is now at the Department of Psychology, Bradley University, Peoria, Illinois 61625, or to David M. Buss, Department of Psychology, University of Michigan, Ann Arbor, Michigan 48109. Electronic mail may be sent via the Internet to dps@bradley.bradley.edu.

(Symons, 1979). Sexual selection theory predicts, therefore, that women will compete with one another to embody physical attractiveness (Walters & Crawford, 1994), and those women successful in this competition will effectively attract men because they will be strategically solving the problem of fulfilling men's preference for cues to reproductive value (Buss, 1988a).

This does not imply that women are aware of the evolutionary logic underlying the effectiveness of this tactic or that men are aware of the adaptive reasons why they desire physical attractiveness. To the contrary, just as people are unaware of the adaptive reasons they find nutritious fruits more delicious, they may be unaware of the reasons why sexual selection has forged in them particular mating desires (Symons, 1992). They are probably well aware, though, of the effectiveness of particular tactics of mate attraction. They may also come to know through experience that the mate preferences of the opposite sex play a pivotal role in determining which tactics of mate attraction are effective for them to use. Men and women must overcome another problem, however, when trying to effectively attract a mate: Mate preferences shift according to the type of relationship desired.

Temporal Context as a Moderator of Attraction Effectiveness

Most men and women engage in a variety of mating relationships during their lifetime. More than 90% of adults attempt to maintain long-term relationships in the form of marital alliances (Price & Vandenburg, 1980), and many also choose short-term relationships as additions to long-term mating (e.g., extramarital affairs; Blumstein, 1983; Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin, & Gebhard, 1953). Furthermore, some men and women engage in short-term mating relationships as alternatives to long-term mating (as in serial monogamy; Fisher, 1989), as a prelude to long-term mating, or between long-term relationships.

Clearly, mating relationships vary along a temporal continuum. The conceptual end points of short-term and long-term mating, though, may be especially useful for predicting the content of effective tactics of intrasexual competition. This is because researchers have documented many moderating effects of temporal context categories on mate preference criteria (Buss & Schmitt, 1993; Kenrick, Groth, Trost, & Sadalla, 1993; Kenrick, Sadalla, Groth, & Trost, 1990; Nevid, 1984; Simpson & Gangestad, 1992). Kenrick and his colleagues (1990, 1993), for example, have studied commitment as a series of exclusive relationship categories, ranging from a single date to marriage. By examining the changes in mate preference criteria between the categories, they found that midrange commitment categories act as intermediaries between basic short-term and long-term mating differences, which are the contexts used in this article. Researchers have consistently found that the preferences of both men and women systematically shift depending on whether a short-term or long-term relationship context is desired. To predict the strategic content of effective tactics of mate attraction, one must accordingly distinguish between short-term and long-term competition contexts as well.

As an example, consider the finding that people prefer kindness and understanding more in long-term mates than in short-term mates (Buss & Schmitt, 1993). We predict that tactics of

mate attraction that manipulate cues to kindness and understanding will be used more effectively in long-term mate competition than in short-term mate competition. Thus, attending to differences between long-term and short-term mate preferences enables one to predict with greater precision the content of effective tactics of mate attraction and the specific contexts within which they are used. Indeed, some mate preferences and hence effective tactics of mate attraction are hypothesized to be specific to both a particular sex and a particular temporal context.

Sexual Strategies Theory: Sex and Temporal Context as Moderators of Attraction Effectiveness

From an evolutionary perspective, human mating requires solving adaptive problems, problems that were historically linked with successful survival and reproduction. Over the course of human evolutionary history, those men and women who selected mates who helped solve their adaptive problems were more reproductively successful than those who did not. Consequently, people now possess evolved preferences for mates who help solve their adaptive problems (Buss, 1989b), and they effectively attract potential mates by signaling that they will solve (Buss, 1988a; Hill, Nocks, & Gardner, 1987), and others will not solve (Buss & Dedden, 1990), the potential mates' adaptive problems.

Buss and Schmitt (1993) argued that many important adaptive problems are highly context specific and sex specific. Both men and women have faced temporally unique problems in long-term versus short-term mating contexts. As a result, women and men possess distinct short-term and long-term mating psychologies that become differentially activated when pursuing a mate in a specific temporal context. Men express a preference for overt sexual availability, for example, only in the context of seeking a short-term partner (Oliver & Sedikides, 1992). This preference, in the form of an evolved psychological mechanism, solves the short-term problem for men of gaining sexual access quickly and easily. In contrast, men pursuing a long-term mate prefer potential partners who are sexually exclusive, solving for men the long-term problem of paternity certainty. Women prefer the potential to provide future resources in the context of seeking a long-term mating partner but tangible resources in the context of short-term mating.

Taking into account the effects of both sex and temporal context, Buss and Schmitt (1993) articulated nine hypotheses and 22 subsequent predictions in the form of sexual strategies theory. They found considerable support for their theory using diverse measurement techniques, such as self-report, physiological, and behavioral measures, and different samples, such as college undergraduates, newlywed couples, and 37 cultures from around the world. In addition, many researchers have independently corroborated several of their key empirical findings (Oliver & Hyde, 1993; Sprecher, Sullivan, & Hatfield, 1994; Townsend, 1989; Wiederman & Allgeier, 1992). In this article, we use sexual strategies theory to generate hypotheses about the effectiveness of tactics of mate attraction. Specifically, we predict when attraction tactics will be differentially effective for each sex, each temporal context, and each Sex \times Temporal Context quadrant.

Previous Research on Effective Tactics of Mate Attraction

There are two fundamental avenues for increasing romantic attractiveness and thus increasing one's chances at successfully entering into a desired mating relationship (Buss & Dedden, 1990). The first avenue is to embody, or at least appear to embody, the characteristics preferred by the opposite sex. This form of mate competition in which perceptions of one's own characteristics are manipulated involves tactics of *self-promotion*. The second major avenue is to reduce the perceived mate value of same-sex competitors. Convincing the opposite sex that one's competitor does not possess the attributes they desire enhances one's relative standing. This form of mate competition involves tactics of *competitor derogation*. Previous studies have shown that there are sex differences in the effectiveness of specific tactics of self-promotion (Buss, 1988a) and competitor derogation (Buss & Dedden, 1990). However, the effectiveness of certain tactics of self-promotion and competitor derogation may further depend on the temporal context in which they are used.

For instance, Buss and Dedden (1990) found that a woman who tells a potential mate that another woman is promiscuous does not effectively lower the other woman's mate value, contradicting the prediction that men would shun women who compromise their certainty in paternity. They speculated that this particular tactic of competitor derogation may require temporal contextualization. A man pursuing a short-term sexual strategy may actually desire a woman who is promiscuous because it signals increased sexual availability and less chance of entanglement. A man pursuing a long-term strategy may not shun promiscuity per se, rather, he may desire sexual exclusivity once in the relationship to ensure that the child in which he is investing heavily is, in fact, his own.

Buss (1988a) also found an unexplained anomaly: Sexually provocative behaviors were very effective for women when performed, but they were performed only rarely. A consideration of temporal context suggests that these self-promotion tactics are seemingly effective because, when performed in the context of short-term mate attraction, they signal sexual availability, an attribute highly valued by men seeking short-term partners (Oliver & Sedikides, 1992). Provocative behaviors may have been performed infrequently, however, because so many women compete principally in the long-term mating context (Buss & Schmitt, 1993).

Hypotheses Tested in the Present Study

As an effort to address these anomalous findings and to further understanding of the effects of temporal context on romantic attraction, we developed seven hypotheses and designed two studies to test them. Each hypothesis links context-specific psychological mechanisms to predicted patterns of tactic effectiveness judgments. A prediction of "more effective" indicates that we predict a main effect of either temporal context or sex of the actor. When we predict that a tactic will be most effective, on the other hand, we predict an interaction between temporal context and sex of the actor. In Hypothesis 1, for instance, we predict that sexual availability tactics will be most effective when used by women in the context of short-term mate

competition, meaning that the tactic will be more effective for women in the short-term context than for any other Sex \times Temporal Context quadrant. An interaction prediction, therefore, suggests that it will be necessary to know both the temporal context in which the tactic is performed and the sex of the actor who performed the tactic to account for the variance in effectiveness judgments. We first present interaction hypotheses and then move to main effect hypotheses.

Hypothesis 1: Tactics involving cues to sexual availability will be judged most effective when used by women in the context of short-term mate competition. Over human evolutionary history, men have been constrained in their reproductive success partly by restrictions on the number of women they can successfully inseminate. Although short-term relationships provide men with an opportunity to greatly increase their genetic legacy, pursuing a short-term strategy leads men to face an important adaptive problem: identifying sexually available women. Identifying sexually available women saves time and energy in a strategy that attempts to maximize number of partners (Buss & Schmitt, 1993). Time and effort spent in courting women who give cues to sexual unavailability would interfere with the successful pursuit of a short-term sexual strategy.

Empirical evidence suggests that men, in comparison with women, have lower thresholds for opportunistic copulation (R. D. Clark & Hatfield, 1989; Symons, 1979), have more permissive premarital sexual standards (Hendrick, Hendrick, Slapion-Foote, & Foote, 1985), are more likely to engage in extramarital sex (Blumstein, 1983; Hunt, 1974; Kinsey et al., 1948, 1953), and more often seek short-term matings (Buss & Schmitt, 1993). Clearly, not all men seek short-term mates at all times. However, when men do pursue a short-term mate, they appear to possess an evolved psychological mechanism that becomes activated and inclines them to prefer sexual availability (Buss & Schmitt, 1993).

Therefore, Hypothesis 1 posits that effective tactics of intrasexual competition for women seeking a short-term mate will be those that manipulate men's perceptions of female sexual availability. Specifically, tactics of self-promotion that suggest one's own sexual availability, and tactics of competitor derogation that convey a message of the rival's sexual unavailability, will be judged most effective for women seeking short-term mates.

Hypothesis 2: Tactics involving cues to exclusive sexual access will be judged most effective when used by women in the context of long-term mate competition. When a man pursues a long-term sexual strategy with a woman, his reproductive success depends on exclusive sexual access to that woman. Men who do not attend to cues of exclusive sexual access risk a mate's infidelity that could lead to lower paternity certainty and larger investments in competitors' gametes. Thus, a crucial adaptive problem men historically had to solve in the context of long-term mating was exclusively monopolizing a woman's reproductive capacity. Women, in contrast, are 100% certain of maternity and, thus, have not faced this adaptive problem.

Hypothesis 2 suggests that the tactics of intrasexual competition that involve cues to exclusive sexual access within a relationship will be judged most effective for women seeking a long-term mate. Thus, tactics of self-promotion that suggest sexual exclusivity should be judged most effective for women seeking a long-term mate. A woman may also enhance her own relative

mate value by signaling to men that her intrasexual rival is unlikely to provide exclusive sexual access to a man once in the relationship. Therefore, competitor derogation tactics that signal a lack of exclusive access to a rival woman's reproductive capacity will be judged most effective for women seeking a long-term mate.

