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Sociability Scores as a Predictor of Intra-Group Cooperation

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SOCIABILITY SCORES AS A PREDICTOR OF INTRA-GROUP COOPERATION

by

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CHAPTER I

SOCIABILITY SCORES AS A PREDICTOR OF INTRA-GROUP COOPERATION

Various personality tests include measures or scales of a trait called sociability, socialization, social adjustment, etc. Test manuals describe this trait in such general terms as: "high scores are made by individuals who like to be with and work with people, and who are gregarious and sociable" (Gordon, 1963), "to identify persons of outgoing, sociable, participating temperament" (Gough, 1956), "...enjoy the company of others, make friends easily, and are sympathetic, cooperative, and agreeable in their relations with people" (Thurstone, 1950), "... likes working with people and meeting new people" (Kuder, 1953), etc.

Despite divergences of expression and lack of rigorous definitions of terms, these sociability trait descriptions imply that an individual possesses a certain quantitative amount of a tendency to work or cooperate with other people. Thus, it is easy to accept sociability scores as predictions of how an individual is likely to behave in social situations. A teacher, foreman, social worker or other group leader who obtains sociability scores of members may be tempted to use these scores as the basis for assigning people into groups, varying conditions or organizing programs.

The literature of group dynamics and social psychology to date does not record experiments which test the validity and reliability of widely-used sociability scores as predictors of social behavior. This paper, therefore, hypothesizes that subjects who score high on a commonly-used, short and easily-scored personality test of the so-called sociability trait (in this case, the Gordon Personal Profile) will exhibit more cooperation and be more productive in small groups performing simple cooperation tasks than subjects who score low. Further, such sociability scores should correlate highly positive with S's attitudes toward all groups in general as measured by an attitude scale. Finally, sociability scores should correlate highly positive with a quantitative record of S's past group participation and assumption of leadership roles.

In order to avoid introduction of unproven measuring instruments, the Gordon Personal Profile sociability scores will be used as the basis upon which to separate Ss into low-mid-high sociability groups and as the standard for checking upon the efficiency of the attitude scale and past group history forms devised by E. Groups will be given identical, simple cooperation tasks to eliminate possible differences in skill, practice effect or intelligence, and E will allow the groups to perform in separate, closed experimental booths free from any influence the presence of E might bring to bear. As a replacement for E's judgment, subjects will be asked to vote on which fellow members in their group were most helpful and least helpful in solving the group puzzle task.

Review of Pertinent Literature

As was stated previously, no investigations have been uncovered testing

the ability of commonly-obtained sociability scores to predict behavior in small groups. Attempts have been made, however, to predict behavior with individually designed personality measures. Cattell (1950) held that actions by any group member regarding group goals, movement, interaction, cohesiveness, etc., are leadership acts, the likelihood of their appearance being predicted by his Sixteen Personality Factor Questionnaire. Schutz (1958) devised a personality scale to create compatible and non-compatible groups. Von Zelst (1952) used expressed preferences for co-workers as the means to predict group productivity. Sarbin and Jones (1956) related ability to take the role of another in a group to the MMPI scale that differentiates responses to psychotherapy. Haythorn (1956) measured attitudes toward authoritarian group leaders with the California F-scale. Cattell (1953) tested accuracy of judgments between heterogeneous groups based on seven personality traits.

Other well known investigations into the relations between the individual and his group include Freud's basic postulate that group behavior is the repression and sublimation of early libidinal ties, the self-actuation of Jennings (1953), the independent, withdrawn and doubt-ridden personality types under group pressure of Asch (1951), etc. To date, no single theory or measurement seems to have become predominant.

A like amount of confusion also surrounds the selection of tasks to be performed by groups as measures of performance. Zajonc (1965) recounted how Ss in various experiments have been asked to count beans, pull cones out of bottles, throw darts, solve riddles, pursue a rotating target, discuss human relations, etc., and proposed a standard group task requiring an electronic

apparatus costing from $1,500 to $4,000. In the process of designing his Group Reaction Time Apparatus, Zajonc described the ideal group task as one that is non-cultural, permits commensurate individual or group performance measures, can be separated out, is flexible, easy to record, manipulable, etc. Lacking such equipment, it seems most feasible to follow the example set by Deutch (1949) who assigned puzzles and lists of suggestions as tasks to measure group productivity. Since this experiment centers about sociability and group cooperation, tasks will be chosen in this area.

Procedure

Subjects were 58 male and 15 female Loyola University sophomores, juniors and seniors enrolled in five laboratory sessions of a course in experimental psychology. At the first meeting with E during regular class sessions, subjects were asked to cooperate in an experiment concerning voluntary organizations with a full explanation to follow at its conclusion.

Each subject filled out (1) a questionnaire listing organizations joined voluntarily (both in and outside of school) while a college freshman and organizations of the same types in which the subject held some position of leadership. The freshman year was specified since it seemed necessary to limit the past group history to a period equal in length and social opportunity for all subjects. See Appendix 1. (2) A five-classification attitude scale on which each indicated his current feeling about voluntary organizations in general. See Appendix 2. (3) The Gordon Personal Profile, hand score form. See Appendix 3. At the initial sessions, each subject was assigned an identification number so that no names would be used in the subsequent session. The only identification required from Ss was to indicate M or F for sex.

