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Sharing Secrets: Disclosure and Discretion in Dyads and Triads

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To develop a more comprehensive picture of the variables that influence disclosure patterns, the impact of group size on sharing secrets was explored. Given Derlega and Chaikin's suggestion that the existence of a closed dyadic boundary is a prerequiste for intimate self-disclosure, it was hypothesized that subjects would be more willing to disclose intimate information in a dyad than in a triad. The results of Experiment 1, which used a role-playing methodology, confirmed the hypothesis. The main effect of group size was observed over a range of roles and items of information. In addition to the main effect, group size interaction effects also indicated that the difference between dyad and triad disclosure rates increased with more intimate items of information and with more intimate roles. These interaction effects suggested that the importance of a closed dyadic boundary depends in part on the expected confidentiality of the interchange. In Experiment 2 the conversations of groups of acquaintances were recorded and rated for intimacy. As predicted, the conversations of dyads were more intimate than those of triads. Suggestions for understanding the intimate quality of dyads are discussed.

Self-disclosure is a topic that has recently generated an enormous amount of research (cf. Cozby, 1973), and substantial support for what Jourard (1971) called the "dyadic effect: disclosure begets disclosure" (p. 66) has been obtained. Two hypotheses modeling and social exchange have been offered to explain this effect. The latter hypothesis has received the lion's share of empirical support (Certner, 1973; Davis, 1976; Davis & Skinner, 1974; Derlega, Harris, & Chaikin, 1973; Ehrlich & Graeven, 1971; Jones & Archer, 1976; Worthy, Gary, & Kahn, 1969), and reciprocity has become a dominant theme in self-disclosure research.

However, several limitations preclude drawing conclusions on the generality of reciprocal disclosure. Research has been conducted largely with pairs of strangers, and these interactions may not be prototypical of interactions between acquaintances or friends (cf. Derlega, Wilson, & Chaikin, 1976).[1] Second, almost all disclosure research has been conducted with dyads, and little is known about disclosure patterns in larger groups. For example, when interacting with more than one other, a person may find it difficult to maintain reciprocal disclosure vis-à-vis each other person in the group.

The term dyadic effect seems to suggest that there is something special, apart from reciprocity, about disclosure in dyads. For example, dyads may be more intimate because each person has the undivided attention of the other and can give undivided attention to the

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[1] For a contrary viewpoint, see Rubin (1974, 1975).

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other. Although this interpretation of the dyadic effect has intuitive appeal, the little work that has been conducted does more to undermine than support this appeal. Rubin (1976) found that the presence or absence of a third party had no influence on subjects' responses to disclosures by an experimenter. Spinner (Note 1) in his laboratory experiment also found no main effect of group size on depth (intimacy) of disclosure. Drag (1969) found that the two-person discussion groups self-disclosed more than eight-person groups but not more than four-person groups. Group size interaction effects have indicated that people may disclose more or less readily in groups larger than dyads, depending on the composition of the audience (Chelune, 1976) and the mode of communication (Spinner, Note 1).

In sum, although results are mixed, evidence suggests that disclosure patterns in dyads, as compared to other groups, are not unique. Nonetheless, before concluding that there are no effects of group size on depth of disclosure, group size as a source of social influence should be examined.

Blake (1958, p. 229) has suggested that situational sources of social influence include both (a) the "central stimulus" or the "immediate focus of attention" and (b) "context" factors. Group size qualifies as a context factor. In a self-disclosure situation, the recipient of information is the central stimulus. Research has indicated that recipient characteristics such as physical attractiveness (Brundage, Derlega, & Cash, 1977) and a reflective or aggressive style (Ellison & Firestone, 1973) do influence disclosure patterns.

Context factors have received little attention in self-disclosure research, although they can be influential. For example, Johnson and Dabbs (1976) and Rubin and Shenker (1978) both observed that proximity influenced amount of disclosure on low- and medium-intimacy topics.

