

Sex Differences in Social Participation

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Twenty female and 38 male first-year college students maintained a daily record of their social interactions for 2 weeks early in the fall semester and for 2 weeks late in the spring semester. Over all interactions, females decreased time per day in interaction more than males did, primarily by reducing the length of interactions, and reported decreased satisfaction with these interactions. In interactions with three best same-sex friends, females also decreased length more than males did but maintained a higher level of satisfaction. Number of interactions with same-sex best friend decreased markedly for females but not for males. The results were interpreted as showing that females socialize more intensely in the new environment than males and make use of the same-sex best friend to deal with the social stimulation. Differences between the sexes on interaction measures in the spring were minimal.

Social psychology is often defined as the study of social interaction, and social psychologists do indeed study social interaction in a variety of ways. Strangely enough, however, social scientists in general are hard pressed to answer some of the most basic questions about social interaction: questions such as how much time during a day do people spend in social interaction? With how many different people do they interact? How long is the average interaction? How many people are involved in the typical social encounter, and what is its sexual composition? What differences exist among people in their reactions to their social lives?

For each of these questions and the many others that could be asked, a second question immediately follows: In what ways, if any, do males and females differ in their social behavior? Using sex-based characteristics is a nearly universal way of describing

people, and a variety of stereotypes and theories exist that claim there are differences in the social behavior patterns of men and women. Men are sometimes described as "group oriented," a proclivity left over from the days of hunting parties. Women, on the other hand, have "kaffeeklatsches" in which all types of information are exchanged. Men are more aggressive socially, while women are more sensitive to interpersonal needs and are the emotion carriers of our culture. This list of assumed or imagined differences between the sexes in their social behavior patterns could go on and on.

As late as 1972, Booth asserted that "no systematic comparisons of male and female social participation patterns have been reported" (p. 183). Booth went on to report interview data from a sample of adults, all over 45 years of age, in two urban communities and concluded that while males had slightly more friends, females' friendship relations were affectively richer. Women had more contact with their close friends, confided in them more, and engaged in more spontaneous activities.

One doesn't know what to make of these data, however, because adult females are usually less mobile than males and would be likely to concentrate their interactions on fewer people, thereby creating affectively richer relationships.

However, there is supporting evidence for

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Booth's conclusion. The evidence is reasonably clear that women self-disclose more than men do (Cozby, 1973). This would lead to the prediction that women have closer, more intense, affectively richer social relationships than men do. In support of this argument, Aries (1976) contrasted all male, all female, and mixed groups of five to seven Harvard undergraduates who met in five 1½ hour sessions for the purpose of getting to know one another. She found that "Over time the women were most interested in the all-female group and looked forward to those sessions more than to the mixed group sessions. The males over time looked forward to the mixed group sessions, and were less interested in attending the all-male group sessions" (p. 16). In addition, content of the interactions was analyzed by the General Inquirer, a computer-aided content analysis system (Stone, Dunphy, Smith, & Ogilvie, 1966). The General Inquirer showed more frequent references in the all-female groups than in the other groups to categories for self, feelings, affiliation, home, and family. In short, women shared more with one another and enjoyed their interactions more.

Although Macoby and Jacklin (1974) concluded that females are not more "social" than males, the studies they cited indicate that males engage in more positive social interactions with their peers, while females report greater liking for those they interact with. However, the first set of data comes from observational studies of very young children, typically preschool, while the second set of data comes from self-reports of older subjects, typically 18-21 years old. This is further complicated by the fact, as Block (1976) pointed out, that sex differentiation increases with age.

Deaux (1976) concluded that it was difficult for social psychologists to make any statements about sex differences in social participation because they have not studied social behavior in voluntary and real-life groups. In this article, we present data on social participation as it occurs in the everyday life of college freshmen in a residential coeducational university. Subjects were referred to as "coinvestigators" because they maintained continuous records of all their so-

cial interactions and their feelings about these interactions. Data were collected early in the first semester and late in the second semester to determine if there were differences between the sexes in adjustment to the social environment.

Method

Subjects

Subjects were 20 female and 38 male entering students at the University of Rochester, residents of two coeducational dormitories. They were recruited for the study during the third week of the fall semester at several regularly scheduled corridor meetings by a male professor and a male graduate student who explained the study in detail and answered all questions. The importance of accuracy was heavily stressed by asking subjects not to take part unless they were confident that they would keep accurate records on a daily basis. Seventy-five students initially agreed to take part for a payment of \$12.50 during the fall semester and \$12.50 during the spring semester. Of the 75, 10 were lost because they didn't want to take part during the spring semester data collection period, which took place during the first 2 weeks of April. Seven more were lost for various reasons, such as illness, obvious inaccuracy, leaving school, misunderstanding instructions, or losing portions of their data. Males were lost at an insignificantly higher rate than females.

Prior to the spring data collection period, subjects had individual interviews with one of the experimenters, who repeated all instructions and again emphasized the importance of accuracy. Subjects were always referred to as "coinvestigators" because they both emitted the behavior and recorded it.