Before the second meetings, Ss were classified according to percentile rank scores on the Gordon S scale (sociability), as compared with the test's standardized population of college men and women. Those in each lab who scored in the lowest 25% of the score range were categorized into group 1 (low sociability), those in the highest 25% into group 3 (high sociability) and the remainder into group 2 (mid sociability). Number of Ss in five group 1s and five group 3s was held constant at five each while group 2s varied from two to six subjects according to the number available at each session.

To start the second sessions one week later, each lab was separated into the predetermined low-mid-high sociability groups and sent to separate experimental booths to perform a series of tasks out of the sight and influence of E. Identical instructions were provided each of the three groups on typed sheets fastened to the front of large envelopes containing task materials.

See Appendix 4. Envelopes were placed on tables in the center of each booth and doors closed. Each group was left alone to perform as much or as little, as quickly or slowly as its members wished.

Materials and tasks, in order, were: (1) Group to select a member to act as timekeeper and to control or record elapsed time for each task; (2) Each member to write his identification number on a name tag and affix to lapel; (3) Group to compile a list of clubs or organizations which members would be interested in joining or forming at Loyola. Time limit, five minutes. This task was chosen on the basis that high sociability groups would be more aware of and interested in joining additional group activities than low sociability groups. See Appendix 5; (4) Group to distribute five envelopes among members. Each envelope contains two to four pieces of a 15-piece puzzle which, when properly assembled, formed five perfect, same size squares. Members can trade or give away pieces as they wish. When completed, members to affix squares to a large piece of cardboard with cellophane tape. No time limit imposed but timekeeper to note elapsed time from start to finish. This task was chosen on the basis that members of high sociability groups would cooperate more fully among themselves and solve the puzzle more quickly than members of low sociability groups. See Appendix 6; (5) Each member to note identification numbers of fellow members thought to be most helpful or least helpful to the group in solving the puzzle. Voting as a means of judging group cooperation was chosen on the basis that high sociability groups would expect members to be more cooperative than would members of low sociability groups. See Appendix 7; (6) Group to replace all materials in large envelope and return to E.

Results

Table 1 presents the basic data of the three experimental groups as measured by the sociability scale of the Gordon Personal Profile. All laboratory sessions have been lumped into one group in order to compare sociability scores of all Loyola males and females with each other and with the Gordon populations. Significances of mean difference is less than the .10 level between Loyola males and females and greater than .10 between Loyola females and Gordon females. Means for Loyola and Gordon males are identical.

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Insert Table 1 about here

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Differences between sociability score means of groups 1 versus 2, groups 1 versus 3 and groups 2 versus 3, as shown in Table 2, all are significant at less than the .001 level indicating that the three experimental groups were adequately divided using the low 25% - mid 50% - high 25% score basis. Thus, the Gordon Personal Profile appears to be a sufficiently adequate measure upon which to base the remainder of the study.

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Insert Table 2 about here

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The questionnaire regarding clubs voluntarily joined or led during the freshman year was scored by awarding one point for each organization joined and two points for each position of leadership held. Table 3 summarizes the means,

Table 1

Comparison of Gordon Sociability Scores:
Loyola Male versus Female Students and
Combined Loyola Male and Female Students
versus Gordon Standardized College Populations

	Gordon Males	Loyola Males	Loyola Females	Gordon Females
N	4,211	58	15	1,106
M	21.7	21.7	24.6	23.4
SD	6.2	6.91	5.62	6.0
Mean Diff.	0	2.9 (a)	1.2 (b)	

(a) $t = 1.7$. $p = < .10$. $df = 71$

(b) $t = 1.25$. $p = > .10$. $df = 1,119$

Table 2

Comparison of Three Experimental Groups Divided according to Range of Sociability Scale Scores, Gordon Personal Profile

	Low 25% Range (Group 1)	Mid 50% Range (Group 2)	High 25% Range (Group 3)
N	25	23	25
M	14.32	24.26	28.48
SD	4.27	1.75	2.62
M Diff.	Gp. 1 vs. Gp. 2 9.94 (a)	Gp. 1 vs. Gp. 3 14.16 (b)	Gp. 2 vs. Gp. 3 4.22 (c)

(a) $t = 10.51$. $p = < .001$ $df = 46$

(b) $t = 13.89$. $p = < .001$ $df = 48$

(c) $t = 6.52$. $p = < .001$ $df = 46$

standard deviations and significances of mean differences between group 1, 2 and 3 for past group activity.

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Insert Table 3 about here

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The significance of differences between groups 1 and 2, and 2 and 3 was greater than the .10 level while between groups 2 and 3 significance was at the more than .50 level. Correlation between sociability scores and scores on the measure of past group activity is .25 by contingency coefficient and .30 by Pearson's r. (A difference this large or larger would occur by chance from 1.4 to 3.6 times out of 100).