We wished to further investigate the relationship between group size and disclosure patterns, since (a) context factors in general may exert a widespread influence on social behaviors (Blake, 1958) and (b) group size has been established as a potent influence of social interaction (Bales & Borgatta, 1955; Hackman & Vidmar, 1970; O'Dell, 1968; Slater, 1958; Thomas & Fink, 1963). Exploration of the relationship between group size and self-disclosure uncovers two relevant theoretical considerations. First, Derlega and Chaikin (1977) have suggested that self-disclosure may be viewed as an interpersonal boundary regulation process (Altman, 1975; Altman & Taylor, 1973) and that a precondition of intimate disclosure is the existence of a closed dyadic boundary, that is, "a boundary within which it is perfectly safe to disclose to the invited participant and across which the self-disclosure will not pass" (p. 104). The importance of a closed dyadic boundary has been alluded to before. Simmel (see Wolff, 1950) suggested that dyads have a special quality of intimacy that is not present in larger groups, and thus, dyads could share secrets more often and with more security.

The second theoretical consideration is the layperson's perception of disclosing. De Soto (1960; De Soto & Kuethe, 1959) found that "confides in" was perceived as a pair-forming relationship in contrast to "likes," which was perceived as a group-forming relationship. Confides in was viewed by subjects as symmetric and nontransitive or "essentially a pair-wise interchange" (De Soto & Kuethe, 1959, p. 193). This view of disclosing is congruent with the notion of a closed dyadic boundary.

To test Derlega and Chaikin's (1977) suggestion that a closed dyadic boundary is a prerequisite for intimate disclosure, self-disclosure between acquaintances was examined in dyads and triads. Since a closed dyadic boundary does not exist in a triad, we hypothesized that subjects would be less willing to make intimate disclosures in a triad than in a dyad. Although our hypothesis may seem intuitively obvious to some, it is important to bear in mind that previous research has by and large failed to yield main effects of group size on intimacy of disclosure.[2]

[2] Predictions contrary to ours might be drawn from a deindividuation perspective (Diener, Fraser, Beaman, & Kelem, 1976; Zimbardo, 1969), which suggests that the presence of a group serves as a releaser for certain behaviors. Contrary predictions could also be drawn from a sensitivity training or encounter group perspective, which is based on the working assumption

We also expected, in light of Chelune (1976) and Spinner (Note 1), that dyad/triad differences in disclosure rates would increase when more confidential interchanges were expected.

Although intimate disclosures between strangers can be elicited, we decided to focus on intimate disclosures between acquaintances. Given that intimate interchanges occur more frequently between acquaintances than strangers, this focus might enhance the ecological validity of the results.

Experiment 1

Method

Subjects. A specially designed self-disclosure questionnaire, described later, was administered to 21 undergraduate volunteers enrolled in psychology courses at Johns Hopkins University and Towson State University.

Procedure. To manipulate group composition and information content in a controlled fashion, a role-playing technique was used. Willingness versus reluctance to disclose was measured. Subjects were asked to predict how they would behave in hypothetical situations, not how they had behaved in past situations, to assure similarity of situations across subjects. Items contained specific information rather than general topics.

Six items of information were presented on separate pages of the questionnaire with individual roles or pairs of roles listed underneath. The subject was asked to rate how quickly he/she would disclose the item to occupants of various roles or pairs of roles. Each item was encountered twice in the questionnaire—once to assess disclosure to single roles and once to assess disclosure to pairs of roles. The instructions exhorted subjects to think of particular individuals that they knew to fill each role. Disclosure was assessed across several role pairs (sister and best friend of the opposite sex, boy/girlfriend and best friend of the same sex, two liked professors, and acquaintance and roommate) to assess the generality of any effects of group size. Role pairs were chosen on the basis of pilot subjects' suggestions about what role pairs they would be likely to encounter in everyday settings. Finally, disclosure was assessed across six items of information (see Table 1).[3]

A four-category scale ranging from 1 ("I will tell the person [them] as soon as I see him or her [them]") to 4 ("I will probably never tell the person [them]") was used to measure disclosure. Questions concerning disclosure to pairs of individuals were presented separately from those concerning disclosure to single individuals. Order of presentation was randomized across subjects and order of items was randomized within each type of question. At the end of the questionnaire, subjects rated the intimacy of each item of information and the closeness of their relationship with occupants of each of the specific roles.