Hypothesis 3: Tactics involving cues to *current* ability and willingness to devote resources will be judged most effective when used by men in the context of short-term mate competition; tactics involving cues to *future* ability and willingness to devote resources will be judged most effective when used by men in the long-term context; and general indications of resources will be judged more effective for use by men than for use by women. Trivers (1972) provided an important elaboration of Darwin's sexual selection theory, proposing that the sex investing most in the progeny should be more discriminative in terms of mate choice. Poor mating decisions are more costly to those who invest more in offspring. In humans, women typically have a higher level of minimum investment than men. The typical minimum investment of a woman has been placentation, 9 months of gestation, and a prolonged period of lactation. Ancestral men minimally required a smaller amount of time and energy to produce offspring. Furthermore, men historically have disproportionately controlled resources, which they may or may not devote to the offspring. Because women have had to solve the adaptive problem of securing a man's devotion of resources to them and their children, they may solve this problem, in part, by valuing cues to men's willingness and ability to provide parental investment (Buss & Schmitt, 1993; Greenless & McGrew, 1994; Wiederman & Allgeier, 1992).

Hypothesis 3 suggests that tactics of attracting mating partners that involve cues to the willingness and ability to devote resources will be judged more effective for men than for women. Specifically, tactics of self-promotion that suggest current devotion of resources will be judged particularly effective for men in the short-term mating context. Tactics of self-promotion and competitor derogation that manipulate the perception of cues to primarily future ability and willingness to devote resources will be judged most effective for men in the long-term context. Indications of current resources for which no immediate short-term dispersion or future long-term potential is given will be judged, overall, to be more effective for men than for women.

Hypothesis 4: Tactics involving cues to dominance and status will be judged most effective when used by men in the context of short-term mate competition. Many selective benefits can come from pursuing a short-term sexual strategy (Buss & Schmitt, 1993). One potential benefit for women is that they can gain genetic access to otherwise unattainable men such as those in positions of high status (Smith, 1984), and they may subsequently confer status-linked genetic traits to their sons (Gangestad & Simpson, 1990). Another potential benefit from short-term mating for women is increased protection and provision (Smith, 1984; Smuts, 1991), in that multiple men may be answerable as the putative father of their children.

Both theories of how women may gain from short-term mating hinge on the proposition that evolutionary benefits will accrue most notably when the men are especially high in dominance and status. In support of these theories, women who tend to seek short-term relationships do prefer men higher in dominance and status (Simpson & Gangestad, 1992). Also, experi-

mental evidence suggests that dominance cues are intimately connected to women's feelings of sexual attraction to men (Jensen-Campbell, Graziano, & West, 1995; Sadalla, Kenrick, & Vershure, 1987). Women seeking long-term mates clearly do not abhor cues to dominance and status because status is linked to long-term resource potential (Buss, 1994). Rather, women seeking short-term partners may place relatively more emphasis on such attributes because genetic quality and physical protection constitute a larger portion of the possible benefits of this strategy for women (Greiling, 1993).

Hypothesis 4 suggests that tactics of mate attraction that manipulate the cues to dominance and status will be judged most effective when used by men in the context of short-term mate competition. We predicted, therefore, that self-promotion tactics signaling high levels of dominance and status will be judged most effective for men in the short-term mating context. Derogation of a competitor's dominance and status will also be judged most effective for men in the short-term mating context.

Hypothesis 5: Tactics involving cues to enduring commitment will be judged more effective in the context of long-term mate competition than in the context of short-term mate competition. When pursuing a long-term sexual strategy, both sexes face the adaptive problem of finding a partner who will commit to the relationship for a sustained period of time (Buss & Schmitt, 1993). There are tremendous costs to those who, expecting long-term commitment, devote themselves to a relationship but do not receive a reciprocal investment. Women are particularly susceptible to being abandoned and left to raise children alone. Men face the same problem and, in addition, may not have the opportunity to provide crucial resources to the child.

As a result, both men and women prefer, in potential long-term mates, cues indicating an interest in investing substantial effort and energy in the relationship (Buss & Schmitt, 1993). Hypothesis 5, therefore, suggests that people will more effectively attract long-term mating partners than short-term mating partners by displaying signs of enduring commitment and an expressed expectation of a long relationship duration.

Hypothesis 6: Tactics involving cues to kindness and understanding will be judged more effective in the context of long-term mate competition than in the context of short-term mate competition. Throughout evolutionary history, those men and women who preferred long-term mating relationships over short-term relationships also preferred to avoid risky situations and individuals (Simpson & Gangestad, 1992), such as those that threatened to impose substantial costs on themselves and their children. Finding a mate who will not continuously impose costs is a crucial long-term adaptive problem for both sexes.

Previous research has shown that men and women prefer kindness and understanding more in potential long-term mating partners than in potential short-term mating partners (Buss & Schmitt, 1993). There are many substantive costs involved in forming a long-term relationship with an unkind person: such individuals are more condescending, jealous, self-centered, and unfaithful than their agreeable counterparts (Buss, 1994). For these reasons, we predicted that those self-promotion tactics that indicate kindness and understanding, as well as derogation tactics that suggest a lack of kindness and understanding in competitors, will be more effective when used in the context of

long-term mate competition than when used in the context of short-term mate competition.

Hypothesis 7: Tactics involving cues to physical attractiveness will be judged more effective in the context of short-term mate competition than in the context of long-term mate competition and will be judged more effective for use by women than for use by men. Previous research has shown that both women and men prefer physical attractiveness more in potential short-term mating partners than in potential long-term partners (Buss & Schmitt, 1993). In addition, those people with a predisposition to form short-term relationships prefer physical attractiveness in potential partners more than those people who tend to form long-term relationships (Simpson & Gangestad, 1992). For women, the reason may be that, over evolutionary history, those women who mated with attractive men had the opportunity to pass that characteristic to their sons, giving the sons a better opportunity for reproductive success through engaging in a short-term sexual strategy (Gangestad & Simpson, 1990). In fact, the role of better gene acquisition for both males and females in the context of short-term mating has been central to several evolutionary theories of mate competition and tactical attraction (Cronin, 1991; Hamilton & Zuk, 1982; Trivers, 1985).

For men, however, the high premium placed on physical attractiveness in the short-term context may also reflect the importance of the need for immediate conception. Men face the adaptive problem of choosing women who are able to have children immediately (defined as fertility) when they use a short-term sexual strategy. Men have also faced the adaptive problem of choosing women who are able to have many children over time (defined as reproductive value) when they use a long-term sexual strategy. Age and health are powerful indications to men of fertility and reproductive value (Williams, 1975), and physical attractiveness is a strong cue to age, health, and parasite resistance (Buss, 1987; Gangestad & Buss, 1993; Symons, 1979). The adaptive problem of assessing fertility and reproductive value is solved, in part, by men valuing physical attractiveness in both short-term and long-term mating partners (Buss & Schmitt, 1993; Greenless & McGrew, 1994).

Hypothesis 7, therefore, suggests that both men and women will be judged to more effectively use physical attractiveness tactics in the context of short-term mate competition than in the context of long-term mate competition. Hypothesis 7 also suggests that, overall, women will be judged to more effectively use physical attractiveness tactics than men.

Preliminary Study: Acts and Tactics of Self-Promotion

The goal of the preliminary study was to identify empirically the specific acts used by men and women in attempting to attract mates in the contexts of both long-term and short-term mating. We adapted an act nomination procedure for identifying naturally occurring acts. This procedure has previously been used to identify tactics of self-promotion (Buss, 1988a) but was used without regard for potential differences in effectiveness as a result of temporal context. We conducted the present study to identify a wide range of diverse acts of attracting mates in both short-term and long-term mating contexts.

Method

Participants

Participants in this study were 40 college students (18 men and 22 women) enrolled at a large state university. Participation partially fulfilled an experimental requirement for a psychology course.

Act Nominations

Each student received a sheet of paper asking for age and sex and containing the following instructional set:

In this study, we are interested in the things people do to attract a *long-term mating partner* (e.g., someone you might marry). We are interested in *specific behaviors*. One should be able to answer the following questions about each of your act nominations: Have people ever performed this act? If so, how often have they performed it?

Please think of three people you know (this may include yourself) who have done things to attract a *long-term mate*. List first the acts that females you know have done; then list the acts that males you know have done in order to attract a long-term mate.

Five lines were provided for students to record their nominations for each sex. The order of sex of actor was reversed for half of the students. After this recording, we repeated the instructional set with the relationship context altered from long-term mating to short-term mating. An additional five lines were provided for students to record their nominations for each sex; again, order of sex of actor was counterbalanced.

Results and Discussion

The primary goal of this study was to identify a large number of topographically diverse acts that men and women use to make themselves more attractive to the opposite sex for both long-term and short-term mating relationships. We retained all distinct acts of self-promotion. These were then added to previously obtained acts of self-promotion generated from a context-agnostic act nomination procedure (Buss, 1988a). All subsequent duplications encountered in the nominations were eliminated, yielding a list of 130 distinct acts of attracting mating partners. We derived a preliminary set of 31 superordinate tactics of self-promotion, all of which are shown with sample acts and composite reliabilities in Appendix A. Example tactics include Display Resources, Enhance Physical Appearance, Suggest Sex, Act Dumb, Act Honest, Display Sexual Exclusivity, Show Resource Potential, Act Flirtatious, Act Solicitous, and Use Social Networking. Tactic composites were used to clearly test hypotheses, to provide greater reliability, and for economy of data presentation.

Intrasexual competition also involves making competitors less attractive to members of the opposite sex (Buss & Dedden, 1990). Tactics of competitor derogation are also predicted to exploit the preference mechanisms of the opposite sex. According to sexual strategies theory, the effectiveness of certain derogation tactics should depend on the sex of the actor and the temporal context of the mating relationship being pursued. Twenty-eight tactics of competitor derogation were obtained from a previous study (Buss & Dedden, 1990) and are shown in Appendix B. Example tactics include Spread Rumors About Competitor, Derogate Rival's Intelligence, Call Rival Insensitive, Derogate Rival's Current Finances, and Call Rival Promiscuous.

Studies 1 and 2: Perceived Effectiveness of Self-Promotion and Competitor Derogation Tactics

The primary goal of Studies 1 and 2 was to examine the notion that effective acts of attraction relate to the adaptive problems faced by men and women in short-term and long-term contexts. We developed seven specific hypotheses concerning the adaptive problems of sexual availability, sexual exclusivity, resource dispersion and potential, dominance and status, commitment, kindness and understanding, and physical attractiveness. In Study 1, we examined the effectiveness of self-promotion tactics, those intended to increase the attractiveness of the actor. In Study 2, we examined the effectiveness of competitor derogation tactics, those meant to decrease the attractiveness of the actor's rival. We combine the methods and results of the two studies for reportorial efficiency.

