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Altruism, sharing, and reciprocity in children as related to friendship status.

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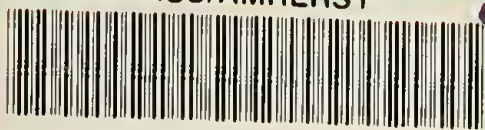
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ALTRUISM, SHARING, AND RECIPROCITY IN CHILDREN
AS RELATED TO FRIENDSHIP STATUS

A Thesis Presented

by

John J. Falkowski

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PSYCHOLOGY

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Abstract

The friendship status of a recipient was taken into consideration with respect to the sharing patterns of third grade children. Subjects were found to share significantly more candies initially with a friend than a desired friend or nonfriend peer. A variety of psychological phenomenon determined the second sharing after the receipt of a large, small, or equal amount of candy from the previous recipient. Children increased their sharing to a desired friend after friendly overtures from him (her) and retaliated small donations by an established friend with decreased sharing. In still more neutral conditions, the children followed a norm of equality that was introduced into the experimental situation. Subsequent sharing with a needy child was related neither to feeling good nor to feeling guilty. Also subjects did not respond differently in the experimental conditions because of sex. Finally highly popular children followed more reciprocal patterns of sharing than other children, and were more susceptible to modeling influences of their peers.

Introduction

The following study was prompted by the consideration of two different lines of research and represents an attempt at the fusion of the two.

The first line of research concerns the role of reciprocity, sharing, and altruism in the formation and maintenance of groups, particularly dyadic relationships. At this point perhaps it would be helpful to make some distinction between these three terms - sometimes subsumed under the single heading prosocial behavior.

As used here, reciprocity means giving after having received something from another individual after a brief temporal interval. Sharing as used here is somewhat different from reciprocity. It does not involve an immediate return, but is different from altruism because it is usually evoked with some expectation of future return or is socially appropriate behavior. Altruism is giving when no return or reinforcement is evident in the situation. Hence, giving something to a needy person on the other side of the world would be considered altruistic. Nietzsche (1878) touched on the importance of these processes in the entire history of civilized man.

The concept of good and evil has a dual prehistory; first in the soul of the ruling tribe and castes. Whoever has the power to repay good with good, evil with evil, and also actually repays, thus being grateful and vengeful, is called good; whoever is powerless and unable to repay is considered bad.

As one who is good, one belongs to the "good", a community that possesses communal feeling because all individuals are knit together by the sense of repayment.

Although many a friendship may be initiated by a spontaneous altruistic act, a new friendship more often than not relies heavily on reciprocity and sharing. The individuals involved are often very cautious and are usually searching for the reaction or return of the other individual as a consequence of some action of their own. As a friendship becomes more established, however, altruism replaces reciprocity as a method of functioning. Perhaps the explanation is that the supposedly altruistic response of one person is vicariously reinforced, hence is reciprocal in nature. However, this seems to be a post facto explanation at best. Hence, the roles played by reciprocity, sharing and altruism in the formation and maintenance of friendship are interesting topics of study. Of specific importance is which one of these is most functional at different points in a relationship.

The second stream of research which came under consideration was the study of altruism and prosocial behavior. There is an extensive amount of research which has been done on these and related topics. An exhaustive review of the adult literature can be found in Krebs (1970). The child literature is less exhaustive and much is left to be done. Some of the studies have looked at developmental

trends of Ugrel-Semin (1952), and Handlon & Gross (1959). The finding has been a general increase in sharing with age as would be expected from theories of moral development (Kohlberg, 1963; Gouldner, 1960). Others have looked at these processes in the context of cooperation and competition as a function of differences in socio-economic class and race (Madsen, 1967, Nelson & Madsen, 1969, and Berkowitz & Friedman, 1967), finding urban middle class groups to be more competitive, but with no difference in race or sex. Most of the other studies have looked at sharing and altruism in the context of learning. The major thrust of this research has been the study of imitation of an altruistic model of varying characteristics, in an attempt to get a parental and peer antecedents in the socialization of these responses (Bryan, 1970; Staub, 1971; Yarrow, Scott & Waxler, 1972; White, 1972). The results of these studies are as conflicting as those of empathic conditioning (Midlarsky & Bryan, 1967, and Aronfreed, 1970), but seem to indicate that expressive, nurturant models and extensive empathic conditioning do produce altruistic and helping orientations in children. A more complete review of the child literature can be found in Byran & London (1970).

Almost on intuitive grounds along it could be expected that the relationship of the recipient to the donor is an important consideration in all of the above research. Thus

there should be a significant difference in sharing if the recipient is a parent rather than a peer-friend or stranger regardless of the modeling or conditioning situation.

With regard to friendship status and sharing (altruism and reciprocity) only three studies, Wright (1942), Floyd (1964), and Staub and Sherk (1970) have been done in the last thirty years. They have only addressed themselves to sharing with a friend versus a stranger and have not considered someone in between in friendship status as a potential friend. Besides this, they have also yielded conflicting results.

For example, in two studies involving eight year olds, Wright (1942) found that children shared a preferred toy more with a strange peer than an established friend (neither of whom was present). The reasons most often given for this by the children were to lessen the inequality between the stranger and the friend, and also to make a friend. The minority who shared more with the friend listed loyalty and reciprocity obligations as their primary motives.

In direct contrast with these findings were those of Floyd (1964), who found that children shared more with friends than non-friends. She also examined reciprocity in the children as a function of friendship status, and found an interesting relationship. Children seemed to follow a reciprocal paradigm with strangers, increasing the number of trinkets given after receiving a lot from

this person and decreasing the number after receiving a few. Just the opposite pattern of sharing occurred with friends. Children increased the amount given to a friend after receiving little from a friend, but decreased the amount given after receiving a lot from a friend. Floyd attempted to explain these differences in terms of a gain-loss notion, which argues that subjects will increase sharing if there is a potential gain (overtures from a stranger in the form of a larger number of trinkets) or loss (few from a friend) for them. Left insufficiently explained is the decrease to the friend after the receipt of a large amount from him.

Staub & Sherk (1970) in a study of forty-five fourth graders did not look at the initial friend-stranger preference, but did partially support Floyd (1964) finding that prior-sharing affected future sharing with non-friends more than with friends. They also found a sex difference. Boys shared more than girls, although this was confounded by differences in need for approval, a primary interest of the study.