Interaction Record

The interaction record completed for each interaction during each of the 2-week data collection periods is shown in Figure 1. Subjects were given a number of 8 × 11 sheets, each containing four such records. A face sheet of instructions stated that only interactions of 10 minutes or more should be recorded and that records should be updated at least once a day. Records were to be returned to the experimenters every 3 days. A social interaction was defined as any encounter of 10 minutes or longer with another person(s) in which the participants attended to one another and adjusted their behavior in response to one another. The instructions stated.

A conversation is the clearest example of an interaction. Person A says something, Person B responds to that response, and so forth. Dancing and lovemaking are also interactions. Sitting side by side and watching television is not an inter-

am____

Date_____ Time_____ pm_____ Length_____

Initials_____ _____ _____ Male Group Female Group
Mixed Group

Sex. _____ _____ _____ No _____

Initiator Self Other Mutual Unclear

Intimacy of Interaction Intimate 7 6 5 4 3 2 1 Not Intimate

Satisfaction Unpleasant 7 6 5 4 3 2 1 Pleasant

Location Mine Thers Ours Dining On Campus Off Campus

Nature Task Past-time Conversation Share Date Party Date/Party Other

Figure 1. Interaction form completed for each interaction of 10 minutes or more.

action. Listening to a lecture is not an interaction, even if you occasionally ask a question.

Let's take a more difficult example. Suppose you are dining with a group of people. You are listening to their conversation but seldom saying anything yourself. Do you record this as a social interaction? We think that it is a social interaction if you are following the conversation *and* if you could enter into it if you wished. If you are not following the conversation *or* if it would be inappropriate for you to enter it, it would not be counted as a social interaction.

Further portions of the instructions indicated that if the subject had two friends of the same sex with the same initials, it was important to differentiate between them in a consistent fashion, such as using a middle initial. It was emphasized that every interaction of 10 minutes or more, no matter how routine or seemingly pointless, had to be recorded. It was noted that many interactions would create problems of recording. If, for example, a subject interacted with Person AB for an hour, but they were joined by Person CD for 20 minutes during the middle third of the hour, three interactions should be recorded: a 20-minute interaction with AB, a 20-minute interaction with AB and CD, and a 20-minute interaction with AB. Satisfaction and intimacy were not defined, except to note that intimacy did not have to be sexual. The location and nature categories were all defined and will be referred to below when appropriate. Subjects were told to call one of the experimenters day or night if there were questions about recording an interaction.

Results

Postexperimental Interview

All subjects were interviewed individually after each data collection period. The record was examined for any peculiarities, subjective impressions were elicited, and a standardized interview was given.

Each question was analyzed in a 2×2 (Sex \times Time) analysis of variance. All significant effects are reported.

1. Degree of Difficulty Recording Interactions. (1 = no difficulty, 7 = very much difficulty). Males = 2.78, females = 3.47, $F(1, 55) = 6.52, p = .014$. The only major difficulty reported was in remembering accurately all interactions (32% of the subjects).

2. How accurate did the student perceive his interaction record to be? (1 = very accurate, 7 = very inaccurate). Males = 2.58, females = 3.10, $F(1, 53) = 5.88, p = .019$.

3. What is the student's guess of the percentage of interactions not recorded? Overall $M = 8.2\%$.

4. How does the student rate the extent to which keeping the record interfered with his/her interactions? (1 = no interference at all, 7 = a great deal of interference). Overall $M = 1.83$.

5. Did such interference increase or decrease as the study progressed? (1 = decreased, 2 = no change, 3 = increased). Overall $M = 1.83$.

6. Did the student consider his accuracy to have increased or decreased as the study progressed? (1 = decreased, 2 = no change, 3 = increased). Overall $M = 2.16$.

Reliability of the Interaction Record

Due to the fact that the subjects were recruited from only two dormitories, a number of them were roommates. This was done deliberately so that we could compare roommates' interaction records against one another in order to obtain some measure of reliability. Separate intraclass correlations were obtained for each sex and for each time period on interactions per day. They were (number of pairs in parentheses): fall males = .76

(11); fall females = .79 (8); spring males = .67 (9); spring females = .84 (8). The magnitude and similarity of these correlations indicate quite acceptable reliability.¹

An Overview of Social Participation

In this section, we will present analyses by sex, time, and sex composition (same only, opposite only, or mixed) of all social interactions. The purpose is both to detail basic differences between the sexes in their pattern of social behavior and to present a general picture of the social life of college freshmen. In a later section, we will present more detailed analyses that take into account the degree of friendship between interactants.

Before presenting any analyses, a statistical note is in order. The general format of presentation of the analyses for a variable is first a Sex \times Time analysis of variance followed by a Sex \times Time \times Composition analysis of variance. One might ask why there are separate analyses for the sex, time, and Sex \times Time effects, when one could use the *F* ratios from the composition analyses. Although the question sounds reasonable, such *F* ratios are in fact unsound and could produce misleading results. The explanation for this lies in the fact that the naturally occurring frequencies, and therefore accurate weights (the percentages) of same-, opposite-, and mixed-sex interactions vary as a function of time and sex. No single weighting scheme, including equal weights, can avoid this confound, which will happen whenever an analysis is collapsed across composition. To solve this problem, overall variables were computed for each subject which allowed the naturally occurring weights of each type of interaction to determine the overall mean.²

One question concerns the number of people engaged in the typical interaction. The data allow us to determine whether an interaction was with one, two, or three other people or whether it was an interaction in a larger group. The analysis of variance revealed no Sex \times Time effects but a large size effect, $F(3, 168) = 188$. Forty-eight percent of all interactions occurred with one other person, 19% with two other people, 11% with three other people, and 22% in

larger groups. We cannot make a really meaningful statement about the size of larger groups because too many subjects failed to specify the number of people involved. When they did, it was usually four, five, or six people. In future research, we recommend that space be provided for the initials of five or six people.

