

Four strategies used during intrasexual competition for mates

MARYANNE FISHER^a AND ANTHONY COX^b

^a*Saint Mary's University* and ^b*Centre for Psychology and Computing*

Abstract

Research on intrasexual competition for mates focused on the strategies of self-promotion and competitor derogation. Although these strategies describe many competitive behaviors, it was predicted that they do not describe all possible strategies. In Study 1, a qualitative investigation, participants reported how they compete with same-sex rivals for mates. This led to the discovery of the strategies of competitor manipulation and mate manipulation. All 4 strategies were compared and no sex difference in their frequency of application was found. In Study 2, a quantitative survey using the 4 strategies was created. There was no sex difference in strategy use, but those involved in a romantic relationship were significantly more likely to use competitor derogation than any other strategy.

A scan of the literature on intrasexual competition indicates that it is typically depicted as the complement to mate choice (e.g., Buss, 1988). People are thought to compete with same-sex others for access to mates using the traits or abilities for which the opposite sex expresses a preference. The coupling of competition with mate preference is inherent in Darwin's (1871) theory of sexual selection; characteristics evolve to enable an individual to gain an advantage over same-sex competitors in order to successfully reproduce. Therefore, the traits providing the highest probability of competitive success are the most preferred by the opposite sex (see also Andersson, 1994). Using this perspective, one could predict, for example, that because men highly value women's attractiveness (e.g., Buss, 1989), women should compete intrasexually in terms of their attractiveness, and indeed they appear to do so (Fisher, 2004).

To date, researchers (e.g., Buss, 1988; Buss & Dedden, 1990; Schmitt & Buss, 1996; Walters & Crawford, 1994) have examined two strategies for intrasexual competition: self-promotion and competitor derogation. Self-promotion refers to the enhancement of characteristics, such as physical attractiveness, in order to improve one's ability to compete against rivals. Conversely, competitor derogation refers to acts that diminish the value of rivals and decrease their chances of winning the competition. We propose that these strategies do not sufficiently encapsulate all forms of intrasexual competition for mates, and thus we performed a qualitative study, Study 1, to more fully explore the issue. We then used the findings of Study 1 to create a survey and obtain quantitative data, presented in Study 2. We next review self-promotion and competitor derogation before examining the limitations of past research that motivated our study.

Maryanne Fisher, Department of Psychology, Saint Mary's University, Halifax, Nova Scotia, Canada; Anthony Fox, Centre for Psychology and Computing, Nova Scotia, Canada.

Correspondence should be addressed to Maryanne Fisher, Department of Psychology, Saint Mary's University, Halifax, Nova Scotia, Canada B3H 3C3, e-mail: mlfisher@smu.ca.

Self-promotion and competitor derogation

One of the earliest examinations of intrasexual competition and the use of self-promotion was by Buss (1988). In a series of three studies, he

investigated sex-specific similarities and differences in self-promotion for mate attraction, starting with a qualitative approach. Participants listed five ways that they, and their close same-sex friends, made themselves seem as attractive as possible to members of the opposite sex. The tactics were grouped according to themes and then presented to university students who reported how frequently a close same-sex friend performed each act within the past 3 months. The results indicated that men used tactics related to resource possession and display, whereas women altered their appearance. A second study, involving newlyweds who reported their use of tactics to obtain their current mates, supported the findings of this first study. Third, undergraduates rated these tactics in terms of their effectiveness when used by a man and a woman to attract members of the opposite sex. Men's display of resources was judged to be more effective than women's display of resources. Similarly, wearing sexy or stylish clothes, acting provocative, wearing cosmetics, and altering one's appearance were judged to be more effective when performed by women than men. Together, the results of Buss's studies demonstrate the sex specificity of self-promotion, as related to mate attraction.

A second strategy that may be used during intrasexual competition is competitor derogation. Buss and Dedden (1990) investigated competitor derogation in terms of the similarities and differences between the sexes in a series of three studies using the methods of Buss (1988). The nomination procedure revealed that men would probably derogate other men's financial resources, achievements, and goals, and derogate their rival's physical strength and athleticism. In contrast, women would likely derogate other women's appearance, fidelity, and sexual history. When rating the effectiveness of the tactics for competitor derogation, a similar pattern emerged, with the exception that derogating achievements, athleticism, and appearance were perceived to be equally effective for men and women. Finally, newlyweds were asked to self-report their use of derogation tactics as well as those used by their spouses. The only tactics that differed significantly by sex was

men's derogation of a rival's strength and women's derogation of a rival's appearance and calling a rival promiscuous. Examined together, the results of these studies strongly suggest that women derogate other women in terms of their appearance, and men derogate other men in terms of their physical strength, and to a lesser extent their resources.

Limitations with past research

Although this past research is highly informative, the methods employed are problematic because they might not include subtle, or indirect, forms of competition that are often used by women. This issue was presented by Walters and Crawford (1994) who largely replicated the procedures of Buss (1988) but framed the tasks in terms of self-promotion for the direct purpose of intrasexual competition for mates rather than to perform mate attraction. They found that several tactics had to be omitted because judges were required to agree that the tactic was competitive and also agree upon the task's purpose. That is, "if one sex makes more use of subtle competitive tactics, the method used in this study may not detect or define such tactics" (p. 12). This exclusion is important in light of the large body of research that reveals women's use of indirect, subtle forms of competition (e.g., Björkqvist, Lagerspetz, & Kaukiainen, 1992). Therefore, one aim of this study was to include acts that might otherwise have been unnoticed in these investigations and to capture as many of the tactics as possible using data-derived categories (inductive categorization) rather than predefined categories (deductive categorization; Lindlof & Taylor, 2002).

A second limitation with the previous research is that participants were asked to specifically and exclusively think about ways they self-promote (Buss, 1988) or derogate competitors (Buss & Dedden, 1990). By asking participants to filter their behavior according to these strategies, the data set might be incomplete. Instead, if participants list all the ways they compete against potential rivals, the list of tactics may provide a more accurate and complete catalog of behavior. Defining intrasexual competition strictly and exclusively in

terms of self-promotion or competitor derogation is problematic because it does not allow for the consideration of other strategies that may be used when individuals vie for the attention of members of the opposite sex.

