The Experimental Generation of Interpersonal Closeness: A Procedure and Some Preliminary Findings

Arthur Aron
State University of New York at Stony Brook

Edward Melinat
California Graduate School of Family Psychology

Elaine N. Aron
State University of New York at Stony Brook

Robert Darrin Vallone
University of California, Santa Cruz

Renee J. Bator
Arizona State University

A practical methodology is presented for creating closeness in an experimental context. Whether or not an individual is in a relationship, particular pairings of individuals in the relationship, and circumstances of relationship development become manipulated variables. Over a 45-min period subject pairs carry out self-disclosure and relationship-building tasks that gradually escalate in intensity. Study 1 found greater postinteraction closeness with these tasks versus comparable small-talk tasks. Studies 2 and 3 found no significant closeness effects, in spite of adequate power, for (a) whether pairs were matched for nondisagreement on important attitudes, (b) whether pairs were led to expect mutual liking, or (c) whether getting close was made an explicit goal. These studies also illustrated applications for addressing theoretical issues, yielding provocative tentative findings relating to attachment style and introversion/extraversion.

A core variable in the thriving study of the social psychology of close relationships is whether a subject is in such a relationship. So far, researchers have compared those in and not in close relationships, or those in relationships that are close to various degrees, using measures of degree of closeness (e.g., Aron, Aron, & Smollan, 1992; Berscheid, Snyder, & Omoto, 1989). But in all of these approaches, the existence of a close relationship, the characteristics of its members, or the circumstances under which the relationship developed are not subject to experimental manipulation.

This article presents a practical methodology for creating closeness in an experimental context, so that whether or not a subject is in a relationship, the particular pairings of individuals in the relationship, and the circumstances under which the relationship develops all become manipulated independent variables. That is, we have tried to make being in a relationship accessible to laboratory study and experimental manipulation in the same way as the minimal group paradigm, mood induction procedures, or self-esteem-lowering methods have opened up previously impractical research horizons.

Authors' Note: We are grateful to our many research assistants on these projects, including Stephanie Anderson, Jonathan Armstrong, Mark Baggett, Kimberly Chu, Ritsu Itoi, Tina Luu, Dori Morechower, Whitney Parker, Dianne Rossiter, Liz Shafton, Laura Steffen, Susanne Waldman, and Julie Wilson. We also want to thank Drs. Merlynn Bergen and Gregory White for their substantial input on the preliminary studies. Some of these data were presented at the 1994 International Network on Personal Relationships Graduate Workshop, the 1994 Nag's Head Conference on Interaction Processes, and the 1994 International Conference on Personal Relationships. Address correspondence to Arthur Aron, Psychology Department, State University of New York at Stony Brook, Stony Brook, NY 11794-2500, E-mail aron@psych1.psy.sunysb.edu.

PSPB, Vol. 23 No. 4, April 1997 363-377
© 1997 by the Society for Personality and Social Psychology, Inc.

from the SAGE Social Science Collections. All Rights Reserved.

The studies reported here examined the elements of the procedure we have developed for inducing closeness under controlled conditions and illustrated its applicability for testing theoretical issues that previously could be treated only with correlational data.

One key pattern associated with the development of a close relationship among peers is sustained, escalating, reciprocal, personalistic self-disclosure (e.g., Altman & Taylor, 1973; Berg & Clark, 1986; Collins & Miller, 1994; Derlega, Metts, Petronio, & Margulis, 1993; Dindia & Allen, 1995). The core of the method we developed was to structure such self-disclosure between strangers. We also incorporated two other well-substantiated findings in the attraction and relationship literature: (a) We matched individuals so they did not disagree about attitudinal issues of importance to them (e.g., Byrne, 1971; Rosenbaum, 1986) and (b) we created the expectation that each subject's partner would like him or her (e.g., Aron, Dutton, Aron, & Iverson, 1989). Finally, following the model used in other research areas (e.g., memory, perception), we made becoming close an explicit task. The studies reported here systematically address the usefulness of each of these key elements of the procedure (nature of the task, nondisagreement, expectation of mutual liking, and making closeness an explicit task).

The procedure we developed was to some extent inspired by what Collins and Miller (1994) call the *acquaintance paradigm* in the substantial body of experimental research on self-disclosure conducted mainly in the 1970s and 1980s. However, the present procedure clearly goes well beyond what was done in that line of research—which, of course, was not intended for the present purpose. Even in those few studies in which the partner was not a confederate, the procedures were typically brief, did not strongly engage the participant in an ongoing interaction, and did not involve the other aspects of our tasks. (Although these differences in procedure between our method and the acquaintance paradigm studies do not guarantee greater closeness as a result of our method, such a difference seems reasonable.)

We should also emphasize that the goal of our procedure was to develop a temporary feeling of closeness, not an actual ongoing relationship. This feeling we would associate with the Arons' (Aron et al., 1992; Aron, Aron, Tudor, & Nelson, 1991) definition of closeness as "including other in the self"—an interconnectedness of self and other. This feeling of interconnectedness is similar to what some researchers call intimacy. For example, Reis and Shaver (1988) emphasize that intimacy is a process in which each feels his or her innermost self validated, understood, and cared for by the other; McAdams's (1988) summary of the intimacy literature argued that most definitions of intimacy "converge on the central idea of *sharing that which is inmost* with others" (p. 18). There are other meanings of closeness, such as Berscheid et al.'s (1989) definition that emphasizes behavioral interaction—amount of time together, shared activities, and mutual influence. Indeed, Aron et al. (1992) found that various measures of closeness have two latent dimensions of *behaving close* and *feeling close.* The former included the Berscheid et al. measures; the latter, a subjective measure of how close one feels to the partner and Sternberg's (1988) Intimacy Scale. (A measure based directly on including other in the self loaded on both dimensions.) Whereas behaving close in this sense could not really arise outside of a long-term ongoing relationship, it seemed to us that the subjective feeling of closeness, which is our focus, might well arise at least temporarily in a short-term interaction.

In the initial version of our procedure as we have developed it (Aron, Aron, Melinat, & Vallone, 1991), cross-sex stranger pairs carried out a series of self-disclosure and relationship-building tasks over a 1½-hr period while alone together in a comfortable room. Encouraged by high postexperiment ratings of closeness and anecdotal reports of the impact of the experience over the next few months (including one pair who married!), we adapted this task so that it could be carried out in a classroom situation, over a 45-min period, and with either same- or cross-sex pairings. In this way the procedure could be used more practically by researchers and with large numbers. Our initial results with this approach were also very promising.[1]

The present studies examined the utility of this approach as a research tool for exploring important questions in the area of close relationships. Thus these studies examined both the degree of closeness attained through this procedure and the relative importance for generating closeness of each of the conditions implemented in the procedure: whether the tasks involve self-disclosure and other intimacy-associated behaviors (Study 1); whether partners are matched for not disagreeing on important attitudinal issues and whether subjects expect their partners to like them (Study 2); and whether becoming close is an explicit goal (Study 3). In addition, to illustrate the potential of the procedure, we have applied it in a preliminary way to theoretical issues difficult to address with the usual correlational methods in the areas of adult attachment (Studies 1 and 2) and introversion/extraversion (Study 3).

STUDY 1

Study 1 focused on the importance for generating closeness of the nature of the tasks we have incorporated into the procedure (escalating, reciprocal, personalistic self-disclosure, and intimacy-associated behaviors). That

is, in this study we manipulated the nature of the tasks as an independent variable.