An interaction may occur with only people of the same sex, with only people of the opposite sex, or with people of both sexes. The analysis of variance produced a large effect for this composition variable, $F(2, 112) = 44.8$. Fifty-six percent of all interactions were with only same-sex people, 19% were with opposite-sex people, and 25% were mixed-sex interactions. In addition, there was a Composition \times Sex interaction, $F(2, 112) = 2.93$, $p = .057$, and a Composition \times Time interaction, $F(2, 112) = 5.32$, $p = .006$. Males had a larger percentage of same-sex interactions, while females had a larger percentage of opposite- and mixed-sex interactions. Across both sexes, same-sex interaction decreased from fall to spring, while opposite- and mixed-sex interactions increased as a percentage of the total.

It appears then, for both males and females, that the most common interaction is with one other person of the same sex. Beyond that, both sexes move toward opposite-sex contact over time, and females, probably due to the availability of upper-class males, have a larger percentage of opposite- and mixed-sex interactions.

Turning to the number of interactions per day, the analysis of variance produced no effects for time or sex. Overall, there were 7.4 interactions of 10 minutes or more each day. Adding composition as a variable in the analysis of variance revealed no further effects.

¹ Although males reported less difficulty and more accuracy, neither the intraclass correlations nor the estimate of percentage of interactions not recorded suggests that males were more accurate. It is likely that males were simply less inclined to admit to difficulty or inaccuracy.

² In addition, one subject was eliminated from the composition analyses because she had no opposite-sex interactions in the fall. Her exclusion did not affect the results.

Time per day spent in interaction produced somewhat different results. The analysis of variance produced an effect for time, $F(1, 56) = 4.86$, $p = .031$, and a Time \times Sex interaction, $F(1, 56) = 4.34$, $p = .042$. Females decreased time in interaction from 389 minutes a day to 323, while males decreased from 338 to 337 minutes.

This decrease of more than an hour a day for females is dramatic and sets the tone for many of the other results. In order to determine with whom females decreased time per day in interactions, a Sex \times Time \times Composition (same, opposite, mixed) analysis of variance was obtained. The second-order interaction did not approach significance, indicating that the decrease in female social participation over time relative to males was common to each type of composition.

At this point, we know that females decreased time per day in interactions relative to males but did not decrease number of interactions relative to males. Logically, then, we would expect that females decreased the average length of interactions relative to males. The Sex \times Time analysis of variance produced the expected interaction between the two variables, $F(1, 56) = 2.84$, $p = .097$. Female average length of interactions decreased from 49.9 minutes to 42.7, while male average length of interactions decreased from 50.3 minutes to 48.6. There was also a significant effect for time, $F(1, 56) = 7.38$, $p = .009$; length decreased from first to second semester.

Adding composition as a variable in the analysis of variance of average length did not produce a second-order interaction, suggesting that the relative decrease in length of interactions for females was common to each type of composition. There were effects, however, for composition, $F(2, 110) = 38.3$, $p = .001$; for Composition \times Sex, $F(2, 110) = 5.9$, $p = .004$; and for Time \times Composition, $F(2, 110) = 5.83$, $p = .004$. Mixed-sex interactions were longer than others; males had longer same- and mixed-sex interactions, while females had longer opposite-sex interactions; and length of same-sex interactions decreased from fall to spring relative to opposite- and mixed-sex interactions.

Another basic question about social par-

ticipation concerns the number of different people interacted with. A Sex \times Time \times Sex of Interactee analysis of variance was performed on the number of different initials in the interaction records. There was an effect for time, $F(1, 56) = 5.36$, $p = .024$; for sex of interactee, $F(1, 56) = 23$, $p = .001$; and for the Sex of Subject \times Sex of Interactee interaction, $F(1, 56) = 16.2$, $p = .001$. The number of people interacted with increased from fall to spring; there were more same-sex than opposite-sex interactees; and females had more opposite-sex interactees than did males. None of this is particularly surprising. The average subject interacted with 16 different people over a 2-week period.

The Time \times Sex analysis of variance of satisfaction produced a main effect for sex, $F(1, 56) = 6$, $p = .017$, and a Sex \times Time interaction, $F(1, 56) = 4.17$, $p = .046$. Females expressed more satisfaction with their interactions but decreased from a mean of 5.5 to 5.2, while males increased slightly from 4.9 to 5.0. Adding composition as a variable did not produce a second-order interaction, forcing us to conclude, as we did with time per day and length, that the decrease in female satisfaction is common to each composition.

The analysis of variance of intimacy also produced a Sex \times Time interaction, $F(1, 56) = 5.4$, $p = .024$. Females decreased intimacy from a mean of 3.2 to 3.0, while males increased intimacy from 3.1 to 3.35. Again, adding composition as an independent variable, there was no second-order interaction. Females decreased intimacy relative to males regardless of the sexual composition of the interaction.