One possible strategy that has remained unnoticed is to remove the target or goal of the competition so that no competition is necessary. This strategy may be useful to individuals who sense an eminent loss in intrasexual competition, and thus, they proceed by sequestering the mate for whom they would typically have to compete. We call this strategy "mate manipulation." Note here that the manipulation element refers to the potential mate's attention or activities, which could have been directed toward a rival, and thus, the strategy is to displace or remove the mate's attention from the rival. This strategy could also be used to end a contest prematurely when one is "in the lead" but senses that his or her advantage may be mitigated by the future actions of rivals. The basic concept in mate manipulation is to create a screen that hides the presence or actions of rivals, thus reducing or eliminating the need for competition.

A second potential strategy is to reduce the need for competition by manipulating one's rivals. There are several ways in which "competitor manipulation" can be accomplished, including changing the "worth" of the prize. Competing involves costs, such as the expenditure of resources or energy. This expenditure causes one to have fewer resources to devote to other, potentially greater fitness-enhancing pursuits or to pursuits that have a higher likelihood of a large payoff. Thus, when deciding to compete, people likely follow the rule that the benefits of competition must exceed the costs (Palombit, Cheney, & Seyfarth, 2001). Consequently, if an individual can convince their rivals that the potential mate is not worth the costs of competition, this individual has increased their likelihood of success. The methods of persuasion need not be honest, but because the price of deception is frequently high in terms of ostracism or retaliation, individuals utilizing deception must do so with caution (Hess & Hagen, 2009).

As mentioned, mate manipulation and competitor manipulation are strategies that can be used to reduce or remove the need for competition. These strategies could also be used to purposely delay the competition from transpiring. If one cannot effectively compete against one's rivals, it might be advantageous to temporarily postpone the competition until winning is more likely, such as when there are fewer rivals present. To accomplish this task, an individual may actively attempt to alleviate the need for competition using some combination of mate manipulation and competitor manipulation. It is possible that one could completely withdraw from the competition, choosing instead to perform other behaviors. However, an individual who withdraws from competition may be in the vulnerable position of not obtaining a mate. Nonetheless, this strategy is viable if withdrawal is not permanent and serves to conserve resources for later competitive efforts. If one views competition using a long-term perspective whereby it consists of more than a single interaction, withdrawal can be seen as a form of metastrategy for deciding when to use competitor derogation, self-promotion, mate manipulation, and competitor manipulation. It is because of its nature as a metastrategy that we do not consider competition withdrawal as a specific strategy and instead consider the techniques used to avoid or delay competition as part of the other four strategies.

It is possible that individuals involved in romantic relationships (i.e., those who have found a mate) are less likely to use competitive strategies than uninvolved individuals. That is, perhaps involved individuals may remove themselves from intrasexual competition. Alternatively, they may derogate potential threats (i.e., rivals) to their relationship as a relationship maintenance mechanism, perhaps in a similar manner to how one derogates potential alternative mates (Lydon, Meana, Sepinwall, Richards, & Mayman, 1999; Simpson, Gangestad, & Lerma, 1990; but see also Fisher, Tran, & Voracek, 2008). In contrast, romantically uninvolved individuals may be more prepared to form a relationship and actively self-promote in an attempt to advertise one's best features to a

potential mate. Therefore, we hypothesize that relationship status would significantly affect strategy use, such that those who are romantically involved would competitor derogate more than those without a mate, and those who are romantically uninvolved would self-promote more than those with a mate. As for sex differences, we sought to replicate earlier findings using a qualitative approach. Thus, we hypothesize that women would be more likely to provide self-promoting tactics related to their appearance than men and more likely to use competitor derogation of a rival's appearance. We also hypothesize that men would be more likely than women to self-promote their resources and to use competitor derogation of a rival's resources.

The strategies of mate manipulation and competitor manipulation have not yet been explored with respect to their use during intrasexual competition, yet they remain plausible alternatives to self-promotion and competitor derogation. To date, researchers (e.g., Schmitt & Buss, 1996) have espoused the idea that the only method for intrasexual competition is to perform a comparison between oneself and the rival while using strategies to manipulate (i.e., promote or derogate) the characteristics being compared. However, this perspective is limited, as individuals can also select strategies to reduce the necessity for competition. Therefore, the primary goal of this study is to verify and document individuals' use of the four strategies (self-promotion, competitor derogation, mate manipulation, and competitor manipulation), as well as other unidentified strategies, and to compare their usage as a function of sex and romantic relationship status.

Study 1

Method

Participants

A total of 161 women (age, in years, $M = 20.75$, $SD = 3.20$) and 80 men ($M = 21.08$, $SD = 2.17$) participated in the study, all of who were heterosexual. Participants were psychology students who received course credit for their participation. Because the study was

exploratory, there were no exclusion criteria based on demographic variables. However, it should be noted that an additional 45 participants were excluded, as the surveys were not completed (9), illegible (4), the participant claimed to not intrasexually compete (7), the participant chose to instead write a vignette about a situation from which tactics could not be clearly determined (17), or the tactics listed were deemed not applicable to intrasexual competition (e.g., compete with sisters for mother's time; 8).

Of the 161 women, 95 were currently involved in a romantic relationship, with 84 self-reporting that they were in a committed relationship, and 11 in casual relationships. The remaining 63 women were not currently romantically involved, and of these, 38 stated that they were seeking a romantic relationship. Note that 3 women did not list their relationship status. Of the 80 men, 36 were currently involved in a romantic relationship, with all reporting that it was a committed relationship. The remaining 44 men were not involved in romantic relationships, and of these, 28 were seeking a mate.

Measures

In keeping with a qualitative approach, an open-ended format was selected to allow participants to freely express their strategies without having to categorize or analyze them in any manner. We sought to create a measure designed to capture people's sense of intrasexual competition, to elaborate and systematize people's thoughts with regard to intrasexual competition, and to explore people's representation of intrasexual competition (all of which are integral components of qualitative research; Banister, Burman, Parker, Taylor, & Tindall, 1994). Therefore, participants were simply asked to list the ways in which they intrasexually compete for mates. To meet this goal, the following statement was provided:

"How do you compete with others of the same sex (e.g., for dating partners or attention)? Please list as many ways as you can think of in point form. Take as much time as you need, and as many pages as you need."

Procedures

After providing informed consent, the participant completed a brief demographic survey and then received the competition question (presented as a one-item survey) while alone and in a quiet room that allowed for a high degree of privacy. When finished, they sealed the surveys in an envelope, returned it to the researcher, and were debriefed.