Method

Participants

Participants in Study 1 were 108 undergraduates (58 men and 50 women), and participants in Study 2 were 86 undergraduates (44 men and 42 women). Participation partially fulfilled a requirement for a psychology course. None of the students in Study 1 had participated in the preliminary study. None of the students in Study 2 had participated in the preliminary study or in Study 1.

Design

The design for both studies was a 2×2 factorial. The first variable was temporal context (short term vs. long term), and the second was sex of actor.

Procedure

The students in Study 1 received a six-page instrument asking for age and sex and containing the following instructional set:

Below are listed acts that someone might perform to attract members of the opposite sex. In this study, we are interested in *how effective* you think each act is at achieving this goal. Please read each act carefully, and think about its *consequences*. Then rate each act on how likely the act is to be in successfully attracting a member of the opposite sex. We ask you to rate the effectiveness of each act in attracting mates in two relationship contexts:

- (1) *Short-term partners* (e.g., brief affair, one-night stand, etc.).
- (2) *Long-term partners* (e.g., someone you might marry).

Use this 7-point scale: a "7" means that you feel the act will be *very likely* to be effective in attracting members of the opposite sex. A "1" means that you feel the act is *not very likely* to be effective in attracting members of the opposite sex. A "4" means that you feel the act is *moderately likely* to be effective in attracting a member of the opposite sex. Use intermediate numbers for intermediate likelihoods of effectiveness in attracting members of the opposite sex. Remember, please rate these likelihoods of effectiveness for attracting either *long-term* or *short-term* mating partners.

Following these instructions was a visual display of the rating scale and the 130 acts to be assessed on effectiveness. Half of the male students and half of the female students received the male-actor version ("He . . ."); the other half of each sex received the female-actor version ("She . . .").

The students in Study 2 received a six-page instrument asking for age and sex and containing the following instructional set:

Below are listed acts that someone might perform to derogate members of the same sex when competing for members of the opposite sex. In this study, we are interested in *how effective* you think each act is at achieving this goal. Please read each act carefully, and think about its *consequences*. Then rate each act on how likely the act is to be in successfully making a competitor less attractive to a member of the opposite sex. We ask you to rate the effectiveness of each act in attracting mates in two relationship contexts:

- (1) *Short-term partners* (e.g., brief affair, one-night stand, etc.).
- (2) *Long-term partners* (e.g., someone you might marry).

Use this 7-point scale: a "+3" means that you feel the act will be *very likely* to be effective in derogating members of the same sex. A "-3" means that you feel the act is *not very likely* to be effective in derogating members of the same sex. A "0" means that you feel the act is *moderately likely* to be effective in derogating a member of the same sex. Use intermediate numbers for intermediate likelihoods of effectiveness in derogation. Remember, please rate these likelihoods of effectiveness for derogating either *long-term* or *short-term* mate competitors.

The rating scale of -3 to 3 differed from that of Study 1 for two reasons. First, we wanted to use the same scale used in the study from which we drew the derogation acts. This would render our findings comparable to previous research. Second, the previous investigation used the -3 to 3 scale precisely because derogation tactics are often disadvantageous to the user. In the present studies, we expected some of the derogation tactics to be ineffective because they were obtained from a study designed to assess only long-term effectiveness.

Following these instructions was a visual display of the rating scale and the 83 acts to be assessed on effectiveness. Half of the male students and half of the female students received the male-actor version ("He . . ."); the other half of each sex received the female-actor version ("She . . .").

Results and Discussion

Reliabilities of Tactic Effectiveness Judgments

Appendix A displays sample acts from all 31 tactics of self-promotion. Appendix B displays sample acts from all 28 tactics of competitor derogation. We computed alpha reliabilities (Cronbach, 1951) for each of the tactics of self-promotion and competitor derogation. For each tactic, the average alpha across conditions, as well as the range of alphas across conditions, reached appreciable levels, and the mean alphas are shown in the respective appendixes. The numbers of main effects due to sex of rater did not reach levels above those that would be expected by chance alone, indicating that there appears to be sufficiently high agreement among judges across the contexts for highly reliable composite judgments to be obtained.

Tests of Hypotheses

The effects of temporal context and sex of actor were tested in a mixed analysis of variance design; temporal context (short term vs. long term) was a within-subject variable, and sex of actor (male vs. female) was a between-subjects variable. Our dependent variable was the judged effectiveness of specific tactics of self-promotion or competitor derogation. Each tactic consisted of the mean average of all acts subsumed by it on the basis of preliminary study and previous studies. For some hypotheses, we predict interaction effects; for others, we predict main effects of temporal context. When more than one tactic provided a test of a hypothesis, mixed multivariate analyses of

variance were performed, and we present the multivariate *F* values in the text. All univariate tests of hypotheses, and their corresponding *F* values, are presented in tables. The precise form of all effects is indicated by the pattern of subscripts presented in the tables. If two means share a common subscript, they are not significantly different ($p > .05$).

Sexual availability tactics. Are tactics that involve cues to sexual availability judged most effective for women in the short-term mating context? That is, of all four Sex × Temporal Context quadrants, are women who pursue a short-term mate the most effective at acting seductively, making propositions, and so on? As shown in Table 1, the tactics of mate attraction that provided tests of Hypothesis 1 were Act Flirtatious, Act Seductively, Have Sex, Make Proposition, and Sexualize Appearance. In support of this hypothesis, a significant multivariate interaction of sex and temporal context was obtained, $F(5, 102) = 7.09, p < .001$. For all five individual sexual availability tactics, we found significant univariate interactions of sex and temporal context. We list univariate tests of tactic interactions in the last column of Table 1. The precise form of the interac-

tion for each tactic supported our predictions, as revealed by the pattern of subscripts next to each mean.

The tactics of competitor derogation that tested this hypothesis were Call Rival Sexually Unavailable and Call Rival Promiscuous. As shown in Table 1, the predicted interactions of sex and temporal context for both Call Rival Sexually Unavailable and Call Rival Promiscuous were observed, as indicated by the interaction *F* value and the pattern of subscripts. Suggesting that your competitor is sexually unavailable was judged most effective for women competing for a short-term mate, whereas calling your rival promiscuous was judged least effective for women seeking a short-term mating partner. The later tactic was judged ineffective because it indicates to men that the woman's competitor is currently sexually available, which is precisely what men desire in a short-term mate (Buss & Schmitt, 1993).

Sexual exclusivity tactics. As shown in Table 2, the tactic of self-promotion that tested Hypothesis 2 was Display Sexual Exclusivity. Tactic effectiveness judgments showed the predicted interaction effect, with women in the long-term context

Table 1
Tactic Effectiveness Judgments Providing Tests of Hypothesis 1

Tactic	Mating context				Sex of actor	Mating context	Sex × Context	
	Short term		Long term					<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Self-promotion tactics predicted to be judged most effective for women in short-term mating context								
Act Flirtatious								
Men	5.53 _a	0.98	5.08 _b	1.25	4.49*	49.32***	5.95**	
Women	6.12 _c	0.75	5.19 _{a,b}	0.96				
Act Seductively								
Men	4.53 _a	1.46	3.39 _b	1.24	22.81***	168.66***	10.66***	
Women	5.93 _c	1.01	4.03 _a	1.34				
Have Sex								
Men	5.18 _a	1.52	4.74 _b	1.58	8.23**	40.97***	7.00**	
Women	6.15 _c	1.04	5.09 _{a,b}	1.20				
Make Proposition								
Men	3.89 _a	1.39	2.70 _b	1.10	31.96***	181.87***	14.57***	
Women	5.52 _c	1.16	3.40 _a	1.31				
Sexualize Appearance								
Men	3.66 _a	1.82	2.23 _b	1.15	53.90***	139.44***	8.08**	
Women	5.86 _c	1.41	3.58 _a	1.50				
Competitor derogation tactic predicted to be judged most effective for women in short-term mating context								
Call Rival Sexually Unavailable								
Men	0.74 _a	1.23	0.58 _a	1.21	5.57*	10.58**	4.41*	
Women	1.52 _b	1.08	0.78 _a	1.03				
Competitor derogation tactic predicted to be judged least effective for women in short-term mating context								
Call Rival Promiscuous								
Men	1.05 _a	1.21	1.42 _b	1.14	2.16	48.28***	18.89***	
Women	0.09 _c	1.44	1.70 _b	1.22				

Note. The degrees of freedom for all univariate analyses of variance involving self-promotion tactics are (1, 106) and for all competitor derogation tactics are (1, 84). Scales ranged from *not at all effective* (1) to *extremely effective* (7) for tactics of self-promotion. Scales ranged from *not very likely to be effective* (-3) to *very likely to be effective* (+3) for tactics of competitor derogation. Means sharing a common subscript are not significantly different ($p > .05$).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2
Tactic Effectiveness Judgments Providing Tests of Hypothesis 2

Tactic	Mating context				Sex of actor	F	Sex × Context
	Short term		Long term				
	M	SD	M	SD			
Self-promotion tactic predicted to be judged most effective for women in long-term mating context							
Display Sexual Exclusivity							
Men	4.56 _a	1.85	6.08 _b	1.16	0.04	104.17***	4.31*
Women	4.21 _a	1.52	6.52 _c	1.17			
Competitor derogation tactic predicted to be judged most effective for women in long-term mating context							
Question Rival's Fidelity							
Men	0.94 _a	1.37	1.59 _b	1.20	1.56	57.54***	17.12***
Women	-0.10 _c	1.52	2.11 _d	1.24			

Note. The degrees of freedom for all univariate analyses of variance involving self-promotion tactics are (1, 106) and for all competitor derogation tactics are (1, 84). Scales ranged from *not at all effective* (1) to *extremely effective* (7) for tactics of self-promotion. Scales ranged from *not very likely to be effective* (-3) to *very likely to be effective* (+3) for tactics of competitor derogation. Means sharing a common subscript are not significantly different ($p > .05$).

* $p < .05$. *** $p < .001$.

being the most effective of all of the Sex × Temporal Context quadrants. The derogation tactic that tested Hypothesis 2 was Question Rival's Fidelity (see Table 2). This tactic also showed a significant interaction effect. It should be noted that although women in the long-term context were judged significantly more effective than men in the long-term context ($M = 2.11$ vs. $M = 1.59$), $t(84) = 1.96$, $p < .05$, women in the short-term context were judged particularly ineffective, potentially contributing to the observed crossover interaction.

Resource-signaling tactics. Are men judged more effective than women at attracting mates by suggesting they are willing and able to devote resources, and are certain resource-signaling tactics judged particularly effective in specific temporal contexts? As shown in Table 3, two of the tactics of self-promotion that tested Hypothesis 3 were Give Resources Immediately and Show Resource Potential. In support of Hypothesis 3, Give Resources Immediately was judged most effective for men seeking a short-term mate, whereas Show Resource Potential was judged most effective for men seeking a long-term mate.