In addition, we attempted to illustrate the usefulness of the procedure for addressing theoretical issues, focusing on adult attachment (Hazan & Shaver, 1987). For this aspect of the research, we combined data from Studies 1 and 2 to have a sufficient N for the kinds of analyses needed (we describe results of these analyses with Study 2). Thus, in both Studies 1 and 2, we matched subjects into specific attachment-style combinations and included some additional postinteraction measures. The focus was on differences among attachment styles in closeness achieved and in change from before to after the interaction in reported attachment style. We selected these issues because they show key advantages of using the closeness-generating procedure; previous work on these issues has been correlational in that who pairs with whom and whether the subject is in a relationship at all at the time of the study are entrenched confounding variables in that research. (Of course, even using our paradigm, subjects' own initial attachment style remains a nonmanipulated variable.)

Method

The experiment was conducted during a regular class session of a large psychology course, 5 weeks into the term. The study was announced 2 weeks in advance, and those willing to participate (nearly all present) completed initial questionnaires at that time. When students arrived on the day of the experiment, they were placed into the predetermined pairings and seated together at a moderate distance from other pairs. Each pair then carried out a series of self-disclosure and relationship-building tasks over a 45-min period. Finally, subjects were separated and individually completed postinteraction questionnaires.

Announcement and recruitment of subjects. The announcement explained that on a particular day the class would be devoted to a demonstration of experimental methods that would also be part of an ongoing research program on "interpersonal closeness." The main part of the announcement was as follows:

> You will be paired with another person in this class whom you don't know. (We will match you, based on the questionnaire [you are about to complete], with someone we think will like you and whom you will like.) During the first hour of class on this day you and the person we have paired you with will do a series of activities (such as talking about particular topics) designed to help you get close.

Students were not required to participate, and no record was made available to the instructor of who did and did not. About 80% of the students enrolled in the class completed the initial questionnaire; of these, about 90% came on the day of the study and took part. (These percentages were approximately the same in all three studies.)

Initial questionnaire. The initial questionnaire included a consent form, a brief written description of the project (restating the oral announcement), demographic items, an item asking subjects to list all other students they know in the class, 17 attitude questions, and an attachment-style measure. The attitude questions assessed attitudes and behaviors disagreement about which would make a person undesirable as a relationship partner (e.g., "Students should dress in conventional ways" and "I smoke"). The items were created based on results of an open-ended questionnaire on this theme administered to a separate sample at the same university. For each item, subjects indicated both their agreement-disagreement and how important-unimportant the issue was to them, using separate 7-point Likert-type scales. The attachment-style measure was a version of Hazan and Shaver's (1987) forced-choice attachment-style question, modified by Bartholomew and Horowitz (1991) for their fourfold classification. Subjects read a paragraph describing each style and then (a) selected the style most applicable to themselves and (b) rated how much each style applied to them on a 7-point scale.

Matching procedure and subjects. The matching procedure involved several steps and was quite elaborate and complex. The result was the random assignment of individuals to pairs and of pairs to conditions within constraints of sex and attachment style, all counterbalanced across conditions, attachment-style pairings, and cross-sex versus all-women pairings. In addition, subjects who knew each other, as indicated by having listed the other's first name on the initial questionnaire, were not matched. Also, subjects who disagreed on any item that either had rated as very important were not matched. (See Study 2 for more details on the matching for non-disagreement.) As in most psychology courses at this university, about 70% of the students were women. Thus we decided to use only cross-sex and all-women pairings (our preliminary studies had found no differences between all-women and all-men pairings[2] but had found differences between cross-sex and same-sex pairings). We randomly assigned the women into two groups: One group, corresponding to the number of men, were put into cross-sex pairs ($n = 33$); the remaining were put into all-women pairs ($n = 17$).

Experimental procedure. After subjects were paired and seated, they were instructed to open the envelope with which they had been provided and begin. Each envelope contained an instruction sheet and three sets of slips. It was emphasized that "This is a study of interpersonal

closeness, and your task, which we think will be quite enjoyable, is simply to get close to your partner, with whom you've been matched." The instructions also explained the procedure they should follow in which, for each slip, one of them (in alternating order) reads it aloud, both carry out the activity, and then they go on to the next slip. (The full text of our standard instructions for this procedure is given in the appendix.)

After reading the instructions, they were to begin at once with the first Set I slip. After 15 min, the experimenter told the subjects to stop, put away the Set I slips, and begin Set II; after another 15 min, to begin Set III; and after a final 15 min, to stop, quickly move to another location in the room as far away as possible from their partners, and then complete the postinteraction questionnaire.

Tasks and experimental manipulation. Subjects were given one of two types of tasks. The closeness-condition tasks were based on the procedure developed in our preliminary research (Aron, Aron, Melinat, & Vallone, 1991). These tasks called for self-disclosure or other intimacy-associated behaviors; the intensity of these tasks gradually increased, both within sets and over the three sets. (We used three sets of slips so that even pairs that went very slowly through the tasks would do at least some of the fairly intense Set III tasks.) The small-talk-condition tasks involved minimal disclosure or focus on partner or relationship. The full set of tasks for each condition is given in the appendix.

Dependent measure: closeness. The postinteraction questionnaire included Aron et al.'s (1992) Inclusion of Other in the Self (IOS) Scale and Berscheid et al.'s (1989) Subjective Closeness Index (SCI). The IOS Scale consists of seven pairs of circles labeled *Self* and *Other* (in this study, *Partner*) that overlap to various degrees, creating a 7-point, interval scale. Subjects select the pair that best describes their relationship. The IOS Scale has shown high levels of test-retest and alternate-form reliability (.85 and .92, respectively, for friendships) and convergent and discriminant validity with appropriately related measures; it also predicts relational maintenance over 3 months—all as well as or better than several more elaborate, standard measures of closeness that Aron et al. also tested. The SCI consists of two items in which the subject rates on a 7-point scale his or her degree of closeness to another person (in this study, his or her partner). On one item the relationship is compared with all of one's other relationships; on the other item, the relationship is compared with what the subject knows about the closeness of other people's relationships. We included the SCI because it seems to tap very directly the feeling aspect of closeness (its loading on this latent variable in the Aron et al. confirmatory analysis was .99). Further, the SCI is a short scale that provided a complement to the IOS Scale.

In the three studies reported in this article, the correlations between the two measures ranged from .69 to .83, with a median of .77. Thus, to simplify reporting of results and to maximize reliability, we combined the two measures into a single composite. In all three studies, standard deviations were very close for the two measures, so that we simply averaged raw scores. Treating this composite as a scale with two subparts (IOS and SCI) yielded a median alpha (over the three studies) of .88. Also, as would be expected from the high correlations, in all analyses in which there was a significant effect for the composite, both IOS and SCI individually showed the same pattern of results. Both of these scales correspond closely to the feeling of closeness as we have described it in the introduction.

Additional measures on postinteraction questionnaire. Both Studies 1 and 2 added two measures for the attachment-style analyses: (a) a version of the IOS Scale completed for "HOW YOU WISH your relationship with your partner had been at the end of the experiment" (to assess discrepancy between obtained and desired IOS Scale closeness) and (b) the same attachment-style scales as on the initial questionnaire (to assess change in reported attachment style).

Results and Discussion

Means on the closeness composite were 4.06 for the closeness condition and 3.25 for the small-talk condition. This difference corresponds to an effect size (d) of .88 standard deviations (.8 is considered large in relation to typical effect sizes in the psychological literature; Cohen, 1988). This difference was also clearly significant. We evaluated significance in the context of a 2 (Task) × 2 (Cross-sex vs. All-women) × 4 (Attachment-style Pairing) ANOVA with the pair as the unit of analysis (a conservative procedure; Kenny, 1988). The effect for task condition (closeness vs. small talk) was $F(1, 37) = 5.68$, $p < .05$. There were no significant or near-significant interactions of task condition with any other variable; nor did the main effect for cross-sex versus all-women reach or approach significance. (Attachment-style findings are presented at the end of the Study 2 Results and Discussion section in the context of the larger, combined samples of Studies 1 and 2.) Also, in the analysis of the cross-sex pairs only, there were no significant or near-significant within-pair main effects for sex or any sex interactions involving task condition.

