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ORIGINAL ARTICLE

# Cross-sex Friendships: Who has More?

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**Abstract** This is the first study to examine the independent, simultaneous, and relative roles of several factors—sex, relationship commitment, perceptions of the benefits vs. costs of cross-sex (vs. same-sex) friendships, gender role orientation, and sexism—in the number of cross-sex (vs. same-sex) friendships people have. The latter four constructs were independently found to predict participants' proportions of cross-sex friendships. Furthermore, a model comprised of all five factors provided a very good fit to the data, explaining 35% of the variability in the degree to which the participants possessed cross-sex friendships. Perceptions regarding the general benefits of both same- and cross-sex friendships and cross-gender role orientation continued to explain proportion of cross-sex friendship when the other factors were controlled.

**Keywords** Cross-sex friendship · Gender role orientation · Sexism · Relationship commitment · Benefits vs. costs

People typically have more same-sex than cross-sex friendships (Booth & Hess, 1974; Rose, 1985). Rawlins (1982) suggested that men and women form more same-sex friendships because societally normative relationship models prescribe that men and women should become paired only for romantic relationships. However, Gottman (1994) argued that it simply reflects different interaction styles between the sexes. For many decades, researchers viewed cross-sex friendships (CSFs) as nothing more than potential romantic relationships (Bleske-Rechek & Buss, 2001). For this reason, as well as the predominance of same-sex friendships (SSFs) in people's lives, the study of platonic CSFs was long neglected. CSFs are seen now, however, as distinct from romantic relationships because, like SSFs, they are platonic (Rubin, 1985), non-exclusive, and generally not ruled by passion (Sternberg, 1986). But CSFs are also distinct from SSFs because they are qualitatively different in several respects (Monsour, 2002; Werking, 1997). For example, there are at least four unique challenges faced by individuals in CSFs: defining the relationship, managing sexual attraction, establishing equality, and managing the interference of others (O'Meara, 1989).

Clearly, the study of CSFs has grown in recent years. Nevertheless, there is still much to learn about which personal characteristics predispose people to acquire and maintain cross-sex friendships. To date, research in this area has focused primarily on the examination of a single explanatory factor or the independent contributions of just a few factors (e.g., age, marital status, gender roles; Adams, 1985; Booth & Hess, 1974; Reeder, 2003; Rose, 1985). Furthermore, researchers have typically operationalized cross-sex friendship possession in a dichotomous manner (participant has vs. doesn't have), and, as a result, we still know little about factors that predict variation *within* those who do possess cross-sex friendships (but see Reeder, 2003). This study thus extends the previous research as it is the first to examine the independent, simultaneous, and relative roles of several factors—sex, relationship com-

The Preliminary Study that preceded the research described herein was the foundation of Laura Webber's undergraduate thesis, for which Alison P. Lenton served as supervisor (when the latter was affiliated with the University of Cambridge).

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mitment, perceptions of the benefits vs. costs of cross-sex (vs. same-sex) friendships, gender role orientation, and sexism—in the *number* of cross-sex (vs. same-sex) friendships people have. We focused on these particular constructs for three reasons: (1) to gain a better understanding of how personal predispositions, as opposed to physical setting or social forces (O'Meara, 1994), influence individuals' proportions of CSFs; (2) to tease apart which of these factors are the most meaningful predictors; and (3) to provide the first direct investigations of the roles of sexism, individual differences in the perceived benefits vs. costs of CSFs and SSFs, and relationship commitment (vs. relationship status) in the possession of CSFs. It is important to improve our understanding of the personal factors associated with the possession of cross-sex friendships, as the potential to form cross-sex friendships is an increasing phenomenon (at least in Western cultures; Monsour, 2002), and they are known to offer significant benefits to people's well-being across their lives (Monsour, 1997).

### Sex

A number of studies indicate that sex predicts whether or not a person will have cross-sex friendships (Booth & Hess, 1974; Reeder, 2003; Rose, 1985; Wright, 1989); men typically report having more such friendships. Among university-aged persons (as is our sample), Rose found that 100% of the men and 73% of the women reported having at least one close CSF. Notably, other research (Rubin, 1985) revealed that as many as two-thirds of those women men call 'close friends' do not share this perception of their relationship. Thus, whether or not sex is a consistent predictor of CSF possession remains somewhat unclear. Nevertheless, theories abound as to why men or women might have more CSFs. For example, men are thought to be more likely to have a cross-sex friend than women because men (more than women) tend to view cross-sex friendship as a gateway to a sexual and/or romantic relationship (Buhrke & Fuqua, 1987), and they may benefit more than women from this type of relationship (Bleske-Rechek & Buss, 2001). On the other hand, some research suggests that women may be more likely than men to have a cross-sex friend, as women are more likely than men to initiate the formation of 'platonic' CSFs (Buhrke & Fuqua). Accordingly, some studies do show that women report more CSFs than men do (Bell, 1981; Parker & DeVries, 1993).

### Relationship Commitment

Bleske-Rechek and Buss (2001) found that single people judged romantic potential as an important reason for initiating a CSF more so than did those who were already in a romantic relationship. Also, single (vs. partnered) people reported an increased desire to have a committed romantic relationship with their CSF. Furthermore, 30% of participants in O'Meara's (1994) study said that being romantically involved with someone else is one reason *not* to form or maintain CSFs and other research indicates that married persons have traditionally been less likely than single people to have CSFs (Booth & Hess, 1974; Rose, 1985). Thus, the seeking of CSFs may be a mate acquisition strategy. Based on this framework, we expected that increasing relationship commitment should be related to decreasing numbers of CSFs (relative to SSFs).