The attitude scale toward groups in general was scored by assigning five points for the most favorable statement, four points for the next favorable down to one point for the least favorable. Means of the low-mid-high sociability groups on the attitude scale were extremely close: group 1 = 4.08, group 2 = 4.15, group 3 = 4.56. By inspection, the above differences do not appear to be significant at any important level. Correlation by contingency coefficient between low-mid-high grouping and the attitude scale means is only .15. (Significance is greater than .20).

Only 10 of the 73 subjects checked positions on the neutral or negative end of the attitude scale. Since these 10 represent only 14% of Ss, no significance is attached to this distribution.

Results from the second experimental sessions devoted to group tasks is reported for groups 1 and 3, omitting groups 2 of each lab day. Groups 2 data is not complete since number of Ss varied from two to six and some of the tasks

Table 3

Comparison of Three Experimental Groups

With Clubs Joined or Led during Freshman Year

	Group 1	Group 2	Group 3
M	1.8	3.5	3.7
SD	2.0	3.76	3.38
M Diff.	Gp. 1 vs Gp. 2 1.7 (a)	Gp. 1 vs Gp. 3 1.9 (b)	Gp. 2 vs Gp. 3 0.2 (c)

(a) $t = 1.88$. $p = > .10$ $df = 2$

(b) $t = 2.42$. $p = > .10$ $df = 2$

(c) $t = .19$. $p = > .50$ $df = 2$

could not be performed in a comparable manner.

Table 4 shows results for groups 1 and 3 on the two tasks of suggesting clubs to be formed or joined, and minutes needed to solve the puzzle. Means for group 1 and 3 were identical for the number of clubs suggested. Differences between means for the two groups on the number of minutes to solve the puzzle was significant at the greater than .50 level.

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Insert Table 4 about here

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The final task was to vote on fellow members considered most helpful and least helpful in enabling the group to solve the puzzle. Since N=5 in each group, each S could receive as many as five most helpful votes or five least helpful votes including his own in any of five rank order positions. Table 5 shows the scoring schema with the number of positive or negative points scored for each position. Score values are weighed so that receiving a vote as most or least helpful in the first rank order position counts five times as many points as the same vote in the last rank order position.

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Insert Table 5 about here

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Table 6 reports the means and variances for the net points (psoitive less negative) voted within each group. Group 3s averaged a higher mean of net helpful votes than group 1s but significance was at the greater than .50 level. Difference between variances by F ratio is greater than .10.

Table 4

Comparison of Low and High Sociability Groups on Two Cooperative Tasks

	No. Clubs Suggested		Minutes to Solve Puzzle	
	Group 1	Group 3	Group 1	Group 3
Monday Lab	16	5	10	15
Tues. Lab	6	4	10	7
Wed. Lab	3	5	3	3
Thurs. Lab	10	7	3	5
Fri. Lab	5	19	3	4
M	8	8	5.8	6.8 (a)

(a) M. Diff.: $\underline{t} = 0.2$. $p = > .50$ $\underline{df} = 8$

N=5 for all groups, all lab days.

Table 5

Scoring Schema for Most and Least Helpful Voting

Rank Order Position	Most Helpful	Least Helpful
1st	+5 points	-5 points
2nd	+4	-4
3rd	+3	-3
4th	+2	-2
5th	+1	-1

Table 6

Comparison of Net Points Voted in Each Group for Most or Least Helpful in Solving Puzzle

	Group 1 Mean	Group 3 Mean
Monday Lab	6.0	5.4
Tues. Lab	2.2	3.4
Wed. Lab	2.2	1.8
Thurs. Lab	2.0	Not reported
Fri. Lab	2.5	3.6
$\bar{X}$	2.98	3.55 (1)
s^2	2.88	2.16 (2)

(1) M Diff. t = .53. p = > .50. df = 7. (2) F ratio = 1.33. p = > .10 (two tailed)

N = 5 for all groups, all lab days.

Another measure of the differences between groups 1 and 3 on voting for most or least helpful is a comparison of the number of members of each group who received extremely helpful, mid helpful and extremely not helpful votes. This is pictured in Figure 1. Significance of the differences between voting patterns by chi-square is less than .20 (df = 2). It can be seen that although both groups voted the same number of members as extremely most helpful, group 3 was more severe in placing fewer members into the mid range and more members into the extremely not helpful category.

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Insert Figure 1 about here

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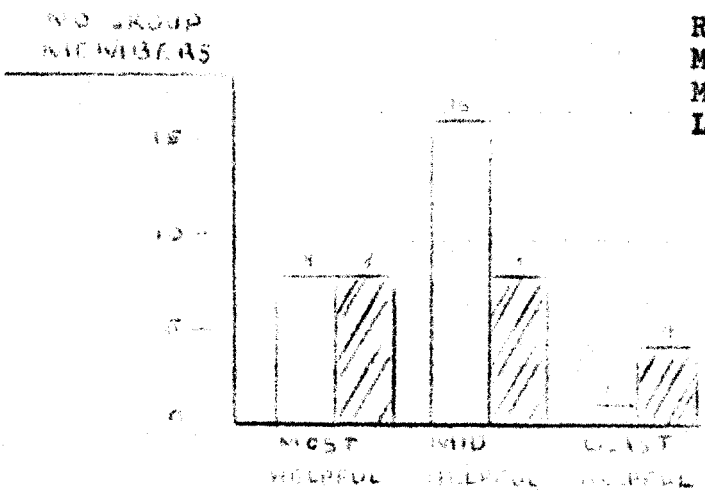
Discussion

The Gordon Personal Profile finds no significant differences between Loyola and Gordon males and females and appears an apt measure of sociability among Loyola students. Yet, agreement between Gordon sociability scores and S's records of past voluntary group activity was only .25 - .30, according to the statistical analysis used. Obviously, either the Gordon does not distinguish between low and high sociability Ss or else past group activity is related only slightly to sociability. The two measures are most in agreement, albeit low, at the two extremes only.