Results and Discussion

The analysis of variance used a 2 × 4 × 6 (Group Size × Role Pairs[4] × Information) within-subjects factorial design. Although the use of a repeated measures design may possibly have aroused subjects' suspicions, in debriefing no subjects expressed any awareness concerning the group size hypothesis.

The hypothesized main effect of group size was observed, $F(1, 20) = 11.4$, $p < .005$, ($\hat{\omega}^2 = .01$). Subjects indicated that they would be more reluctant to disclose in a triad than in a dyad (see Table 1). This main effect was qualified by two interactions.

A modest though significant Group Size × Information interaction occurred, $F(5, 100) = 2.5$, $p < .05$ ($\hat{\omega}^2 < .01$). The difference in dyad versus triad disclosure rate increased as the intimacy of the information increased (see Table 1). (The rank-order correlation between dyad versus triad disclosure rate and intimacy ratings of the items was .74.) This interaction further supports the hypothesis. As the information under consideration became more intimate, the triad, in comparison to the dyad, was perceived as a less appropriate disclosure setting. Furthermore, relative reluctance to disclose in a triad was a general phenomenon, since it occurred with five out of the six items of information.

Also, a significant Group Size × Role Pairs interaction was obtained, $F(3, 60) = 4.4$, $p < .01$ ($\hat{\omega}^2 = .01$). The difference in dyad versus triad disclosure rate increased as the intimacy rating of the role pairs increased. There was a perfect rank-order correlation

that people are willing to reveal intimate information while in a sizable group.

[3] Only negative items were used, since pilot subjects quickly disclosed items of positive information, regardless of group size or group composition. Although Jones and Wortman (1973) have pointed out that disclosure of positive information can pose problems for the discloser (e.g., being perceived as a bragger), in our samples this was not the case.

[4] To determine disclosure to a role pair when the members of the pair were encountered individually, the mean of the disclosure rate to the two individuals was used.

Table 1
Relationships Among Group Size, Disclosure Rates, and Information in Experiment 1

Information	Intimacy rating	Disclosure rate	
		Dyad	Triad
You have lost a large sum of money from your wallet	3.29	2.24	2.21
You have been rejected from the college or graduate school of your choice	5.14	2.13	2.21
During vacation you got into a car accident due to excessive speed and the person who was with you suffered a broken leg	5.19	2.32	2.63
Your parents are getting divorced	6.66	2.40	2.71
Your brother has been committed to a mental hospital	7.29	2.72	2.98
You have discovered that you have incurable leukemia	7.29	2.89	3.24

Note. On intimacy ratings, a higher score indicates a more intimate item; on disclosure rates, a higher score indicates a slower disclosure rate (i.e., more reluctance to disclose).

between these two measures. Although it was based only on four pairs, this correlation does strongly suggest that a triad, compared to a dyad, became a less appropriate setting for disclosure when the individual was interacting with more intimate contacts.[5]

Consistent with prior self-disclosure research (Derlega & Chaikin, 1975; Jourard & Lasakow, 1958), main effects for role pairs (information was revealed more quickly to more intimate role pairs) and information (more intimate information was disclosed less readily) and a Role Pairs × Information interaction (difference in disclosure rate to acquaintance and roommate and to two liked professors decreased as the intimacy of the items increased) were obtained (all ps $< .001$, $\hat{\omega}^2$s $= .22$, $.07$, and $.01$, respectively).