Competitor derogation tactics that provided tests of Hypothesis 3 are listed next in Table 3. We found only marginal support for Hypothesis 3 in the form of a multivariate interaction of sex and temporal context, $F(3, 82) = 2.37$, $p < .10$. However, both Derogate Rival's Achievements and Derogate Rival's Resource Potential showed significant univariate interactions of sex and temporal context. Examination of the subscripts in Table 3 shows that when using the competitor derogation tactics (e.g., Suggest Rival Has No Goals), men ($M = 1.58$) were judged significantly more effective than women ($M = 0.81$) in the context of long-term mate competition, $t(84) = 3.31$, $p < .001$, but women in the short term were believed to be relatively ineffective when using the Suggest Rival Has No Goals tactic ($M = -0.24$). Therefore, the hypothesis was largely supported in the long-term context, but the pattern of mean judgments in the short-term context lessened the observed interaction effect. Women may have a difficult time being effective with derogation

tactics when trying to dissuade a man from engaging in a short-term relationship with another woman, with the previously noted exception of the Call Rival Sexually Unavailable tactic.

We predicted that cues to resource holdings for which no immediate short-term dispersion or future long-term potential is implied would be judged more effective for men than for women. As shown in Table 3, the Display Resources tactic was judged more effective for men than for women. As seen by the pattern of subscripts for this tactic, the main effect for sex of actor was largely carried by differences in the short-term context. In the long-term context, men and women were judged almost equally effective at displaying resources. However, men in the short-term context were judged significantly more effective than women. Perhaps displaying resources is a filtering cue for women, after which short-term dispersion of resources becomes more likely.

Derogating a competitor's general resources, as represented by the derogation tactic Derogate Rival's Current Finances, was judged more effective for men than for women. However, the effectiveness judgments indicate that neither men nor women were perceived to be particularly effective; women were simply more ineffective across both temporal contexts than men. This suggests the possibility that economically deprived women are more attractive to both men seeking short-term partners and men seeking long-term partners, or at least that women cannot effectively derogate a rival by suggesting economic powerlessness.

Dominance tactics. As shown in the first section of Table 4, the two self-promotion tactics used to test Hypothesis 4 were Act Macho and Display Surgency. As predicted, students judged these tactics as most effective when used by men seeking short-term relationships, $F(2, 105) = 8.75$, $p < .001$. The tactics of competitor derogation that tested Hypothesis 4 were Derogate Rival's Strength, Derogate Rival's Surgency, Dominate Competitor, and Outshine Rival in Sports. These tactics also showed

Table 3
Tactic Effectiveness Judgments Providing Tests of Hypothesis 3

Tactic	Mating context				Sex of actor	Mating context	Sex × Context
	Short term		Long term				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Self-promotion tactic predicted to be judged most effective for men in short-term mating context							
Give Resources Immediately							
Men	4.87 _a	1.37	4.44 _b	1.23	9.63**	4.14*	4.89*
Women	4.02 _b	1.11	4.04 _b	0.93			
Self-promotion tactic predicted to be judged most effective for men in long-term mating context							
Show Resource Potential							
Men	3.52 _a	1.46	4.74 _b	1.33	17.25***	36.35***	6.38**
Women	2.93 _c	1.35	3.43 _a	1.45			
Competitor derogation tactics predicted to be judged most effective for men in long-term mating context							
Derogate Rival's Achievements							
Men	-0.64 _a	1.16	0.39 _b	1.33	19.43***	10.82***	7.44**
Women	-1.07 _a	1.28	-0.98 _a	1.14			
Derogate Rival's Resource Potential							
Men	-0.32 _a	0.96	1.53 _b	1.04	8.28**	107.98***	5.11*
Women	-0.44 _a	0.89	0.75 _c	1.09			
Suggest Rival Has No Goals							
Men	0.00 _b	0.99	1.58 _b	1.00	9.80**	69.65***	2.86
Women	-0.24 _a	1.03	0.81 _c	1.15			
Self-promotion tactic predicted to be judged more effective for men							
Display Resources							
Men	4.17 _a	1.59	2.94 _b	1.31	4.96*	92.35***	1.17
Women	3.51 _c	1.48	2.53 _b	1.13			
Competitor derogation tactic predicted to be judged more effective for men							
Derogate Rival's Current Finances							
Men	-0.06 _a	1.12	0.14 _a	1.05	29.27***	4.12*	0.07
Women	-1.20 _b	1.02	-0.94 _b	1.14			

Note. The degrees of freedom for all univariate analyses of variance involving self-promotion tactics are (1, 106) and for all competitor derogation tactics are (1, 84). Scales ranged from *not at all effective* (1) to *extremely effective* (7) for tactics of self-promotion. Scales ranged from *not very likely to be effective* (-3) to *very likely to be effective* (+3) for tactics of competitor derogation. Means showing a common subscript are not significantly different ($p > .05$).

* $p < .05$. ** $p < .01$. *** $p < .001$.

a significant multivariate interaction of sex and temporal context, $F(4, 81) = 4.90, p < .001$.

As shown in Table 4, each individual tactic of self-promotion and competitor derogation was judged most effective when used by men in the short-term context. It is worth noting that the tactics of competitor derogation were judged, overall, as relatively ineffective. However, of all of the Sex × Temporal Context quadrants, men competing for a short-term mate was the sole quadrant in which these tactics were judged to be at all effective. Such a uniform valence shift provides strong support for Hypothesis 4.

Commitment tactics. The six self-promotion tactics used to test Hypothesis 5 were Act Helpful, Act Honest, Become Friends, Communicate Often, Invoke Love, and Show Commitment. Use of these tactics indicates an interest in investing effort and energy in the relationship. The predicted multivariate main effect of temporal context was significant, $F(6, 101) = 27.89, p$

$< .001$. As shown in Table 5, students judged each of these tactics as more effective for attracting a long-term mate than for attracting a short-term mate, confirming the prediction that tactics involving the expression of commitment are more effective for both men and women in the context of long-term mate competition. In fact, men and women were judged to be identically effective in the long-term context with one of the most effective commitment tactics: Invoke Love ($M = 6.18$).

The competitor derogation tactics used to test Hypothesis 5 were Call Rival Exploitative and Call Rival Selfish. Shown in the second section of Table 5, these tactics also displayed the predicted temporal context effect. Together, they showed a significant multivariate main effect of temporal context, $F(2, 83) = 10.32, p < .001$. Again, the pattern indicated that when women use derogation tactics, they are judged as particularly ineffective in the context of short-term mate competition.

Table 4
Tactic Effectiveness Judgments Providing Tests of Hypothesis 4

Tactic	Mating context				Sex of actor	Mating context	Sex × Context
	Short term		Long term				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Self-promotion tactics predicted to be judged most effective for men in short-term mating context							
Act Macho							
Men	3.52 _a	0.89	2.93 _b	0.78	63.17***	29.74***	24.55***
Women	2.19 _c	0.73	2.16 _c	0.54			
Display Surgency							
Men	4.38 _n	1.18	3.95 _b	1.02	5.93*	10.58**	4.40*
Women	3.74 _b	1.10	3.65 _b	1.01			
Competitor derogation tactics predicted to be judged most effective for men in short-term mating context							
Derogate Rival's Strength							
Men	0.16 _a	1.43	-0.52 _b	1.34	16.82***	5.02*	10.16**
Women	-1.36 _c	1.32	-1.24 _c	1.46			
Derogate Rival's Surgency							
Men	0.25 _a	1.19	-0.16 _b	1.08	12.40***	1.69	4.94*
Women	-0.81 _c	1.16	-0.70 _c	1.29			
Dominate Competitor							
Men	0.20 _a	1.28	-0.46 _b	1.30	26.18***	24.83***	7.96**
Women	-1.21 _c	0.89	-1.40 _c	0.99			
Outshine Rival in Sports							
Men	0.23 _a	1.31	-0.34 _b	1.38	10.59**	8.83**	5.33*
Women	-0.88 _c	1.33	-0.95 _c	1.27			

Note. The degrees of freedom for all univariate analyses of variance involving self-promotion tactics are (1, 106) and for all competitor derogation tactics are (1, 84). Scales ranged from *not at all effective* (1) to *extremely effective* (7) for tactics of self-promotion. Scales ranged from *not very likely to be effective* (-3) to *very likely to be effective* (+3) for tactics of competitor derogation. Means showing a common subscript are not significantly different ($p > .05$).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Kindness tactics. The mate attraction tactics used to test Hypothesis 6 were Act Kind and Act Sensitive. These are listed at the end of the first section of Table 5. We obtained a significant multivariate main effect of temporal context, $F(2, 105) = 39.10$, $p < .001$, and students also judged both individual tactics more effective in the long-term context, fully supporting Hypothesis 6. As shown at the end of the second section of Table 5, the Call Rival Insensitive derogation tactic was judged more effective in long-term mate competition than short-term mate competition, providing further support of Hypothesis 6.

Physical attractiveness tactics. We predicted that people would be judged more effective at attracting short-term mates than long-term mates and that women would be judged more effective than men when using tactics that manipulate impressions of physical attractiveness. In support of Hypothesis 7, and shown in the third section of Table 5, students judged the Enhance Physical Attractiveness tactic as more effective for use in the context of short-term mate competition than in the temporal context of long-term mating and as more effective for use by women than for use by men. Correspondingly, the derogation tactics Derogate Rival's Appearance and Derogate Rival's Physical Attractiveness, as seen in the last section of Table 5, were judged more effective in short-term than in long-term mate competition. Together, they showed a significant multivariate temporal context effect, $F(2, 83) = 48.62$, $p < .001$. However,

the multivariate effect for sex of actor was not significant, $F(2, 83) = 0.42$, *ns*.

Women were judged, overall, to be more effective than men at using the Derogate Rival's Physical Attractiveness tactic, $F(1, 84) = 4.03$, $p < .05$, but not at using the Derogate Rival's Appearance tactic, $F(1, 84) < 1$. This last competitor derogation tactic may have been a poor test of this hypothesis because of some of the specific acts it contains refer to status-oriented appearance. For example, one of the acts is "he told her the other man wore shabby clothes." If this is the case, the tactic contains acts that would be judged more effective for men to use (status related) and items that would be judged more effective for women to use (physical attractiveness related). This may well be the case; the sex of actor main effect was insignificant.

Overall, the temporal context prediction from Hypothesis 7 was well supported. For all relevant tactics, manipulating cues to physical attractiveness was judged more effective in short-term than long-term mate competition. The sex of actor prediction of Hypothesis 7 was only partially supported. One of the competitor derogation tactics was not judged more effective for use by women than for use by men.