The present study was designed to get at some of the differences in the preceding three experiments and to explore the mechanisms of reciprocity operating. This was accomplished by extending the friendship manipulation to include a potential friend, thus exploring the differences in friendship formation and friendship maintenance. Second-

arily, the study looked at possible sex differences, the sociometric standing of the subjects and its relationship to sharing, and at verbal reports of friendship and friendship formation. The study was primarily concerned with three aspects of the problem. The first was whether children shared more with a friend, potential friend, (someone the child would like to have as a friend), or a non-friend (stranger) peer. This gets at the differences between Floyd (1964) and Staub & Sherk (1970) and Wright (1942) studies, and attempts to get at the question of friendship formation versus friendship maintenance by contrasting an established friend with a potential friend.

Next, the study looked at the reciprocity patterns involved with friends, potential friends, and strangers. Here the concern was with the differential effects on sharing resulting from the receipt of something from one of these three different individuals. This gets at the findings of Floyd (1964) and Staub & Sherk (1970) of direct reciprocity with non-friends and an "inverse" reciprocity with friends, and examines where the potential friend fits in.

Lastly because of the experimental arrangement, verbal reports of the children's concepts of friendship and its formation were gathered. These verbal reports were also correlated with actual sharing behaviors. The literature on cheating seems to indicate that what a person says and

does are two different things. The experiment attempted to determine whether this finding in anti-social behavior holds up in a prosocial behavior context. In addition, whether a particular child had many friends or few in the classroom was considered because of the possible consequences in preference for sharing. Since higher sociometric children probably receive more reinforcement from the members of their peer group, they might be more susceptible to a modeling side effect of the experimental manipulation. Thus, Hartup & Coates (1967) found that the degree to which a child modeled a peer was dependent upon the child's history of reinforcement from the peer group. Consequently, high sociometric subjects would be expected to follow a reciprocal paradigm more than low sociometric subjects because the experimental situation offered a possible modeling exposure. Two other theories were explored as a result of the experimental arrangement. Krebs (1972) has suggested that all altruistic behavior is motivated by guilt. As part of the debriefing it was felt that some children might feel guilt that they had slighted a friend, and hence would share more with a needy person if Krebs (1972) was right. Also as part of the debriefing some children received more from the experimenter before leaving than other children. Isen & Levin (1972) found that just feeling good, after having received something, greatly increased helping behavior. This "glow effect"

possibly induced in the debriefing was looked at to see if it had any effect on sharing with a needy person.

Method

Subjects

Seventy-two third graders, 40 boys and 32 girls, participated in the experiment. The same male experimenter administered the questionnaire and conducted the experimental sessions.

Apparatus

In addition to the questionnaire and tape recorders, the materials consisted of five "donation boxes", differing in color and made of malleable plastic. The boxes measured approximately 64 cu. in. and each had a $\frac{1}{2}$ in. square hole in the top of a removable lid. Each was contact papered a different color. An illustration of the boxes, the layout of the experimental rooms, and a copy of the questionnaire can be found in Appendix A.

Procedure

Session 1. In the initial session, the E administered the questionnaire to all the Ss in their classrooms. The purpose of the questionnaire was to ascertain friendship constellations in the classrooms, and to introduce the desired or potential friend manipulation of the experimental session. Ss were asked to write down, as best they could, the names of friends and desired friends in their third

grade class, in the other third grade class, and in the rest of the lower school (grades 1-3). Separate spaces were provided for each of the above friendship and class categories. Throughout the experiment a desired friend was explained to the Ss as "someone who is not your friend yet, but whom you would like to make friends with". Two other questions were asked Ss to indicate whom they would like to sit next to and whom they would like to invite to a birthday party. All children also indicated their liking for M & M candies. The E then told the Ss that he would return in a few days to being playing "the game".

Session 2. Two days later the E returned and conducted the second experimental session. The Ss were randomly selected for the various experimental conditions and for order of presentation from each of the third grade classes. The E took each S individually to an experimental room, divided about one-third of the way in width by a permanent corrugated cardboard and wood partition (see Fig. 1, Appendix A). The E and S sat down at a table in the larger part of the room on which a tape recorder and microphone were placed. The E then explained to the S that he was giving each S a chance to hear himself(herself) on tape recording. The E asked the S if he recalled the questionnaire about friends. If answered in the affirmative (all Ss did), then the E told the S that he had some similar questions to ask about friends. The recording

session began and each S was asked five questions, concerning the location of the S's friends (school or home), whether they rode the same or a different school bus, types of games played with friends, the S's definition of a friend, and how each S would make friends with a non-friend peer. The questions were intended to get verbal reports of the child's concept of friendship, to determine whether friendship or acquisition of it involved sharing or helping behavior, and to implant the friend-desired friend idea clearly in the S's mind.

After the recording session, each S got to hear a replay of the interview. After the replay the E gave the S two cups, each containing 10 M & M's of the same color. The E told the S that one cup was for him to keep, for participating in "the game", and the other cup contained extras or "give-aways". The E then led the S to another table, still in the larger part of the room, on which there were four donation boxes - three at the front of the table and the other at the rear. Each of the three boxes had a card in front of it labeled either "Friend", "New Friend", or "Other Kid". The fourth box was not in line with the other three and was ignored by the E for the time being. The E explained that these three were "give-away" boxes and that the S was to distribute the extra candy in any way he (the S) decided between them. The E then asked the S to read the card in front of each

of the three boxes. The S was told that whatever he left in the "Friend" box, the E would give to one of the children the S had listed on the questionnaire as being a friend of the S; that whatever he left in the "New Friend" box would be given to one of the children the S had listed on the questionnaire as a desired friend ("someone who you would like to have as a friend very much, but who is not your friend yet"), and that whatever was left in the "Other Kid" box would be given to anyone else in the lower school. The word "new" was used rather than potential or desired so that each S would be able to read the label; it was explained verbally by the E that the person falling into the "new friend" category was actually someone the S had said he would like to have as a new friend. All Ss indicated an understanding of the nature of the boxes and all questions were answered. The E then left the larger part of the room and went into the smaller part on the pretext of getting another recording ready, so that each S's donation was anonymous.