As predicted, subjects thought they would be more reluctant to disclose intimate information in a triad than in a dyad. This main effect and the group size interactions lend support to Derlega and Chaikin's (1977) suggestion concerning the importance of a closed dyadic boundary. Furthermore, the group size interaction effects, although small in terms of magnitude, do suggest that the presence of a closed dyadic boundary became more important as the expected confidentiality of the interchange increased.

Experiment 2

The results of Experiment 1 are limited in that they were based on a role-playing methodology. Subjects were asked to describe how they thought they would act in various situations. Behavioral observations of actual disclosure patterns in dyads and triads would increase our confidence in these findings. We hypothesized that in a fairly unstructured leaderless discussion, conversations among dyads would be more intimate (i.e., contain greater depth of self-disclosure) than conversations among triads.[6]

[5] The results of this experiment were almost wholly replicated with a second larger sample ($n = 26$), using different items and role pairs. In the replication the predicted main effect of group size was again obtained ($p < .005$). A significant Group Size × Information interaction ($p < .05$), similar in interpretation to the one obtained in the first study, was also obtained.

[6] In Experiment 2 an instructional variable (discuss intimate vs. discuss nonintimate topics) could have been included to replicate the group size interaction effect in Experiment 1. Although such an instructional variable was considered, we decided against it because (a) such an instructional variable would make the conversations less natural and (b) we felt it was appropriate to replicate the group size main effect before seeking to replicate any interaction effects.

Method

Subjects and procedure. Freshmen in on-campus housing at Johns Hopkins University were solicited as volunteers by an experimenter. He explained that he was conducting a survey to find out how groups of freshmen felt about the quality of life on campus. The freshmen were randomly asked to contact either one or two of their acquaintances and arrange a time for a group discussion. The experimenter returned to the volunteer's room with a tape recorder at the time appointed for the discussion.

A total of 35 freshmen (19 males and 16 females) agreed to participate. Subjects were grouped into seven same-sex dyads (2 male and 5 female) and seven same-sex triads (2 female and 5 male). Each grouping was composed of acquaintances (i.e., friends the original contact had brought with him/her to the group discussion).[7]

When he arrived at the dorm room, the experimenter explained that the purpose of the discussions was to find out how groups of subjects felt about the quality of life on campus. Fully informed consent was obtained from the subjects.

The experimenter set the general outline for the discussions: "Talk about any problems concerning undergraduate life that you have encountered here as freshmen. Your discussion should, as much as possible, focus on sharing specific personal experiences that each of you has had related to the topic." After answering any further questions the experimenter started the tape recorder and left the room. He was not present during the discussions so that he would not disturb the natural atmosphere of the interactions.

After 9–12 minutes of conversation, the experimenter returned to the room and terminated the discussion. To compensate for increased resource input, triads were allowed a longer discussion time (M = 10.5 minutes) than dyads (M = 9.3 minutes). A short postdiscussion questionnaire was handed out to the subjects. The questionnaire assessed subjects' perceptions of various aspects of the group discussion, subjects' level of acquaintance with other group members, and subjects' general level of disclosure of their personal worries to other role figures (roommate, parents, best friend of the opposite sex, and best friend of the same sex). All questions used a 7-point rating scale, except for the question on level of acquaintance, which used a 4-point scale. Rate of disclosure across the four role pairs was summed to establish a general rate of disclosure of intimate information for each subject. After completing the questionnaire, subjects were fully debriefed.