In order to maximize reliability, the qualitative analysis was performed by four separate individuals, all of whom were blind to the purpose of this study. Moreover, to reduce the potential for discussion or collaboration between the coders, the coding took place in four separate geographic locations, at different times of the year, and by people who did not know each other. Two coders started with the raw comments of the participants and created themes, whereas the other two coders started with the themes and worked to the raw data to confirm the analysis. In order for a specific tactic to be considered part of a category, defined below, all coders needed to agree. When a tactic caused concern for the initial coder, they could omit the tactic or place it within a theme and record an explanation for their decision. Using these notes, the authors resolved the few issues that arose. Most of these issues stemmed from surveys that contained inapplicable content, as mentioned in the Participants section.

Results

Due to the nature of intrasexual competition, and the exploratory goals of this study, a qualitative methodology was selected. Liebscher (1998) supports the use of qualitative approaches when the phenomena under scrutiny are complex, social in nature, and do not readily lend themselves to quantification. In order to make the process of qualitative analysis transparent, the form and the associated rationale of the analysis is now provided. The qualitative data analysis was divided into three stages, which mirrors the widely established “grounded theory” approach (Glaser & Strauss, 1967).

First, all the statements were read, free of any extraneous information (e.g., demographics), and general categories were identified. This procedure is often called “open coding” (Lindlof & Taylor, 2002; Strauss, 1987) because there are no predestined categories or themes to guide the process. Instead, the process is completely unrestricted in that the data are chunked according to their coherent meaning (Lindlof & Taylor, 2002).

In the second, “integration” stage (Glaser & Strauss, 1967), the identified categories were examined in connection to each other. This process for finding interconnectivity among categories resulted in the collapse of many categories into a few, broader themes. As a consequence, the analysis is transformed from a collection of incidents or statements into emergent theoretical constructs (Lindlof & Taylor, 2002).

The third, “dimensionalization” stage (Glaser & Strauss, 1967) was performed, such that the components, or dimensions (called *subthemes* below), of the theoretical constructs were fully explored to the extent that the study became “theoretically saturated.” At this point, new statements added little, if any, value to the existing themes or categories (Lindlof & Taylor, 2002). At this point, the analysis was complete and interpretation was performed. All four coders were fully trained in this procedure prior to any data analysis and were financially compensated for their time to ensure they were not hurried or rushed.

A systematic hierarchy with labels for each tier was created to allow for discussion of the findings. Hence, “theme” refers to the overall, first tier, which is the broadest division of intrasexual competition. Note that we have referred to the themes as strategies up until this point; however, in keeping with the qualitative analysis terminology, they will be referred to as themes. An example of a theme is “self-promotion.” “Subthemes” refers to the second tier, in which the general themes are constructed of components. An example of a subtheme is “appearance.” The third tier is composed of “categories,” which are the individual strategies listed by participants, grouped according to topic. For example,

within the subtheme of appearance, “dressing-up” would be a category. The final tier, called “tactics,” is composed of the actual statements provided by participants. For example, a female participant wrote, “I compete with other girls by dressing-up when we go out clubbing.”

All statements were transferred into a database with all identifiers and demographic information (i.e., sex, relationship status) removed. The statements were then grouped according to similarity in terms of content by the coders using the methods described above. This process revealed intrasexual competition is composed of four themes: self-promotion, competitor derogation, mate manipulation, and competitor manipulation, in addition to a general “unknown” theme for which the statements could not be classified. For example, the tactic “let other people do the talking” was classified as unknown in that the purpose of the action could not be ascertained because it was impossible to identify whether the participant meant the rivals or the potential mate when referring to others. A full listing of these categories (and the corresponding subthemes) is provided in the Appendix.

Tactics related to self-promotion were the most frequently provided. Tactics related to self-promotion were listed (according to category counts) 683 times by participants, compared to 144 times for competitor derogation, 20 times for competitor manipulation, and 180 times for mate manipulation. There was substantial variation between participants in the number of tactics provided and, consequently, the numbers of categories, as participants were asked to write as little or as much as they felt necessary. A total of 12% of participants listed a tactic belonging to one category, 17% listed tactics belonging to two categories, 23% listed tactics belonging to three categories, 23% listed tactics belonging to four categories, 12% listed tactics belonging to five categories, and 25% listed tactics belonging to six or more categories.

To explore the possibility of sex differences and differences due to relationship status in strategy use, the tactics provided by the participants were linked with the demographic variables after coding was completed. The sex

of the participant did not influence the number of categories as shown by a two-tailed, independent samples *t* test, $t(239) = .55$, *ns*, nor did relationship status (i.e., involved vs. uninvolved), $t(239) = 1.42$, *ns*.

Although the focus of our study was qualitative in nature, we created a repeated measures analysis of variance (ANOVA) model to investigate whether participant sex (female vs. male) and relationship status (involved vs. uninvolved) influenced the number of tactics that people provided. The within-subject variable was subtheme (self-promotion, competitor derogation, competitor manipulation, and mate manipulation) and the dependent variable was the number of tactics provided. There was no main effect for participant sex, $F(1, 234) = 2.04$, *ns*, nor for relationship status, $F(1, 234) = .001$, *ns*. The interaction between participant sex and relationship status was also not significant, $F(1, 234) = 2.78$, *ns*.

There was a significant difference in the number of tactics provided for each subtheme. Pairwise comparisons revealed significant differences at $p < .01$ for all comparisons between self-promotion ($M = 2.79$, $SD = 2.44$), competitor derogation ($M = .60$, $SD = 1.05$), competitor manipulation ($M = .07$, $SD = .33$), and mate manipulation ($M = .74$, $SD = 1.12$), with the exception of the comparison between competitor derogation and mate manipulation.

As for the other within-subject comparisons, there was no significant interaction between the subthemes and participant sex, $F(3, 702) = 2.16$, *ns*, nor between the subthemes and relationship status, $F(3, 702) = .05$, *ns*. There was no overall interaction between the subthemes, participant sex, and relationship status, $F(3, 702) = .81$, *ns*.