After the S finished sharing, the E returned to the larger part of the room and led the S into the smaller part (see Fig. 1, Appendix A). The E seated the S in the smaller part of the room at a desk on which a tape recorder with attached headphones and picture books were located. The E asked the S to listen to recordings of two popular songs with the headphones on and to let the E know which one he

liked better. The picture books were there for the S to look at while listening and the S was told he could eat the candy received earlier if he desired. The E explained to the S that while the S was doing this, the E would be in the larger part of the room playing the "sharing game", which the S had just finished, with another child. The E then placed the headphones on the S and started the recording. Because of this arrangement, each S was isolated and could not see or hear anything in the larger part of the room because of the partition, the restricted mobility caused by the headphones, the level of the recorded music, and the added distractions of the candy and picture books. While the S was listening to the recordings (approximately 4 minutes), the E returned to the larger part of the room and recorded the amount left by the S in each of the three boxes. The E then placed the fourth box in line with the other three, placed a sign with the word "Mine" in front of the box, and then deposited either zero (Less Than condition), ten (Greater Than condition), or the number of M & M's left by the S in one of the three boxes (Equal to condition) in this box. The amount left by the E in the S's own box (the "Mine" box) was randomized for each S earlier.

The recording over, the E led the S back into the larger part of the room and indicated that he had played the interview and sharing game with another child, while

the S was listening to the recordings. The other child was described to the S as someone the S had indicated as a Friend, or a Desired Friend, on the questionnaire the other day or just someone else in the lower school (Stranger or Non-Friend). The E told the S that the other child had taken the candy the S had left for him from the appropriate box (friend from "Friend" box, etc.), and had then left some of the candy he (she) had received for the S in the "Mine" box. The E asked the S to recall how much he had left for the other child and upon retrieving his candy to note to himself how much had been left for him in return. After this was done, the E asked the S which song he liked better, and then gave the S two more cups of ten M & M's each. Again, one cup was designated as being for him for his opinion and the other was a "give-away" cup. The E reminded the S what each box signified and told him that the same individual would receive this candy as had received it the first time. He then went into the smaller part of the room on the pretext of getting a bag ready for the S to put his candy in.

After the S was finished distributing the candy, the E led him back into the smaller part of the room and gave him (her) a bag and a name tag to carry and identify the S's candy. The E returned to the larger part of the room in the Equal To and Less Than conditions, while the S was putting the candy in the bag, and returned with a number of

M & M's supposedly left by the other child for the S but in the wrong box (that is a box besides the "Mine" box). This was done as part of the debriefing. It was thought that in certain conditions the S might feel hurt, for example in the Friend Less condition the S would have thought that a friend had left him (her) nothing. Hence, the E returned with a number of M & M's which would give each S a total of thirty for the experiment (20 from the E, and 10 from the other kid). The E then pointed to a donation box, previously inconspicuous, in the smaller room, and indicated that it was a donation box for needy children, and that the S could give away some of his winnings if he chose. To further emphasize this the E turned around a card in front of the box, containing two pictures of impoverished children of the S's age. The E then returned to the larger part of the room while the S made a donation, if any. While the S was doing this, the E recorded the amount shared by the S in the three boxes the second time. The E then escorted the S back to class. In the subsequent session the E recorded the amount left for the poor children by the previous S in the smaller part of the room while the present S was doing the first sharing in the larger part of the room.

Manipulations

There were nine conditions in the study; three levels were concerned with the degree of reciprocity (Greater,

Less, Equal), and three levels were concerned with the recipient's role status (Friend, Potential Friend, Stranger).

These are listed below:

1. Friend Less than (FL) - zero M & M's left for the S, supposedly from someone the S had indicated on the questionnaire as being a friend.
2. Friend Equal to (FE) - same as FL, only number left by the S was equal to the number left by the S for the Friend initially.
3. Friend Greater than (FG) - same as FL only number left was ten.
4. Potential Friend Less than (PFL) - same as FL only the candy was supposedly left by someone the S had listed as someone he would like to have as a friend (potential or desired friend).
5. Potential Friend Equal to (PFE) - same as FE only "from" desired friend.
6. Potential Friend Greater than (PFG) - same as FG only "from" a desired friend.
7. Stranger Less than (STL) - same as FL, but from strange* peer.
8. Stranger Equal to (STE) - same as FE, but "from" strange* peer.
9. Stranger Greater than (STG) - same as FG, but "from" strange* peer.

*These children are not literally strangers, but are children in the S's class, the other third grade classes, or the other grades (0-2) in the school, who do not enjoy any special status in the S's mind. They are not strangers in the sense that the S may have seen them before or even interacted with them.

The following abbreviations will be used in addition

to those above: F - friend, PF - potential friend, ST - stranger or other kid.

Operationally, the Less than and Greater than conditions were chosen to be zero and ten candies. These numbers were selected for two reasons. First, they would provide maximum points for reciprocity, that is responses had to be made to an all or nothing response of another. It was also reasoned that this all or nothing donation would avoid the pitfall of unequal amounts across subjects. For example, if the manipulation was the receipt of three M & M's more or less than the initial amount shared by the S, then problems would arise if the S shared 0, 1, 2, 8, 9, or 10 M & M's.

Hence the design was a 3 x 3 factorial one with three levels of friendship status and three levels of candy reception.

Results

One problem in the analysis of the data was the correlated means: since each S had 10 M & M's to share among three persons and once he had shared with the first two, the amount shared with the third person was fixed. Because of this problem, the method of likelihood ratios was used in the analysis of the differences in initial sharing. These means are listed in Table 1.

Insert Table 1 About Here

This method yields a test statistic $\lambda = -272.25$ distributed as $X^2_{(1)}$, clearly significant beyond the .001 level of significance; that is Ss are showing a clear preference in this initial sharing.

Another problem which arose in the analysis of the data was the question of a single dependent variable or measure; would it be the amount shared with the Friend, the amount shared with the Potential Friend, or the amount shared with the Stranger. It was decided to do a separate analysis for each of these rather than combining them in some way.

The first of the dependent measures on which an analysis was done was the amount shared with a Friend. The results of this 3 x 3 x 2 ANOVA are found in Table 2; the means of the data on which they are based are found in Table 3.

Insert Tables 2 and 3 About Here

This analysis shows that greater, equal, or less sharing by another person greatly affected sharing with friends. The lack of significant interactions indicates that this was true, whether the other child, who shared greater, equal or less, was a friend, potential friend, or stranger. However, the examination of Table 3 indicates

TABLE 1

Mean number of M & M's shared on first sharing as a function of the friendship status of the recipient.