These data support the importance of task type in developing closeness through our procedure. The contents of the tasks—whether they required self-disclosure and other intimacy-associated behaviors—made a considerable difference. Thus any effect of this procedure is

not simply a matter of putting two people together in any kind of structured interaction for 45 min.

STUDY 2

This study focused on the importance for generating closeness of two additional aspects of our procedure: (a) matching within a pair for nondisagreement on attitudes and (b) leading subjects to expect mutual liking between self and partner. That is, we manipulated these two variables as crossed experimental factors. In addition, subjects were paired by attachment style as in Study 1 so that data from the two studies could be combined for an illustration of the application of our procedure to attachment issues.

Method

Procedures were the same as in the Study 1 closeness condition, except for this study's two manipulated variables and two additional items on the postinteraction questionnaire. There were 52 cross-sex and 19 all-women pairs. The study was conducted 8 weeks into the term.

Experimental manipulations. All potential pairings (that is, within Attachment-style Combination × Cross-sex vs. All-women categories) were made so that half did not disagree on any important issue (the procedure used for all subjects in Study 1) and half clearly did disagree on one or more important issues. Crossed with this division, subjects were randomly assigned to expect or not expect mutual liking.

The disagreement/nondisagreement manipulation used the 17 attitude items on the initial questionnaire. Those pairs in the disagreement condition had either (a) one strong disagreement (one rated the item a 1 or 2 and the other a 6 or 7 on the 7-point scale) on an issue rated as highly important (5 or higher on this 7-point scale), (b) two strong disagreements on issues rated as moderately important (4 or higher), or (c) three moderate disagreements (the two people's ratings are on opposite sides of the midpoint, or one is at the midpoint and the other is a 1 or 7) on issues of very high importance (6 or higher). Those pairs in the nondisagreement condition were matched so that there were no disagreements of any of the kinds listed above (this is the same rule as used for all subjects in Study 1).

Regarding the manipulation of expectation of mutual liking, in this study nothing was said on the initial questionnaire or in any oral instructions of any expectation that the pair would like each other or that any special matching had occurred. However, in the expectation-of-mutual-liking condition the instruction sheet included an explicit and prominent section noting that the pair had been carefully matched:

> We have taken great care in matching partners. Based on our experience in previous research we expect that you and your partner will like one another—that is, you have been matched with someone we expect you will like and who will like you.

In the no-expectation-of-mutual-liking condition, this section instead read as follows:

> Partners in this study have been put together in ways that pair different categories of individuals. We are investigating the effect of different kinds of pairings. We have no special reason in your case to assume that you and your partner will like each other.

Additional items on the postinteraction questionnaire. In this study only, we included a version of Byrne's (1971) two-item Interpersonal Judgment Scale (IJS), which asked, "How much would you like to work with your partner on a project?" and "How much do you like your partner?" We included the IJS in this study because the disagreement/nondisagreement manipulation seemed directly relevant to issues Byrne and others have explored with this measure.

Results and Discussion: Instruction Conditions (Attitude Disagreement and Expected Mutual Liking)

Overall mean closeness was 4.02, a figure comparable to that obtained for the closeness-condition subjects in Study 1. There were no significant or near-significant differences on the closeness composite or the IJS for either of the instruction condition variables (disagreement vs. nondisagreement or expectation of mutual liking vs. no expectation of mutual liking) or their interaction; in all cases, Fs < 1. (There were also no significant or near-significant interactions of the instruction condition variables with cross-sex vs. all-women pairing or with the attachment-style pairings.)

Overall, these data suggest that matching in terms of not disagreeing on important attitudes or leading subjects to believe that they and their partners will like each other probably has little impact on the overall closeness subjects achieve through this procedure, or even on their mutual attraction. There was about 90% power in this study for achieving significant effects (or interactions) for the two manipulated variables if in fact there were a large effect of this kind ($d = .8$). Indeed, the power is about 90% for finding at least a near-significant ($p < .10$) medium-sized effect ($d = .5$). Thus it seems unlikely that we would have obtained the present results if in fact there is more than a small effect for either of these variables.

In light of extensive research showing the importance of similarity (e.g., Byrne, 1971) and expected liking (Aron et al., 1989) in attraction, it is surprising we did not find any effects for these variables on either closeness

or attraction. Perhaps the self-disclosure and relationship-building process has such an impact that agreement or expectation of liking is not relevant (Aron & Aron, 1986). Or perhaps this result is due to the specific conditions of the study: In terms of disagreement/nondisagreement, the tasks employed may not bring up topics that allowed subjects to discover any attitude dissimilarity; and in terms of expectation of mutual liking, the general expectation of closeness as a purpose/result of the study may already imply mutual liking, so that the explicit mention of expecting them to like each other made little difference. It is also possible that any attitude similarity effect was minimized in this study because subjects were aware that their partners were in the same class (and may have actually noticed them in the classroom), so that they expected they were similar, thus reducing the range on this variable. However, Byrne (1971) regularly found attitude similarity effects using a somewhat similar situation (subjects in most of his studies believed that they were evaluating partners from another psychology class at the same university).

Results and Discussion: Illustration of Application to Theoretical Issues (Closeness of Attachment-Style Pairings)—Combined Data From Studies 1 and 2

These analyses included pairs from Study 1 in the closeness condition and all pairs from Study 2, for a total of 97 pairs—37 secure, 11 avoidant/dismissive, 23 avoidant/fearful, and 26 with a preoccupied partner.[3] Three results stood out. First, the avoidant/dismissive pairs reported less closeness than other pairings (*M*s = 4.10 for secure pairs; 3.59, avoidant/dismissive; 4.09, avoidant/fearful; 4.07, preoccupied with other; contrast $p < .05$). Correlational research (e.g., Hazan & Shaver, 1987) has found that having an avoidant attachment style is associated with reporting poorer quality relationships. Our findings support an underlying causal direction for this association from attachment style to poorer relationship quality, illustrating the potential of the present method for sorting out causality.[4] (Of some theoretical interest in its own right is the finding that the avoidant-poor-relationship link may be limited to avoidant/dismissive individuals; most previous research has used the three-category typology in which the two types of avoidant individuals are not distinguished.)

The second main result was that the discrepancy between actual and desired IOS Scale closeness was greatest for those pairs with a preoccupied partner (*M*s = −.70 for secure pairs; −.45, avoidant/dismissive; −.57, avoidant/fearful; −1.12, preoccupied with other; contrast $p < .01$). (The same significant pattern was observed considering only the scores on desired IOS Scale closeness, and there were no significant or near-significant differences between the score of the preoccupied partner vs. the nonpreoccupied partner.) Combined with the results for actual closeness, the overall pattern is one in which pairs with a preoccupied partner report about the same level of closeness as other pairs but are considerably less satisfied with that level of closeness. (This result is consistent with the attachment theory description of preoccupied individuals as wishing for more closeness than they are able to find; e.g., Hazan & Shaver, 1987.) Once again, these results illustrate the usefulness of the closeness-generating procedure; without it, it would be quite difficult to test this kind of issue.

The third main result was about change in reported attachment style from before to after the task. To simplify the analysis and maximize interpretability, we combined the change on the four attachment-style scales into two uncorrelated linear composites corresponding to Bartholomew and Horowitz's (1991) scheme: (a) model of self (increases in secure and avoidant/dismissive minus increases in preoccupied and avoidant/fearful) and (b) model of other (increases in secure and preoccupied minus increases in avoidant/dismissive and avoidant/fearful). (Results using change on individual attachment styles were entirely consistent with the composite results.) Median test-retest correlation for pairs for model of self was .77 and for model of other, .76.