Other researchers have suggested, however, that one means by which to acquire cross-sex friends is via one's sexual–romantic partner (Fehr, 1996). If the majority of men's and women's friends are same-sex prior to and during young adulthood (Monsour, 2002), then participating in a heterosexual adult relationship should expose people to more potential friends of the other sex. It is well known that propinquity (e.g., Segal, 1974) and familiarity (e.g., Zajonc, 1968) breed liking. According to this point of view then, increasing relationship commitment may—at least initially—facilitate the procurement of cross-sex friendships. Taken together, this research suggests that there could be a non-linear relationship between relationship commitment and cross-sex friendships, whereby low commitment is associated with having more CSFs, but with deepening commitment there is a plateau or actual decrease in the number of CSFs. In the present study, we used a continuous measure of relationship commitment rather than the traditional dichotomization (i.e., single vs. married) in order to assess this prediction and in order to gain a more full understanding of why relationship status plays a role in determining who becomes our friend. Some research suggests that people avoid initiating cross-sex friendships after marriage because of societal and personal taboos about doing so (Werking, 1997) but, as Monsour (2002) pointed out, little is known about why romantic relationships appear to impact cross-sex friendship formation.

### Perceived Benefits vs. Costs of CSFs

Individuals may acquire and maintain CSFs because they perceive the cost–benefit ratio of this sort of relationship to be at least as good (if not better) than that which could be attained via SSFs. Thus, we proposed that individual variability in the perceived benefits vs. costs of CSFs (vs. SSFs) would predict participants' proportions of CSFs (vs. SSFs). What are the potential benefits and costs associated with CSFs and SSFs? Solano (1986) suggested that

friendship in general serves three valuable functions. First, it meets our material needs by giving us help and support. Second, friends meet our cognitive needs by supplying stimulation by way of shared experiences, activities, exchange of ideas, views, and gossip. Third, friends meet social–emotional needs by providing love and esteem.

CSFs may have each of these benefits as well as benefits that cannot be sought from SSFs. For example, CSFs may increase an individual's understanding about the beliefs and values of the other sex (Canary, Emmers-Sommers, & Faulkner, 1997). Another potential benefit is that CSFs may verify our attractiveness to the other sex (Rubin, 1985). Bleske-Rechek and Buss (2000) cited a number of other unique benefits such as protection, short-term sexual opportunity, self-expression, and intimacy (see also Monsour, 1992; Sapadin, 1988).

Both SSFs and CSFs have potential downsides as well. For example, competition and envy are not uncommon in SSFs (Werking, 1997), CSFs may cause problems for the maintenance of an existing romantic relationship (O'Meara, 1994), and women have reported feeling more patronized in their CSFs than in their SSFs (Sapadin, 1988). Of course this list of benefits and costs is not exhaustive, but it serves to highlight that many factors may be considered by people when they are forming same-sex or cross-sex friendships. To the extent that individuals perceive the upsides of CSFs to be higher and the downsides to be lower than in SSFs, this should be reflected in their proportions of CSFs: More positive attitudes toward CSFs→more CSFs. To our knowledge, individual differences in perceptions of the relative costs vs. benefits of CSFs and SSFs have not yet been examined by those who have investigated cross-sex friendships.

## Gender Role Orientation

Recent research (Reeder, 2003) indicates that gender role is predictive of proportion of cross-sex (vs. same-sex) friendships, as participants tend to 'match' their gender role orientation to the sex of their friends. That is, 'feminine' individuals (both men and women) reported having more female than male friends, and 'masculine' individuals (both men and women) reported having more male than female friends. Other researchers, however, have found somewhat different types of relationships between gender role and number of CSFs (Jones, Bloys, & Wood, 1990; Monsour, 1988, as cited in Monsour, 2002). For example, Monsour found that androgynous men, more so than gender-typed individuals and androgynous women, reported having more cross-sex friends, whereas Jones and colleagues found that androgynous individuals tend to have more male than female friends. Thus, the role of gender role orientation in proportions of CSFs isn't entirely clear. Perhaps by examining the separate and combined contributions of continuously measured femininity and masculinity (all of the researchers used the traditional categorical assignments, which are statistically far less powerful; Judd & McClelland, 1989), as well as the influence of gender role over and above the effects of other associated predictors, we can gain a more comprehensible perspective regarding how gender role relates to cross- vs. same-sex friendship.

## Sexism

We are unaware of any research that has directly examined the role of sexist attitudes in number of cross- vs. same-sex friends, though there is reason to believe that sexism may explain who has more CSFs. In particular, friendship is a relationship of equals (Werking, 1997), and it is based on mutuality (McWilliams & Howard, 1993). Accordingly, and as mentioned already, O'Meara (1989) argued that one of the 'challenges' to the formation and continuation of cross-sex friendships is the establishment of equality between the individuals: Because men have traditionally held more societal power than women, there may be an 'inherent' inequality in cross-sex friendships. Thus, individuals who believe that persons of the other sex are *not* their equal should be less likely to form (platonic) cross-sex friendships, whereas those who do not endorse sex-based prejudice should be more likely to form (platonic) cross-sex friendships. Finally, research regarding the relationship between attitudes and behavior indicates that people spend less time with people or things toward which they hold negative attitudes (Fazio, 1990; Fazio, Jackson, Dunton, & Williams, 1995). Thus, the present study may reveal a relationship between sexist attitudes (toward the other sex) and CSFs. To assess this prediction, we examined the role of sexist attitudes by and toward *both* men and women in cross-sex friendship possession.

## Materials and Methods

### Participants

One hundred and eighty-two individuals (93 women and 89 men) voluntarily participated in the present study. These participants were recruited from the University of Edinburgh community, and their average age was 22.73 years. The sample was predominantly White (91.8%); the remainder identified themselves as Asian (3.8%), Black (1.6%), or other/mixed (2.7%). Nearly all participants (98.3%) reported that they were heterosexual in orientation.