Most effective specific acts for men and women in short-term and long-term contexts. Table 6 lists the 10 most effective acts of self-promotion for each of the Sex × Temporal Context quadrants. In the context of attracting a short-term mate, 6 of 10 acts

Table 5
Tactic Effectiveness Judgments Providing Tests of Hypotheses 5, 6, and 7

Tactic	Mating context				Sex of actor	F	Sex × Context
	Short term		Long term				
	M	SD	M	SD			
Self-promotion tactics predicted to be judged more effective in long-term mating context							
Act Helpful							
Men	5.22 _a	1.34	6.03 _b	0.95	10.03**	55.87***	1.64
Women	4.65 _c	1.35	5.55 _a	1.07			
Act Honest							
Men	4.99 _a	1.69	6.25 _b	0.92	2.91	139.48***	3.85*
Women	4.38 _c	1.44	6.14 _b	0.89			
Become Friends							
Men	4.44 _a	1.31	5.99 _b	1.10	2.67	129.84***	0.14
Women	4.08 _c	1.32	5.72 _b	1.21			
Communicate Often							
Men	4.44 _a	1.57	5.14 _b	1.27	12.06***	33.81***	0.63
Women	3.55 _c	1.39	4.46 _a	1.28			
Invoke Love							
Men	3.96 _a	1.61	6.18 _b	1.01	0.97	180.98***	1.09
Women	3.59 _a	1.70	6.18 _b	0.93			
Show Commitment							
Men	3.57 _a	1.40	5.60 _b	1.09	3.42	200.81***	0.00
Women	3.25 _a	1.25	5.26 _b	0.95			
Act Kind							
Men	5.37 _a	1.25	5.57 _b	1.29	3.20	17.47***	4.91*
Women	4.73 _c	1.39	5.37 _b	1.34			
Act Sensitive							
Men	5.06 _a	1.21	6.11 _b	0.83	5.49*	119.11***	0.23
Women	4.64 _a	1.06	5.78 _c	0.78			
Competitor derogation tactics predicted to be judged more effective in long-term mating context							
Call Rival Exploitative							
Men	1.25 _a	1.05	1.72 _b	1.12	3.66	37.14***	5.93*
Women	0.58 _c	1.00	1.67 _b	1.03			
Call Rival Selfish							
Men	0.73 _a	1.06	1.36 _b	1.08	3.00	34.60***	3.57
Women	0.07 _c	1.37	1.31 _b	1.29			
Call Rival Insensitive							
Men	0.91 _a	1.05	1.07 _a	1.55	8.93**	6.71**	3.03
Women	-0.10 _c	1.34	0.71 _a	1.47			
Self-promotion tactic predicted to be judged more effective in short-term mating context and more effective for women							
Enhance Physical Attractiveness							
Men	4.38 _a	0.94	3.85 _b	0.98	21.56***	47.02***	0.00
Women	5.13 _c	0.87	4.61 _a	0.94			
Competitor derogation tactics predicted to be judged more effective in short-term mating context and more effective for women							
Derogate Rival's Appearance							
Men	-0.31 _a	0.84	-0.75 _b	1.00	0.40	23.03***	0.05
Women	-0.46 _a	1.17	-0.86 _b	1.05			
Derogate Rival's Physical Attractiveness							
Men	0.50 _a	1.09	-0.07 _b	1.06	4.03*	31.68***	0.43
Women	1.02 _c	1.31	0.30 _{a,b}	1.19			

Note. The degrees of freedom for all univariate analyses of variance involving self-promotion tactics are (1, 106) and for all competitor derogation tactics are (1, 84). Scales ranged from *not at all effective* (1) to *extremely effective* (7) for tactics of self-promotion. Scales ranged from *not very likely to be effective* (-3) to *very likely to be effective* (+3) for tactics of competitor derogation. Means sharing a common subscript are not significantly different ($p > .05$).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6
 10 Acts of Self-Promotion Judged Most Effective in Each Sex × Temporal Context Quadrant

Act of self-promotion	<i>M</i>	<i>SD</i>
10 acts judged most effective for men to attract a short-term mate		
He accepted her sexual offer	5.94	1.87
He made himself look good	5.92	1.33
He made a good first impression	5.91	1.39
He showed that he was attracted to her	5.87	1.23
He showered often	5.83	1.71
He showered with her	5.77	1.23
He made subtle physical contact	5.72	1.23
He was talkative and outgoing	5.72	1.32
He initiated social communication	5.64	1.26
He went out of his way to talk to her	5.60	1.26
10 acts judged most effective for women to attract a short-term mate		
She accepted his sexual offer	6.58	1.20
She suggested they spend time together alone	6.44	0.79
She flirted with him	6.36	0.85
She made subtle physical contact	6.33	0.96
She made him think of having sex with her	6.31	0.94
She asked him if he would have sex with her	6.31	1.22
She showered often	6.27	1.50
She made herself look good	6.25	0.91
She showed that she was attracted to him	6.22	0.88
She had sex with him	6.20	1.24
10 acts judged most effective for men to attract a long-term mate		
He was understanding of her problems	6.57	0.67
He remained faithful to her	6.45	1.08
He found common interests with her	6.40	0.93
He showed a loving devotion to her	6.40	0.97
He fell in love with her	6.38	1.18
He acted like himself	6.36	0.90
He was sensitive to her needs	6.34	0.76
He got to know her well	6.32	1.01
He dated her for a long time	6.28	1.26
He did special things for her	6.25	1.14
10 acts judged most effective for women to attract a long-term mate		
She showed a loving devotion to him	6.55	0.72
She avoided sex with men other than him	6.53	1.23
She remained faithful to him	6.51	1.17
She fell in love with him	6.42	1.05
She dated him for a long time	6.38	0.91
She found common interests with him	6.31	0.88
She showered often	6.29	1.55
She was sensitive to his needs	6.25	0.75
She acted like herself	6.24	0.92
She was understanding of his problems	6.20	0.83

Note. Effectiveness judgments were made on scales ranging from *not at all effective* (1) to *extremely effective* (7).

overlapped male and female lists. For men, the most effective self-promotion acts for attracting a short-term mate were accepting a sexual offer, making oneself look good, and making a good first impression. For women, the most effective short-term mate competition acts of self-promotion were accepting a sexual offer, suggesting they spend time together alone, and flirting with him. In the context of long-term mate competition, 8 of 10 acts overlapped male and female lists, suggesting moderately

strong similarity between men and women within each context, particularly in the long-term context. Interestingly, only one act of attraction occurred on both a long-term and a short-term list (i.e., showering often), suggesting that differences between contexts are considerably stronger than differences between the sexes.

Table 7 shows the 10 most effective acts of competitor derogation for each of the Sex × Temporal Context quadrants. For both short-term and long-term contexts, 5 of 10 acts overlapped male and female lists. Unlike acts of self-promotion, however, many of these acts also occurred on both short-term and long-term lists. Saying the rival used people, was bisexual, was gay, had a social disease, or had a serious girlfriend or boyfriend all occurred on at least three of the four lists.

Non-hypothesis-related tactics. The tactics for which no hypotheses were made are listed in Table 8, along with their mean ratings in terms of sex of actor and context. *F* tests relevant to main effects of temporal context can be found in the seventh column of Table 8. Some of the tactic ratings showed significant context effects and merit discussion. We found that acts of self-promotion that artificially inflate adaptive value or that pertain to deception were judged difficult to maintain when in the often enduring context of long-term mate competition. The tactics labeled Try To Impress and Act Solicitous, for example, imply a degree of deception and exaggeration and were judged more effective when used to attract short-term mates, $F(2, 105) = 133.86, p < .001$.

Also noteworthy is the finding that, as with many of the hypothesis-related tactics, tactics concerning intelligence showed interaction effects of temporal context and sex of actor. Women in the short-term context, particularly, were judged as effective when they use tactics of self-promotion that indicate they are unintelligent; for example, Act Dumb showed a significant interaction of sex and temporal context, $F(1, 106) = 37.02, p < .001$. In addition, acting intelligent was least effective for women in the short-term context, $F(1, 106) = 5.35, p < .05$. Conversely, women were judged ineffective in the context of short-term mating when they derogate their competitor's intelligence; in all other Sex × Temporal Context quadrants, this tactic was effective, yielding a significant interaction of sex and temporal context, $F(1, 84) = 9.15, p < .003$.

An explanation of this pattern of findings may lie within the sexual strategies theoretical framework. Men seeking short-term partners may be perceiving a lack of intelligence as a cue to obtaining easier sexual access, which is relevant to our first hypothesis. Women who lack intelligence may be more susceptible to the particularly effective short-term tactics of deception and exaggeration mentioned earlier. In addition, because so many women compete principally in the long-term mating context (Buss & Schmitt, 1993), women who act dumb may present conspicuous opportunities for men to realize their short-term desires. Thus, when women "act dumb," this may signal to beguiling men that they have a higher likelihood of successfully obtaining a short-term mateship.

Most of the non-hypothesis-related tactics of self-promotion and competitor derogation showed significant main effects of temporal context. As can be seen in Table 8, only one tactic of self-promotion and five tactics of competitor derogation showed insignificant main effects of temporal context. On one hand, this could be an indication that our preliminary study was very

Table 7
10 Acts of Competitor Derogation Judged Most Effective in Each Sex × Temporal Context Quadrant

Act of competitor derogation	<i>M</i>	<i>SD</i>
10 acts judged most effective for men to derogate a short-term competitor		
He said the other man might be gay	2.23	0.91
He said that the other man attacks women	2.11	1.22
He said the other man was a bisexual	2.07	1.15
He suggested the other man had a social disease	2.05	1.56
He said the other man had a serious girlfriend	1.84	1.35
He would tell her the other man had gotten a girl pregnant	1.80	1.34
He told her that the other man never showered	1.73	1.32
He said the other man uses people	1.66	1.18
He said the other man was out to use women	1.66	1.29
He said the other man slept around a lot	1.57	1.19
10 acts judged most effective for women to derogate a short-term competitor		
She suggested the other woman had a social disease	1.91	1.76
She said the other woman might be bisexual	1.90	1.72
She told him that the other woman never showered	1.76	1.41
She said the other woman might be gay	1.71	1.58
She said the other woman was frigid	1.57	1.38
She said the other woman wouldn't put out	1.57	1.53
She said the other woman had a low level of cleanliness	1.55	1.33
She called the other woman fat and ugly	1.48	1.40
She would tell him the other woman had an abortion	1.45	1.38
She said the other woman was just a tease	1.40	1.65
10 acts judged most effective for men to derogate a long-term competitor		
He said the other man has a serious girlfriend	2.32	0.98
He said the other man was out to use women	2.00	1.16
He said the other man was a bisexual	2.00	1.45
He said the other man attacks women	1.93	1.39
He said the other man was sleazy	1.91	1.12
He said the other man just wants to get laid	1.91	1.24
He said the other man slept around a lot	1.91	1.25
He said the other man uses people	1.89	1.30
He said the other man had gotten a girl pregnant	1.82	1.28
He said the other man was inconsiderate	1.80	1.02
10 acts judged most effective for women to derogate a long-term competitor		
She said the woman couldn't stay loyal to just one man	2.21	1.28
She said the other woman had a serious boyfriend	2.17	1.06
She said the other woman was a bisexual	2.14	1.49
She said the other woman was sleazy	2.10	1.32
She told the man the other woman slept around a lot	2.02	1.47
She said the other woman cheats on men	2.00	1.38
She said the other woman was loose	1.98	1.33
She said the other woman might be gay	1.88	1.53
She said the other woman uses people	1.81	1.15
She suggested that the other woman had a social disease	1.81	1.77

Note. Effectiveness judgments were made on scales ranging from *not very likely to be effective* (−3) to *very likely to be effective* (+3).

useful and important. In the preliminary study, we obtained acts of self-promotion specific to each temporal context; the competitor derogation acts were obtained from a context-agnostic nomination procedure. Finding more significant main effects of temporal context for tactics of self-promotion than for tactics of competitor derogation supports the basic notion that temporal context is pivotal, especially in the act nomination stage.