Amount of agreement between the Gordon and the attitude scale toward groups in general is even lower -- around the greater than .20 significance level. Since there is no substantiation of E's assumption that Ss possess an



Range of net votes=44
Most Helpful (top 25%)= +11 to +21
Mid Helpful (mid 50%)= +10 to -13
Least Helpful(low 25%)= -14 to -23

Fig. 1. Number of Members in Groups 1 and 3 Who Received Extreme Most Helpful, Mid Helpful and Extreme Least Helpful Net Votes.

attitude toward groups in general which can be isolated and measured by a simple attitude scale, there are no grounds for preferring either the Gordon or the attitude scale.

Using the Gordon as the base sociability measure, it is possible to separate Ss into low-mid-high sociability groupings according to the score range with significant differences at the less than .001 level. The success of the cutting procedure, however, is not sustained by the tests of group cooperation and productivity used in this experiment.

The task of suggesting clubs yields quantitative score ranging from 3 to 16 in groups 1 and from 4 to 19 in groups 3; mean for all groups 1 and all groups 3 is identical at 8. The task of solving a puzzle cooperatively yields a wide range of time scores. Groups 1 needed 3 to 10 minutes and groups 3 needed 3 to 15 minutes. Differences between means is no more significant than had the groups been selected by chance.

Examination of the recorded times for puzzle solving gives some grounds to suspect that Ss of the Monday and Tuesday labs described the puzzle solving task to Ss waiting to be tested despite requests from E for secrecy. Thus, the first two tasks fail to measure any differences which might exist between high and low sociability groups.

The third task of sociometric voting for least or most helpful was analyzed first for differences in amount of net votes. Difference between means of groups 1 and 3 is no more significant than chance and the difference between variances could occur more than 10 times out of 100 by chance. Analysis of voting does reveal a difference in pattern, however, in the number of Ss

voted extremely most helpful, mid helpful and extremely not helpful. Based on a total voting range of 44 net points, groups 1 and 3 agreed that eight members were most helpful but groups 3 judge fellow members more harshly. This difference is noted even though the Thursday group 3 chose not to vote as one S stated, "because it wasn't fair." This evidence of some expective demand among high sociability groups that all members should carry their share of the load may be worthy of further study.

However, the null hypothesis must be accepted for the thesis that group behavior on simple cooperative tasks can be predicted from sociability scores of the Gordon Personal Profile. It is probable than other common personality tests would predict no better, at least on tasks of like simplicity and time length. Other variables or clusters of variables probably confound a simple one-to-one investigation of trait description to expected behavior. It would be wise if personality test publishers qualified trait descriptions as rank orderings along as yet undefined continuums and cautioned against use of scores as predictors of behavior.

Summary

To test the hypothesis that sociability scores from popular personality tests such as the Gordon Personal Profile can be used to predict intra-group cooperation, 73 Loyola University students were tested and separated into low, mid and high sociability groups. An attitude scale toward groups in general and a record of past group activity also were obtained and compared for correlation against Gordon sociability scores. Low and high sociability groups were

compared on two simple cooperation tasks and on sociometric voting for most or least helpful to the group.

Agreement between the attitude scale and the Gordon, and the group history and the Gordon were .15 and .25 respectively. No significant differences in task output were noted between low and high sociability groups although some evidence was found that high sociability groups expect more cooperation from members than do low sociability groups. The null hypothesis is accepted that so-called sociability scores of the Gordon Personal Profile should not be used to predict intra-group cooperation.

BIBLIOGRAPHY

Asch, S. E. Effects of group pressure upon the modification and distortion of judgments. In H. Guetzkow (Ed), Groups, leadership and men. Pittsburgh: Carnegie Press, 1951.

Asch, S. E. Social psychology. Englewood Cliffs, N.J.: Prentice-Hall, 1952.

Bavelas, A. Communication patterns in task-oriented groups. J. acoustical soc. Amer., 1950, 22, 725-730.

Bonner, H. Group dynamics. New York: Ronald Press, 1959.

Cartwright, D. & Zander, A. Group dynamics. Evanston, Ill.: Row, Peterson, 1960.

Cattell, R. B. Concepts and methods in the measurement of group syntality. Psych. Rev., 1948, 55, 48-63.

Cattell, R. B. Personality. New York: McGraw-Hill, 1950.

Cattell, R. B. New concepts for measuring leadership in terms of group syntality. Human Relations, 1951, 4, 161-184.