Overall, from before to after the task, there was little change in model of self (*M* change = −.10), with increased positive ratings for the avoidant/fearful and preoccupied pairings offsetting decreases for the other two groups—a pattern of differences that may simply reflect regression to the mean. However, there was a clear and significant overall increase on positivity of model of other (*M* change = 1.11); $F(1, 93) = 30.19$, $p < .01$. (The amount of increase was significantly greater for avoidant/dismissive than for secure pairs as might be expected from regression to the mean. But all four groupings showed an increase of some degree, which would not be expected from regression to the mean.) This increase was significantly greater ($p < .01$) than the overall change for self-model, and this difference was not qualified by an interaction with attachment-style pairing. If one interprets these changes as actual modifications of one's mental model of other, these various findings are consistent with Hazan and Shaver's (1987) suggestion that relational experience can have an impact on attachment style. On the other hand, the entire tenor of attachment theory emphasizes that mental models are formed early and are not easily modified by later experience. Perhaps one way of understanding the present data is in terms of a temporary modification, a kind of tempering, of the degree of extremity of one's model of other from an experience with such an impact that it is counter to what one expects from one's model. But even if changes produced by this procedure are only tempo-

rary or shallow, they may well represent in a small way the kind of processes that actually modify attachment style over the longer term. To the extent this may be the case, these data illustrate the potential of the closeness-generating procedure for being able to model in the laboratory processes that are otherwise not subject to high levels of experimental control.

STUDY 3

Study 3 examined the effect of making closeness an explicit task. In addition, Study 3 again attempted to illustrate the usefulness of our procedure for evaluating theoretical issues by considering a different area than attachment style—introversion/extraversion. Using this issue for illustration demonstrates the usefulness of our procedure for controlling the matching of subjects into pairs using a different individual difference variable than attachment and also demonstrates how an experimental manipulation of the instructions may create a theoretically interesting interaction effect.

The impact of making closeness an explicit task. In Studies 1 and 2 and in our preliminary research with this procedure (Aron, Aron, Melinat, & Vallone, 1991), subjects were explicitly instructed to make closeness a goal. As noted in the overall introduction, we intentionally adopted this approach to enhance the degree of closeness achieved, and we considered this approach similar to procedures used in the study of perception, memory, and other areas of experimental psychology. Study 3 directly examined the impact of this feature of our procedure by randomly assigning half the pairs to an experimental condition in which there was no indication before or during the study that closeness was the goal.

This manipulation was primarily intended to help determine whether this aspect of our procedure contributes to the overall closeness achieved. This manipulation was also important for considering the possible role in our procedure of demand characteristics (i.e., effects of subjects' knowledge of the purpose of the study). In general, we do not think demand characteristics are a great problem in using our procedure in research because the procedure is intended for studies that examine not whether closeness develops overall but the amount of it that develops differentially across experimental conditions. Any effect of demand characteristics seems to be equated across experimental conditions. However, the possible role of demand characteristics did seem potentially relevant to the more general issues of just how much "real" closeness is being produced by these tasks. Thus we felt it would be useful to examine whether there was a substantial degree of closeness attained even when efforts were made to see that subjects did not know in advance or during the procedures that the study had to do with closeness.

Extraversion/introversion. Extraversion/introversion appears to be a consistent factor in the latent structure of ordinary persons' ratings of self and others (e.g., Goldberg, 1990). Extraversion/introversion scales (e.g., Eysenck & Eysenck, 1975; Myers & McCaulley, 1985) emphasize the respondent's desire and ability to socialize with strangers. However, it is not entirely clear how introverts and extraverts behave in situations perceived as offering a possibility for real intimacy. On one hand, extraverts would be expected to be most comfortable and effective in any situation with a new other. On the other hand, the potential for one-on-one intimacy is consistent with the kinds of relations that are particularly desirable for introverts (e.g., Hotard, McFatter, McWhirter, & Stegall, 1989). However, this issue is not easy to sort out in correlational research. Thus Study 3 created pairings of extraverts with extraverts, introverts with introverts, and mixed-type pairs and examined how close each pairing became—illustrating the usefulness of our procedure for independently controlling with whom people have the opportunity to develop closeness. Study 3 also permitted us to examine whether there were any differential effects on closeness of these pairings as a function of whether closeness was an explicit goal—illustrating the usefulness of our procedure for manipulating a situational factor (closeness as a goal of the situation) relevant to how closeness may develop. The extraversion/introversion aspect of Study 3 was suggested by a somewhat similar study to ours conducted by Thorne (1987) in which women paired by introversion/extraversion participated in 10-min unstructured conversations and then made ratings of each other's personality.[5]

Method

Procedures were generally the same as in Studies 1 and 2 except that the manipulated variable was whether closeness was an explicit task and subjects were randomly paired on the basis of introversion/extraversion. The study was conducted 3 weeks into the term.

Subjects. There were 45 cross-sex and 24 all-women pairs. Of these, 36 cross-sex and 18 all-women pairs were matched in advance on introversion/extraversion. (We did not have introversion/extraversion data on the remaining subjects.) There were 14 extravert pairs, 23 introvert pairs, and 17 mixed pairs.

Initial questionnaire. The initial questionnaire was the same as that used in previous studies except that instead of an attachment-style measure, subjects indicated their introversion/extraversion type, based on the Myers-Briggs Type Indicator (Myers & McCaulley, 1985), which they had taken and self-scored in a recent class session.

The Myers-Briggs Type Indicator is a widely used measure, employed here because it was used in the Thorne (1987) study.

Experimental manipulation and procedures. We took great care that the students in this class would not be aware of previous studies or have any basis for thinking this study focused on closeness. In class announcements and in all materials, the research was described as a study of social interaction in which subjects would participate in pairs. The experimental manipulation consisted of whether the subjects received one of two sets of instructions. In the closeness-as-a-task condition, the written instructions began in the way they had in the previous studies—"This is a study of interpersonal closeness, and your task . . . is to get close to your partner"—and proceeded with several more lines about getting close (see appendix). Also, in this condition, the reminders interspersed among the slips repeated this emphasis on the task being one of getting close. In the no-mention-of-closeness condition, the written instructions began, "This is a study of dyadic interaction, and your task is simply to follow instructions, doing the tasks with your partner"; reminders in this condition similarly did not mention closeness.

Results and Discussion: Closeness as a Task Versus No Mention of Closeness

Overall mean closeness was 3.76, a figure in the same range as the closeness condition in Study 1 and overall in Study 2. There was no difference between instruction conditions ($F < 1$), and the interaction with cross-sex versus all-women pairing did not reach or approach significance. The lack of difference suggests that, overall, making closeness a task versus not mentioning it does not much affect the level of closeness achieved. There was about 90% power in this study for achieving a significant result if in fact there were a large effect for this variable and also about 90% for a near-significant result with a true medium effect. Further, the lack of a direct overall effect for this manipulation cannot easily be attributed to the manipulation not having an impact on the subjects at all, because (as described below) there were significant interactions of this manipulation with introversion/extraversion. Thus these findings suggest that, overall, making closeness an explicit task is not very important for producing closeness using this paradigm. They also suggest that, on the average, the closeness produced by the procedure is probably not due to making closeness an explicit goal serving as a demand characteristic.

Results and Discussion: Illustration of Application to Theoretical Issues (Introversion/Extraversion and Its Interaction With Closeness as a Goal)

Our analysis strategy, based on Thorne's (1987) approach, separately compared (a) extravert-extravert pairs with introvert-introvert pairs (a between-subjects analysis) and (b) within mixed-type pairs, the extraverted person's ratings to the introverted person's ratings (a within-subjects analysis). Separating the data into these two analyses is a quite conservative procedure (*n*s for each analysis are small). Thus near-significant results should probably be taken a bit more seriously than usual. Also, because cross-sex versus all-women pairings did not significantly interact with any introversion/extraversion effect in any of these analyses, we collapsed over this variable. (Nor were there any sex differences or interactions within the cross-sex pairs.)