On the other hand, the wealth of temporal context effects may have been due, in part, to our experimental design. Participants in both studies rated the effectiveness of each tactic in short-term and long-term contexts. In essence, we communicated part of our experimental design to the participants. Although this represents a possible limitation of our study, our theory explicitly assumes that short-term and long-term psychological mechanisms exist in all individuals. Future research could ex-

Table 8
Tactic Effectiveness Judgments From Studies 1 and 2 for Which No Hypotheses Were Made

Tactic	Mating context				Sex of actor	F	Sex × Context
	Short term		Long term				
	M	SD	M	SD			
Self-promotion tactics judged more effective in short-term mating context							
Act Dumb							
Men	1.60 _a	1.02	1.31 _b	0.50	34.37***	71.72***	37.02***
Women	3.25 _c	1.71	1.62 _a	0.77			
Act Solicitous					0.42	34.79***	2.81
Men	5.34 _a	1.06	4.97 _b	1.03			
Women	5.37 _a	1.03	4.70 _b	0.98			
Act Spontaneous					0.61	38.88***	2.98
Men	5.08 _a	1.35	4.57 _b	1.38			
Women	5.08 _a	1.45	4.18 _b	1.37			
Frequent Social Gatherings					0.16	111.84***	0.69
Men	4.31 _a	1.26	3.15 _b	1.14			
Women	4.49 _a	1.35	3.13 _b	1.14			
Initiate Social Interaction					0.66	36.00***	2.39
Men	5.34 _a	1.08	4.90 _b	1.29			
Women	5.35 _a	0.99	4.60 _b	0.80			
Try to Impress					0.21	83.71***	0.06
Men	4.11 _a	1.19	3.34 _b	1.15			
Women	4.21 _a	0.96	3.40 _b	0.77			
Use Alcohol					2.48	160.97***	1.24
Men	3.57 _a	1.56	2.02 _b	1.08			
Women	4.09 _a	1.76	2.25 _b	1.15			
Use Humor					0.01	8.31**	0.91
Men	4.92 _a	1.37	4.48 _b	1.33			
Women	4.79 _{a,b}	1.16	4.57 _{a,b}	0.94			
Self-promotion tactics more effective in long-term mating context							
Act Intelligent					7.13**	101.15***	5.35*
Men	4.81 _a	1.56	5.86 _b	1.09			
Women	3.95 _c	1.35	5.63 _b	1.01			
Use Social Networking					0.85	172.74***	0.00
Men	3.09 _a	1.13	4.90 _b	1.37			
Women	2.91 _a	1.22	4.73 _b	1.19			
Self-promotion tactic showing no mating context difference							
Act Emotionally Unstable					2.74	0.96	2.89
Men	1.99 _a	1.00	2.23 _{a,b}	1.13			
Women	2.48 _b	1.36	2.42 _b	1.15			
Competitor derogation tactic more effective in short-term mating context							
Derogate Rival's Hygiene					1.90	8.61***	2.22
Men	1.33 _a	1.02	0.87 _b	1.21			
Women	1.48 _a	0.99	1.33 _a	1.30			
Competitor derogation tactics more effective in long-term mating context							
Call Rival Emotionally Unstable					0.05	24.88***	8.00**
Men	0.45 _a	0.99	0.70 _b	1.14			
Women	0.08 _c	0.88	0.98 _b	1.04			
Derogate Rival's Family					0.08	8.03**	3.04
Men	-1.00 _{a,b}	1.33	-0.84 _a	1.61			
Women	-1.33 _b	1.30	-0.67 _a	1.71			

Table 8 (continued)

Tactic	Mating context				Sex of actor	F	
	Short term		Long term			Mating context	Sex × Context
	M	SD	M	SD			
Competitor derogation tactics more effective in long-term mating context (continued)							
Derogate Rival's Intelligence							
Men	0.32 _a	0.90	0.40 _a	1.17	10.13**	13.17***	9.15**
Women	-0.65 _b	0.84	0.23 _a	1.19			
Get Rival Drunk							
Men	-0.50 _a	1.36	-0.45 _a	1.50	3.97*	5.37*	3.85*
Women	-1.31 _b	1.46	-0.76 _a	1.39			
Competitor derogation tactics showing no mating context differences							
Call Rival Boring							
Men	0.66 _{a,b}	1.18	0.73 _{a,b}	1.50	0.01	3.32	1.86
Women	0.48 _a	1.38	0.95 _b	1.68			
Call Rival Unpopular							
Men	0.65 _a	1.02	0.15 _b	1.09	7.82**	0.50	2.78
Women	-0.20 _c	1.23	-0.08 _c	1.33			
Ignore Rival Socially							
Men	-0.57 _a	1.25	-0.70 _a	1.27	1.59	1.44	0.71
Women	-0.95 _a	1.21	-0.98 _a	1.26			
Question Rival's Sexual Orientation							
Men	2.15 _a	0.92	1.88 _a	1.11	0.14	0.17	7.72**
Women	1.81 _a	1.61	2.01 _a	1.48			
Say Rival Has Social Disease							
Men	-0.75 _a	1.50	-0.64 _a	1.60	0.35	0.05	1.04
Women	-0.48 _a	1.42	-0.55 _a	1.37			
Speak of Rival's Previous Pregnancy							
Men	1.80 _a	1.34	1.82 _a	1.28	0.89	0.59	0.36
Women	1.45 _a	1.38	1.64 _a	1.69			
Spread Rumors About Competitor							
Men	0.80 _a	1.69	0.14 _b	1.83	0.68	1.00	6.38**
Women	0.60 _a	1.74	0.88 _a	1.78			

Note. The degrees of freedom for all univariate analyses of variance involving self-promotion tactics are (1, 106) and for all competitor derogation tactics are (1, 84). Scales ranged from *not at all effective* (1) to *extremely effective* (7) for tactics of self-promotion. Scales ranged from *not very likely to be effective* (-3) to *very likely to be effective* (+3) for tactics of competitor derogation. Means sharing a common subscript are not significantly different ($p > .05$).

* $p < .05$. ** $p < .01$. *** $p < .001$.

amine whether the current sexual strategy of an individual influences his or her perceptions of attraction behavior effectiveness. In the final section, we discuss other limitations of our studies and discuss future research designed to address these limitations.

General Discussion

Modern evolutionary approaches to human mating focus on the adaptive problems recurrently faced by humans over the course of evolutionary history. After identification of the adaptive problems faced by each sex, the next step is to test hypotheses about the psychological mechanisms that might have evolved to solve each problem (Tooby & Cosmides, 1990). Psychological mechanisms appear to underlie between-sex differences in what people prefer in mates (Buss, 1989b), how they fantasize about mates (Ellis & Symons, 1990), how they attract mates (Buss, 1988a; Buss & Dedden, 1990; Greer & Buss,

1994), how they deceive mates (Tooke & Camire, 1991), how they conflict with mates (Buss, 1989a), and how they retain mates (Buss, 1988b). In two studies, we attempted to show that psychological mechanisms underlie within-sex variability as well, a variability partly attributable to temporal context.

Context-Specific Perceptions of Strategic Effectiveness

Over the course of human evolutionary history, men pursuing a short-term sexual strategy have faced the adaptive problem of finding sexually available women. As a result, men appear to possess an evolved psychological mechanism that inclines them to prefer sexual availability when seeking a short-term mate. In support of Hypothesis 1, tactic effectiveness judgments corresponded to this evolved mate preference. Of the four Sex × Temporal Context quadrants, participants judged women pursuing a short-term mate to be most successful when using tactics of self-promotion that directly signal sexual avail-

ability. Men desire easy sexual access in short-term matings, and when women suggest easy access, they are perceived as particularly effective at short-term mate attraction.

Conversely, suggesting that a rival is sexually unavailable is judged particularly effective for women seeking a short-term mate, and signaling to a potential mate that one's rival is sexually promiscuous is ineffective only for women in the context of short-term mate competition. In addition, the post hoc finding that women are judged particularly effective when they act dumb in the context of short-term mate competition provides additional support to the hypothesis that ease of sexual access is acutely important to men seeking a short-term mate.

When pursuing a long-term sexual strategy, men have faced a distinctly different adaptive problem: the problem of assured paternity certainty. Men, therefore, may possess evolved long-term preference mechanisms that lead to obtaining exclusive sexual access to a woman's reproductive capacity once in a relationship. In support of Hypothesis 2, displaying cues to sexual exclusivity was judged most effective for women seeking a long-term mate, as was suggesting that a competitor would be sexually unfaithful.

The current findings highlight the domain specificity of the psychology of mate attraction. Signaling sexual availability is judged effective for women in the short term, for example, but is judged relatively ineffective in long-term mate competition. Signaling sexual exclusivity or fidelity, in contrast, is judged effective in the long term but not in the short term. These shifts in perceived effectiveness could not occur unless members of the opposite sex possessed distinctive mate preferences corresponding to the two contexts. Sexualizing one's appearance, on the other hand, is judged to be one of the most powerfully effective tactics women can use to attract short-term mates; however, the same tactic is judged to be considerably less effective for men in attracting short-term mates and is judged to be exceptionally ineffective for men in attracting long-term mates. Domain-general mechanisms, those that operate in the same manner across contexts and across sexes, could not produce these effects. Thus, the current research contributes to a growing body of literature supporting the premise of domain specificity; that is, human minds contain a large number of psychological mechanisms, each uniquely tailored to solving particular adaptive problems (Hirschfeld & Gelman, 1994; Pinker, 1994; Symons, 1992; Tooby & Cosmides, 1992).

Along with men's mate preferences affecting women's strategic effectiveness in mate competition, we predicted that women's short-term and long-term psychological mechanisms affect the ability of men to attract specific types of mates. In support of Hypothesis 3, participants judged men to compete most effectively when imparting resources immediately in the short-term context (more than women in either context and more than men in the long-term context), and men wanting a long-term partner were the most effective at exhibiting cues to future resource potential. Conversely, men in long-term mate competition were largely judged the most effective at derogating a rival's future resource potential. Thus, these findings support a key premise of sexual strategies theory: Both men and women have short-term and long-term mating strategies within their repertoire, and the evolved mate preferences specific to each temporal context have an impact on the perceived effectiveness of particular competition tactics.