## Materials

Various measures were developed for the purposes of this survey. The dependent variable measures are discussed first. To measure participants' current relative proportion of CSFs vs. SSFs, three items were constructed. We utilized multiple items rather than a single item, as doing so reduces measurement error, thus maximizing the reliability of our dependent variable (DV; Kerlinger & Lee, 2000). First, participants were explicitly asked to estimate the percentage of their current friendships that are male–female. A second item asked participants to write the initials of their five closest friends and mark whether each was male or female. Operationalization of this particular item involved calculating the proportion of their five friends who were of the other sex (i.e., proportion of male friends for female participants, proportion of female friends for male participants). The third item asked participants to circle on a scale from 1 (none of my friendships are male–female) to 7 (all of my friendships are male–female) the number that best represents the extent to which their present friendships are male–female. The Cronbach's alpha coefficient for a scale comprised of standardized scores on each of the three items was sufficiently high ($\alpha$=0.80); thus responses to them were averaged to create a single DV.[1]

As noted above, we were interested in the independent *and* combined effects of five constructs on the relative number of CSFs to SSFs. The measurement of each of these predictors is described in turn. With respect to participant sex, participants merely circled the label (male or female) that described them. To measure relationship commitment, participants were first asked to indicate (yes or no) whether or not they were currently in a romantic/sexual relationship. Thereafter, they responded to the 15-item 'Decision/ Commitment' subscale of Sternberg's (1997) Triangular Love Scale (e.g., 'I value ___ greatly in my life'; $\alpha$=0.97).[2] This subscale assesses one's commitment to persist in and further one's current romantic partnership. In the present study, relationship commitment was operationalized such that participants received a score of '0' if they were not currently involved with anyone; otherwise participants were assigned their score on the Decision/ Commitment scale.

To measure perceptions of the perceived benefits vs. costs of CSFs and SSFs, participants were given a list of 29 qualities found in our preliminary study to be associated with SSFs, and a list of 35 qualities found in our preliminary study to be associated with CSFs. Notably, all 29 qualities associated with SSFs were also associated with CSFs. Originally, the qualities were culled from the literature on the basic features of SSFs and friendship in general (e.g., potential benefits: companionship; potential costs: envy) and of CSFs in particular (e.g., potential benefits: learning about one's own sex appeal; potential costs: interference with ongoing romantic relationship). See Appendix for the complete list of qualities (note: this is not intended to be an exhaustive list of qualities that may be found in either CSFs and/or SSFs). Participants were asked to rate each of the set of SSF traits with respect to whether it was perceived to be a cost (1 on a 7-point Likert-type scale) or a benefit (7 on a 7-point Likert-type scale) of this type of friendship. Participants also rated each of the set of CSF traits with respect to whether it was perceived to be a cost (1 on a 7-point Likert-type scale) or a benefit (7 on a 7-point Likert-type scale) of this type of friendship. One-half of the participants rated the SSF traits first, and the other one-half rated the CSF traits first.

Operationalization of 'perceived benefits vs. costs' then followed from a two-stage principal components exploratory factor analysis (EFA) on each set of ratings. The purpose of the first EFA stage was to identify the number of factors underlying the two sets of items (separately). Results suggested that a two factor solution would be appropriate for the SSFs ratings and a three factor solution would be appropriate for the CSFs ratings, as the scree plots revealed the distribution of eigenvalues to flatten out thereafter, and initial inspection of the loadings suggested that the theoretical interpretation of subsequent factors would be difficult. A second EFA was then run for each set of qualities, with two factors and three factors extracted using varimax rotation for the SSF set and the CSF set, respectively. Simple structure was largely achieved for each of the two EFAs, as the items all loaded above |0.30| on their respective factors and 100% of the SSF, and 80% of the CSF items failed to load above |0.30| on the other factors. For those cases where an item loaded above |0.30| on more than one factor, we assigned that item to the factor where it loaded highest and/or where it made more sense theoretically. With respect to identification of the factors, both SSFs and CSFs possessed 'general benefits' (e.g., opportunity for self-expression, shared interests) and 'general costs' (e.g., potential to interfere with an ongoing romantic relationship, competition). The third CSF factor we called 'sexual excitement,' as it comprised such items as 'sexual tension' and 'possibility for a sexual relationship' (see Appendix).

Five new variables were then created by averaging participants' idiosyncratic ratings of the benefits vs. costs associated with the items relevant to each of the two SSF and each of the three CSF factors. Thus, for 'General

[1] The 'proportion of five friends' item was arcsine-transformed before it was standardized in order to normalize the distribution (Judd & McClelland, 1989).

[2] The scale alphas reported herein are those that were found in the present study.

Benefits SSFs,' *higher* numbers reflect participants' belief that SSFs possess *increasing benefits* as a result of these features. The same general interpretation applies to 'General Benefits CSFs.' For 'General Costs SSFs,' *lower* numbers reflect participants' belief that SSFs possess *increasing costs* as a result of these features. The same general interpretation applies to 'General Costs CSFs.' For 'Sexual Excitement CSFs,' *higher* numbers reflect the belief that CSFs possess benefits as a result of the sexual tension contained in these relationships, whereas lower numbers reflect the belief that CSFs possess costs as a result of the sexual tension contained in these relationships.

Various other standard measures were also used in the present study. Specifically, to assess participants' gender role orientation, we employed the 'Bem Sex Role Inventory' (BSRI; Bem, 1974). This scale contains 60 characteristics, 20 of which are stereotypically feminine, 20 are stereotypically masculine, and 20 are neutral or filler items. Participants rated themselves with respect to each characteristic on a Likert-type scale (1=never true; 7=always true). For each participant we computed his or her masculinity ($\alpha$=0.86) and femininity ($\alpha$=0.80) scores by averaging responses across the items that make up those two scales. To take advantage of the BSRI's traditional operationalization of gender role (i.e., four categories: feminine, masculine, androgynous, undifferentiated) without a loss of statistical power (see Judd & McClelland, 1989), we examined the interaction between femininity and masculinity subscale scores.