Considering the extravert pairs versus the introvert pairs, there was a marginal overall main effect of extravert pairs reporting greater closeness ($p = .11$). However, any such tendency was qualified by a strong interaction with instructional condition, $F(1, 33) = 5.61$, $p < .05$, such that extravert pairs become much closer than introvert pairs in the no-mention-of-closeness condition, but there was relatively little difference between extravert and introvert pairs in the closeness-as-a-task condition. The analysis comparing extraverted versus introverted individuals who were paired with each other revealed findings strikingly similar to the analysis comparing all-extraverted to all-introverted pairs. This result approached significance (main effect, $p = .09$; interaction effect, $p = .10$).

The overall tendency for introverted individuals to report somewhat lower closeness (and the quite clear tendency for them to do so when no special instructions about closeness as a task are given) is consistent with the general understanding of introversion as a discomfort with social interactions with strangers. Because the method for getting close is presumably provided by the task, these data shed doubt on the view that introverts are less social because they are less skilled at getting close. Indeed, when getting close is made an explicit task, introverts became as close as extraverts. This may be because to the extent introverts do engage in social interaction, this task was precisely the kind of self-disclosure that is typical of their conversations (Thorne, 1987). Thus, when the goal of closeness was made salient, introverts may have perceived themselves as especially effective at these tasks (or perhaps as a result they were less aroused than they would have been without the instructions). In any case, these tentative findings (both the main and interaction effects) are important here because they demonstrate the potential of our procedure for shedding light on theoretical issues. In the present study, they demonstrate the possibilities arising from (a) being able to control the pairings (as was also done in Studies 1 and 2 with attachment style) and (b) being able to manipulate the circumstances of interaction, in this case the goal of closeness, and evaluate

its moderating effect in the context of theory (which was illustrated here for the first time in Study 3).

GENERAL DISCUSSION

This series of studies explored a closeness-generating experimental paradigm, simultaneously examining various aspects of the procedure and illustrating its potential for addressing theoretical issues in the study of close relationships. Below, we consider the level of closeness produced by the procedure, implications of the findings for various aspects of the paradigm, implications of the data from the illustrative theoretical issues regarding the usefulness of these procedures, and how this paradigm could be used to advance knowledge in the social psychology of close relationships.

Overall Level and Type of Closeness Produced by the Procedure

Over the three studies (excluding the small-talk condition in Study 1), the mean IOS Scale score was 3.82. In an independent sample of 296 students (Aron et al., 1992) at the same level at the same university and collected at about the same time as this study, subjects used the IOS Scale to rate their "closest, deepest, most involved, and most intimate relationship" (these instructions were taken originally from Berscheid et al., 1989, p. 806). In that sample, the mean IOS Scale score was 4.65 ($SD = 1.50$) and was approximately normally distributed. (In yet another similar sample of 88, reported in the same article, means, *SD*s, and distributions were about the same as for the larger sample.) Using those data as a standard, the mean scores for the subjects who participated in our closeness-generating procedure were at about the 30th percentile ($Z = -.55$) of ratings of one's closest, deepest, most involved, and most intimate relationship. That is, immediately after about 45 min of interaction, this relationship is rated as closer than the closest relationship in the lives of 30% of similar students. Of course, we cannot rule out the possibility that subjects used the scale differently in the experimental context than they would when rating actual ongoing relationships.

Another way of estimating the degree of closeness achieved by subjects in these studies is to consider the absolute score on the SCI. On this scale subjects were explicitly instructed to rate their closeness "relative to all your other relationships" (Question 1) and "relative to what you know about other people's relationships" (Question 2). That is, on the SCI subjects were explicitly told to evaluate the closeness to their partners with real-world standards. For each question on the SCI, 4 is the midpoint on the scale from *Not at all Close* to *Extremely Close*. In the three studies reported here (excluding the small-talk condition in Study 1), the mean was about 4 for each question. This suggests that subjects rated their relationship to their partners of less than an hour to be about as close as the average relationship in their lives and in other people's lives.[6] (Of course, it is still possible that subjects ignored the literal meaning of the instructions and used the midpoint to mean about average in some general sense. Also, "all other relationships" may have been taken to include casual acquaintanceships.)

A third indication that these studies actually produced some degree of felt closeness is that many subjects maintained some relationship with their partners afterwards. In Study 3 we were able to administer brief follow-up questionnaires about 7 weeks after the study (at the final exam). We did not report these data as part of the presentation of Study 3 because subjects had already been debriefed immediately following the studies, so any differences across conditions would be contaminated. The key finding was that of the 58 pairs represented in the follow-up questionnaires, 57% had had at least one subsequent conversation, 35% had done something together, and 37% had subsequently sat together in class.[7] (It should be emphasized that the goal of the procedure as used in these studies was not to produce closeness beyond the context of the subjects' feelings immediately at the end of the interaction. That there was any carryover at all beyond the study, including several weeks later, is significant in indicating the power of the procedure. On the other hand, without a control group, it remains possible that there could have been this much closeness without the procedure.)

A fourth indication that the closeness produced in these studies is comparable in important ways to closeness in naturally occurring relationships is the parallel outcomes, when similar issues were tested, between our results and those obtained in previous research using naturally occurring pairs. For example, the difference in closeness between all-secure pairs and all-avoidant pairs in Studies 1 and 2 was just what would be expected from studies of secure versus avoidant individuals in naturally occurring relationships.

So are we producing real closeness? Yes and no. We think that the closeness produced in these studies is experienced as similar in many important ways to felt closeness in naturally occurring relationships that develop over time. On the other hand, it seems unlikely that the procedure produces loyalty, dependence, commitment, or other relationship aspects that might take longer to develop. Certainly, there is minimal shared history and minimal behavioral closeness in the ways measured by Berscheid et al. (1989). Thus the procedure is like other experimental paradigms such as mood-induction procedures, the minimal group paradigm, or methods for temporarily lowering self-esteem: It is useful as a means of creating a similar although not completely

identical state, but under controlled conditions permitting experimental tests of causal hypotheses and theoretical issues. For these purposes the absolute level of the impact on the individual is less important than the relative level across experimental conditions.

Implications for Features of the Procedure and Its Application in Research[8]

The procedure itself, in addition to putting pairs together to interact for 45 min, was initially developed to include four key elements: (a) gradually escalating reciprocal self-disclosure and intimacy-related behaviors, (b) matching by nondisagreement on important attitude issues, (c) expectations of mutual liking, and (d) making closeness an explicit task. In this series of studies, we systematically examined each of these elements and found that only the first, the nature of the tasks themselves (self-disclosure, etc., vs. small talk), made a significant overall difference. Also, Study 3 indicated that making closeness an explicit goal may be of importance for some subjects, such as introverts. Just how other aspects of these procedures have an impact on closeness (and how these may interact with personality or other variables) is a ripe subject for further research.

More generally, we have tried to demonstrate the practicality and flexibility of these procedures for examining hypotheses in the close-relationships and related research areas. In particular, the classroom version of the procedure we have used in these studies is relatively easy for most researchers to implement. The most time-consuming aspect of the original process was matching subjects on nondisagreement on critical attitudes, but the results of Study 2 suggest that neither the matching nor subjects' belief that they have been matched makes much difference in the closeness obtained. Indeed, if a planned study does not involve subject variables (i.e., it is manipulating only instructional, task, or situational variables), then a pretest/initial-questionnaire procedure can be eliminated entirely.