Due to the low number of people who listed any particular tactic (i.e., often less than 15 individuals, per sex, and fewer still when partitioned for relationship status), it was not possible to perform reliable quantitative statistical analyses beyond those already presented. However, given that past researchers (e.g., Buss, 1988) have indicated sex-specific competitive strategies, it was necessary to further investigate potential sex differences

in the subthemes. Therefore, for the purposes of exploration, percentages were calculated to consider how many women and men listed the tactics under each subtheme (see the Appendix). It is important to note that although men (total = 311; $M = 3.89$, $SD = 2.23$) stated fewer actions in total, and on average, than women (total = 716; $M = 4.44$, $SD = 2.97$), this difference was not significant as shown by a one-way ANOVA, $F(1, 239) = 2.22$, *ns*. To test for significance for the subthemes, two-tailed z tests for proportions were performed, with 95% confidence intervals. Within self-promotion, women (72.7%) were significantly more likely than men (58.7%) to list tactics related to appearance, $z = 2.05$, $p = .02$. Also within self-promotion, women (34.8%) were significantly more likely than men (18.7%) to list tactics for body and athleticism, $z = 2.42$, $p = .008$. The third and final significant difference was within the strategy of competitor derogation, such that men (13.7%) were significantly more likely than women (2.5%) to list tactics related to direct action, $z = 2.92$, $p = .002$.

Discussion

Using a grounded theory approach, the qualitative analyses revealed that intrasexual competition for mates is composed of four strategies: self-promotion, competitor derogation, mate manipulation, and competitor manipulation. When participants were asked to think of the ways that they compete for a mate, they most frequently listed tactics relating to self-promotion, followed by mate manipulation, competitor derogation, and competitor manipulation. The quantitative analyses showed that there are no significant sex differences in the use of these strategies, or differences due to relationship status. However, at the subtheme level, women are more likely to self-promote their appearance, and body and athleticism, thus providing some support for the hypothesis that women would self-promote with their appearance, but failed to support the hypothesis that they would also competitor derogate rivals' appearance. We also did not find support for the hypothesis

that men would self-promote with respect to resources, but we did find support for the hypothesis that men would competitor derogate a rival's resources. In the subtheme of direct action, one tactic was to put down a rival's material possessions, although only a small number of men directly provided this as a tactic ($n = 3$). As for relationship status influences, we did not support our hypothesis that those who are romantically uninvolved would self-promote more than those who have a mate, or that those who are romantically involved would competitor derogate more than those with a mate.

As mentioned, participants stated tactics for self-promotion significantly more often than the other strategies. Perhaps self-promotion is the most socially desirable strategy, as it can be perceived as self-improvement if it involves general actions that are useful against any unspecified competitors (e.g., using cosmetics). Furthermore, if individuals use self-promotion for the purposes of intrasexual competition and are then accused of competing, they can deny it and claim to be performing self-improvement. It might also be the case that people are simply trying to be as efficient because some of the tactics for self-promotion also improve one's physical fitness or health.

Another reason that tactics for self-promotion might have been listed the most often is that they are simply the most effective, as suggested by other researchers (Buss, 1988; Schmitt & Buss, 1996). When one attempts to derogate a competitor or manipulate a competitor or potential mate, one must be aware of the latter's identity. Self-promotion does not rely on this knowledge. Many of the tactics classified as self-promotion (e.g., dressing well) are useful against any number of rivals and can be performed without any knowledge of the rivals' identities. Conversely, a derogatory act such as spreading a nasty rumor about a rival's promiscuity means that one particular individual, the rival, has been implicated. Self-promotion allows one to compete with a large number of people within the immediate mating environment. Self-promotion could also

advertise to potential mates that one is ambitious and is making an effort to improve oneself, leading them to be perceived as a desirable prospective mate. These positive features are in stark contrast to the other strategies. Those who attempt to redirect another person's attention or behaviors might be perceived as being manipulative and as meddling, traits that are not socially desirable. Similarly, those who use tactics for competitor derogation, such as making a negative comment about a potential rival, might be perceived as mean-spirited (e.g., Schmitt & Buss, 1996) and, hence, as an undesirable mate.

A further contributing factor to explain the frequency of self-promotion is that the other tactics, excluding those under mate manipulation, often require the competitors to be present. One needs to have identified and targeted a specific rival for manipulation or derogation, thus limiting the number of situations in which they can be applied. Mate manipulation tactics, which also do not require a competitor to be present, are the next most used, which suggests that the generality and wide applicability of these tactics are factors that influence their frequent use.

It is interesting that participant sex and relationship status appeared to have minimal impact on the strategies. Because the primary goal of Study 1 was to identify, using a qualitative method, the components of intrasexual competition, the level of analysis was by necessity quite broad and may have led us to miss potential sex differences or differences due to relationship status. The strength of the qualitative approach is also the most noteworthy limitation of Study 1 in that exploratory and confirmatory data are needed to quantify and explore any potential sex differences and differences due to relationship status in the new strategies of competitor manipulation and mate manipulation. Furthermore, it is entirely possible that people simply did not think of all the tactics that they have used in intrasexual competition for mates, and thus, the findings might be different if presented with potential behaviors rather than freely recalling them. Therefore, Study 2 was created to further explore the presence of sex differences and relationship status in strategy use.

Study 2

Method

As mentioned, the goal of Study 2 was to determine sex differences and differences due to relationship status in the use of self-promotion, competitor derogation, competitor manipulation, and mate manipulation. A survey was created based on the qualitative findings of Study 1, which ensured the content of the items were accurate and comprehensive. We hypothesized that self-promotion would remain the primary choice of individuals and thus be favored over the other three strategies.

Rather than test for the frequency of sex-specific behaviors, the survey was based on the actions both women and men reported performing in Study 1. That is, instead of having a survey item pertaining to the wearing of cosmetics, which only women reported, we asked about more generic self-promotion behaviors such as trying to physically look more attractive. Similarly, because only men reported in Study 1 that they put down a rival's material possessions (i.e., use resources as a focal point for competitor derogation), we instead asked participants how likely they would be to actively put down the rival to their mate. Our intention was not to create sex differences in strategy use because some tactics are performed by only one sex, but instead determine whether there were sex differences at the strategy level. Given that the results of Study 1 indicated that significantly more women provided tactics for two of the seven subthemes of self-promotion, we hypothesized that women would self-promote more than men. Similarly, because significantly more men provided tactics for one of seven subthemes for competitor derogation in Study 1, we predicted men would be more likely to competitor derogate than women.

Mirroring Study 1, we additionally hypothesized that relationship status would significantly impact on strategy use, such that those who are romantically involved would competitor derogate more than those without a mate, and those who are romantically uninvolved would self-promote more than those with a mate. Note that although mate manipulation involves relationship status, it is a

strategy that one could use when initially identifying a potential mate, casually dating someone, or in a long-term relationship. Thus, whereas competitor derogation suggests one is confident enough in their current relationship that they will not be discarded for seeming mean-spirited, mate manipulation is a strategy that might be used by someone at any stage in the mating process. Thus, we did not expect our data to suggest relationship status influences on mate manipulation. Similarly, competitor manipulation involves tactics that would be advantageous at any stage in the mating process, and several tactics do not necessitate clear identification of a single mate. Therefore, we did not hypothesize differences due to relationship status for this strategy.