In the context of short-term mate competition, men must also confront the evolved female preference for dominance and status. Consistent with Hypothesis 4, men trying to attract a short-term mate were judged the most effective at using self-promotion tactics that suggest dominance and using derogation tactics that imply a lack of dominance and status in their rivals. In fact, ratings of all four dominance derogation tactics suggested that dominance derogation is solely effective when men compete for short-term mates. In addition, the Call Rival Unpopular derogation tactic displayed a similar pattern of effectiveness judgments, perhaps reflecting women's short-term preference for men of high social status.

Participants' judgments of commitment, kindness, and physical attractiveness tactic effectiveness were also predictably moderated by temporal context. In support of Hypotheses 5 and 6, manipulating a potential mate's perceptions of one's commitment and kindness was judged more effective in the context of long-term mate competition than in the context of short-term mate competition. In support of Hypothesis 7, manipulating a potential mate's perceptions of one's physical attractiveness was judged more effective in short-term mate competition than long-term mate competition. In addition, women were judged to be more effective than men at most physical attractiveness tactics, which is consistent with previous investigations of attraction effectiveness (Buss, 1988a; Buss & Dedden, 1990; Walters & Crawford, 1994).

Overall, we found substantial support for all seven hypotheses. Hypotheses 1 and 2 were strongly supported by the effectiveness ratings of both self-promotion and competitor derogation tactics. Hypothesis 3 received solid support, with the exception of a competitor derogation tactic that did not display a significant interaction between sex of actor and temporal context. Hypothesis 4 was strongly supported; an actual valence shift occurred between the predicted Sex \times Temporal Context quadrant and all others. Hypotheses 5 and 6 received strong support across all self-promotion and competitor derogation tactics. The main effects for temporal context and sex of actor predicted by Hypothesis 7 were largely supported, with the exception of a competitor derogation tactic that did not display a significant sex of actor effect.

Linking Evolutionary and Traditional Perspectives on Romantic Attraction

Taken as a whole, these findings suggest that sexual strategies theory served as a useful heuristic for predicting and understanding sex and temporal context differences in tactic effectiveness judgments. By extension, the evolutionary psychology approach in general proved useful. Evolutionary psychology has begun to take its place among established theories of interpersonal attraction. Traditionally, two basic perspectives have dominated psychological research on romantic attraction. The first holds that people encounter or perceive attributes in others that inherently induce attraction at the early stages of relationship formation (cf. Cate & Koval, 1983). In this view, attributes such as physical attractiveness, geographical proximity, attitude similarity, and personality complementarity lead to greater romantic attraction between individuals (Cattell & Nesselroade, 1967; Eckland, 1968; Winch, 1958). The second perspective considers romantic attraction to be a more dynamic

and strategic enterprise. Balance, equity, and exchange theories, for example, propose that people are strategically attracted to those with whom an exchange of resources would be in approximate equilibrium (Berscheid & Walster, 1974; M. S. Clark & Reis, 1988; Rusbult & Buunk, 1993).

Sexual strategies theory integrates these two traditions by explicitly linking the content of characteristics that induce attraction to the contextual marketplaces in which they are evaluated, compared, and potentially exchanged. Whereas similarity, complementarity, balance, and exchange theories yield relatively unqualified predictions about the content of which specific acts of attraction are effective—any act that suggests similarity, complementarity, or equity should be equally effective—sexual strategies theory predicts that acts and tactics of attraction are particularly effective when their content solves context-specific adaptive problems. Thus, the value of characteristics for exchange depends on their adaptive content, and the adaptive content depends on the temporal context being pursued.

In effect, short-term and long-term mate competition contexts constitute two separate forms of adaptive exchange or two distinct marketplaces of competition. In the short-term exchange market, female sexual availability can be traded for immediate male resources, the most extreme form of short-term exchange being prostitution. In the long-term exchange market, female sexual exclusivity can be traded for future male resource potential, the most extreme form of long-term exchange being monogamous marriage. Physical attractiveness is valued by both male and female short-term market customers, whereas kindness and enduring commitment are particularly valued by long-term market customers. With the growing number of identifiable adaptive problem domains that require context-specific solutions (Buss, 1994), the evolutionary psychology approach should continue to yield an increased understanding and generate a large number of precise predictions concerning the various contents, contexts, and marketplaces of romantic attraction.

Limitations and Future Research Directions

Although Studies 1 and 2 largely provided support for our theory that temporal context plays a fundamental role in romantic attraction, the present studies were limited examinations of this contention. For example, we had participants rate the effectiveness of acts of attraction performed by men and women in general, not what they had done themselves. Even though we used a technique that involved acts that had been used by participants or by someone they knew, future research could examine actual mating behavior in real-life contexts and move beyond self-reported or observer-reported effectiveness. It should be noted, however, that whenever alternative methods of assessment such as physiological responses or marital patterns have been used to test evolutionary theories, the results have convincingly supported adaptive explanations (Buss, Larsen, Westen, & Semmelroth, 1992; Buss & Schmitt, 1993). Another potential limitation of our results lies in the limited age range of participants in our studies. College students, because of their relative youth, may not have well-elaborated ideas of what makes for effective long-term mate attraction. We suspect, however, that many of our participants did have sexual commitment as a concern in their lives. Indeed, college students may repre-

sent one of the best-suited samples for studying commitment in its many varied and complex forms.

Overall, the results suggest that the array of sexual strategies within the human repertoire is complex and highly contingent on temporal context. One unanticipated finding was that competitor derogation tactics were relatively ineffective in comparison with tactics of self-promotion. Although the tactics of derogation displayed the same pattern of Sex \times Temporal Context effects as did the tactics of self-promotion, the derogation tactics were judged to be relatively ineffective. One possible explanation is that those who use derogatory tactics are viewed as cost-inflicting (mean-spirited, unkind) individuals in general, and so their desirability as mates is lowered in both temporal contexts as a consequence, given the premium that people place on kindness in a mate. Another possibility is that those who use derogatory tactics may be perceived as being overly concerned about the desirability of their rivals and so may be viewed as having lower mate value than those who do not feel the need to derogate members of their own sex. Future studies could fruitfully explore the attributions people make about those individuals who use derogation tactics, as well as the contexts in which such tactics might acquire marked effectiveness.

The present studies provide a powerful confirmation of the hypothesis that neither biological sex nor temporal context alone is adequate for predicting the effectiveness of tactics of self-promotion and competitor derogation. Rather, sex and temporal context interact. The combination of the two can account for substantially more variance than either alone. Nonetheless, this represents just the start of the exploration of interactional Person \times Context effects on tactics of attracting mates. Future studies could profitably focus on other personal and contextual factors likely to be important. The "mate value" or desirability of the person performing the tactic, the life stage of the person, the operational sex ratio or relative availability of men and women in the mating pool, and the reputational context are all likely to influence the effectiveness of particular tactics of attracting mates.

Future research could also focus on more specific forms of short-term mating relationships, whether as additions, as alternatives, or as preludes to long-term mating relationships. The psychological mechanisms that we have associated with short-term mating may be differentially "activated" across varying types of short-term contexts. For example, the male short-term psychological mechanism for preferring sexual availability, and the resulting effectiveness of sexual availability tactics for women seeking short-term partners, may be most relevant or active when men are pursuing a purely short-term sexual strategy early in life. When men pursue a mixed sexual strategy (both short term and long term) later in life, such as desiring an extramarital affair, mechanisms for avoiding commitment may emerge more strongly in the behavior and cognition of men. Men already in a long-term relationship may not desire extra-pair copulations simply with easily accessible women; rather, these men may especially seek women who do not require or expect an enduring commitment. Thus, the mate preferences of men, and the resulting effectiveness of particular competition tactics for women, may be life-stage specific.

Life-stage-specific shifts in mate preference criteria constitute yet another interactional context to be investigated. Only now is there beginning to be an understanding and articulation

of the complexity of short-term and long-term mate competition and the subsequent functions of adaptively relevant, context-specific competition tactics. Although patterns of mate preferences have been examined across different ages (Kenrick & Keefe, 1992), future research could address the strategic impact of evolved sexual psychologies on mate competition across the life cycle. In this manner, effective tactics of attraction may vary not only with the time of relationship duration but with the time of life.