The BSRI itself has been the subject of tremendous criticism over the years. For example, some researchers have not found the masculine and feminine scales to be internally consistent, which has led them to question whether the subscales are, in fact, assessing single dimensions (Choi & Fuqua, 2003; Collins, Waters, & Waters, 1979; Feather, 1978). As noted above, however, we found the two subscales to possess more than adequate internal consistency. Others have criticized the BSRI for subscribing to rather old-fashioned notions of femininity and masculinity, which are now out of date (Auster & Ohm, 2000). Because it remains the most widely used measure of gender role orientation, however, we employed it in this study.

To ameliorate potential concerns about our use of the BSRI, we also included a far newer measure of gender role orientation: gender diagnosticity (Lippa & Connelly, 1990). In brief, gender diagnosticity is founded upon the notion that there are sex-based differences in vocational interests (among other interests). As such, researchers can use vocational interests to measure individual differences in masculinity–femininity (Lippa, 2005). According to Young and Sweeting (2004), gender diagnosticity has a number of advantages over the BSRI, including the fact that its calculations are tailored to each sample, and, as a result, it doesn't rely on static or old-fashioned notions about what is masculine or feminine. And gender diagnosticity is more closely related to people's self-rated gender role orientation, as well as to others' ratings of their gender role orientation (Lippa & Connelly).

To assess gender diagnosticity in the present study, participants were presented with a list of 40 occupations (e.g., accountant, dance teacher, inventor, librarian). For each, they indicated the extent to which they agreed (1=Strongly disagree; 7=Strongly agree) that they would like to engage in the given type of work (total scale $\alpha$=0.89). Based on participants' responses to these 40 items, the probability that the respondent is male or female was estimated.[3] Per recommendations (Lippa & Connelly), the operationalization of gender diagnosticity was then conducted via a series of probability estimations. In particular, the probability of being male (1.0) or female (0.0) was determined four times for each participant, once per 10-item set (sets randomly determined). To create the final measure of gender diagnosticity, the four probability ratings were averaged ($\alpha$=0.88 overall, $\alpha$=0.73 for women, $\alpha$=0.68 for men). According to Lippa (1991; Lippa & Connelly), gender diagnosticity is not correlated with BSRI scores. Thus, to the extent that we find any convergence of results in the analyses of these two different measures, we can have greater confidence in the results.

And finally, we measured participants' sexism toward men and toward women, respectively, with Glick and Fiske's (1999) 'Ambivalence Toward Men Inventory' (AS-M) and 'Ambivalent Sexism Inventory' (AS-W; Glick & Fiske, 1996). Each of these measures is comprised of two subscales: One of the subscales contains items that assess *hostility* toward or derogation of the target group (e.g., 'Men act like babies when they are sick,' 'Women seek to gain power by getting control over men'), whereas the other subscale contains items that assess *benevolence* or paternalism/maternalism toward the target group (e.g., 'Men are more willing to take risks than women,' 'A good woman should be set on a pedestal by her man'). Within both measures (AS-M and AS-W), hostile and benevolent sexism are correlated with one another such that increasing hostility is generally associated with increasing benevolence, which leads to the 'ambivalence.' Furthermore, the two measures (AS-M and AS-W) are related to one another: Increasing ambivalence toward men predicts increasing ambivalence toward women (Glick & Fiske, 1999). We employed these particular measures of sexism because of

[3] This is typically done with the use of discriminant analysis. In the present study, however, we used logistic regression to derive the probabilities, as this method generally results in the same conclusions as discriminant analysis, it requires fewer assumptions and, thus, it is more robust statistically (Press & Wilson, 1978).

their comparability across participant sex and their demonstrated validity (see Glick et al., 2000, 2004). The measures also were found to exhibit adequately high internal consistency in the present study: hostile sexism toward women ($\alpha$=0.88), benevolent sexism toward women ($\alpha$=0.79), hostile sexism toward men ($\alpha$=0.80), and benevolent sexism ($\alpha$=0.83) toward men.

### Procedure

Participants were given a survey packet, the cover page of which provided the standard informed consent information. When participants had given their consent, they turned to the first page of the survey where they were provided a definition of 'male–female friendship,' a label used in the items that made up the primary dependent variable. In particular, male–female friendship was defined as 'friendship between a heterosexual man and a heterosexual woman (e.g., David and Sue are friends).'

The participants responded to the various dependent variable measures first and in the following order: (1) CSFs percent estimation; (2) listing of friends' sex; and (3) proportion of CSFs rating. Next, participants responded to the independent variable measures, with their order counterbalanced across participants via a Latin Square design, though participant sex and other demographics were always assessed on the final page. Participants were thanked following completion of the survey packet, and any questions they had about the study were answered.

## Results

Outliers were detected via the analysis of Studentized deleted residuals (SDR), Leverage values, and Cook's distance, and then removed so that they would *not* have undue effect on the magnitude of the examined relationships.[4] If no mention of outliers is made for a given analyses, it may be assumed that none were detected and deleted. There were missing data for some of the analyses, as not all participants responded to every part of the survey. Thus, some of the statistical tests do not rely on the entire sample. And finally, analyses of the independent effects of each of the independent variables (IVs) include participant sex as a covariate where it is correlated with that IV. This was done in order that these variables' independent effects were neither obscured nor exaggerated by any relationship they might have with participant sex.

[4] The criteria were as follows: if sdr > |2.5|, levers approached 1.0, and/or Cook's d was unusual, the case was removed (see Judd & McClelland, 1989).

### Proportions of Cross-sex Friendships

On average, participants reported that nearly 42% of their friendships were cross-sex, though the listing of their close friends suggests that this estimate may be somewhat inflated ($M$=30%). Participants' rating of the proportion, however, again confirmed that fewer than one-half of participants' friends were likely to be persons of the other sex ($M$=3.60 on a scale from 1–7). These results replicate the approximate proportions of CSFs to SSFs among young adults today found by other researchers (e.g., Reeder, 2003).