However, for both satisfaction and intimacy, there was a Sex \times Composition effect ($ps = .008$ and $.001$, respectively). Females expressed more intimacy in, and were more satisfied with, same-sex interactions than males. For both satisfaction and intimacy, there was also a composition effect ($p = .0001$ in each case); satisfaction and intimacy were greater for opposite-sex interactions than for the other two types.

Turning now to the location of interactions, a Sex \times Time \times Location (6) analysis of variance was obtained on percentage

of interactions in each location, and the Location \times Time interaction, $F(5, 280) = 4.97$, $p = .001$, was significant. The interaction was due to a decreased percentage of interactions in "our location" and an increased percentage in the dining location. Our location was defined to the subjects as having two possible meanings: (a) an interaction with one's roommate in the shared room or (2) an interaction with a roommate or a dormmate in a part of the corridor or dorm belonging to no specified person.

Adding composition to the location analysis produced a Composition \times Time \times Location interaction, $F(10, 550) = 6.1$, $p = .001$. Same-sex interactions moved from our location and dining to "their location" and on campus. Opposite-sex interactions moved from our location to dining and on campus. It should be noted that the subjects lived in a coed dormitory, and this percentage of opposite-sex our-location interactions in the fall is probably a reflection of that fact.

Subjects were asked to classify each interaction by its primary nature: task, pastime, conversation, share, date, party, date/party, and other. The categories of date, party, and date/party were collapsed into one category after inspection of the data, and all subsequent analyses of nature of interaction will reflect this change. The share category was defined to the subjects as "exchange of immediate feelings or perceptions about one's self or other." The pastime category was defined as "any type of shared activity (sports, hobbies, etc.)." The bulk of the interactions for both sexes, almost 70%, fell into the conversation category.

The analysis of nature of the overall interactions produced a Sex \times Nature interaction, $F(5, 280) = 4.24$, $p = .001$. This result was due to greater use of the pastime category by males and greater use of the share category by females. Adding composition as an independent variable to the analysis produced several other effects. A Composition \times Nature interaction, $F(10, 550) = 7.94$, $p = .001$, was found due to more same-sex conversation and more opposite-sex sharing and party/date, a not-unexpected finding given the definitions of the categories.

The last significant effect in this analysis

was the Time \times Composition \times Nature interaction, $F(10, 550) = 3.07$, $p = .001$. From the first to the second semester, percentage of same-sex interactions described as pastime increased, relative to opposite sex, with a corresponding decrease in conversation.

The Sex \times Time \times Initiation (4) analysis of variance produced a marginally significant interaction between Sex and Initiation, $F(3, 168) = 2.36$, $p = .073$, and a strong main effect for initiation, $F(3, 168) = 25$, $p = .0001$. The main effect was due to overwhelming use of the mutual initiation category. The interaction was due to greater use by females of the other initiation and mutual initiation categories and greater use by males of the self initiation and unclear categories.

Adding composition as a variable produced a Composition \times Initiation interaction, $F(6, 330) = 24.56$, $p = .001$, and a Composition \times Initiation \times Sex interaction, $F(6, 330) = 8.17$, $p = .001$. This was due, as one might expect, to opposite-sex interactions being self-initiated for males and other-initiated or mutually initiated for females.

Summary of the Overview of Social Participation

There were a number of results that were so intuitively reasonable that we felt confident of the technique. There were also some results we did not expect. First, let us summarize the expected results.

The predominant interaction was with one other person of the same sex. Females had a higher percentage of their interactions with the opposite sex because of upperclassmen, and they had longer opposite-sex interactions. They also interacted with a great number of opposite-sex people. Both sexes moved toward more opposite-sex contact over time, and both sexes increased the number of interactees over time. Both sexes moved away from interactions in their own territory toward neutral territory. Males initiated interactions more than females, particularly with the opposite sex. Both sexes felt that their opposite-sex interactions were more satisfactory and intimate than their same-sex interactions, but this was more true for males

than for females. Females had more "sharing" interactions.

We did not expect that females would decrease time spent in interacting from fall to spring. Nor did we expect that females would reduce satisfaction and intimacy over time relative to males. Females seem to have been highly active socially in the new environment and then, with time, to become less active, while males maintained a more consistent pattern from fall to spring. In the next section we will examine these findings in greater detail.

We will do this by confining the following analyses to the three people of each sex with whom each subject interacted most frequently during each data collection period. The person of either sex interacted with most frequently is defined as best friend of that sex, the person interacted with next most frequently is defined as second best friend of that sex, and so forth. Each of the unweighted analyses of variance includes sex (2), time (2), and friendship (3), the latter two being repeated measures.

Again, a statistical note is in order concerning the analyses of variance to be presented here. Similar to the problem of weights in the composition analysis, a confounding of weights and factors exists in the analysis of three best friends. The naturally occurring frequency of interaction with best friends varies as a function of both time and sex. Therefore, any analysis that was collapsed across friendship could have led to inaccurate results and conclusions. Again, separate variables were computed for analyses that were collapsed across friendship rank: sex, time, and the Time \times Sex interaction effects. These overall variables were calculated in a slightly different fashion than the composition variables. The sexual composition classification was a mutually exclusive system; a social interaction could not be both same and mixed. With friendship rank, however, a social interaction could contain both the best and second best friend, or any combination of the three best friends. To remedy this problem, a social interaction contributed only once to the calculation of an overall variable, regardless of how many of the friends were there. This scheme was judged the most logical, for

the inference of the F tests of the sex, time, and Time \times Sex interaction effects was to social interactions in which at least one of the three best friends was present. This method avoided both the confounds of weights with factors and of friends with interactions.