Results and Discussion

The unit used in all analyses was the group mean. One-way analyses of variance were used to test the effects of group size on two sets of dependent variables: the intimacy of the group discussions and subjects' perceptions of the discussions.[8] The effects of group size were first assessed with no variables held as covariates and then with sex composition, mean level of acquaintance, and mean disclosure habits held as covariates.[9]

Intimacy of discussions was strongly influenced by group size, $F(1, 12) = 21.2$, $p < .001$ ($\hat{\omega}^2 = .59$). As predicted, the discussions of triads were less intimate than the discussions of dyads (see Table 2). The

[7] Some previous self-disclosure research has observed that females disclose more readily than males (cf. Cozby, 1973). Thus, one might argue that by overrepresenting females in the dyad condition we are biasing the sample in favor of our hypotheses. However, in this experiment sex composition was not correlated with any of the questionnaire or behavioral dependent variables (all ps > .05). This internal analysis indicates that although females were slightly overrepresented in the dyad condition, this did not actually influence the results.

[8] The conversations were transcribed. In the transcripts, there was no indication of the number of people in a particular group. Using a 4-point intimacy scale, each conversation was rated independently by one of the experimenters and by an individual who was totally unfamiliar with the experiment and its purposes. Interrater reliability was assessed using the intraclass correlation (Winer, 1962). Reliability between the two sets of ratings was .96. The mean ratings averaged across the two raters were used in the analysis. The estimated reliability of these mean ratings was .98.

The intimacy scale used was as follows: 1 = little or no disclosure (discussants shift focus away from selves), 2 = superficial or conventional disclosure (reveal trite or peripheral aspects of selves), 3 = personal disclosure (reveal specific experiences concerning more personal topics), 4 = intimate disclosure (specific experiences concerning more personal topics are discussed, and subjects clearly discuss their responses to these experiences).

[9] The analysis of covariance (ANCOVA) used here represents, in the terminology of Evans and Anastasio (1968), Usage 2 of ANCOVA: " 'Adjustment' of treatment means for differences between intact groups, when the covariate is unrelated to the treatments" (p. 227). The covariates used in this analysis (sex composition, level of acquaintance, and disclosure habits) were all statistically independent of the treatment (all rs < .30, all ps > .10). Furthermore, these covariates were statistically independent of questionnaire (amount learned) and behavioral (rated intimacy of conversations) treatment effects (all rs < .40, all ps > .05). These correlations are small. Evans and Anastasio note that "small correlations such as might occur . . . in the context of Usage 1 or 2, might not have serious consequences" (p. 233). Thus, in this analysis the usage of ANCOVA was appropriate and was not seriously biased by the small violations of the assumptions of independence.

Table 2
Behavioral and Perceived Effects of Group Size in Experiment 2

Condition	Dependent variable	
	Intimacy of discussion	Amount learned about others
Dyad	2.79	3.36
Triad	1.43	2.24

Note. Intimacy of discussion means were derived from ratings of the transcripts; a higher mean indicates a more intimate discussion. Amount learned means were obtained from subjects' answers to the question: "As a result solely of this discussion, how much do you think you have learned about the other people in the group?," with a higher mean indicating more learned.

influence of group size remained strongly significant with sex composition, acquaintance level, and disclosure habits held as covariates, $F(1, 9) = 12.0$, $p < .01$.

The covariate of acquaintance influenced the intimacy of the discussions, although the effect was much smaller than the effect of group size. Better acquainted groups had more intimate conversations, $F(1, 9) = 5.5$, $p < .05$.

On the postdiscussion questionnaires, the amount subjects learned about other group members was influenced by group size, $F(1, 12) = 5.4$, $p < .05$ ($\hat{\omega}^2 = .30$), with members of dyads learning more about others in the group than members of triads (see Table 2). This result is consistent with the finding that dyads had more intimate discussions than triads. The effect of group size on amount learned persisted, with the three covariates held constant, $F(1, 9) = 7.2$, $p < .05$. Furthermore, amount learned due to the discussion was solely a function of group size. (For all covariates, Fs < 1.) Amount learned due to the discussion was independent of other dimensions assessed by the questionnaire. The highest correlation between amount learned and other questions about the interaction was .32.