Cattell, R. B., Saunders, D. R. & Stice, G. F. The dimensions of syntality in small groups. Human Relations, 1953, 6, 331-356.

Cattell, R. B. & Stice, G. F. The psychodynamics of small groups. Urbana, Ill.: University of Illinois, 1953.

Crespi, L. P. Attitudes toward conscientious objectors and some of their psychological correlates. J. Psychol., 1944, 18, 81-117.

Cronbach, L. J. Essentials of psychological testing (2nd ed). New York: Harper, 1960.

Deutch, M. An experimental study of the effects of co-operation and competition upon group process. Human Relations, 1949, 2, 199-232.

Dunlap, J. W. & Kroll, A. Observations on the methodology of attitude scales. J. soc. Psychol., 1939, 10, 475-487.

Faust, W. L. Group versus individual problem-solving. J. abnorm. soc. Psychol., 1959, 59, 68-72.

Goodenough, Florence L. Mental testing. New York: Rinehart, 1949.

Gordon, L. V. Manual for the Gordon Personal Profile. New York: Harcourt, Brace, 1963.

Gough, H. G. California Psychological Inventory. Palo Alto, Cal.: Consulting Psychologists Press, 1956.

Haythorn, W. The influence of individual members in the characteristics of small groups. J. abnorm. soc. Psychol., 1953, 48, 276-284.

Haythorn, W. The effects of varying combinations of authoritarian and equalitarian leaders and followers, In. Maccoby, Newcomb & Hartley, Readings in social psychology (3rd ed). New York: Holt, 1958.

Horsfall, A. B. & Arensberg, C. M. Teamwork and productivity in a shoe factory. Hum. org., 1949, 8, (1), 13-25.

Jackson, J. & Saltzstein, H. The effect of person-group relationship on conformity processes. J. abnorm. soc. Psychol., 1958, 57, 17-24.

Jennings, Helen H. Sociometric structure in personality and group formation. In Sherif & Wilson, Group relations at the crossroads. New York: Harper & Bros., 1953.

Kelley H. H. & Thibaut, J. W. Experimental studies of group problem solving

and process. In G. Lindzey (Ed) Handbook of social psychology. Cambridge: Addison-Wesley, 1954.

Krech, D., Crutchfield, R. S. & Ballachey, E. L. Individual in society. New York: McGraw-Hill, 1962.

Kuder, G. F. Examiner manual for the Kuder Preference Record, personal form A (4th ed). Chicago: Science Research Associates, 1953.

Leavitt, H. J. Some effects of certain communication patterns on group performance. J. abnorm. soc. Psychol., 1951, 46, 38-50.

McNemar, Q. Psychological statistics (3rd ed). New York: John Wiley and Sons, 1962.

Roby, T. B. & Lanzetta, J. T. Considerations in the analysis of group tasks. Psychol. Bull., 1958, 55, 88-101.

Sarbin, T. R. & Jones, D. S. An experimental analysis of role behavior. In Maccoby, Newcomb & Hartley, Readings in social psychology (3rd ed). New York: Holt, 1958.

Schachter, S. The psychology of affiliation. Stanford Cal.: Stanford Univ. Press, 1959.

Schutz, W. C. FIRO: a three-dimensional theory of interpersonal behavior. New York: Rinehart, 1958.

Siegel, S. Nonparametric statistics. New York: McGraw-Hill, 1956.

Thurstone, L. L. Examiner Manual for the Thurstone Temperament Schedule (2nd ed). Chicago: Science Research Associates, 1953.

Von Zelst, R. H. Validation of a sociometric regrouping procedure. J. abnorm. soc. Psychol., 1952, 47, 299-301.

Vroom, V. H. Some personality determinants of the effects of participation. J. abnorm. soc. Psychol., 1959, 59, 322-327.

Zajonc, R. B. The requirements and design of a standard group task. J. exp. soc. Psychol., 1965, 1, 71-87.

Appendix 1.

YOUR NO. _____

QUESTIONNAIRE

This questionnaire is interested in which groups, organizations and clubs you joined while a college freshman.

Please list those which you joined of your own free will, both inside and outside of school, such as social clubs, athletic teams, hobby groups, etc.

You are not asked to sign your name so this questionnaire cannot affect your grades in any way.

Please list only those groups and organizations which you actually joined, omitting those you were merely interested in.

1. While a college freshman, I voluntarily joined the following groups, organizations, and clubs:

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

2. I held the office of President, Vice-President, Secretary, Treasurer, or some other position of leadership in the following groups, organizations, and clubs:

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Appendix 2

YOUR NO. _____

QUESTIONNAIRE

Thinking about the various clubs and organizations you joined or decided not to join, how in general do you feel about them now?

Check the box below which best describes your feeling:

☐ I feel that most groups and organizations are worthwhile and should be encouraged.

☐ I feel that most groups and organizations have more good points than bad.

☐ I don't feel one way or the other about groups and organizations.

☐ I feel that most groups and organizations have more bad points than good.

☐ I feel that most groups and organizations are worthless and should be discouraged.

Has your general feeling about groups and organizations changed since you entered college?