Friend	Potential Friend	Stranger
4.6	2.9	2.5

TABLE 2

Summary of a 3x3x2 Analysis of Variance with the amount given to the friend as the dependent measure

F (three levels of friendship status) = F, PF, ST
 T (three levels of amount left for S) = Greater, Equal, Less
 A (two levels) = first sharing, second sharing

<u>SV</u>	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>
Total	143	573.97		
Between S	71	195.49		
F	2	7.93	3.97	1.50
T	2	19.26	9.63	3.68 P < .075
FxT	4	1.86	0.47	0.18
S/FxT	63	166.44	2.64	
Within S	72	378.49		
A	1	55.01	55.01	11.65 P < .001
FxA	2	3.85	1.92	0.41
TxA	2	1.01	0.51	0.11
FxTxA	4	21.94	5.49	1.16
SxA/FxT	63	297.69	4.73	

TABLE 3

Mean amounts of M & M's shared with the
Friend in all conditions

<u>Condition</u>	<u>First Sharing</u>	<u>Second Sharing</u>	<u>Difference</u>	<u>t Value</u>
F	5.125	4.75	-.375	.325
Greater PF	5.25	3.125	-2.125	1.896*
ST	4.50	4.00	-.500	.519
F	5.125	2.25	-2.875	2.681**
Equal PF	3.50	3.5	0	0
ST	4.125	2.875	-1.25	1.92***
F	5.25	3.50	-1.75	1.594*
Less PF	4.375	3.00	-1.375	1.294
ST	4.375	3.50	-.875	1.160

*p < .10

**p < .02

***p < .07

that the major source of the significant difference was equal sharing by a friend and stranger, but not equal sharing by a potential friend. The analysis also shows a highly significant change from first to second sharing. Since the greater, equal, or less manipulation was applied only after the initial sharing, the TA interaction should have been significant. The fact that it wasn't is probably due to random experimental factors in the initial sharing.

The second 3x3x2 ANOVA was done with the amount shared with the Potential Friend as the dependent measure. The results of this analysis are shown in Table 4; the means of the data, on which they are based, are shown in Table 5.

Insert Table 4 and 5 About Here

This analysis shows that there was a highly significant increase in first to second sharing with potential friends. Examination of Table 5 indicates that this difference (first sharing = 2.903, second sharing = 3.766 is primarily due to increased sharing with the potential friend after receiving an equal amount from a friend or stranger; and increased sharing with a potential friend after having received a greater amount from a potential friend. The lack of other main effects and interaction effects indicates that this increase is in fact also due to small increases in sharing with the potential friend in other conditions.

TABLE 4

Summary of a 3x3x2 Analysis of Variance with the amount given to the Potential Friend as the dependent measure

F (three levels of friendship status) = F, PF, ST
 T (three levels of amount left for S) = Greater, Equal, Less
 A (two levels) = first sharing, second sharing

<u>SV</u>	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>
Total	143	558.44		
Between S	71	242.99		
F	2	6.00	3.00	0.87
T	2	12.04	6.02	1.75
FxT	4	7.58	1.90	0.55
S/FxT	63	217.31	3.45	
Within S	72	315.50	4.38	
A	1	35.01	35.01	9.08 p < .005
FxA	2	2.72	1.36	0.35
TxA	2	4.18	2.09	0.54
FxTxA	4	30.53	7.63	1.99 p < .10
SxA/FxT	63	243.06	3.86	

TABLE 5

Mean amounts of M & M's shared with the potential
Friend in all conditions

<u>Condition</u>	<u>First Sharing</u>	<u>Second Sharing</u>	<u>Difference</u>	<u>t Value</u>
F	2.50	3.00	+ .500	.386
Greater PF	2.375	5.00	+2.625	2.072*
ST	3.375	2.75	- .625	.967
F	2.75	5.25	+2.50	2.079*
Equal PF	4.0	3.27	- .75	1.158
ST	2.25	3.50	+1.25	2.376**
F	3.0	3.875	+ .875	1.142
Less PF	3.0	4.25	+1.25	1.139
ST	2.875	3.0	+ .125	.242

*p < .075

**p < .05

Again examination of Table 5 supports this contention, with increases to the potential friend in several of the other conditions.

The third 3x3x2 ANOVA was done with the amount shared with the Stranger as the dependent measure. The results of this analysis are shown in Table 6; the means of the data, on which they are based, are shown in Table 7.

Insert Tables 6 and 7 About Here

This analysis shows that there was a significant effect on first to second sharing with the stranger as a function of having received a greater, equal, or less amount of M & M's from another person. Looking at the means in Table 7 indicates that the main source of this significant difference is sharing more with a stranger after having received an equal amount from a stranger.

Another 3x3x2 ANOVA was done using the amount shared with the anonymous donor as the dependent measure. That is, in the Friend condition, the amount shared with the friend was used, in the Potential Friend condition the amount shared with the potential friend was used and in the stranger condition the amount shared with the stranger was used. The results of this are found in Table 8; the means of the data, on which they are based, are in Table 9.

Insert Tables 8 and 9 About Here

TABLE 6

Summary of a 3x3x2 Analysis of Variance with the amount given to the Stranger as the dependent measure

F (three levels of friendship status) = F, PF, ST
 T (three levels of amount left for S) = Greater, Equal, Less
 A (two levels) = first sharing, second sharing

<u>SV</u>	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>
Total	143	286.44	2.00	
Between S	71	190.99	2.69	
F	2	11.36	5.69	2.05
T	2	0.67	0.33	0.12
FxT	4	3.83	0.96	0.34
S/FxT	63	175.06	2.78	
Within S	72	95.50	1.33	
A	1	2.51	2.51	1.99
FxA	2	0.26	0.13	0.10
TxA	2	8.39	4.19	3.26
FxTxA	4	3.28	0.82	0.66
SxA/FxT	63	81.06	1.29	

p < .05

TABLE 7

Mean amounts of M & M's shared with the
Stranger in all conditions

<u>Condition</u>	<u>First Sharing</u>	<u>Second Sharing</u>	<u>Difference</u>	<u>t Value</u>
F	2.375	2.25	-.125	.133
Greater PF	2.375	2.0	-.375	.445
ST	3.375	2.75	-.625	.967
F	2.125	2.50	+.375	.475
Equal PF	2.5	3.25	+.750	1.426
ST	2.25	3.50	+1.25	2.376*
F	1.75	2.625	+.875	1.594
Less PF	2.625	2.75	+.125	.179
ST	2.875	3.0	+.125	.242