To demonstrate the practicality of this simplified approach, we conducted an additional study of 222 subjects attending a large class at a different university. We gave no pretests at all but simply announced the planned study on the preceding class day (to allow students not to participate if they so chose—in fact, attendance on the day of the task was greater than usual). On the class day, we separated the students into two rooms (one for women, one for men) and randomly paired them on the spot, reassigning members of any pair who already knew each other. We then gave them envelopes containing the closeness tasks and the closeness-as-a-task instructions and proceeded in the usual way. The result was a mean closeness score of 4.02, a figure quite comparable to those in the previous studies that included pretests and matching.

One other practical boon of this particular research paradigm is that participants report enjoying it a great deal. This makes it easy to obtain access from instructors to carry out the procedure during a class session (which provides excellent opportunities for discussing research methods issues as well as relationship and personality material) and to obtain follow-up data or repeated participation. As a check on subjects' enjoyment of the procedure, in the study just described, which lacked the pretest/matching procedures, we included in the postinteraction questionnaire an item about how much the subjects enjoyed their participation. The mean rating was 5.78, well above the midpoint on the scale, which ranged from 1 (*Not Very Much*) to 7 (*Very Much*). This item was highly correlated ($r = .52$) with the closeness composite. (In this course and in the other classes in which we used this procedure, instructors told us that it was frequently mentioned on student evaluations at the end of the term as a highlight of the course.)

Illustrative Theoretical Findings

Before turning to the specific results, we want to emphasize again that this aspect of our three studies was intended to illustrate the potential of the closeness-generating procedure. Any implications for the substantive theories are clearly highly preliminary and in many cases employed less-than-optimal procedures for operationalizing the major theory-relevant variables.

Studies 1 and 2 focused on adult attachment style (Hazan & Shaver, 1987). There were three key results: (a) Avoidant/dismissive pairs reported less postinteraction closeness than any of the other pairings; (b) pairs with a preoccupied partner reported a greater discrepancy between actual and desired postinteraction closeness than any of the other pairings; and (c) for all pairing types, there was an overall change in reported attachment style from before to after the interaction in the direction of greater endorsement of styles consistent with a positive model of other. Each of these findings, if replicated in future research, would bear importantly on theoretical understanding in this area. Note that in each case, the findings bear directly on issues of causal directions that would be difficult to sort out with nonexperimental methods.

The illustrative theoretical issue of Study 3 was introversion/extraversion. The main finding was that when no special instructions about getting close were given, extraverted individuals reported achieving more closeness than did introverted individuals; but when closeness was made an explicit task of the procedure, the greater reported closeness for the extraverted individuals essentially disappeared. If this pattern is supported in

future research, it would deepen our understanding of the dynamics of the interaction of personality and social behavior. Most important for the present purposes, this finding illustrates the potential of our procedure for yielding theoretically significant results by both systematically controlling pairings of individuals and systematically manipulating the circumstances of their interaction.

How Can This Closeness-Generating Paradigm Help Researchers?

There are at least four ways that the present procedure might help researchers advance theory in the social psychology of close relationships and related areas. First, the closeness-generating procedure permits individual-difference variables to be measured prior to (and during and after) relationship formation. Second, this procedure permits researchers to control who is in a relationship with whom and separates preexisting individual differences from determinants of pairings such as choice of partner and opportunity constraints. Regarding these first two values of the closeness-generating procedure for research purposes, some other variables that could be examined (in addition to attachment style and introversion/extroversion) are neuroticism, happiness, communication skills, self-esteem, dispositional trust, style of handling conflicts, communal/exchange orientation, and gender. Indeed, some of these variables could themselves be temporarily manipulated, making such a study a true experiment over all variables.

A third way in which this procedure can help researchers is by permitting direct manipulation of various relationship-relevant variables, such as the motivations and expectations of the participants, the kinds of interactions that occur, and the length and intensity of interaction. In the present studies we illustrated these possibilities by comparing the impact of our usual procedures with small talk, by manipulating whether subjects expected their partners to like them, and so forth. These are only a few of a great many possibilities. For example, by creating appropriate interaction tasks, research on relationship awareness (Acitelli, 1988) could manipulate whether subjects were made to use *we* language and focus on the relationship per se; research on relationship investment (e.g., Rusbult, 1983) might actually control the amount of investment subjects made in the process of developing the relationship; research on trust (e.g., Holmes & Rempel, 1989) might actually be able to create or undermine trust; research on particular relationship processes, such as demand-withdraw (e.g., Christensen, 1988), might create those processes in the lab with newly created couples not necessarily predisposed to either process; and so forth. (Also note that by using the closeness-generating procedure to produce a new relationship, there are fewer ethical problems in employing other procedures within the study that might have negative relationship effects.)[9]

A fourth main way in which this paradigm might be of use is that it puts relationship development into a setting in which it can be readily observed. For example, one could simply give questionnaires after each segment and track change—paralleling procedures used in studies that monitor actual couple development over weeks or months (e.g., Surra, 1987). Or one could observe interaction as the pairs are carrying out the tasks; one might use a procedure like that developed by Ickes, Bissonnette, Garcia, and Stinson (1990), in which interactants are videotaped automatically (i.e., without any person actually operating the camera) without their knowledge and then at the end of the experiment given the opportunity to destroy the tape before it is seen by anyone. Or one could assess physiological processes during the interaction in ways that have proven successful in studies of interactions of couples in ongoing relationships (e.g., Levenson & Gottman, 1983).

The closeness-generating paradigm described here differs from other experimental procedures for generating interaction used in recent years (e.g., Asendorpf, 1989; Ickes et al., 1990; Thorne, 1987) in that tasks are explicitly structured to create maximum felt closeness in a short period. In addition, unlike many of the procedures used in the self-disclosure research of the 1970s and 1980s, it does not require a confederate and would not ordinarily require deception at all (other than not revealing hypotheses being tested).

Conclusion

The study of close relationships has progressed in the last 15 years by freeing itself from the strictures of controlled interaction and the true experiment (Duck, 1988). But without these tools, we are constantly faced with ambiguities of interpretation and obstacles to identifying the details of hypothesized processes. This article is not a call to abandon the richness of real-world experience, particularly in the area of close relationships. Rather, it is an invitation to alternate field and laboratory, correlational and experimental methods. In this way, work with naturally occurring relationships can be refined and sorted out through experimentally generated relationship experiences. At the same time, precise work with experimentally generated relationships can be inspired by and checked against the reality of relationships as they naturally occur in the world. In short, it is time for researchers of close relationships to find ways to welcome back our wayward friend, the true experiment. We hope that this paradigm we have developed will aid in this process.

APPENDIX

Instructions to Subjects Included With Task Slips Packet

INSTRUCTIONS (Please both read carefully before continuing)

This is a study of interpersonal closeness, and your task, which we think will be quite enjoyable, is simply to get close to your partner. We believe that the best way for you to get close to your partner is for you to share with them and for them to share with you. Of course, when we advise you about getting close to your partner, we are giving advice regarding your behavior in this demonstration only, we are not advising you about your behavior outside of this demonstration.

In order to help you get close we've arranged for the two of you to engage in a kind of sharing game. You're sharing time will be for about one hour, after which time we ask you to fill out a questionnaire concerning your experience of getting close to your partner.

You have been given three sets of slips. Each slip has a question or a task written on it. As soon as you both finish reading these instructions, you should begin with the Set I slips. One of you should read aloud the first slip and then BOTH do what it asks, starting with the person who read the slip aloud. When you are both done, go on to the second slip—one of you reading it aloud and both doing what it asks. And so forth.

As you go through the slips, one at a time, please don't skip any slips—do each in order. If it asks you a question, share your answer with your partner. Then let him or her share their answer to the same question with you. If it is a task, do it first, then let your partner do it. Alternate who reads aloud (and thus goes first) with each new slip.

You will be informed when to move on to the next set of slips. It is not important to finish all the slips in each set within the time allotted. Take plenty of time with each slip, doing what it asks thoroughly and thoughtfully.