It might be argued that our operational definition of "best friend" bears no relationship to the subjects' definition. One week after the fall data collection period, most of the subjects were asked, as part of another study, to list their three best friends. They were not asked to list them in order. However, our operational best friend was named in the first three by 19 of the 20 females and by 31 of the 34 males questioned. It would appear that our operational definition is similar to the subjective definition of both male and female subjects.³

Although female subjects were somewhat more likely to be roommates than were males, the difference did not approach significance (fall $\chi^2 = .73$, spring $\chi^2 = 1.68$). Furthermore, the sexes did not differ in the likelihood that the roommate was the operational best friend. In the fall, 65% of female roommates were best friends, compared to 63% of male roommates. In the spring, 40% of female roommates were best friends, compared to 42% of male roommates.

Results by Degree of Friendship with Interactee: Same Sex

Figure 2 presents the average number of interactions per day by sex, time, and friendship. Every main effect and every interaction is significant. The Time \times Sex \times Friendship interaction is significant, $F(2, 106) = 8.18$, $p < .001$, and it is apparent from inspection of Figure 2 that female interaction with best friend in the fall was very divergent from the other points and was creating or at least contributing heavily to all other effects.

In the overall analysis we found no sex difference for number of interactions. This effect for best same-sex friend is strange and must be examined further.

³ We are grateful to Harry Reis for providing these data.

To understand more precisely this dramatic effect and to rule out possible artifacts, two internal analyses were performed. They were: (a) subjects whose operational fall best friend was the roommate versus others and (b) subjects who had the same best friend in both semesters versus others. In each of these analyses, one very extreme female subject was excluded, because breaking the small female sample into two groups allows an extreme case to have undue influence. The dependent variable for each analysis was the change from fall to spring in total number of interactions with operational best friend over the 2-week period.

(a) For males with a best friend roommate in the fall ($N = 24$), the mean decrease in interactions from fall to spring semester was 1.75. The corresponding figure for other males (14) was an increase of .42 ($t < 1.0$). For females with a best friend roommate (13) the average decrease in interactions was 10.5; for other females (6), the decrease was 11.2 ($t < 1.0$).

(b) Males who had the same best friend both semesters (10) increased the number of interactions by 2.3, while other males (28) decreased by 2.1 ($t = 1.11$). Females with the same best friend both semesters (9) decreased interactions by 11.4, while other females (10) decreased 10.1 ($t < 1.0$).

These analyses do not help us to understand the female decrease in number of interactions with best friend, but they do indicate that the decrease was very general and does not appear to be an artifact dependent on other differences between males and females. Let us now examine other dependent variables.

The Time \times Sex \times Friendship analysis of variance of average length of interactions produced a main effect for time, $F(1, 56) = 7.51$, $p = .008$, and a Sex \times Time interaction, $F(1, 56) = 4.88$, $p = .03$. While males slightly decreased the average length of their interactions from fall to spring (from 43 to 42 minutes), females showed a substantial decrease (from 44 to 35 minutes). The size of the change by both sexes was very similar to that found in the overall analysis of all interactions.

The analysis of variance of satisfaction

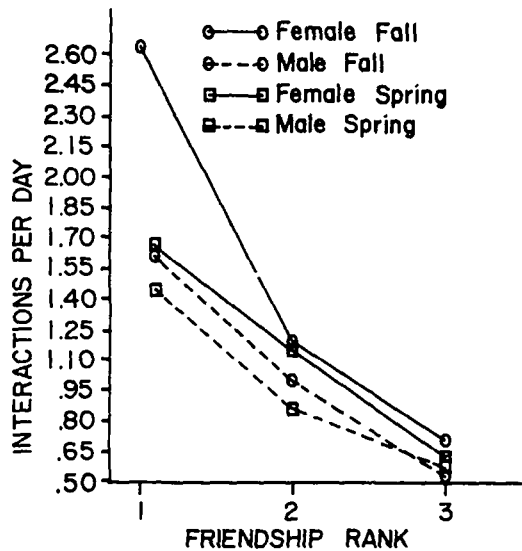


Figure 2. Same-sex interactions per day by sex, time, and friendship

yielded only a main effect for sex, $F(1, 56) = 6.85$, $p = .01$. Females (5.3) were more satisfied than males (4.8) with their three same-sex best friends. This effect was also found in the overall analysis. However, the overall analysis also showed females decreasing in satisfaction over time relative to males. The present analysis indicates that such a decrease in satisfaction was not due to same-sex close friends.

The analysis of variance of intimacy produced a Time \times Sex interaction, $F(1, 56) = 3.06$, $p = .086$, similar to the one found in the overall analysis. Females decreased from a mean of 3.25 to 3.08, while males increased from 2.94 to 3.17.