*p < .05

TABLE 8

Summary of a 3x3x2 Analysis of Variance combined over three friendship conditions (dependent measure: amount shared with the Friend in the F conditions, amount shared with the Potential Friend in the PF conditions, and the amount shared with the Stranger in the ST conditions)

F (three levels of friendship status) = F, PF, ST
 T (three levels of amount left for S) = Greater, Equal, Less
 A (two levels) = first sharing, second sharing

<u>SV</u>	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>
Total	143	588.99	4.12	
Between S	71	233.44	3.29	
F	2	45.38	22.69	8.16 p < .005
T	2	6.00	3.00	1.08
FxT	4	6.88	1.72	0.62
S/FxT	63	175.19	2.78	
Within S	72	355.50	4.99	
A	1	0.56	0.56	0.13
FxA	2	46.54	23.27	5.52 p < .005
TxA	2	10.67	5.33	1.26
FxTxA	4	32.04	8.01	1.90 p < .10
SxA/FxT	63	265.69	4.22	

TABLE 9

Mean amounts of M & M's shared with the Friend in the FG, FE, FL conditions, the Potential Friend in the PFG, PFE, PFL conditions, and the Stranger in the STG, STE, STL conditions

<u>Condition</u>	<u>First Sharing</u>	<u>Second Sharing</u>	<u>Difference</u>	<u>t Value</u>
F	5.125	4.75	-.375	.304
Greater. PF	2.375	5.00	+2.625	1.371
ST	3.375	2.75	-.625	.905
F	5.125	2.25	-2.875	2.376*
Equal PF	4.0	3.25	-.75	1.083
ST	2.25	3.50	+1.50	2.667**
F	5.25	3.50	-1.75	1.50
Less PF	3.00	4.25	+1.25	1.065
ST	2.875	3.00	+.125	.277

*p < .05

**p < .02

This analysis shows that receiving a greater, equal, or less amount from a friend, potential friend, or stranger significantly affected future sharing with the three. A consideration of the means of Table 9 indicates that a significant amount of this is accounted for by a decrease in sharing with a friend after having received an equal, or less amount from a friend, and an increase in the amount shared with a stranger after having received an equal amount from a stranger. This is essentially the same findings as in the analysis of Tables 2 and 6.

The means of sharing with the three recipients, for each S, for all conditions, can be found in Appendix B.

A 3x3 ANOVA (3 levels of friendship status, 3 levels of amount received) was done to determine whether experimental condition had any effect on sharing with the needy child. This analysis yielded a non-significant F ($F = 1.72$, $df = 2,21$).

Table 10 illustrates the behavior of Ss according to sex. Since this was not the primary concern of the study,

Insert Table 10 About Here

no attempt was made to control the numbers of each sex for each of the conditions. The only condition where the n's are approximately equal and the differences marked was in the potential friend greater than condition where the 4 male Ss varied in their responses, while the 3 female Ss

TABLE 10

Numbers of subjects changing from first to
second sharing by sex and condition

		Males			Females		
		Increase	Decrease	No Change	Increase	Decrease	No Change
F	Greater	1	2	1	2	2	0
	Equal	0	5	1	1	1	0
	Less	3	2	0	2	1	0
PF	Greater	1	1	2	0	3	0
	Equal	0	2	1	1	2	2
	Less	0	2	1	3	0	2
ST	Greater	1	2	2	0	1	2
	Equal	2	0	2	2	0	2
	Less	1	1	2	2	1	1

all responded to the reception of a large amount of candy from a potential friend by decreasing the amount to him.

Sex differences were also looked at in terms of the mean amount of M & M's shared by each sex with the needy children. Again there were no differences. Mean numbers shared were: males = 2.7; females = 2.8.

An analysis was done on high versus low sociometric standing Ss with respect to following a "reciprocal vs. non-reciprocal" paradigm on their second sharing. High sociometric Ss were those who had the two highest scores on the sociogram within their class and sex; the others were included in the low sociometric group. If two subjects were tied for the highest or second highest, both were included. Those who were said to follow a reciprocal paradigm increased the amount to the person (F, PF, ST) in the greater than conditions, decreased the amount in the less than conditions, or did not change in the equal to conditions. Included in the non-reciprocal category were those who increased in the less than conditions, decreased in the greater than conditions, or made any changes in the equal to conditions. Table 11 illustrates how people fell in these categories.

Insert Table 11 About Here

Analysis of the data yielded a $X_{(1)} = 5.016$, $p < .025$ after making Yates' correction for 1 df. This indicates that

TABLE 11

Reciprocal vs. non-reciprocal strategies
as a function of sociometric standing

		Sociometric Standing	
		High	Low
Sharing	Reciprocal	10	16
	Non-reciprocal	6	40

children who are rated high sociometrically follow reciprocal paradigms of sharing significantly more than children who are lower sociometrically.

Discussion

There were several significant findings in the study. The findings of Floyd (1964) and Staub & Sherk (1970) were given support, those of Wright (1942) were not. Ss showed an initial sharing preference for friends. The equity theory of Floyd (1964) was found to be lacking in certain conditions. A norm of reciprocity also seemed to mediate sharing in several conditions. Sex differences were not found to be significant; neither were the guilt-edged giving contentions of Krebs (1972) or Isen & Levin's (1972) "glow effect". Also Ss reports of friendship formation did not correspond to their actual sharing patterns. And finally the sociometric status of the children had a significant effect on their patterns of sharing.

The initial significant difference in sharing favoring friends, clearly indicates that subjects were using this as a friendship maintenance rather than a friendship formation occasion. Otherwise, the amount shared with the potential friend would have been equal to or higher than the amount shared with the friend. One possible explanation for the small difference in sharing between the potential friend and stranger or non-friend (2.9 vs. 2.5) may be due

to the fact that they gave almost half the initial amount to be shared to the friend. In this case, to have shared more with the potential friend would mean leaving almost nothing for the stranger, possibly an anxiety provoking action for several of the children.

Although these initial sharing patterns are interesting, the most important findings of the study are seen in the differences between first to second sharing for various conditions (Tables 2-9). Each of these differences will be considered separately.