☐ YES ☐ NO

a good mixer socially.....
lacking in self-confidence.....
thorough in any work undertaken.....
tends to be somewhat emotional.....

not interested in being with other people.....
free from anxieties or tensions.....
quite an unreliable person.....
takes the lead in group discussion.....

acts somewhat jumpy and nervous.....
a strong influence on others.....
does not like social gatherings.....
a very persistent and steady worker.....

finds it easy to make new acquaintances.....
cannot stick to the same task for long.....
easily managed by other people.....
maintains self-control even when frustrated.....

able to make important decisions without help..
does not mix easily with new people.....
inclined to be tense or high-strung.....
sees a job through despite difficulties.....

not too interested in mixing socially with people..
doesn't take responsibilities seriously.....
steady and composed at all times.....
takes the lead in group activities .....

a person who can be relied upon.....
easily upset when things go wrong.....
not too sure of own opinions.....
prefers to be around other people.....

finds it easy to influence other people.....
gets the job done in the face of any obstacle.....
limits social relations to a select few.....
tends to be a rather nervous person.....

doesn't make friends very readily.....
takes an active part in group affairs.....
keeps at routine duties until completed.....
not too well-balanced emotionally.....

Turn the page and go on.

	M	L	M	L
assured in relationships with others				
feelings are rather easily hurt				
follows well-developed work habits				
would rather keep to a small group of friends				
	M	**L**	**M**	**L**
becomes irritated somewhat readily				
capable of handling any situation				
does not like to converse with strangers				
thorough in any work performed				
	M	**L**	**M**	**L**
prefers not to argue with other people				
unable to keep to a fixed schedule				
a calm and unexcitable person				
inclined to be highly sociable				
	M	**L**	**M**	**L**
free from worry or care				
lacks a sense of responsibility				
not interested in mixing with the opposite sex				
skillful in handling other people				
	M	**L**	**M**	**L**
finds it easy to be friendly with others				
prefers to let others take the lead in group activity				
seems to have a worrying nature				
sticks to a job despite any difficulty				
	M	**L**	**M**	**L**
able to sway other people's opinions				
lacks interest in joining group activities				
quite a nervous person				
very persistent in any task undertaken				
	M	**L**	**M**	**L**
calm and easygoing in manner				
cannot stick to the task at hand				
enjoys having lots of people around				
not too confident of own abilities				
	M	**L**	**M**	**L**
can be relied upon entirely				
doesn't care for the company of most people				
finds it rather difficult to relax				
takes an active part in group discussion				
	M	**L**	**M**	**L**
doesn't give up easily on a problem				
inclined to be somewhat nervous in manner				
lacking in self-assurance				
prefers to pass the time in the company of others				

By Leonard V. Gordon

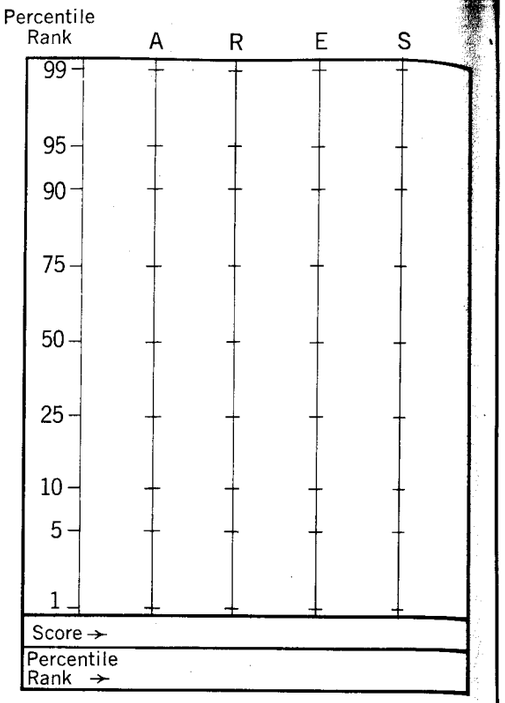
Name _____ Age ____ Sex ____

Date _____ Marital Status _____

School *or* Firm _____

Grade *or* Occupation _____

City _____ State _____



Norms used _____

Directions:

In this booklet are a number of descriptions of personal characteristics of people. These descriptions are grouped in sets of four. You are to examine each set and find the one description that is *most like you.* Then make a solid black mark between the pair of dotted lines following that statement, in the column headed M (*Most*).

Next examine the other three statements in the set and find the one description that is *least like you;* then make a solid black mark between the pair of dotted lines following that statement, in the column headed L (*Least*). Do *not* make any marks following the two remaining statements.

		M	L
Here is a sample set:	has an excellent appetite		
	gets sick very often		▮
	follows a well-balanced diet		
	doesn't get enough exercise	▮	

Suppose that you have read the four descriptive statements in the sample and have decided that, although several of the statements may apply to you to some degree, "doesn't get enough exercise" is *more like you* than any of the others. You would fill in the space following that statement in the column headed M (*Most*), as shown in the sample.

You would then examine the other three statements to decide which one is *least like you.* Suppose that "gets sick very often" is *less like you* than the other two. You would fill in the space following that statement in the column headed L (*Least*), as shown in the sample above.