### Participant Sex

A simple linear regression model (1 outlier deleted) wherein CSFs was regressed on participant sex (men coded +1, women coded −1) was not statistically significant, $t(166)=1.54$, $p=0.13$. This analysis revealed that women, on average, reported having the same numbers of CSFs as men reported.

### Relationship Commitment

CSFs was regressed on participant sex (which was correlated with relationship commitment), the linear effect of relationship commitment, and the quadratic effect of relationship commitment (1 outlier deleted). This analysis showed that, although the linear effect of relationship commitment is not reliably related to participants' proportion of cross-sex friendships, $t(161)=1.07$, $p=0.29$, the quadratic effect appears to possess some relationship with participants' proportion of cross-sex friendships, $t(161)=-1.69$, $p=0.09$, $pr=-0.13$. To determine the nature of this effect, we performed a median split on the standardized relationship commitment scores, then examined the relationship between relationship commitment and CSFs (controlling for participant sex) separately for those low and high in relationship commitment. These analyses revealed relationship commitment *not* to predict CSFs in either case: $t(84)=1.58$, $p=0.12$, $pr=0.17$, for those *low* in relationship commitment, and $t(76)=-0.85$, $p=0.40$, $pr=-0.10$, for those *high* in relationship commitment. The quadratic effect appears to stem from the different directions of these relationships. Among those *low* in relationship commitment, increasing commitment is associated with having somewhat more CSFs, whereas among those *high* in relationship commitment, increasing commitment is associated with having somewhat fewer CSFs. The former effect appears a bit stronger than the latter, perhaps because our sample contained relatively few *truly* highly committed individuals (i.e., the mean score was 3 on a scale that ranged from 0 to 7; only 27% scored 5 or above), and thus

we examined relationship commitment within a restricted range of values.

### Perceived Benefits vs. Costs

A multiple linear regression model was employed to examine the effects of perceived benefits vs. costs of CSFs to SSFs in the proportion of CSFs. Because participant sex was found to be predictive of two of the factors,[5] CSFs was regressed on general benefits SSFs, general benefits CSFs, general costs SSFs, general costs CSFs, and sexual excitement CSFs, after controlling for participant sex (1 outlier deleted). The overall model was significant, $F(6, 144)=4.90$, $p=0.001$, $R^2=0.17$, indicating that, generally, the perceived benefits vs. costs of CSFs and SSFs play a role in how many CSFs vs. SSFs people have. Examination of the individual effects suggests that the perceived general benefits of both SSFs, $t(149)=-2.86$, $p=0.01$, $pr=-0.23$, and CSFs, $t(149)=4.39$, $p=0.001$, $pr=0.34$, are the primary factors that contribute to the significance of the overall model. The more participants perceive that SSFs possess generally positive features of friendship, the *fewer* CSFs they have (regardless of their negative perceptions of SSFs and perceptions of CSFs). And the more participants perceive that CSFs possess generally positive features of friendship, the *more* CSFs they have (regardless of their perceptions of SSFs and other perceptions of CSFs).

### Gender Role Orientation

To assess the role of gender role orientation in the relative proportion of CSFs, we ran two different regression models: one assessing the role of gender role as measured by the BSRI, and the other assessing the role of gender role as measured via gender diagnosticity. To do the former, we regressed CSFs on participant sex, BSRI masculinity score, BSRI femininity score, the BSRI-masculinity×BSRI-femininity interaction, the participant sex×BSRI-masculinity interaction, the participant sex×BSRI-femininity interaction, and the three-way interaction between participant sex, BSRI-masculinity, and BSRI-femininity (3 outliers deleted). We adopted this approach rather than categorizing individuals as 'masculine,' 'feminine,' 'androgynous,' or 'undifferentiated,' as one loses power if one converts continuous variables into categorical variables (Judd & McClelland, 1989). Furthermore, the interaction between BSRI-masculinity and BSRI-femininity does allow us to examine these traditional categorizations (e.g., whether the effect of BSRI-femininity depends on whether one is high or low in BSRI-masculinity). For example, if we were to expect results similar to those found by Monsour (1988, as cited in Monsour, 2002), whereby androgynous (high in femininity and high in masculinity) men would have more CSFs than would all others, we should find a participant sex×BSRI-femininity×BSRI-masculinity interaction. In addition to enabling us to conduct the traditional analyses, this model also allows us to examine the independent effects of stereotypical masculinity (after controlling for stereotypical femininity) and vice versa. Finally, we included interactions with participant sex in the model, as past research indicates that 'cross-gender' role orientation may be especially predictive of the acquirement and possession of CSFs (Reeder, 2003) or that the effects of gender role only apply to one sex (Monsour, 1988).

The entire model was statistically significant, $F(7, 151)=4.78$, $p=0.001$, $R^2=0.18$ (2 outliers deleted). Examination of the independent effects revealed significant effects of BSRI-masculinity, $t(157)=2.41$, $p=0.02$, $pr=0.19$, the interaction between BSRI-masculinity and participant sex, $t(157)=-3.15$, $p=0.002$, $pr=-0.25$, and the interaction between BSRI-femininity and participant sex, $t(157)=2.52$, $p=0.013$, $pr=0.20$. The main effect of BSRI-masculinity indicates that, on average, increasingly masculine participants have *more* CSFs than less masculine participants do. This effect is qualified, however, by participant sex. To understand the nature of this interaction and the interaction between BSRI-femininity and participant sex, we regressed CSFs on BSRI-masculinity, BSRI-femininity, and their interaction for male and female participants separately. For female participants, BSRI-masculinity predicts CSFs, $t(78)=4.61$, $p=0.001$, $pr=0.47$, whereas neither BSRI-femininity nor the interaction between the two scales were reliably predictive of CSFs, $ts(78) < |1.00|$, $ps>0.60$. Thus among women, increasing masculinity is associated with the possession of more CSFs, whereas decreasing masculinity is associated with the possession of fewer CSFs. For male participants, BSRI-femininity predicts CSFs, $t(76)=2.46$, $p=0.02$, $pr=0.28$, whereas neither BSRI-masculinity nor the interaction between the two subscales were reliably predictive of CSFs, $ts(76) < |1.60|$, $ps>0.12$. Thus among men, increasing femininity is associated with the possession of more CSFs, whereas decreasing femininity is associated with the possession of fewer CSFs.