Participants

A total of 93 women (age, in years, $M = 20.44$, $SD = 2.01$) and 33 men ($M = 20.72$, $SD = 1.75$) participated in the study, all of whom were heterosexual. Participants were psychology students who received course credit for their participation. Fifty-nine women reported they were in a committed relationship and 7 in causal relationships. Of the remaining 27 women, 21 were seeking a mate. Of the 33 men, 13 were currently involved in a committed romantic relationship and 4 in a casual relationship. Of the remaining 16 men, 12 were currently seeking a mate. We only obtained a small sample of individuals who were dating casually, and hence, we opted to include these participants with those who were romantically uninvolved. Thus, the distinction between romantically involved or uninvolved centers around feelings of commitment toward a relationship, not whether the individual is simply dating or not.

Measures

The Intrasexual Competition Survey was created to contain 24 items created to represent each subtheme identified in Study 1. The instructions read:

When dating, people often feel it is necessary to perform certain activities to

make themselves seem better than potential rivals. Similarly, those in romantic relationships may have to complete to retain their current mates. Please think about your current relationship, or some of your dating experience and then answer the following questions. For simplicity, we refer to your dating partner or partner in your romantic relationship as your mate. If you don't currently have a mate or aren't dating, simply answer as honestly as you can based on your past behaviour or how you think you would act in the future. Circle the number that best corresponds to your behaviour. There are no right or wrong answers. Please answer honestly.

Then, there was a prime, "If I sense that a rival is competing with me for attention, I would," and the items were listed, in random order such that those from the four strategies were intermixed. All items had a Likert-type scale ranging from 1 (*definitely would not do*) to 7 (*definitely would do*). The self-promotion items were as follows and are listed in the order they appeared on the survey although they were intermixed with other tactics. Note that we have listed the specific subtheme each item was intended to capture in parentheses, but this information was not provided to the participant. Thus, for self-promotion: (a) try to make myself physically look more attractive and perhaps wear some cologne or perfume (appearance); (b) try to seem nice, caring, and helpful (personality advertisement); (c) try to seem independent and maybe play a little "hard to get" with my mate (autonomy); (d) flirt and make good eye contact with my mate (direct contact); (e) show off my body, especially one of my good features (body and athleticism); and (f) try to hide my flaws (general). We also included one item that was simply a description of the strategy itself: (g) try to promote myself in some way. For this strategy, Cronbach's $\alpha = .78$. The competitor derogation items were (a) mention to my mate that the rival is immature (personality); (b) tell my mate that the rival is promiscuous (sexuality); (c) actively put down the rival to my mate (direct action); (d) try to derogate or

say something negative about the rival (strategy description); (e) telling gossip about the rival to my mate (gossip); (f) hide good things about the rival when asked about them (indirect action); and (g) point out to my mate some of the flaws in the rival's appearance (appearance), Cronbach's $\alpha = .90$. The competitor manipulation items were (a) try to make the rival feel really self-conscious (general); (b) tell the rival that they look fine when they do not, or recommend they wear something that I think makes them look unattractive (appearance); (c) tell the rival that my mate is dumb or boring, and would not make a good mate for them (target derogation); (d) try to manipulate the rival in some way (strategy description); and (e) try to divert the rival's attention to people other than my mate (target elimination), Cronbach's $\alpha = .75$. The mate manipulation items were (a) compliment my mate, or tell my mate things I know they want to hear (partner satisfaction); (b) try to get my mate to open up to me to establish common interests (establish commonality); (c) try to exclude the rival from any activities involving my mate (mate guarding); (d) tell my mate how much I am interested in them (mate attraction); and (e) try to manipulate my mate somehow (strategy description), Cronbach's $\alpha = .69$. The overall scale had high internal reliability, Cronbach's $\alpha = .91$.

Procedures

After providing informed consent, the participants completed a brief demographic survey and the Intrasexual Competition Survey while alone in a private room. When finished, they sealed the surveys in an envelope, returned it to the researcher, and were debriefed.

Results

A repeated measures multivariate analysis of variance was created, with mean value of each of the four strategies (self-promotion, competitor derogation, competitor manipulation, and mate manipulation) as the repeated dependent variable, and participant sex (female vs. male) and relationship status (involved vs. uninvolved) as the between-participant independent variables. There was a main effect

for relationship status, $F(1, 120) = 5.63$, $p = .02$, but not for sex, $F(1, 120) = 1.02$, ns , nor for the interaction of relationship status and sex, $F(1, 120) = .66$, ns . Those involved in a romantic relationship ($M = 4.42$, $SD = 1.13$) reported higher overall mean strategy use than those uninvolved in a romantic relationship ($M = 3.98$, $SD = 1.09$).

There was also a significant main effect for strategy, $F(3, 360) = 80.29$, $p < .000$. Pairwise comparisons revealed significant differences at $p < .01$ for all comparisons between self-promotion ($M = 5.15$, $SD = 1.00$), competitor derogation ($M = 3.42$, $SD = 1.35$), competitor manipulation ($M = 3.40$, $SD = 1.17$), and mate manipulation ($M = 4.76$, $SD = 1.00$), with the exception of the comparison between competitor derogation and competitor manipulation.

The interaction of strategy and relationship status was significant, $F(3, 360) = 3.51$, $p = .01$. As shown in Figure 1, independent samples t tests revealed a significant difference for those involved versus uninvolved, $t(123) = 3.41$, $p = .001$. Those involved ($M = 3.74$, $SD = 1.31$) in romantic relationship provided higher ratings for competitor derogation than those who were uninvolved ($M = 2.93$,

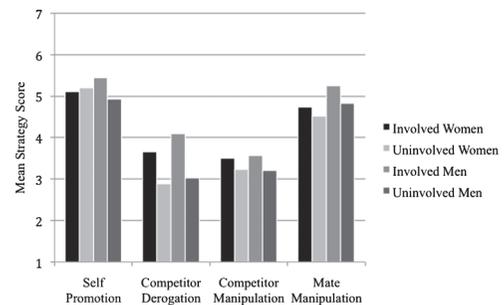


Figure 1. Intrasexual competitive strategy by participant sex and relationship status.