For every set you should have *one* and *only one* mark in the M (*Most*) column, and *one* and *only one* mark in the L (*Least*) column. There should be *no* marks following two of the statements.

In some cases it may be difficult to decide which statements you should mark. Make the best decisions you can. Remember, this is not a test; there are no right or wrong answers. You are to mark certain statements in the way in which they most nearly *apply to you.* Be sure to mark *one* statement as being *most like you* and *one* as being *least like you,* leaving two statements unmarked. Do this for every set. Turn the booklet over and begin.

Appendix 4

INSTRUCTIONS

Please follow these instructions carefully. Work as quietly as you can to avoid disturbing the other groups.

1. **Open large brown envelope and empty contents.**

2. **Each person take a name tag, write his or her identification number clearly on face. Peel off backing and stick tag to lapel. (Tag comes off easily and will not harm clothing.)**

3. **One person with wristwatch will act as timekeeper and note time elapsed as instructed.**

TASK 1: **On the yellow sheet of paper, compile a list of clubs, groups and organizations of any kind that all of you would be interested in joining or forming here at Loyola.**
TIME ALLOWED, 5 MINUTES. Timekeeper, note starting and finishing times at bottom of yellow sheet.

TASK 2: **Distribute five small white envelopes as equally as possible among members of your group. Inside each envelope are pieces of a cardboard puzzle. There are 15 pieces total, which are to be formed into five perfect square, all of same size.**

When timekeeper gives starting signal, open all envelopes and try to form an equilateral square with your pieces. If you wish, you can trade or give any or all of your pieces to anyone else. When you have completed a square or the group has completed all five squares, fasten squares to the large piece of cardboard with cellophane tape.

Timekeeper: There is no time limit. Mark down Time Started and Time Finished at bottom of the large cardboard.

TASK 3: **Each person takes one of the folded white sheets and fills it out. No time limit for this task.**

TASK 4: Place all papers, materials, taped-up cardboard, any leftover pieces of puzzle, tape, etc. in large brown envelope, give to experimenter and return to your classroom seats.

Experimenter will be available to answer questions.

Thank You.

Appendix 5.

TASK 1.

Compile a list of clubs, groups and organizations of any kind that all of you would be interested in joining or forming here at Loyola.

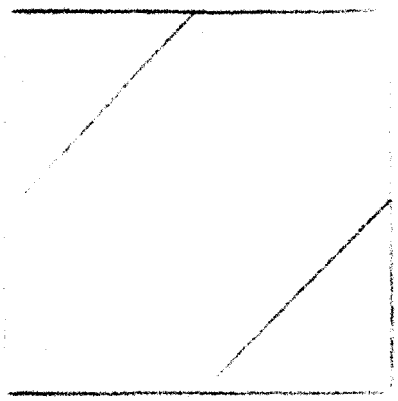
(Timekeeper: TIME ALLOWED IS 5 MINUTES. Jot down the starting and finishing times at the bottom of this page).

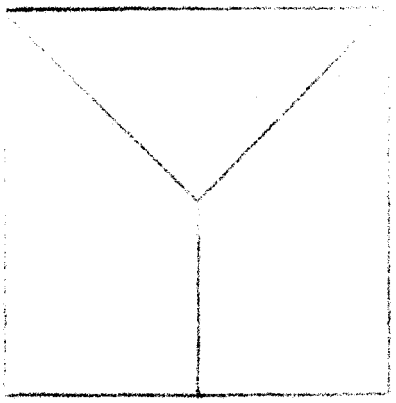
We would be interested in joining or forming the following clubs, groups and organizations here at Loyola:

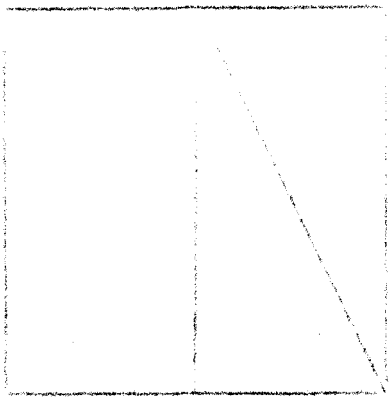
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

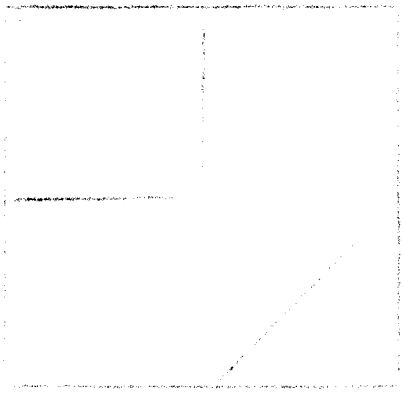
TIME STARTED: _____ TIME FINISHED: _____

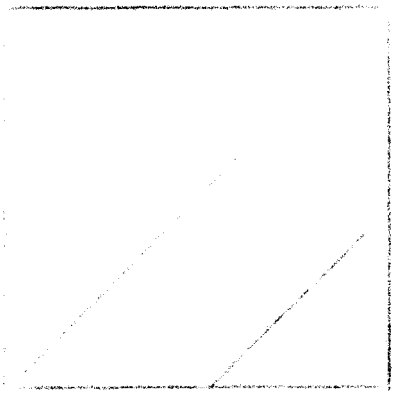
Appendix 6. (1)











(1) Puzzle was developed by Leavitt (1951) for an investigation of effects of communication patterns upon group performance.