Nature of same-sex interactions was analyzed in a Nature (6) \times Sex (2) \times Friendship (3) \times Time (2) analysis of variance. The Nature \times Sex interaction, $F(5, 280) = 5.34$, $p < .001$, was due to greater use of the share category by females than by males (12% of the interactions vs. 3%) and greater use of the pastime category by males than by females (13% vs. 5%). A similar effect was found in the overall analysis.

The Time \times Nature interaction was also significant, $F(5, 280) = 2.68$, $p = .022$, and was due to a decrease in conversation and a slight increase in the other categories.

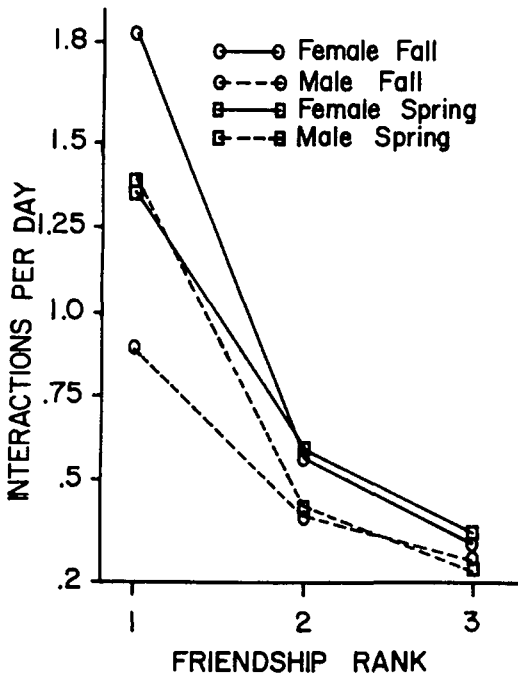


Figure 3. Opposite-sex interactions per day by sex, time, and friendship.

In the analysis of location, the Time \times Location interaction, $F(5, 280) = 2.99$, $p = .012$, for same-sex three best friends was due to a movement away from our location to on campus. The Location \times Friendship effect, $F(10, 530) = 7.48$, $p = .001$, was modified by a Location \times Friendship \times Time interaction, $F(10, 530) = 2.01$, $p = .031$. There was a strong tendency for interactions with best friend to occur in our location, but this diminished with time. Forty-four percent of interactions with best friend in the fall occurred in our location, but this figure dropped to 33% in the spring, being replaced by their location and on campus.

The analysis of initiation produced several significant effects. The only effect involving sex was the Initiation \times Sex interaction $F(3, 168) = 2.21$, $p = .088$, showing more mutual initiation by females and more self-initiation by males. The Time \times Initiation effect, $F(3, 168) = 2.29$, $p = .08$, was due to a decrease in mutual initiation and an increase in everything else. The Initiation \times Friendship effect, $F(6, 336) = 2.93$, $p = .008$, was due to fewer self and other initiations with best friends,

with an increase in mutual and unclear initiations.

Results by Degree of Friendship with Interactee: Opposite Sex

Interactions per day are shown in Figure 3. Aside from the necessary friendship effect, only the Time \times Sex \times Friendship effect was significant, $F(2, 106) = 4.83$, $p = .01$. Females differed from males, but it was largely due to their fall behavior, and then it was largely due to interactions with best friend. A fairly similar pattern was found in the same-sex analysis (see Figure 2), where the second-order interaction was also the strongest and most basic effect.

At this point, we can say that in the overall analysis of number of interactions per day, there were no sex or time effects. But in the analysis of same-sex three best friends and in the analysis of opposite-sex three best friends, females relative to males decreased the number of interactions with best friend. Thus, interactions that were focused on best friend of both sexes in the fall were apparently distributed by females among a larger number of people in the spring.

The analysis of variance of average length of opposite-sex interactions produced an effect for friendship, $F(2, 106) = 4.42$, $p = .01$, and a Friendship \times Sex interaction, $F(2, 106) = 3.13$, $p = .048$. The data are presented in Figure 4. Interactions were longer with best friends, but this was largely due to females.

In the overall analysis, females decreased average length of interactions from fall to spring, as they did in the same-sex best friend analysis. However, they did not decrease with their opposite-sex three best friends. The overall analysis also indicated that females had relatively longer opposite-sex interactions. Figure 4 suggests that this effect was largely due to the longer interactions with the two males seen most frequently.

The Time \times Sex \times Friendship analysis of variance of opposite-sex satisfaction produced no significant effects. Thus, while the overall analysis showed that females decreased satisfaction relative to males, this was not true for either same- or opposite-sex three best friends.

The analysis of variance of intimacy yielded an effect for sex, $F(1, 56) = 5.83$, $p = .019$, and an effect for friendship, $F(2, 106) = 3.78$, $p = .026$. Males (3.89) found opposite-sex interactions to be more intimate than females (3.33), and all subjects reported intimacy to be the greatest with their best friends.

A Nature (6) \times Sex (2) \times Time (2) \times Friendship (3) analysis of variance of nature of interactions with the three most popular opposite-sex friends produced a Nature \times Sex interaction, $F(5, 265) = 2.37$, $p = .04$. This result was due to greater sharing by females than by males (14% vs. 8%) and more conversation by males than by females (62% vs. 55%). There was also a Nature \times Friendship interaction, $F(10, 530) = 2.62$, $p = .004$, due to greater sharing with best friends and more conversation with other friends.