To corroborate those findings, we also examined the relationship between gender role orientation and CSFs with the gender diagnosticity measure. In particular, we regressed CSFs on gender diagnosticity (coded in terms of the probability of being male), participant sex, and the interaction between gender diagnosticity and participant sex. The overall model was significant, $F(3, 158)=3.44$, $p=0.02$, $R^2=0.06$ (2 outliers removed). Examination of the

[5] Participant sex was significantly related to both general benefits of SSFs and general benefits if CSFs. In both cases, male participants had lower scores.

independent effects revealed only the interaction to be significant, $t(160)=-2.74$, $p=0.01$, $pr=-0.21$; the main effect of gender diagnosticity was not significant, $t(160)=0.52$, $p=0.61$. To understand the nature of the interaction, we regressed gender diagnosticity on CSFs separately for the male and female participants. For *female* participants, *increasing masculinity* (decreasing femininity) is significantly related to having more CSFs, $t(79)=2.37$, $p=0.02$, $pr=0.26$. For *male* participants, *increasing femininity* (decreasing masculinity) is related to having more CSFs, though not significantly so, $t(79)=-1.53$, $p=0.13$, $pr=-0.17$. Note that for the purposes of brevity, the inclusive model reported below relies on the BSRI assessment of gender role rather than the gender diagnosticity assessment of such, as the BSRI appears to be a more powerful predictor of CSFs (if we compare the coefficient of determination associated with each model).

## Sexism

To examine the role of sexism in the possession of CSFs, we ran two regressions: the first examined the relationship between sexism toward women and CSFs, and the second examined the relationship between sexism toward men and CSFs. With respect to the former, CSFs was regressed on participant sex, hostile and benevolent sexism toward women, and the interactions between participant sex and each sexism subscale. Glick and Fiske (1996) advised researchers to examine 'hostility' and 'benevolence' simultaneously, as they are correlated with one another and, thus, to examine the independent effects of one subscale, the other should be controlled. The interaction terms are included in order to assess whether sexism toward men might better explain women's proportions of CSFs and vice versa. The overall model was marginally significant, $F(5, 158)=2.22$, $p=0.06$, $R^2=0.07$ (1 outlier removed). Examination of the individual effects of the predictors, however, revealed no significant relationships between hostility toward women, benevolence toward women, the interactions between participant sex and these subscales and CSFs, $ts(162) < |1.50|$, $ps>0.15$. Thus, sexism toward women does not generally explain CSFs for women or men.

To assess the role of sexism toward men in explaining CSFs, CSFs was regressed on participant sex, hostile and benevolent sexism toward men, and the interactions between participant sex and each sexism subscale. The overall model was statistically significant, $F(5, 160)=2.46$, $p=0.04$, $R^2=0.07$ (1 outlier removed). Examination of the individual effects of the predictors revealed only a marginally significant interaction between participant sex and benevolence toward men, $t(164)=-1.76$, $p=0.08$, $pr=-0.14$. None of the other predictors were reliably related to CSFs, $ts(164) < |1.50|$, $ps>0.13$. To assess the nature of this interaction, we examined the relationship between benevolence toward men (after controlling for hostility toward men) for male and female participants separately. For female participants, benevolent attitudes toward men bears no relationship to their number of CSFs, $t(81)=0.32$, $p=0.75$. For male participants, on the other hand, results revealed a statistically significant relationship between benevolent attitudes toward men and their number of CSFs, $t(81)=-2.35$, $p=0.02$, $pr=-0.25$. Among men, increasing benevolence toward men is associated with having fewer CSFs, whereas decreasing benevolence toward men is associated with having more CSFs.

## Inclusive model

CSFs was regressed on all of the predictors described above for two purposes: (1) to assess the fit of our overall model of proportion of CSFs; and (2) to examine the extent to which the above-described effects stand when all of the other IVs are controlled. For example, does gender role orientation continue to predict proportion of CSFs when perceived general benefits of SSFs and CSFs are controlled? The overall model (2 outliers deleted) was statistically significant, $F(22, 123)=2.82$, $p=0.001$, $R^2=0.35$. Together, the set of predictors accounted for 35% of the variability in CSFs, which is a large effect (Cohen, 1988), and thus provides evidence for the fit of the model.

Examination of the individual effects reveals that, over and above the other predictors, participant sex remains unrelated to CSFs, $t(144)=0.89$, $p=0.37$. And although the quadratic (non-linear) effect of relationship commitment is now *not* significantly related to CSFs, $t(144)=0.15$, $p=0.88$, the linear effect of relationship commitment is marginally predictive of CSFs, $t(144)=1.71$, $p=0.09$, $pr=0.15$. So, when we controlled for sample differences in participant sex, gender role, sexism, and perceived benefits vs. costs of CSFs, we found evidence for a simple linear relationship between relationship commitment and CSFs, such that increasing commitment is associated with having more CSFs.

With respect to perceived benefits vs. costs, again, both general benefits SSFs, $t(144)=-2.74$, $p=0.01$, $pr=-0.24$, and general benefits CSFs, $t(144)=2.86$, $p=0.01$, $pr=0.25$, remain related to CSFs. As before, participants who believe that SSFs possess positive features of friendship, regardless of their beliefs about CSFs, have *fewer* CSFs. Similarly, participants who believe that CSFs possess positive features of friendship, regardless of their beliefs about SSFs, have *more* CSFs. As before, the perceived general costs associated with SSFs and CSFs, as well as the perceived sexual excitement associated with CSFs were *not* predictive of CSFs, $ts(144) < |1.50|$, $ps>0.15$.