Receiving more than one gives

Friend Greater Than

In the FG condition there was no change in the amount shared with a friend after having received ten candies from him (her). This does not support Floyd's (1964) finding of a decrease in sharing to a friend after receiving a large amount from him. However, it must be kept in mind that the manipulation here was slightly different from that of Floyd, where Ss either shared or didn't share with a friend; there was no choice of other individuals as recipients in a forced choice situation. Floyd was unable to explain this decrease, and the present study indicates that the generality of her finding may be rather limited. Since subjects were sharing with an established friend, most of them probably saw no reason to step-up their sharing after having received alot from the friend. They were

content with doling out about one-half of their candy each time to the friend. High sociometric subjects behaved differently and they are considered later in this discussion.

Potential Friend Greater Than

Receiving more candy from a potential friend than one gave seems to have straightforward reciprocal effects. Children, in the PFG condition responded to the desired friendship overtures (10 candies) by reciprocating the large donation. The increase +2.65, approaching significance ($t = 2.072$, $p < .075$), was the largest change of any condition in the experiment. This supports Floyd's (1964) equity notion in that the situation represents a gain (a new friend) for the S and they respond appropriately with an increase on the second sharing. The fact that the extra candy given to the desired friend in the second sharing was at the expense of the friend may be in part due to the fact that the initial amount given to the stranger (non-friend) was small, and to have taken more away would have left him with nothing.

Stranger Greater Than

There was no significant change in sharing with a stranger after having received a greater amount from him. Evidently subjects were not willing to slight a friend of potential friend in order to increase sharing with someone they knew nothing about. The ten candies from a

stranger could have been perceived by subjects as an ingratiating technique from an undesirable person, as easily as friendship overtures from a desirable one.

Receiving the same as one gives (the equal to condition):

Friend Equal to

In the FE condition there was a large ($t = 2.681$, $p < .02$) decrease in the amount shared with the friend after having received an equal amount from him. There was a concomitant increase in the amount given to the desired friend in this condition. One possibility is that after having received an equal amount from a friend, S's expectations were confirmed. Thus comfortable, they could then make friendship overtures to a highly desirable other, the potential friend. Some support is given to this by the borderline significant decrease ($t = 1.92$, $p < .07$) with the friend in the STE condition. Again, an expectation was confirmed and subjects moved out to make a friend by increasing the amount (2.376 , $p < .05$) given to a potential friend. These speculations will need further investigation in the future.

Potential Friend Equal To and Stranger Equal to

In the PFE condition there was a small ($t = 1.158$, non-sign) decrease in sharing with a potential friend after having received an equal amount from him. The stranger benefited from this decrease in sharing with the potential friend. In the STE conditions children significantly ($t =$

2.38, $p < .05$) increased the number of candies shared with a stranger after receiving a greater amount from him. One explanation for the above two results can be discerned if the amounts shared the second time with all three recipients are considered in these two conditions (PFE and STE). In the PFE condition it is: $F = 3.50$, $PF = 3.25$, $ST = 3.25$; in the STE condition it is: $F = 2.875$, $PF = 3.625$, $ST = 3.50$. These numbers represent an almost even distribution of candy across recipients. It is entirely possible that in the absence of any other motivational forces, the receipt of an equal amount from either of these individuals (PF or ST) may have introduced some type of norm of equality into the experimental situation. Subjects then responded to this norm by attempting to give everyone the same thing the second time around.

Receiving less than one gives

Friend Less Than

In the FL condition there was a decrease in the amount given to a friend after having received less (nothing) from him (her). This decrease, approaching significance ($t = 1.59$, $p < .10$), seems to cast some doubt on the applicability of Floyd's equity notions here. This equity notion would have predicted an increase sharing at the possible loss of friendship. One possibility is that this slight is not perceived by subjects as that threatening to the friendship in the long run and the children chose to re-

taliate this transgression by their friends instead.

Potential Friend Less Than

There was a slight increase ($t = 1.139$, not sign) in the amount given to a potential friend on the second sharing after having received nothing from him. Evidently, children are not willing to retaliate against a highly desirable but not established potential friend because of a single omission on their part. There is even some indication that Ss may actually be making overtures to recover the relationship or further test the desired friend by increasing the number of M & M's to him on the second occasion.

The behavior of children in these two conditions (FL and PFL) is not far from that of adults in their relationships. If a friend slights me once, there is no great production, but if someone who is not a friend yet but whom one is getting close to does the same thing, it is much more upsetting. There is a dual attempt by a person at regaining the closeness, which is threatened, and seeking information by increasing the amount of friendly overtures to the person and awaiting the response.

Stranger Less Than

The SL condition produced little change ($t = 0.2269$). Nothing was expected from a stranger and nothing was received.

Sharing with the needy was not related to experimental

condition, hence the possible guilt contentions of Krebs (1972) and the glow effect of Isen & Levin (1972) do not seem to be operating in this experiment; it being hypothesized that the debriefing may have produced either guilt or an elated feeling. The notion derived from the cheating literature that what a person says and does are two different things seems to hold with respect to sharing as a friendship formation technique. Ss who said in the interview session that they would give something to make a friend failed to share significantly more (3.2 vs. 2.9) with a potential friend than other Ss in the initial experimental sharing session.

Sex differences did not seem to be important either in the sharings or in the donations to the orphans.

The contention of Hartup & Coates (1967) that the degree to which children model an altruistic peer is dependent upon the history of reinforcement from the peer group, gained support. Assuming children who are high in sociometric standing receive more reinforcement from the peer group than those who are lower, the analysis of Table 10 indicates that they indeed followed a reciprocal paradigm, that is, the manipulations possibly acted as a modeling situation. Related to this and not necessarily relying on a modeling contention, is the fact that reciprocity may be responsible for a child's high sociometric ratings. That is, these children have many friends because they make

efforts at reciprocating other's moves more conscientiously than other children.

The verbal reports of Ss in the interviews seemed to indicate that the children made friends in directive, informal ways, as saying hello. Also, boys tended to have boys as friends and girls had girls, but girls listed boys as the ones they would like to make friends with, while boys tended to list other boys; an indication that at least in the case of girls, interest in the opposite sex is at an increasingly earlier age, the third grade.

The above considerations seem to indicate that sharing and reciprocity in children are probably complex phenomenon and may be related to subtle differences in, and interactions between different mechanisms. In this experimental situation alone, the response of children seemed to be a function of the friendship status of the recipient, modeling influences and experimental expectations, a norm of reciprocity, and the perception of a possible loss or gain in friendship.