You may begin! Turn to Set I, slip 1.

Task Slips for Closeness-Generating Procedure

Set I

1. Given the choice of anyone in the world, whom would you want as a dinner guest?
2. Would you like to be famous? In what way?
3. Before making a telephone call, do you ever rehearse what you are going to say? Why?
4. What would constitute a "perfect" day for you?
5. When did you last sing to yourself? To someone else?
6. If you were able to live to the age of 90 and retain either the mind or body of a 30-year-old for the last 60 years of your life, which would you want?
7. Do you have a secret hunch about how you will die?
8. Name three things you and your partner appear to have in common.
9. For what in your life do you feel most grateful?
10. If you could change anything about the way you were raised, what would it be?
11. Take 4 minutes and tell your partner your life story in as much detail as possible.
12. If you could wake up tomorrow having gained any one quality or ability, what would it be?

Set II

13. If a crystal ball could tell you the truth about yourself, your life, the future, or anything else, what would you want to know?
14. Is there something that you've dreamed of doing for a long time? Why haven't you done it?
15. What is the greatest accomplishment of your life?
16. What do you value most in a friendship?
17. What is your most treasured memory?
18. What is your most terrible memory?
19. If you knew that in one year you would die suddenly, would you change anything about the way you are now living? Why?
20. What does friendship mean to you?
21. What roles do love and affection play in your life?
22. Alternate sharing something you consider a positive characteristic of your partner. Share a total of 5 items.
23. How close and warm is your family? Do you feel your childhood was happier than most other people's?
24. How do you feel about your relationship with your mother?

Set III

25. Make 3 true "we" statements each. For instance "We are both in this room feeling . . ."
26. Complete this sentence: "I wish I had someone with whom I could share . . ."
27. If you were going to become a close friend with your partner, please share what would be important for him or her to know.
28. Tell your partner what you like about them; be very honest this time saying things that you might not say to someone you've just met.
29. Share with your partner an embarrassing moment in your life.
30. When did you last cry in front of another person? By yourself?
31. Tell your partner something that you like about them already.
32. What, if anything, is too serious to be joked about?
33. If you were to die this evening with no opportunity to communicate with anyone, what would you most regret not having told someone? Why haven't you told them yet?
34. Your house, containing everything you own, catches fire. After saving your loved ones and pets, you have time to safely make a final dash to save any one item. What would it be? Why?

35. Of all the people in your family, whose death would you find most disturbing? Why?
36. Share a personal problem and ask your partner's advice on how he or she might handle it. Also, ask your partner to reflect back to you how you seem to be feeling about the problem you have chosen.

Task Slips for Small-Talk Condition in Study 1

Set I

1. When was the last time you walked for more than an hour? Describe where you went and what you saw.
2. What was the best gift you ever received and why?
3. If you had to move from California where would you go, and what would you miss the most about California?
4. How did you celebrate last Halloween?
5. Do you read a newspaper often and which do you prefer? Why?
6. What is a good number of people to have in a student household and why?
7. If you could invent a new flavor of ice cream, what would it be?
8. What is the best restaurant you've been to in the last month that your partner hasn't been to? Tell your partner about it.
9. Describe the last pet you owned.
10. What is your favorite holiday? Why?
11. Tell your partner the funniest thing that ever happened to you when you were with a small child.
12. What gifts did you receive on your last birthday?

Set II

13. Describe the last time you went to the zoo.
14. Tell the names and ages of your family members, include grandparents, aunts and uncles, and where they were born (to the extent you know this information).
15. One of you say a word, the next say a word that starts with the last letter of the word just said. Do this until you have said 50 words. Any words will do—you aren't making a sentence.
16. Do you like to get up early or stay up late? Is there anything funny that has resulted from this?
17. Where are you from? Name all of the places you've lived.
18. What is your favorite class at UCSC so far? Why?
19. What did you do this summer?
20. What gifts did you receive last Christmas/Hanukkah?
21. Who is your favorite actor of your own gender? Describe a favorite scene in which this person has acted.
22. What was your impression of UCSC the first time you ever came here?
23. What is the best TV show you've seen in the last month that your partner hasn't seen? Tell your partner about it.
24. What is your favorite holiday? Why?

Set III

25. Where did you go to high school? What was your high school like?
26. What is the best book you've read in the last three months that your partner hasn't read? Tell your partner about it.
27. What foreign country would you most like to visit? What attracts you to this place?
28. Do you prefer digital watches and clocks or the kind with hands? Why?
29. Describe your mother's best friend.
30. What are the advantages and disadvantages of artificial Christmas trees?
31. How often do you get your hair cut? Where do you go? Have you ever had a really bad haircut experience?
32. Did you have a class pet when you were in elementary school? Do you remember the pet's name?
33. Do you think left-handed people are more creative than right-handed people?
34. What is the last concert you saw? How many of that band's albums do you own? Had you seen them before? Where?
35. Do you subscribe to any magazines? Which ones? What have you subscribed to in the past?
36. Were you ever in a school play? What was your role? What was the plot of the play? Did anything funny ever happen when you were on stage?

NOTES

1. The studies in which we initially developed these procedures focused on Erikson's (1963) ego identity model. Subjects were systematically paired into either both high or both low ego-identity pairs, and this pairing was crossed with a manipulated variable of whether subjects were encouraged to protect themselves from getting closer than was comfortable. This 2 × 2 design was employed in both an original 1½-hr version with all cross-sex pairings and also in our initial classroom version, which employed both same- and cross-sex pairings. The overall results for the cross-sex pairs in the 1½-hr version was an interaction such that the high ego-identity subjects became less close if told to protect themselves, but the low ego-identity subjects became more close if told to protect themselves. This pattern is consistent with Erikson's idea that low ego-identity individuals fear cross-sex intimacy in which they might lose their identity and thus get close only if they feel they can protect themselves from too much intimacy. For the same-sex pairings in the 45-min classroom version, the opposite interaction was found—consistent with Erikson's idea that same-sex friendships for those who have not developed ego identity serve as identity supports, but for those who have developed an identity, they serve as sources of undesired conformity that threatens one's individuated identity. (Another result of interest from these initial studies was that there were no significant or near-significant sex differences or sex interactions in closeness, either within cross-sex pairings or comparing women-women versus men-men pairings.)

2. The study described in the Discussion section, below, also found little difference between all-women and all-men pairs in postinteraction closeness. These results contrast with correlational studies in natural interaction settings that typically find greater closeness for individuals with women interaction partners (e.g., Aron et al., 1992; Wheeler, Reis, & Nezlek, 1983). One interpretation of this difference from previous results is that although people generally do not spontaneously choose to have intimate interactions with men, people are capable of doing so if the situation calls for it (as was the case in these experiments).

3. To have reasonable cell sizes and to minimize analytical complexity, we created only homogenous pairings for secure and avoidant types. However, because there were so few preoccupied subjects, we matched them with either a secure or an avoidant/fearful partner. (We felt

justified in combining these two kinds of preoccupied pairings into a single category for analysis because we found no significant or near-significant differences or interactions on contrasts comparing these two kinds of preoccupied pairings.) Before combining data from the two studies, we checked for any main or interaction effects with study; none were significant or near significant.

4. Because attachment style is not a manipulated variable, the possibility that it is a symptom of some other dispositional variable (such as attractiveness or neuroticism) cannot be ruled out. What is ruled out in this experiment is the causal direction from relationship closeness or partner's attachment style to own attachment style.