The results concerning gender role again revealed significant interactions between participant sex and each BSRI-femininity and BSRI-masculinity, $t(144)=2.44$, $p=0.02$, $pr=0.22$ and $t(144)=-2.96$, $p=0.004$, $pr=-0.26$, respectively. None of the other predictors associated with gender role were significantly related to CSFs, $ts(144) < |1.20|$, $ps>0.25$. As before, to examine the nature of these interactions we regressed CSFs on BSRI-masculinity and BSRI-femininity for male and female participants separately (after controlling for all of the other predictors, save participant sex and terms containing this predictor). For female participants, BSRI-masculinity predicts CSFs, $t(74)=2.97$, $p=0.004$, $pr=0.44$, whereas BSRI-femininity was not significantly related to CSFs, $t(74)=-1.03$, $p=0.31$. Among women, increasing masculinity is associated with the possession of more CSFs, whereas decreasing masculinity is associated with the possession of fewer CSFs. For male participants, BSRI-femininity is a marginally significant predictor of CSFs, $t(68)=1.91$, $p=0.06$, $pr=0.31$, whereas BSRI-masculinity was not significantly related to CSFs, $t(68)=-1.00$, $p=0.36$. Among men, increasing femininity is associated with the possession of more CSFs, whereas decreasing femininity is associated with the possession of fewer CSFs, even when participant differences in perceptions regarding the benefits and costs associated with CSFs, sexism, and relationship commitment were controlled.[6]

Lastly, hostile and benevolent sexism toward women, hostile and benevolent sexism toward men, and the interactions between each of these and participant sex all failed to explain variation in CSFs over and above the other predictors, all $ts(44) < |1.50|$, $ps>0.20$. Thus, when we controlled for participant variation in gender role, perceptions of the benefits vs. costs of CSFs, and relationship commitment, sexism appeared to play no role in determining the number of CSFs people have.

## Discussion

Our research demonstrates that relationship commitment, perceived benefits vs. costs of CSFs (vs. SSFs), and gender role orientation are each independently related to proportion of CSFs. The results also indicate that men's positive stereotyping of their own sex—in the form of benevolent sexism toward men—also explains the number of CSFs (vs. SSFs) they possess. Together, these constructs account for a notable 35% of the variation in proportion of CSFs. Thus, personal predispositions (vs. physical setting configuration and social forces; O'Meara, 1994) clearly provide a powerful explanation of 'who has more' CSFs.

[6] The participant sex×gender diagnosticity interaction also remained statistically significant even after we controlled for the other constructs assessed in the present study, $t(142) = -2.45$, $p = 0.02$, $pr = -0.21$.

Examination of the constructs when all of the other factors were controlled reveals that most of these relationships persist, which suggests they are not artifactual products of their correlations with the other variables. In the present study, sex was *not* found to be related to the number of CSFs an individual has, whether sex was examined independently or when sex differences in other predictors of CSFs were controlled. As described in the introduction, although much of the prior research appears to indicate that men report more cross-sex friends than do women (Booth & Hess, 1974; Reeder, 2003; Rose, 1985; Wright, 1989), still other research suggests that women possess more cross-sex friendships than do men (Bell, 1981; Parker & DeVries, 1993). Given that sex is strongly correlated with other predictors of cross-sex friendship (e.g., in the present study, sex was related to gender role, relationship commitment, and the perceived benefits of SSFs and CSFs), the different pattern of findings across studies is likely to be the result of sample differences in these predictors, and not the result of anything inherent to biological sex. Thus, future researchers who study sex differences in CSF possession must look to other constructs to explain potential sex differences (Leaper, 1998).

With respect to relationship commitment, the independent model suggested that there is a curvilinear relationship between it and cross-sex friendship possession, such that no or low commitment individuals tend to have more, whereas individuals with relatively higher commitment to their relationships tend to have fewer. When we controlled for all of the other predictors, however, only a linear relationship appeared to remain: Increasing relationship commitment was associated with having more cross-sex friendships. It is probably best not to overstate the generalizability of these results because—in both cases—the effects were marginal, and, as mentioned already, our sample was predominantly comprised of young adults, who, on average, possessed relatively low relationship commitment. In line with Monsour's (2002) call for researchers in this domain to rely on more varied samples than the traditional 'subject pool,' we also suggest that future researchers interested in investigating the relationship between relationship commitment and CSFs endeavor to obtain a sample with participants who have deeper commitments to their partners. At the same time, we encourage those researchers to use a continuous measure of commitment—as we have done—in order to explore potential nonlinear trends in the relationship between relationship commitment and CSFs. The standard approach—wherein researchers simply examine whether or not individuals are in a relationship—cannot capture the complexities of those relationships and, further, cannot facilitate our understanding of *why* married people—on average—possess fewer CSFs than single people do.

Both the independent and the inclusive models showed that individuals who perceive that SSFs possess benefits, over and above those of CSFs, are likely to have *fewer* cross-sex friendships, whereas individuals who perceive that CSFs possess benefits, over and above those of SSFs, are likely to have *more* cross-sex friendships. Perceptions about the downsides of either SSFs or CSFs or the costs vs. benefits of sexual tension in these relationships were generally unrelated to the number of cross-sex friends that participants reported having. It would seem that it isn't that people *avoid* cross-sex friendships because of their perceived downside, but, rather, they are drawn to the types of friendship(s) where they see particular benefits, whether those friendships be same- or cross-sex. Perceived benefits vs. costs explained approximately 17% of the variation in CSFs, which suggests that such perceptions should not be ignored by researchers in their attempts to account for why some people have more, and others fewer, cross-sex friendships. Because these data are correlational, however, we are, of course, left with a 'chicken vs. egg' scenario: Perhaps people with more CSFs justify this situation by stating that their cross-sex friendships are more beneficial, and people with more SSFs justify this situation by stating that their same-sex friendships are more beneficial. The fact that we asked participants to rate the quality of cross-sex and same-sex friendships *in general*, rather than to rate their own friendships, somewhat limits the plausibility of this explanation. Still, other researchers might examine perceptions of benefits vs. costs from a developmental perspective in order to gain a more clear understanding of the order of events.