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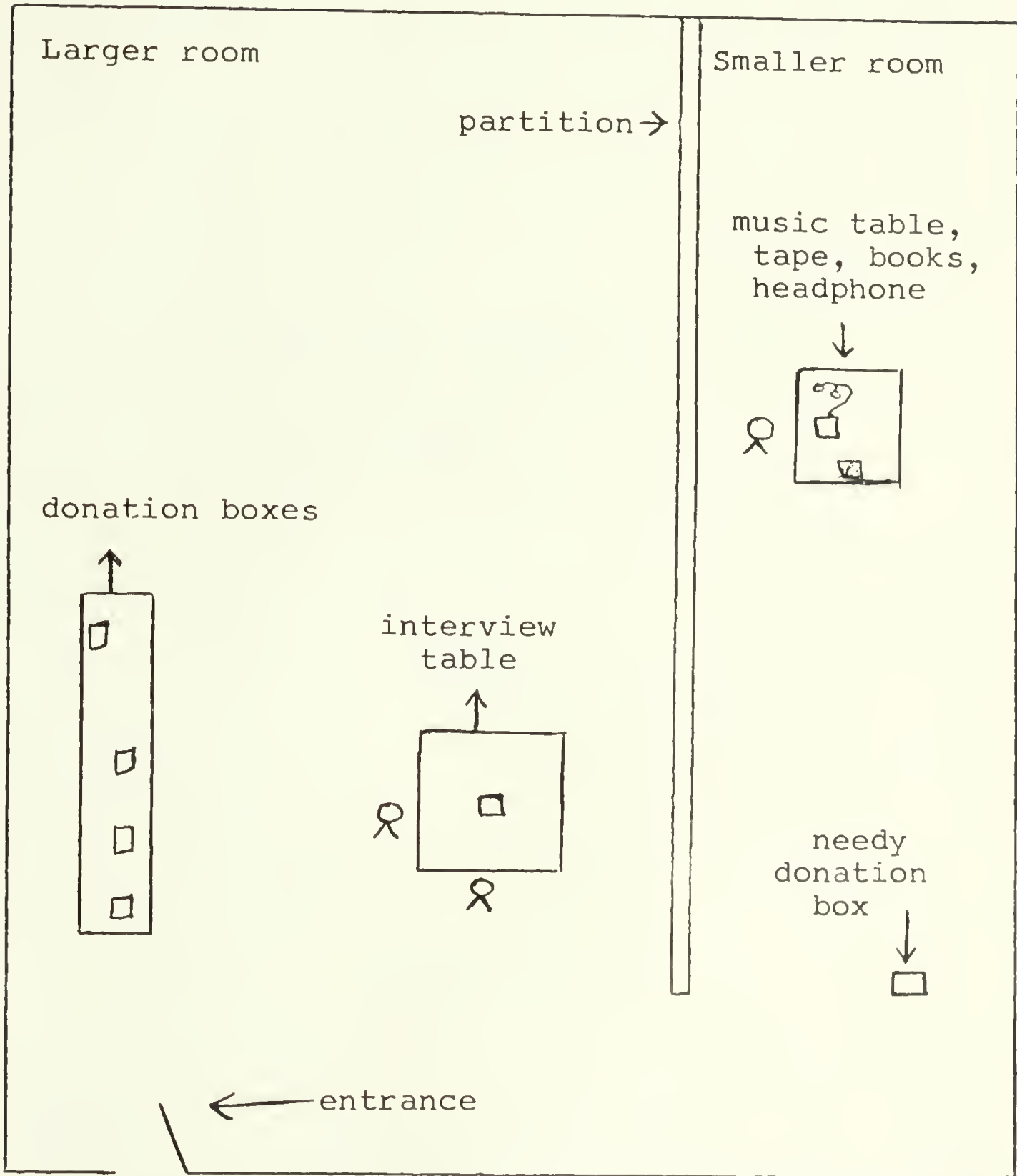
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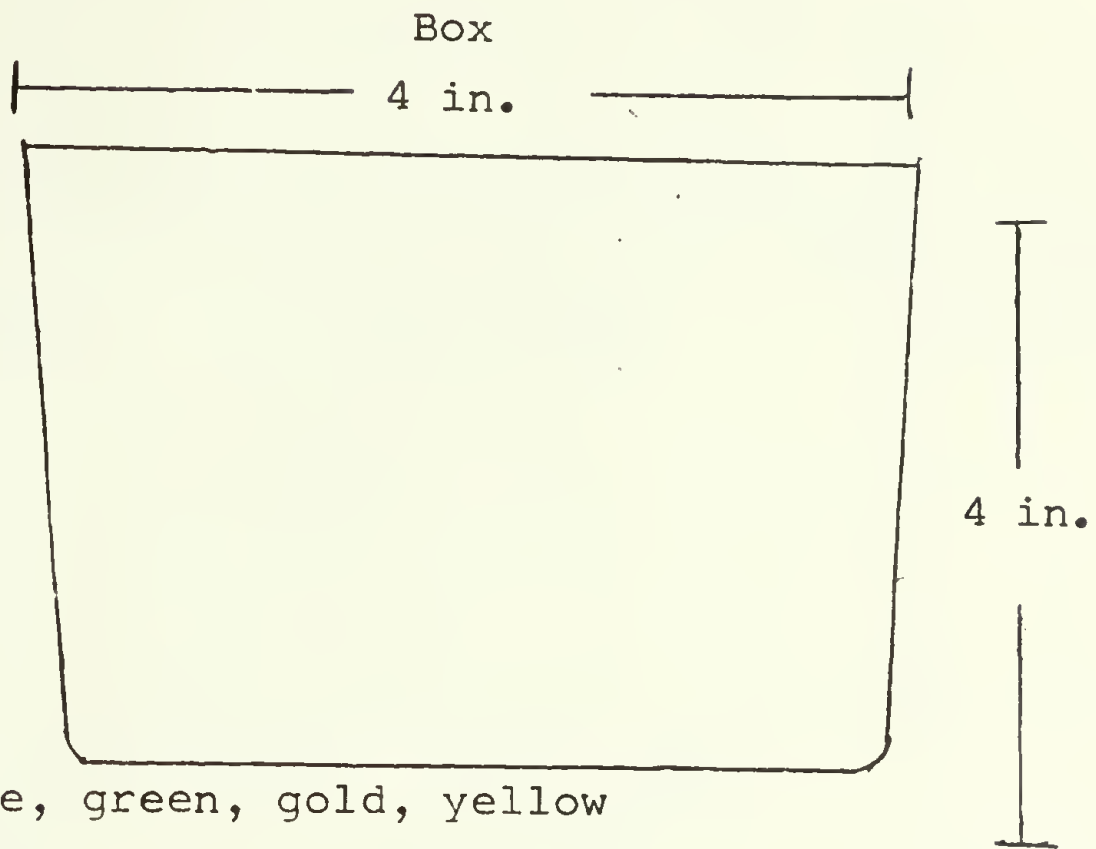
Appendix A