Note. Participants report a significant tendency to use self-promotion over all other strategies. There was no significant difference in reported use of competitor derogation or competitor manipulation. There were no significant sex differences in strategy use. However, those involved versus uninvolved in a romantic relationship were significantly more likely to use competitor derogation.

$SD = 1.25$). No other comparison was significant. Finally, the interaction of strategy and participant sex was not significant, $F(3, 360) = 2.40$, $p = .07$, nor was the interaction of strategy, sex, and relationship status, $F(3, 360) = .73$, ns .

As shown in Table 1, many of the strategies were correlated with each other, depending on the sex of the participant and romantic relationship status. Self-promotion and competitor derogation were not correlated for involved or uninvolved women or men. In contrast, competitor derogation and competitor manipulation were highly correlated, as was self-promotion and mate manipulation.

Discussion

Our findings indicate that people tend to use self-promotion the most, followed by mate manipulation, with equivalent use for competitor derogation and competitor manipulation. This result adds further support to the

possibility that people want to appear desirable to a potential mate and rely on tactics that could lead them to seem mean-spirited only as a last resort. As previously discussed, self-promotion involves the enhancement of one's own features or behaviors rather than acting negatively toward a rival. Similarly, mate manipulation involves several activities that could be construed as positive, such as establishing a common ground with the mate, expressing an interest in the mate, or treating them respectfully. In fact, the only subtheme that contains any potentially negative aspect is mate guarding, in that the mate may be deceived or controlled.

Although mate manipulation presumably increases one's chance of successfully obtaining a mate, it is logical that it should be second to self-promotion. One explanation is that self-promotion involves the display of traits that are preferred by the opposite sex (Buss, 1988), and thus, an individual can use this

Table 1. Correlations for intrasexual competition strategy use as a function of participant sex and romantic relationship status

Strategy	1	2	3	4
Women involved in romantic relationships ($n = 59$)				
1. Self-promotion	—	.23	.42**	.68***
2. Competitor derogation		—	.70***	.51***
3. Competitor manipulation			—	.61***
4. Mate manipulation				—
Women not involved in romantic relationships ($n = 34$)				
1. Self-promotion	—	.24	.51*	.74***
2. Competitor derogation		—	.73***	.34
3. Competitor manipulation			—	.40*
4. Mate manipulation				—
Men involved in romantic relationships ($n = 13$)				
1. Self-promotion	—	.57*	.52*	.78**
2. Competitor derogation		—	.70**	.59*
3. Competitor manipulation			—	.61*
4. Mate manipulation				—
Men not involved in romantic relationships ($n = 20$)				
1. Self-promotion	—	.31	.50*	.69**
2. Competitor derogation		—	.84***	.42
3. Competitor manipulation			—	.59**
4. Mate manipulation				—

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

strategy to attract a large number of mates. That is, an individual does not need to identify a specific mate to use the strategy. In contrast, mate manipulation involves identifying and interacting with one particular mate.

We were unable to support our hypothesized sex difference in strategy use, such that women would self-promote more than men, and men would competitor derogate more than women. Individuals use all four strategies the same, regardless of whether they are women or men. However, what remains unknown is whether there are sex differences in when they are used in the mating process, or in the situations that elicit their use.

Our results did partially support our hypothesis concerning romantic relationship status. As predicted, involved individuals were significantly more likely to competitor derogate than uninvolved individuals. People who are perceived to be rivals might be derogated as a way of helping maintain a romantic relationship. As well, once one has a mate, it is no longer as effective to self-promote given that the mate already knows about one's features. In contrast, one might decide to competitor derogate potential rivals, even though it is risky in that it could draw the mate's attention to these individuals and one might be perceived as mean-spirited or petty (see Fisher & Cox, 2009a, for review). Interestingly, though, we did not obtain support for the hypothesis that uninvolved individuals would self-promote more than involved individuals. Perhaps self-promotion is such an efficient strategy for intrasexual competition for mates that it is heavily relied upon by most people, regardless of their relationship status. Alternatively, self-promotion could be linked to socially desirable behaviors that are reinforced by society, in that Canadian and American cultures endorse self-improvement (White & Lehman, 2005), and hence, they reflect societal norms more than individual's competitive strategy choice.

General Discussion

Together, these studies clearly show that intrasexual competition is composed of four

strategies: self-promotion, competitor derogation, competitor manipulation, and mate manipulation. In Study 1, participants were asked to report any behaviors that they use to compete for mates. A qualitative analysis was used, and the results revealed these four strategies. There were no differences due to romantic relationship status. There were, however, three sex differences. Women were significantly more likely than men to list self-promoting tactics concerning their general physical appearance and concerning their body and athleticism. Men were significantly more likely to use direct actions, including bullying or intimidating a rival or putting down a rival's material possessions, when derogating a competitor. There were also differences in the frequency of the strategies being mentioned. Participants listed tactics of self-promotion the most, followed by mate manipulation, competitor derogation, and competitor manipulation.

A survey was constructed for Study 2 using the subthemes collected in Study 1 to determine how often the subthemes are used and whether usage is influenced by sex or relationship status. Self-promotion was the most used strategy, followed by mate manipulation. The strategies of competitor derogation and competitor manipulation were not significantly different in reported usage. There were no sex differences in strategy use. Relationship status, though, did have an impact on strategy use, such that involved individuals were more likely to competitor derogate than uninvolved individuals.

The lack of a sex difference in Study 2 is curious, given past research. For example, Buss and Dedden (1990) asked participants how likely they would be to employ various competitor derogations, and the results yielded the anticipated sex difference. This approach is very similar to the one used in Study 2, so the lack of congruent findings is unexpected. The Buss and Dedden study was performed approximately 20 years ago, so perhaps methods of intrasexual competition have shown a temporal shift. As well, the content of our survey was quite distinct from past studies which have only examined one strategy (e.g., Buss, 1988; Buss & Dedden,

1990). In our study, participants were provided with various tactics representing four different strategies. Perhaps they based the likelihood of their behaviors relative to the surrounding items on the survey. A third explanation is that the strategies we developed were intentionally comprehensive, so indirect or subtle forms of competition were included. Walters and Crawford (1994) noted this issue in their work as a limitation, and our study sought to address this concern. Thus, it is possible that once subtle forms of competition are included, the previously documented sex difference becomes insignificant. This possibility is speculative, but worthy of further investigation.