References

- Berscheid, E., & Walster, E. (1974). Physical attractiveness. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp. 157–215). San Diego, CA: Academic Press.
- Blumstein, P. (1983). *American couples: Money, work, sex*. New York: Morrow.
- Buss, D. M. (1987). Sex differences in human mate selection criteria: An evolutionary perspective. In C. Crawford, M. Smith, & D. Krebs (Eds.), *Sociobiology and psychology: Issues, goals, and findings* (pp. 335–354). Hillsdale, NJ: Erlbaum.
- Buss, D. M. (1988a). The evolution of human intrasexual competition: Tactics of mate attraction. *Journal of Personality and Social Psychology*, *54*, 616–628.
- Buss, D. M. (1988b). From vigilance to violence: Mate guarding tactics. *Ethology and Sociobiology*, *9*, 291–317.
- Buss, D. M. (1989a). Conflict between the sexes: Strategic interference and the evocation of anger and upset. *Journal of Personality and Social Psychology*, *56*, 735–747.
- Buss, D. M. (1989b). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences*, *12*, 1–14.
- Buss, D. M. (1994). *The evolution of desire*. New York: Basic Books.
- Buss, D. M., & Dedden, L. (1990). Derogation of competitors. *Journal of Social and Personal Relationships*, *7*, 395–422.
- Buss, D. M., Larsen, R. J., Westen, D., & Semmelroth, J. (1992). Sex differences in jealousy: Evolution, physiology, and psychology. *Psychological Science*, *3*, 251–255.
- Buss, D. M., & Schmitt, D. P. (1993). Sexual strategies theory: An evolutionary perspective on human mating. *Psychological Review*, *100*, 204–232.
- Cate, R. M., & Koval, J. E. (1983). Heterosexual relationship development: Is it really a sequential process? *Adolescence*, *18*, 507–514.
- Cattell, R. B., & Nesselroade, J. R. (1967). "Likeness" and "completeness" theories examined by 16 personality factor measures on stably and unstably married couples (Advanced Publication No. 7). Champaign: Laboratory of Personality and Group Analysis, University of Illinois.
- Clark, M. S., & Reis, H. T. (1988). Interpersonal processes in close relationships. *Annual Review of Psychology*, *39*, 609–672.
- Clark, R. D., & Hatfield, E. (1989). Gender differences in receptivity to sexual offers. *Journal of Psychology and Human Sexuality*, *2*, 39–55.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*, 297–334.
- Cronin, H. (1991). *The ant and the peacock: Altruism and sexual selection from Darwin to today*. New York: Cambridge University Press.
- Darwin, C. (1871). *The descent of man and selection in relation to sex*. London: Murray.
- Eckland, B. (1968). Theories of mate selection. *Social Biology*, *15*, 71–84.
- Ellis, B. J., & Symons, D. (1990). Sex differences in sexual fantasy: An evolutionary psychological approach. *Journal of Sex Research*, *27*, 527–556.
- Fisher, H. E. (1989). Evolution of human serial pairbonding. *American Journal of Physical Anthropology*, *78*, 331–354.
- Gangestad, S. W., & Buss, D. M. (1993). Pathogen prevalence and human mate preferences. *Ethology and Sociobiology*, *14*, 89–96.
- Gangestad, S. W., & Simpson, J. A. (1990). Toward an evolutionary history of female sociosexual variation. *Journal of Personality*, *58*, 69–96.
- Greenless, I. A., & McGrew, W. C. (1994). Sex and age differences in preferences and tactics of mate attraction: Analysis of published advertisements. *Ethology and Sociobiology*, *15*, 59–72.
- Greer, A. E., & Buss, D. M. (1994). Tactics for promoting sexual encounters. *Journal of Sex Research*, *31*, 185–201.
- Greiling, H. (1993, June). *Women's short-term sexual strategies*. Paper presented at the Conference on Evolution and the Social Sciences, London, England.
- Hamilton, W. D., & Zuk, M. (1982). Heritable true fitness and bright birds: A role for parasites? *Science*, *218*, 384–387.
- Hendrick, S., Hendrick, C., Slapion-Foote, M. J., & Foote, F. H. (1985). Gender differences in sexual attitudes. *Journal of Personality and Social Psychology*, *48*, 1630–1642.
- Hill, E. M., Nocks, E. S., & Gardner, L. (1987). Physical attractiveness: Manipulation by physique and status displays. *Ethology and Sociobiology*, *8*, 143–154.
- Hirschfeld, L. A., & Gelman, S. A. (1994). *Mapping the mind: Domain specificity in cognition and culture*. New York: Cambridge University Press.
- Hunt, J. (1974). *Sexual behavior in the 1970's*. Chicago: Playboy Press.
- Jensen-Campbell, L. A., Graziano, W. G., & West, S. G. (1995). Dominance, prosocial orientation, and female preferences: Do nice guys really finish last? *Journal of Personality and Social Psychology*, *68*, 427–440.
- Kenrick, D. T., Groth, G. E., Trost, M. R., & Sadalla, E. K. (1993). Integrating evolutionary and social exchange perspectives on relationships: Effects of gender, self-appraisal, and involvement level on mate selection criteria. *Journal of Personality and Social Psychology*, *64*, 951–969.
- Kenrick, D. T., & Keefe, R. C. (1992). Age preferences in mates reflect sex differences in reproductive strategies. *Behavioral and Brain Sciences*, *15*, 75–133.
- Kenrick, D. T., Sadalla, E. K., Groth, G., & Trost, M. R. (1990). Evolution, traits, and the stages of human courtship: Qualifying the parental investment model. *Journal of Personality*, *58*, 97–116.
- Kinsey, A., Pomeroy, W., & Martin, C. (1948). *Sexual behavior in the human male*. Philadelphia: W. B. Saunders.
- Kinsey, A., Pomeroy, W., Martin, C., & Gebhard, P. (1953). *Sexual behavior in the human female*. Philadelphia: W. B. Saunders.
- Nevid, J. S. (1984). Sex differences in factors of romantic attraction. *Sex Roles*, *11*, 401–411.
- Oliver, M. B., & Hyde, J. S. (1993). Gender differences in sexuality: A meta-analysis. *Psychological Bulletin*, *114*, 29–51.
- Oliver, M. B., & Sedikides, C. (1992). Effects of sexual permissiveness on desirability of partner as a function of low and high commitment to relationship. *Social Psychology Quarterly*, *55*, 321–333.
- Pinker, S. (1994). *The language instinct*. New York: Morrow.
- Price, R. A., & Vandenburg, S. G. (1980). Spouse similarity in American and Swedish couples. *Behavior Genetics*, *10*, 59–71.
- Rusbult, C. E., & Buunk, B. P. (1993). Commitment processes in close relationships: An interdependence analysis. *Journal of Social and Personal Relationships*, *10*, 175–204.
- Sadalla, E. K., Kenrick, D. T., & Vershure, B. (1987). Dominance and heterosexual attraction. *Journal of Personality and Social Psychology*, *52*, 730–738.
- Simpson, J. A., & Gangestad, S. W. (1992). Sociosexuality and romantic partner choice. *Journal of Personality*, *60*, 31–51.
- Smith, R. L. (1984). Human sperm competition. In R. L. Smith (Ed.), *Sperm competition and the evolution of animal mating systems* (pp. 601–659). New York: Academic Press.

- Smuts, B. (1991). Male aggression against women: An evolutionary perspective. *Human Nature, 3*, 1-44.
- Sprecher, S., Sullivan, Q., & Hatfield, E. (1994). Mate selection preferences: Gender differences examined in a national sample. *Journal of Personality and Social Psychology, 66*, 1074-1080.
- Symons, D. (1979). *The evolution of human sexuality*. New York: Oxford University Press.
- Symons, D. (1992). On the use and misuse of Darwinism in the study of human behavior. In J. Barkow, L. Cosmides, & J. Tooby (Eds.), *The adapted mind: Evolutionary psychology and the generation of culture* (pp. 137-159). New York: Oxford University Press.
- Tooby, J., & Cosmides, L. (1990). On the universality of human nature and the uniqueness of the individual: The role of genetics and adaptation. *Journal of Personality, 58*, 17-68.
- Tooby, J., & Cosmides, L. (1992). The psychological foundations of culture. In J. Barkow, L. Cosmides, & J. Tooby (Eds.), *The adapted mind: Evolutionary psychology and the generation of culture* (pp. 19-136). New York: Oxford University Press.
- Tooke, J., & Camire, L. (1991). Patterns of deception in intersexual and intrasexual mating strategies. *Ethology and Sociobiology, 12*, 345-364.
- Townsend, J. M. (1989). Mate selection criteria: A pilot study. *Ethology and Sociobiology, 10*, 241-253.
- Trivers, R. (1972). Parental investment and sexual selection. In B. Campbell (Ed.), *Sexual selection and the descent of man: 1871-1971* (pp. 136-179). Chicago: Aldine.
- Trivers, R. (1985). *Social evolution*. Menlo Park, CA: Benjamin/Cummings.
- Walters, S., & Crawford, C. B. (1994). The importance of mate attraction for intrasexual competition in men and women. *Ethology and Sociobiology, 15*, 5-30.
- Wiederman, M. W., & Allgeier, E. R. (1992). Gender differences in mate selection criteria: Sociobiological or socioeconomic explanation? *Ethology and Sociobiology, 13*, 115-124.
- Williams, G. C. (1975). *Sex and evolution*. Princeton, NJ: Princeton University Press.
- Winch, R. (1958). *Mate selection*. New York: Harper & Row.

Appendix A

31 Tactics of Self-Promotion, Along With Example Acts and Alpha Reliabilities

Self-promotion tactic	Number of acts	Example of self-promotion	Mean α
Act Dumb	3	He acted "dizzy"	.80
Act Emotionally Unstable	2	She acted insecure	.54
Act Flirtatious	6	He allowed her to see his stares	.82
Act Helpful	3	She did helpful things for him	.69
Act Honest	2	He acted like himself	.75
Act Intelligent	2	She had intellectual conversations with him	.74
Act Kind	2	He acted nice	.63
Act Macho	5	She acted macho	.61
Act Seductively	3	He talked seductively	.72
Act Sensitive	6	She was understanding of his problems	.78
Act Solicitous	4	He said things she wanted to hear	.66
Act Spontaneous	2	She acted spontaneously	.75
Become Friends	4	He got to know her well	.76
Communicate Often	2	She wrote letters to him often	.59
Display resources	4	He displayed his wealth	.81
Display Sexual Exclusivity	2	She avoided sex with men other than him	.77
Display Surgency	5	He acted dominant	.65
Enhance Physical Attractiveness	8	She made herself look good	.77
Frequent Social Gatherings	3	He visited bars	.55
Give Resources Immediately	3	She gave him gifts	.58
Have Sex	3	He accepted her sexual offer	.67
Initiate Social Interaction	6	She elicited a conversation with him	.70
Invoke Love	3	He said "I love you"	.72
Make Proposition	4	She made a pass at him	.79
Sexualize Appearance	2	He wore revealing clothes	.83
Show Commitment	4	She talked about their marital future	.64
Show Resource Potential	2	He showed high earning potential	.83
Try to Impress	6	She tried to impress him	.74
Use Alcohol	3	He got her drunk	.69
Use Humor	2	She tried to make him laugh	.52
Use Social Networking	4	He became friends with one of her friends	.69

(Appendixes continue on next page)

Appendix B

28 Tactics of Competitor Derogation, Along With Example Acts
and Alpha Reliabilities

Competitor derogation tactic	Number of acts	Example act of competitor derogation	Mean α
Call Rival Boring	1	She called the other woman boring	— ^a
Call Rival Emotionally Unstable	3	He would say the man is flighty	.51
Call Rival Exploitative	3	She said the other woman uses people	.63
Call Rival Insensitive	1	He would say the man is insensitive to other people's feelings	— ^a
Call Rival Promiscuous	5	She would call her a tramp	.72
Call Rival Selfish	2	He called the other man selfish and uncaring	.67
Call Rival Sexually Unavailable	3	She said the other woman wouldn't put out	.62
Call Rival Unpopular	2	He would say that none of the other guys like him	.55
Derogate Rival's Intelligence	4	She would make her seem dumb	.68
Derogate Rival's Achievements	1	He would scoff at his achievements	— ^a
Derogate Rival's Appearance	5	She told him the other woman wore shabby clothes	.81
Derogate Rival's Current Resources	3	He would tell her that the other man was poor	.74
Derogate Rival's Family	1	She made derogatory remarks about her family	— ^a
Derogate Rival's Hygiene	3	He told her that the other man never showered	.67
Derogate Rival's Physical Attractiveness	4	She called the other woman fat and ugly	.82
Derogate Rival's Resource Potential	2	He said the man had no ambition	.70
Derogate Rival's Strength	1	She would call the woman physically weak	— ^a
Derogate Rival's Surgency	2	He would call the man a coward	.73
Dominate Competitor	3	She controlled or dominated the other woman	.69
Get Rival Drunk	1	He got the man drunk	— ^a
Ignore Rival Socially	1	She ignored the other woman socially	— ^a
Outshine Rival in Sports	1	He would outshine the other man in sports	— ^a
Question Rival's Fidelity	2	She would say the woman could not stay loyal to just one man	.71
Question Rival's Sexual Orientation	2	He said the other man might be gay	.84
Say Rival Has No Goals	2	She would say the woman had no goals in life	.68
Speak of Rival's Previous Pregnancy	1	He would tell her the man had gotten a girl pregnant	— ^a
Spread Rumors About Competitor	1	She spread false rumors about her	— ^a
Suggest Rival Has Social Disease	1	He suggested the other man had a social disease	— ^a

^a Not applicable.

Received June 11, 1992
Revision received August 1, 1995
Accepted January 23, 1996 ■