5. Thorne (1987) found that after the conversations, extraverts and introverts were perceived differently on various relevant traits (e.g., talkative) but did not differ on various irrelevant traits (e.g., mature). Our Study 3 also tested whether our procedure would produce similar results. To facilitate the comparison, our postinteraction questionnaires included the same set of adjective rating scales as employed by Thorne. Our results for all-women pairs were significant and entirely consistent with Thorne's findings (she used only all-women pairings). This pattern also held up in our study for cross-sex, all-extraverted, and all-introverted pairings. However, among cross-sex, introvert-extravert pairings, there was the same pattern but with a surprising higher (more positive and more extroverted) overall level of ratings for all subjects.

6. It is difficult to compare directly the SCI scores in our study with other samples, because in previous studies the SCI was not normally distributed.

7. Similar follow-up measures were collected in one of the classroom versions of the initial studies in which we developed these procedures (Aron, Aron, Melinat, & Vallone, 1991). In that study, of the 53 pairs represented by those who completed the follow-up measures, 70% had at least one subsequent conversation, 49% had done something together, and 62% had subsequently sat together in class.

8. Although this procedure was intended for research applications, in our discussions and presentations of preliminary results we always hear considerable enthusiasm about its potential to create real, lasting relationships or at least brief but meaningful connections. For example, it may be useful to help create interpersonal contacts at orientations for entering college students, at week-long seminars or workshops for all types of groups, or among socially isolated individuals in a community or institution. Finally, it may have important potential for clinical populations affected by avoidant attachment styles.

9. On the other hand, one must be cautious about the impact of creating relationships that might not naturally arise. We had no problems with this in our studies. However, we were always careful during debriefing to emphasize that this is an unusual way to form relationships and that subjects should not feel any obligation to their partners or any expectation that an actual friendship will develop. Also, whenever we have run cross-sex pairs, we have always used a pretest questionnaire in which there were some open-ended questions (e.g., "What is the most important thing in life for you?"). We then used any very, very "weird" responses to identify subjects whom we would be reluctant to make anyone's cross-sex relationship partner. Such individuals were always paired with a same-sex other, and their data were not used in the analyses.

REFERENCES

Acitelli, L. K. (1988). When spouses talk to each other about their relationship. *Journal of Social and Personal Relationships, 5*, 185-199.

Altman, I., & Taylor, D. A. (1973). *Social penetration: The development of interpersonal relationships.* New York: Holt, Rinehart & Winston.

Aron, A., & Aron, E. N. (1986). *Love as the expansion of self: Understanding attraction and satisfaction.* New York: Hemisphere.

Aron, A., Aron, E. N., Melinat, E., & Vallone, R. (1991, May). *Experimentally induced closeness, ego identity, and the opportunity to say no.* Paper presented at the Conference of the International Network on Personal Relationships, Normal, IL.

Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of Other in the Self Scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology, 63*, 596-612.

Aron, A., Aron, E. N., Tudor, M., & Nelson, G. (1991). Close relationships as including other in the self. *Journal of Personality and Social Psychology, 60*, 241-253.

Aron, A., Dutton, D. G., Aron, E. N., & Iverson, A. (1989). Experiences of falling in love. *Journal of Social and Personal Relationships, 6*, 243-257.

Asendorpf, J. B. (1989). Shyness as a final common pathway for two different kinds of inhibition. *Journal of Personality and Social Psychology, 57*, 481-492.

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61*, 226-244.

Berg, J. H., & Clark, M. S. (1986). Differences in social exchange between intimate and other relationships: Gradually evolving or quickly apparent? In V. J. Derlega & B. A. Winstead (Eds.), *Friendship and social interaction* (pp. 101-128). New York: Springer-Verlag.

Berscheid, E., Snyder, M., & Omoto, A. M. (1989). The Relationship Closeness Inventory: Assessing the closeness of interpersonal relationships. *Journal of Personality and Social Psychology, 57*, 792-807.

Byrne, D. (1971). *The attraction paradigm.* New York: Academic Press.

Christensen, A. (1988). Dysfunctional interaction patterns in couples. In P. Nollar & M. A. Fitzpatrick (Eds.), *Perspectives on marital interaction.* Philadelphia, PA: Multilingual Matters.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* Hillsdale, NJ: Lawrence Erlbaum.

Collins, N., & Miller, L. C. (1994). Self-disclosure and liking: A meta-analytic review. *Psychological Bulletin, 116*, 457-475.

Derlega, V. J., Metts, S., Petronio, S., & Margulis, S. T. (1993). *Self-disclosure.* Newbury Park, CA: Sage.

Dindia, K., & Allen, M. (1995, June). *Reciprocity of self-disclosure: A meta-analysis.* Paper presented at the Conference of the International Network on Personal Relationships, Williamsburg, VA.

Duck, S. (1988). Introduction. In *Handbook of personal relationships: Theory, research and interventions* (pp. xiii-xvii). Chichester, UK: Wiley.

Erikson, E. (1963). *Childhood and society.* New York: W. W. Norton.

Eysenck, H. J., & Eysenck, S. B. (1975). *Manual of the Eysenck Personality Questionnaire.* San Diego, CA: EdITS.

Goldberg, L. R. (1990). An alternative "description of personality": The big-five factor structure. *Journal of Personality and Social Psychology, 59*, 1216-1229.

Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52*, 511-524.

Holmes, J. G., & Rempel, J. K. (1989). Trust in close relationships. In C. Hendrick (Ed.), *Review of personality and social psychology* (Vol. 10, pp. 187-220). London: Sage.

Hotard, S. R., McFatter, R. M., McWhirter, R. M., & Stegall, M. E. (1989). Interactive effects of extraversion, neuroticism, and social relationships on subjective well-being. *Journal of Personality and Social Psychology, 52*, 321-331.

Ickes, W., Bissonnette, V., Garcia, S., & Stinson, L. L. (1990). Implementing and using the dyadic interaction paradigm. In C. Hendrick & M. S. Clark (Eds.), *Review of personality and social psychology* (Vol. 11, pp. 16-44). Newbury Park, CA: Sage.

Kenny, D. A. (1988). The analysis of data from two-person relationships. In S. W. Duck (Ed.), *Handbook of personal relationships: Theory, research, and interventions* (pp. 57-77). Chichester, UK: Wiley.

Levenson, R. W., & Gottman, J. M. (1983). Marital interaction: Physiological linkages and affective exchange. *Journal of Personality and Social Psychology, 49*, 85-94.

McAdams, D. P. (1988). Personal needs and personal relationships. In S. W. Duck (Ed.), *Handbook of personal relationships: Theory, research, and interventions* (pp. 7-22). Chichester, UK: Wiley.

Myers, I. B., & McCaulley, M. H. (1985). *Manual: A guide to the development and use of the Myers-Briggs Type Indicator.* Palo Alto, CA: Consulting Psychologists.

Reis, H. T., & Shaver, P. (1988). Intimacy as interpersonal process. In S. W. Duck (Ed.), *Handbook of personal relationships: Theory, research, and interventions* (pp. 367-389). Chichester, UK: Wiley.

Rosenbaum, M. E. (1986). The repulsion hypothesis: On the nondevelopment of relationships. *Journal of Personality and Social Psychology, 51,* 1156-1166.

Rusbult, C. (1983). A longitudinal test of the investment model: The development (and deterioration) of satisfaction and commitment in heterosexual involvements. *Journal of Personality and Social Psychology, 45,* 101-117.

Sternberg, R. J. (1988). *Construction validation of a triangular theory of love.* Unpublished manuscript.

Surra, C. A. (1987). Reasons for changes in commitment: Variation by courtship type. *Journal of Social and Personal Relationships, 4,* 17-33.

Thorne, A. (1987). The press of personality: A study of conversations between introverts and extraverts. *Journal of Personality and Social Psychology, 53,* 718-726.

Wheeler, L., Reis, H. T., & Nezlek, J. (1983). Loneliness, social interaction and sex roles. *Journal of Personality and Social Psychology, 45,* 943-953.

Received July 21, 1995
Revision accepted June 21, 1996