The findings of studies suggest that the strategies might be used in distinct ways, depending on the stage one is at in their competition for a mate. Self-promotion can be performed with only minimal knowledge about one's rivals, and hence it might represent the first step one takes in intrasexually competing with others for an unspecified mate. Also, one likely self-promotes to make the best impression possible to potential mates as well as rivals (i.e., self presentation or impression management; Leary, 1996). Once the mate has been targeted, mate manipulation can occur. However, if the mate has a partner of high mate value, one might withdraw and find a different mate where there is a better chance of success (e.g., Penke, Todd, Lenton, & Fasolo, 2007). In contrast, if one feels that the rivals are of similar mate value, they might begin to engage in competitor derogation and manipulation. Thus, the strategies do not necessarily have to occur during the same temporal phase of finding and retaining a mate, but rather, they may occur in a sequence, beginning with the broadest strategy (self-promotion) and ending with mate manipulation where one is, for example, attempting to guard one's mate. Of course, one is presumably still opportunistic and applies the strategy that seems most promising for any specific situation.

Although the findings indicate that all four strategies are used during intrasexual competition, it is important to note that they might be effective only within a rarely occurring,

particular mating context. For example, one can perform competitor manipulation by attempting to lower their value of the target (i.e., the desired mate). However, this tactic is highly risky as the potential mate may learn that one has said that they are unattractive. If the rival tells the mate what was said, one could lose the mate. The risk involved with this tactic suggests that it can only be used in limited contexts when it is probable that the rival will not communicate the derogation. However, target derogation might be an effective emergency tactic if the rival seems highly interested in the mate and one is not likely to interact with the mate otherwise.

The hypothesis that intrasexual competition includes strategies for mate and competitor manipulation is supported. People reported performing actions of mate guarding, whereby their rivals are excluded from activities, not mentioned to the mate, or suggested as being romantically involved with someone else. Participants also reported their attempts to spend as much time as possible with their mate, or to spend time alone with their mate. These actions can all be seen attempts to dominate, and hence manipulate, the mate's attention. We are certainly not the first to document the existence of sequestering behaviors, such as mate guarding (Buss, 2002), but our findings appear to be the first to fit these behaviors directly within the conceptual framework of intrasexual competition and to compare their occurrence with other strategies. People also reported manipulating the value of a potential mate by stating to rivals, for example, that he was a homosexual when he was not or that he appeared promiscuous when they believed the opposite to be true. These actions can be considered as attempts to manipulate the rival's perceptions for improving one's competitive chances.

An intriguing and unexpected result of our grounded analysis in Study 1 was that the audience of the tactic varies. When competing intrasexually for mates, people resort to manipulating themselves (i.e., self-promotion), derogating others, or manipulating a competitor or mate. Study 2 more fully explored the issue of audience, as the items

generally focused on one's behavior and the intended receiver or viewer of that behavior.

It might be the case that the tactics uncovered by our study are somewhat generic and exist outside of the realm of competition for mates. That is, if one changed the purpose of the competition, one might see that the same, or very similar, tactics are used in a wide range of other interpersonal relationships. For example, one could explore how people attempt to manipulate the attention of others in order to initiate or maintain a friendship, receive additional attention from a parent, or to increase their popularity in the workplace. In these examples, people still try to make themselves appear better than they are; to make others seem less kind, faithful, or attractive than they might be; or to manipulate how much time the target spends with oneself versus one's rivals. De Block and Dewitte (2007) suggest that "mating games," including competition for mates, are the catalyst behind the emergence and maintenance of many human cultural practices. This contention lends support to the idea that human behaviors, such as intrasexual competition for mates, should then be seen outside of the mating realm, but in other forms. Our study thus illuminates new avenues for research within many areas of interpersonal relationships that might involve behaviors that have evolved for intrasexual competition for mates.

Another direction for future research is to examine the role of decision making within intrasexual competition. Armed with this arsenal of potential strategies, how does one decide which particular strategy to use? Numerous factors likely affect this decision-making process, such as the quality of the mate, identity of the rival, or particular features of the individual. For example, because women's attractiveness is highly important to men (e.g., Buss, 1989), it is possible that women gauge their own attractiveness with respect to other women to determine the type of strategy they will employ. That is, a woman who is unattractive and has a low mate value is less able to effectively derogate the appearance of a rival than an attractive woman (Fisher & Cox, 2009a) and instead is likely to use alternative tactics. However, assessments

of the physical attractiveness of one's rivals for mates are rarely accurate, as people tend to overestimate rivals' attractiveness (Hill, 2007). This finding indicates that the decision-making process may also be inaccurate if it is based entirely on physical attractiveness evaluations, and hence, it must include multiple sources of information to ensure successful deployment. Therefore, the attractiveness of the rivals, the number of rivals, and the riskiness of the tactic will all play a role in deciding which strategy and specific tactic to use.

Many of the tactics illuminated by Study 1 and refined in Study 2 do not need to be applied immediately and in the presence of a mate. For example, the tactic of "keep rivals busy" may be a long-term tactic that is employed after a potential mate and the appropriate rivals have been identified. Thus, intrasexual competition must not only be viewed as a short-term activity (e.g., a night out at a dance club) but also a long-term activity that takes place over the entire mate acquisition process. Recent research (e.g., Fisher & Cox, 2009b) suggests that receptivity rates to advances by men are not affected by a woman's relationship status. Consequently, if receptivity is not affected, interest in other men may also be unaffected by relationship status, causing a continual need to intrasexually compete. Participants listed many mate guarding activities as part of the competition process, which suggests that even when a potential mate has been targeted, and possibly obtained, competition for that mate is not completed or stopped. Acquisition of a mate is not the end of intrasexual competition but is rather a transition point where one switches from acquiring the mate to protecting the mate from potential mate poachers.

The major strength of this research is that it is the first to examine strategies for intrasexual competition that are not encompassed by self-promotion and competitor derogation. Given that there are costs for competing (e.g., effort, time), it is not surprising that people use strategies to reduce or eliminate the need for competition through the manipulation of the potential mate or rivals. An additional strength of the current research is that it is

completely “grounded” in the data. There is no set formula for dealing with qualitative data (Marecek, Fine, & Kidder, 1997), and thus, the findings of Study 1 fully reflect the themes present in the data, which then served as the basis of Study 2. Therefore, aside from the motivation to do the research, the model of intrasexual competition that was created by the current research is based on the data, not on preexisting beliefs, hypotheses, or theory. Study 2 then confirmed the results of Study 1 and provided a reliable survey that can be used in future research involving intrasexual competition for mates.