According to both the independent and inclusive analyses, individuals with increasingly cross-gender role orientations possessed more cross-sex friendships, whereas individuals who were less counter-stereotypical possessed fewer cross-sex friendships. This result was found with both the Bem Sex Role Inventory and a much newer measure, gender diagnosticity, which confirms the reliability of the finding. These results are generally in line with the results of Reeder's (2003) study, which showed that participants' gender role orientation 'matched' the sex of their friends (i.e., masculine people had more male friends, feminine people had more female friends), though in our study neither women's femininity nor men's masculinity could account for their proportion of CSFs vs. SSFs. Taken together, the accumulating body of evidence suggests that, unlike the findings of Monsour (2002) and Jones et al. (1990), psychological androgyny per se isn't special with respect to cross-sex friendships. Instead, people who (claim to) possess traits traditionally associated with the other sex (i.e., high on cross-sex characteristics) tend to have more cross-sex friends. Such a result is in accord with the well-known finding that similarity facilitates friendship formation more generally (Duck, 1973; Duck & Craig, 1978).

The results concerning sexism appear to suggest that it does not play a particularly strong role in the determination of who has more cross-sex friendships. Only in the independent model did we find that benevolent sexism toward men by men accounted for variation in the number of cross-sex friends. In particular, men who ascribed to the positive stereotypes of their own group reported more same-sex friendships and, thus, fewer cross-sex friendships. This finding is generally in accord with prior research that showed that persons classified as 'conventional' have fewer CSFs than do persons classified as 'nonconventional' (Bell, 1981), though this particular finding was not restricted to men only. When participant differences in gender role, relationship commitment, sex, and the perceived benefits vs. costs of CSFs and SSFs were controlled, the relationship between men's benevolent sexism toward men and their number of CSFs was reduced to non-significance, which suggests that at least one of these other factors might explain the initial relationship. Examination of the intercorrelations amongst the factors suggests that the apparent relationship between benevolence toward men (among men) and CSFs may be due to the existence of a negative correlation between benevolence toward men and BSRI-femininity, whereby increasingly benevolent attitudes toward men is associated with decreasing stereotypical femininity. Recall that stereotypical femininity among men explains their cross-sex friendships. Notably, hostile sexism was found to be unrelated to proportion of CSFs (when benevolent sexism was controlled). Thus, participants with purely 'negative' attitudes toward the other sex do not necessarily have fewer CSFs. Again, because this is correlational research it is difficult to know whether (benevolent) sexist attitudes influence the acquisition of CSFs or whether having CSFs (for other reasons) influences benevolent sexist attitudes. An alternative interpretation is that men feel benevolence about those groups with whom they have more contact. In any case, as this was the first attempt of which we are aware to examine explicitly the relationship between sexism and the possession of cross-sex friends, we encourage other researchers to investigate this issue further, perhaps using a more implicit measure of sexism, as social desirability concerns may have obscured any existing relationship.

## Conclusion

Although researchers have studied some of the variables measured here separately, this is the first attempt to tease apart which factors may be among the most meaningful predictors. It is quite remarkable that this study has described 35% of the variance in proportions of CSF, with perceptions regarding the general friendship benefits of CSFs and cross-gender role orientation consistently and significantly predicting a higher proportion of CSFs. Future

researchers should seek to establish causal links between these predictors and proportions of CSFs, as well as to identify other facets of individuals' personal predispositions that may be significantly predictive of CSFs possession, as sex—one of the most frequently studied constructs in this domain—appears to explain relatively little.

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## Appendix

Friendship Qualities

| | |
|---|---|
| [1a–b] A feeling of obligation toward the other | [3] Learning about own sexual appeal (*CSF item only*) |
| [1a–b] Availability of emotional support | [2a–b] Opportunity for miscommunication |
| [1a–b] Companionship | [1b] Physical protection (*CSF item only*) |
| [2a–b] Competition | [1a–b] Pleasure spending time together |
| [1a–b] Confidentiality and trust | [3] Possibility for romantic, or long-term relationship (*CSF item only*) |
| [1a–b] Contribution to self-reflection | [3] Possibility for sexual relationship (*CSF item only*) |
| [1a–b] Emotional protection | [2a–b] Possibility of envy or jealousy |
| | [2a–b] Possibility of feeling patronized |
| [1a–b] Exchange of ideas or points of view | [2a–b] Potential to interfere with an ongoing romantic relationship |
| [1a–b] Excitement | [3] Practice communicating with people of other sex (*CSF item only*) |
| [1a–b] Experience of platonic love | [1a–b] Sense of belonging |
| [1a–b] Feeling respected | [3] Sexual tension (*CSF item only*) |
| [1a–b] Feeling that someone will stand up for you | [1a–b] Shared activities |
| [1a–b] Feeling understood | [1a–b] Shared interests |
| [1a–b] Feelings of acceptance | [1a–b] Spontaneity of expression and behavior |
| [1a3] Feelings of intimacy | [2a–b] Takes work to maintain |
| [1a–b] Gaining of positive self-worth | [2a–b] The views of others affect the friendship |
| [1a–b] Interaction 'on the same level' (i.e., feeling of equality) | |
| [1a3] Learning about other gender | |

Factors Extracted

[1a] 'General Benefits SSF ($\lambda$=9.29; % variance=37.73)

[1b] 'General Benefits CSF' ($\lambda$=8.89; % variance=25.40)

[2a] 'General Costs SSF ($\lambda$=3.20; % variance=11.02)

[2b] 'General Costs CSF' ($\lambda$=2.22; % variance=6.35)

[3] 'Sexual Excitement CSF' ($\lambda$=4.11; % variance=11.74)

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