Figure 1. Layout of experimental rooms

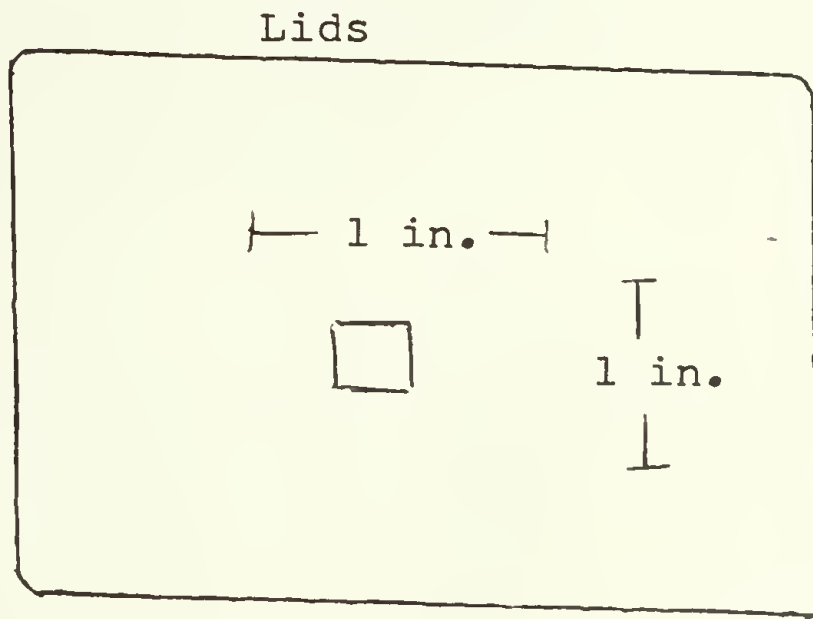


Scale: 1 cm. = 1.5 ft.

Figure 2. Design of plastic donation boxes



colors; blue, green, gold, yellow



Name Tags

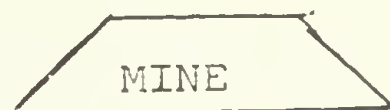
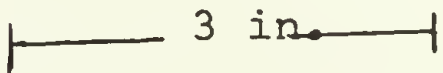
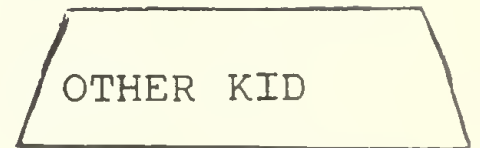
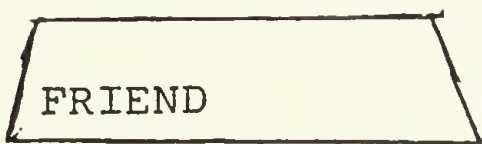


Figure 3. Questionnaire

NAME _____ GRADE _____ AGE _____

1. NAMES OF KIDS WHO ARE NOT YOUR FRIENDS YET, BUT WHOM YOU WOULD LIKE TO HAVE AS FRIENDS (DESIRED FRIENDS):

YOUR CLASS

OTHER CLASS

REST OF SCHOOL

--

--

2. NAMES OF KIDS WHO ARE YOUR FRIENDS:

YOUR CLASS

OTHER CLASS

REST OF SCHOOL

--

--

3. BIRTHDAY PARTY GUESTS:

4. KIDS WHOM YOU WOULD LIKE TO SIT NEXT TO:

Appendix B

TABLE B-1

Mean amounts of M & M's shared with differences in first to second sharing in the Friend conditions (FG, FE, FL) with all three recipients (F, PF, ST)

<u>Condition</u>	<u>First Sharing</u>	<u>Second Sharing</u>	<u>Difference</u>	<u>t value</u>
F	5.125	4.75	-.375	0.325
Greater PF	2.50	3.00	+.500	0.386
ST	2.375	2.25	-.125	0.133
F	5.125	2.25	-2.875	2.681***
Equal PF	2.75	5.25	+2.50	2.079**
ST	2.125	2.50	+.375	0.475
F	5.25	3.50	-1.75	1.594*
Less PF	3.0	3.875	+.875	1.142
ST	1.75	2.625	+.875	1.101

***p < .02

**p < .75

*p < .10

Appendix B

TABLE B-2

Mean amounts of M & M's shared with differences in first to second sharing in the Potential Friend conditions (PFG, PFE, PFL) with all three recipients (F, PF, ST)

<u>Condition</u>	<u>First Sharing</u>	<u>Second Sharing</u>	<u>Difference</u>	<u>t Value</u>
F	5.25	3.125	-2.125	1.896*
Greater PF	2.375	5.0	+2.625	2.072
ST	2.375	2.0	-.375	0.445
F	3.50	3.50	0	0
Equal PF	4.0	3.27	-.75	1.158
ST	2.5	3.25	+.75	1.426
F	4.375	3.0	-1.375	1.249
Less PF	3.0	4.25	+1.25	1.139
ST	2.625	2.75	+0.125	0.179

*p < .10

Appendix B

TABLE B-3

Mean amounts of M & M's shared with differences in first to second sharing in the stranger conditions (STG, STE, STL) with all three recipients (F, PF, ST)

<u>Condition</u>	<u>First Sharing</u>	<u>Second Sharing</u>	<u>Difference</u>	<u>t Value</u>
F	4.50	4.0	-.50	.519
Greater PF	2.125	3.25	+1.125	1.436
ST	3.375	2.75	-.625	0.967
F	4.125	2.875	-1.25	1.92*
Equal PF	3.625	3.625	0	0
ST	2.25	3.50	+1.25	2.376**
F	4.375	3.50	-.875	1.160
Less PF	2.75	3.50	+.750	1.528
ST	2.875	3.0	+.125	0.242

**p < .02

*p < .05