In summary, these data suggest that intrasexual competition is composed of self-promotion, competitor derogation, mate manipulation, and competitor manipulation. Although previous research has identified the first two strategies, we have found two additional strategies that are in common use. As well, while it has been reported that self-promotion is used more than competitor derogation, a finding that we replicate, we also found that mate manipulation is used more than competitor derogation and is consequently a key strategy used during intrasexual competition. Our findings offer new avenues for future research, including explorations into how these strategies function in other forms of interpersonal relationships.

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Appendix. Subthemes and categories for competitive actions

Subtheme and usage	Categories
<i>Strategy of self-promotion</i>	
Appearance $W = 72.7\%$, $M = 58.7\%$ $z = 2.05$, $p = .02$	Dress well or dress up Look good Wear sexy, revealing, tight, cute clothes Wear make-up or paint nails Wear jewelery Change hairstyle, shave, grooming Smell good, wear cologne or perfume Be clean, shower regularly Dress better than rivals
Body and athleticism $W = 34.8\%$, $M = 18.7\%$ $z = 2.42$, $p = .008$	Show off my body Show off my muscles Work out to be strong or fit Weight maintenance Have good posture Wear underwire bras to be bustier, improve shape Play sports and win
Personality advertisement $W = 59.0\%$, $M = 65.0\%$ $z = 0.76$, ns	Seem caring Seem helpful Seem nice Do not seem jealous Be talkative, not shy Have high self-esteem, seem confident Seem smart, have intelligent conversations Seem friendly Be intriguing, interesting, or mysterious Seem laid-back, calm, relaxed Be outgoing, fun-loving Be funny, make potential mate laugh Have a unique style and attitude

Appendix. *Continued*

Subtheme and usage	Categories
	Be popular and social
	Be honest, be myself
	Act like a sweetheart, act sweet, cute
	Act innocent
	Act big, masculine, and “tuff”
	Act powerful
	Act charming
	Be loving and committed
	Show interest in fashion magazines and clothes
	Demonstrate parenting skills
	Avoid gossip so you do not seem mean or spiteful
Autonomy $W = 5.6\%$, $M = 5.0\%$ $z = 0.14$, <i>ns</i>	Be independent
	Think outside the box
	Surround myself with women to make mate jealous
	Play hard to get
	Seem like I do not care if mate likes me
Direct contact $W = 7.5\%$, $M = 10\%$ $z = 0.44$, <i>ns</i>	Flirt
	Smile
	Maintain high levels of eye contact
	Touch potential mate
	Be first to make advances like kissing
	Dance seductively with potential mate or alone
	Seduce the guy
General $W = 23\%$, $M = 23.7\%$ $z = 0.011$, <i>ns</i>	Do the best in a crowd, brag
	Show best qualities
	Outshine others
	Hide my flaws or justify them
	Tell them you are a virgin
	Demonstrate life experience
	Show mate my ability to manage domestic life
<i>Strategy of competitor derogation</i>	
Appearance $W = 2.5\%$, $M = 3.7\%$ $z = 0.16$, <i>ns</i>	Say rival is ugly
	Point out flaws in appearance
Personality $W = 3.7\%$, $M = 5.0\%$ $z = 0.13$, <i>ns</i>	Point out rival is dumb
	Point out rival is immature
	Point out to guy that rival is obsessive
Sexuality $W = 6.2\%$, $M = 6.2\%$ $z = 0.28$, <i>ns</i>	Say rival is promiscuous
	Say rival cheats and is unfaithful
Gossip $W = 12.4\%$, $M = 20.0\%$ $z = 1.45$, <i>ns</i>	Tell mate rival’s secrets
	Say bad things about rival to mate
	Spread rumors about rival
	Point out rival’s mistakes

Appendix. *Continued*

Subtheme and usage	Categories
Direct action $W = 2.5\%$, $M = 13.7\%$ $z = 2.92$ $p = .002$	Tell guy that the girl (rival) insulted him Say rival causes problems in relationships Bully, intimidate, or confront rival Take over conversations involving rival One up rival Be aggressive Make fun of rival Put down rival's material possessions
Indirect action $W = 16.1\%$, $M = 17.5\%$ $z = 0.01$, <i>ns</i>	Do not defend a friend that is a competitor Hide good things about rival when asked
<i>Strategy of competitor manipulation</i>	
Appearance $W = 1.9\%$, $M = 0.0\%$ $z = 0.57$, <i>ns</i>	Tell my friend to wear something ugly Tell my friend that outfit or hair are fine, even if not Hide my outfit from rivals
Target elimination $W = 5.6\%$, $M = 1.2\%$ $z = 1.23$, <i>ns</i>	Tell other girl I am already dating him Divert rival's attention to other mates Tell rival they are not right for mate Keep rival busy so I get time with mate If guy is interested I do not let her know it Tell rival that (potential) mate is homosexual
Target derogation $W = 1.2\%$, $M = 1.3\%$ $z = 0.61$, <i>ns</i>	Tell rival that mate is ugly Tell rival that mate is dumb, boring
General $W = 2.5\%$, $M = 0.0\%$ $z = 0.84$, <i>ns</i>	Look at other girls so they feel self-conscious Do not let other girls know I am competing Stand beside rival in mirror when we shop
<i>Strategy of mate manipulation</i>	
Mate attraction $W = 20.5\%$, $M = 11.2\%$ $z = 1.55$, <i>ns</i>	Tell mate I am interested Talk to mate, more or before rival Make it obvious I like the mate Show him he is only one I am interested in Laugh more than usual
Establish commonality $W = 11.8\%$, $M = 11.2\%$ $z = 0.21$, <i>ns</i>	Find out mate's interests Cater activities to what mate enjoys Let mate in on my personal life Try to get mate to open up to me Hang out with mate's friends Get in good with her parents
Mate guarding $W = 22.4\%$, $M = 18.7\%$ $z = 0.55$, <i>ns</i>	Exclude rival from activities Spend time alone with mate Take mate out more than rival

Appendix. *Continued*

Subtheme and usage	Categories
Partner satisfaction $W = 11.2\%$, $M = 12.5\%$ $z = 0.02$, <i>ns</i>	Be around mate as much as possible Tell mate that rival is already in a relationship Tell mate that rival is unavailable, even if they are Tell mate that the rival is a homosexual Never mention rival in a conversation Say my friend likes a different girl Compliment mate (in general) Compliment mate's appearance Try to make date positive, even if awkward Say things the guy wants to hear Say you are willing to be bisexual to please partner Treat her respectfully Do things for them like cooking (learn to cook) Take girl to expensive restaurant Have more sex Be better listener