Comparing these results to those of same-sex interactions, there is some indication that sharing is more frequent with the opposite sex. To test this directly, a Sex of Subject \times Sex of Interactee \times Time analysis of variance over the three best friends was performed. As expected, a sex effect was found; females shared more than males, $F(1, 56) = 14.4$, $p = .001$. A relationship effect was also found; greater sharing occurred with the opposite sex, $F(1, 56) = 9.83$, $p = .003$. It should be noted that this result is not limited to best opposite-sex friend but occurs with the three best such friends.

The Location \times Sex interaction, $F(5, 280) = 3.51$, $p < .004$, was due to females' interacting more frequently in "my location" and on campus, while males interacted more frequently in their location. The Time \times Location interaction, $F(5, 280) = 1.98$, $p = .081$, indicated a movement from our location to on campus. Strangely enough, there was no significant effect involving friendship.

The analysis of initiation produced a Sex \times Initiation effect, $F(3, 168) = 6.21$, $p = .001$, and a Sex \times Initiation \times Time effect, $F(3, 168) = 2.42$, $p = .068$. Males self-initiated, and females were higher on other and mutual initiations. From fall to spring, however, females increased self-initiation, whereas males decreased. In addition, a Friendship \times

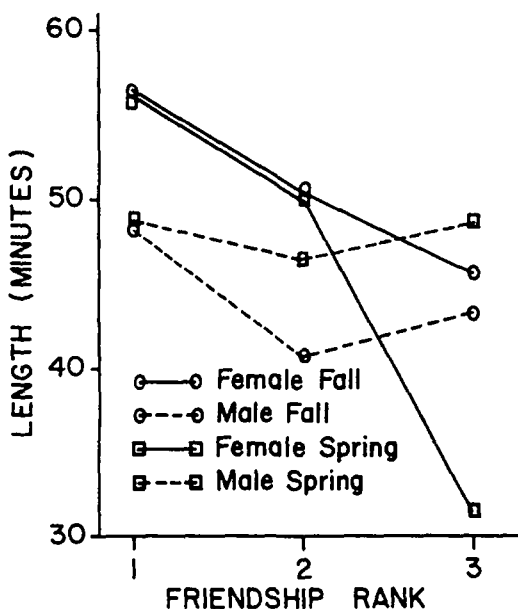


Figure 4. Length of opposite-sex interactions by sex, time, and friendship.

Initiation interaction, $F(6, 336) = 2.49$, $p = .022$, indicated that self-initiation was less likely with best friends, while unclear initiation was more likely. Overall, mutual initiation accounted for 40% of all interactions.

Discussion

Information gathered from interviews and through informal contact with our subjects and other students from the subject population together with the overall results suggest a relatively simple pattern. A brief excerpt from an interview with a young woman may be helpful:

We were all very anxious and excited that first semester and wanted to be friends with everyone. We had a lot of freedom and a lot of fun. Over the Christmas vacation, we had time to take stock of what we were doing and realized that we were spending a lot of time with people we didn't have much in common with and didn't really like. We made a conscious decision to drop these people and not spend all of our time socializing. We came back from vacation and looked for the library.

When females described their first year at school, many agreed with this woman. They stated that they were both anxious and thrilled about the first semester of college. However, they felt more satisfied with them-

selves in the second semester, a feeling accompanied by greater feelings of self-determination and control. They felt they had more control over how they spent time and with whom they spent it. Most mentioned they had increased their circle of acquaintances but at the same time had also developed a small set of friends they genuinely liked. A number mentioned spending more time in the library or alone in their rooms studying. These changes may not have occurred solely over the Christmas vacation, but the data do suggest they had occurred by the second data collection period. In contrast, interviews with males had few common themes, and this lack is consistent with the lack of changes in social behavior males exhibited across semesters.

In the overall analysis of all interactions, two major results need to be explained. Females dramatically decreased time spent per day in social contacts from fall to spring, primarily by reducing the average length of interactions. And relative to males, they experienced a decreased level of satisfaction in the spring. One explanation for this set of results relies on a realization by females that they had spent too much time in social activities in the fall semester. Perhaps they felt they needed to change their style of socializing as well as the people they socialized with. One easy way to reduce social activity in general was to reduce the average length of an interaction. It would have been difficult for them to reduce the number of contacts they had per day because they would have remained acquainted with the same people they had met in the fall and probably still would have had casual contact with them. If people are the creatures of habit some psychologists and detectives feel they are, it would be very difficult to totally ignore the circle of friends one had created upon entering a new situation, even if one did not find continued contact with them to be very rewarding. The shorter average length of interactions and lower levels of satisfaction are consistent with this possibility.

The question still remains as to why this phenomenon was limited to the females of our sample. One appealing (but speculative) explanation rests on the premise that the

change from high school to college meant a greater increase in personal freedom for females than it did for males. Given our culture's prejudice regarding the submissive nature of females and the manner in which this belief is transmitted via the socialization process, such a notion is not farfetched. Completing this line of reasoning, it would follow that females would find the first semester to be very satisfying and would take full advantage of their newly found freedom, two predictions which the data most certainly confirm. By the spring semester the novelty would have worn off, a conclusion the data also support.