Members of dyads tended to perceive their discussions as less awkward and more intimate than did members of triads. These effects, although in the hypothesized direction, did not attain the accepted .05 level of statistical significance.

On the questionnaire results, there were two significant effects due to covariates. First, groups composed of members with high disclosure habits perceived the group discussions as less awkward, $F(1, 9) = 14.4$, $p < .01$. Second, the perceived intimacy of the topic discussed was influenced by the level of acquaintance of group members, with better acquainted groups perceiving their discussion topic as more intimate, $F(1, 9) = 14.0$, $p < .01$.

General Discussion

Two experiments using dissimilar methodologies have supported the hypothesis that individuals, when interacting with acquaintances, are more likely to disclose intimate information in a dyad than in a triad. These results support Derlega and Chaikin's (1977) suggestion that intimate disclosure depends on a closed dyadic boundary, that is, the revealer perceiving that his/her message is safe with the recipient. Disclosure was less intimate in triads in which the closed dyadic boundary did not exist. Furthermore, both experiments provided strong evidence that disclosing behavior closely corresponds to the perceived nontransitive nature of "confides in" (De Soto & Kuethe, 1959). Thus, sharing secrets is not only perceived as a pairwise interchange dividing people into dyads but, behaviorally, confiding actually appears to operate in this fashion. (See also Rubin & Shenker, 1978.)

Although there are other differences between dyads and triads in terms of role conflict (Brown, 1965), unanimity of mood (Heider, 1958), and coalition formation (Mills, 1953), the pattern of findings in Experiment 1 (see also Footnote 5) strongly supports our interpretation of the findings. With more intimate items of information and more intimate role pairs, the difference between disclosure rates in dyads and triads increased. Although the magnitude of these interaction effects was not large, the effects were congruent with prior research (Chelune, 1976; Spinner, Note 1). Furthermore, these interaction effects help clarify the role of the closed dyadic boundary. It appears that the salience of the boundary

increases as the confidentiality of the interchange increases.

In a public setting in which strangers are interacting and disclosure is likely to be nonintimate, our theoretical rationale would lead us to expect no effect of group size on disclosure. This was the result obtained by Rubin (1976) in his field experiment. Although it is hazardous to make inferences from negative findings, Rubin's failure to obtain a group size effect in a low disclosure setting is in line with the perspective presented here.

One limitation of the present study is that the effects of group size were explored only over a narrow range. However, this limited range of group sizes was a legitimate focus, since the differences between dyads and triads are more dramatic than the differences between other pairs of group sizes (cf. Hackman & Vidmar, 1970; O'Dell, 1968).

The results of the present study go some distance toward understanding the inherent quality of intimacy that Simmel (Wolff, 1950) attributes to dyads. However, the reasons for this quality are not as yet fully illuminated. Our expectation is that the intimacy of dyads is due to particular perceptual properties (e.g., perceived climate) and structural properties (e.g., role complexity and intensity) that covary with group size.

Furthermore, the present study highlights a host of questions that should be attended to by researchers in self-disclosure. What is the relationship between reciprocity and group size? Although reciprocal disclosure is straightforward in a dyad and involves only one input and one output channel, it is probably more complex in larger groups. In a triad each individual receives two sets of incoming messages and can send two different sets of messages, although everyone "overhears" everyone else's messages. In a triad, people may avoid the difficulties of maintaining two separate channels by disclosing at a uniform low level of intimacy. The apparent robustness of Jourard's dyadic effect and the reciprocity underlying it may in part be due to the past research focus on dyads.

Also, given that context factors such as group structure and central stimulus characteristics such as qualities of the target both influence disclosure patterns, what is the relative impact of each of these on disclosure? Consideration of this question should lead researchers to a more comprehensive understanding of the determinants of self-disclosure.

Reference Note

1. Spinner, B. *Privacy maintenance and self-disclosure.* Paper presented at the 86th annual convention of the American Psychological Association, Toronto, Canada, August 1978.

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