Appendix 7.

YOUR NO. _____

Your group has just finished working on a puzzle. Please list below (by badge number) the person or persons you think MOST HELPED your group find a solution.

#_____

#_____

#_____

#_____

#_____

Which person or persons LEAST HELPED your group?

#_____

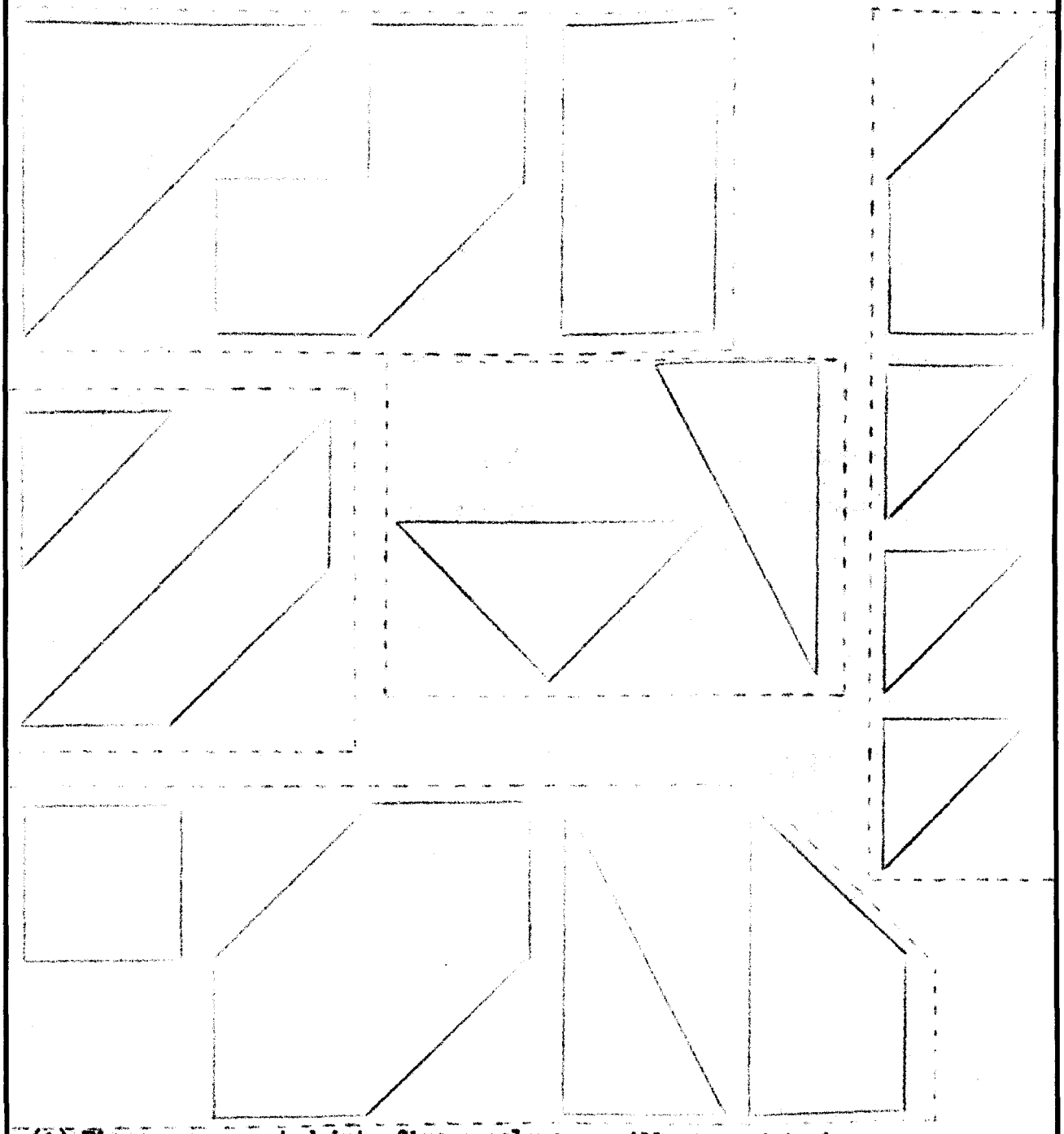
#_____

#_____

#_____

#_____

Appendix 8. (1)



(1) Pieces were sorted into five envelopes as illustrated to increase possibility of "bad" squares being formed and to test cooperation of group members. Pattern suggested by Bavelas (1950).

Approval Sheet

The thesis submitted by Julian S. Frank, Jr., has been read and approved by three members of the Department of Sociology.

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is now given final approval with reference to content, form, and mechanical accuracy.

The thesis is therefore accepted in partial fulfillment of the requirements for the Degree of Master of Arts.

May 31, 1965
Date

Edmund P. Marx
Signature of Adviser