To test this possibility, Nezlek and Wheeler (Note 1) administered to each of the subjects a Life History Questionnaire, a modification of the one by Radloff and Helmreich (1972). Factor analysis revealed a clear parental control factor characterized by verbal criticism, physical punishment, arguments between parents and children, and the use of restriction of activity as a method of punishment. As predicted, high-control females had longer interactions in the fall and decreased them more from fall to spring. It appears then that a previous lack of freedom or conflict over freedom relative to males is at least one reason for the intense socializing of females in the fall.

Let us now turn to the analysis of the three closest friends of each sex.

The most startling effect for same-sex close friends was the decrease for females in number of interactions with best friend (Fig. 2). This effect occurred whether a female had the same best friend both semesters or not and whether her roommate was her best friend or not. However, it was true only for best friend; it was not true for the other two close friends, and it was not true in the overall analysis. Our interpretation, which we admit is speculative, is that females needed a strong anchor in the social storm of the first semester. With intense socializing occurring, there is a lot to talk about.

In a quick attempt to learn something else about the nature of interactions, 40 male and 40 female second-semester freshmen (of another class) were randomly selected from the class lists and were asked to complete a

questionnaire concerning their relationship with their best friend *the first semester*. On 5-point scales with the ends labeled "often" and "not often," subjects were asked to indicate the extent to which they *did* certain things with their same-sex best friend (studying, meals, sports, movies, and other entertainment) and the extent to which subjects *talked* about things with that same-sex best friend (boyfriends/girlfriends, other friends, current events, past experiences, family, school, plans for the future, and personal problems). Females significantly ($p < .05$) exceeded males on studying together and on talking about boyfriends/girlfriends, other friends, family, and personal problems. Males did not significantly exceed females on anything and had higher means only on going to the movies and engaging in sports. Not only are these data perfectly consistent with the self-observational data, but they suggest that the females were relying on one another to deal with their current social environment.

In addition to the decrease in number of interactions with best friend, across the three same-sex friends, females relative to males also decreased interaction length, not as much as in the overall analysis, but still substantially. Unlike the overall analysis, however, females did not reduce satisfaction with interactions. Not only did it remain unchanged, but it was higher than male satisfaction. This is quite consistent with statements from interviews that females had maintained or developed a small group of close friends through the second data collection period.

The Time \times Sex interaction for intimacy is difficult to interpret, because it was due to equivalent small changes by both males and females. Perhaps females decrease intimacy because they have already shared much about themselves, and males increase intimacy because they are finally opening up.

The results for opposite-sex three best friends are similar to same-sex friends in that females relative to males decreased the number of interactions with best friend (Figure 3).

In this case, however, females and males changed equally, and by simple effects tests, neither changed significantly. Accordingly, we will say no more about it other than to

note that the female decrease in number of interactions with same-sex best friend cannot be explained by an increase in interactions with opposite-sex close friends.

The opposite-sex results are also similar to the same-sex results in that there is no decrease in satisfaction with interaction for either males or females. But although females were more satisfied with same-sex interactions than were males, they were equally satisfied with opposite-sex interactions. Taken in conjunction with the Sex \times Composition effect in the overall analysis, it is clear that females are considerably more satisfied with same-sex interactions than males are, whether these interactions are with close friends or with acquaintances. Males, on the other hand, find close opposite-sex interactions to be more intimate than females do. Since females also have more opposite-sex sharing interactions than males do, suggesting greater intimacy, it appears that intimacy does not mean the same thing to the two sexes. Perhaps intimacy appears to be more physically related for males.

The general conclusion we would draw is that females entering college socialize more intensely than males, probably because they experience a greater increase in freedom accompanied perhaps by higher levels of anxiety. They use their same-sex best friend heavily to deal with this social stimulation, and as the stimulation decreases so does the reliance. This reduction in stimulation may be the result of increased familiarity with the environment, and the resultant reduction in intensity of interaction is primarily reflected by a decrease in the average length of interactions. Satisfaction with peripheral relationships decreases, but remains high for interactions with the smaller group of same-sex friends. Females are also more satisfied with same-sex relationships than males are, in both the fall and spring. Aside from that finding and the fact that males found opposite-sex relationships to be more intimate than females did, sex differences in the second semester were minimal. Both sexes increased the number of people they interacted with, both increased the geographical range of their interactions, and both moved toward more opposite-sex interactions.

The study has definite limitations, the major one being the small sample size, which undoubtedly obscured some interesting differences, while at the same time making us reasonably confident of the differences we have reported. With a substantially larger sample size, we could have conducted cross-lag analyses, which would have been very valuable in interpreting the results. Personality measures such as femininity, masculinity, and androgyny would have been useful to have, again necessitating a larger sample size. However, we have what we have, and we think the results are important both in themselves and in demonstrating that a self-observational technique can be used to study naturally occurring behavior. Perhaps as a result of this study, other investigators will frame specific hypotheses that can be examined with this method.

Reference Note

1. Nezlek, J., & Wheeler, L. *Life history and social interaction*. Paper presented at the convention

of the American Psychological Association, Washington, D.C., September 1976.

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