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Sociometric study of academic and social perceptions of learning disabled children in a special day class

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A SOCIOMETRIC STUDY OF ACADEMIC AND SOCIAL PERCEPTIONS OF LEARNING DISABLED CHILDREN IN A SPECIAL DAY CLASS

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General Introduction

The purpose of this project was to examine the relationships and perceptions of a group of fifth and sixth grade Learning Disabled students relative to their classroom peers in terms of social acceptance and academic ability. The project focused upon one particular LD student, who had significant academic ability but was ostracized socially in the classroom. Sociometric testing was conducted on a periodic basis in order to ascertain the perceptions of students in regard to the academic and social strengths of their classroom peers.

In addition to focusing upon one socially-ostracized student, the study also evaluated the perceptions of the LD students as a group. Of particular interest were the correlative relationships involving peer perceptions of friendship and academic ability, to what degree, if any, students were able to discriminate in their perceptions of friendship and academic ability, and to what extent either area (friendship or academics) was more changeable in the context of student perception.

Review of the Literature

Current and past educational and sociological literature was reviewed to determine trends in and applications of sociometric testing particularly in relation to the Learning Handicapped student. The literature indicated that the sociometric testing conducted in a classroom setting was describing social perception rather than academic-performance perception among peers. However, sociometry, as a measuring tool, has become more accepted and thus functional in the educational community.

Procedures/Sequencing

Partner- and group-based tasks were developed and implemented with the student population during the course of the three-month study. The tasks, which were generally academic in nature, were designed to provide all students with direct academic exposure to each of their peers in a one-to-one or small group setting. A sociometric test, the Behavior Rating Profile, was administered and scored on a periodic basis during the time interval (10/87 - 2/88) when partner- and group-based tasks were taking place. The chronology of the testing and tasks proceeded on a prescribed schedule, and the partners and groups were designated on a pre-selected, random basis.

Data

The data from this sociometric study indicated that components of friendship and academic helpfulness in terms of peer perception are highly correlative. A test of binomial expansion determined that students, in all probability, were perceiving and categorizing each other either as "academic helpers" or "friends". Additionally, the data strongly suggested that student perceptions of academic helpfulness were significantly more subject to change than student perceptions of friendship.

Conclusions

Fundamental to this study was the premise that fifth and sixth grade Learning Disabled students can perceive differences among their peers in the areas of academic ability and friendship desirability. Based on the data derived from the sociometric testing, a conclusion may be drawn that students discriminate, to a degree, in their academic and social perceptions of their peers. This ability to discriminate can be critical for those students who otherwise are not recognized nor accepted by their peers. Utilizing group-based tasks, it is possible to provide these students with an opportunity for academic recognition, not only in the LD classroom, but also in the regular class environment.

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General Introduction

The purpose of this project is to examine the relationships and perceptions of a group of Learning Disabled (LD) students relative to their classroom peers in terms of social acceptance (friendship) and academic ability (tutorial helpfulness). The project evaluates peer perceptions towards one student in particular, in the context of a selected sample of individual students, and in the more general perspective of group tendencies and trends.

The impetus for the project derives from limited information gathered during the 1986-1987 school year pertaining to Bobby, an emotionally disturbed student placed in a Learning Disabled/Special Day Class (LD/SDC) of fifth and sixth grade students at Twinhill Elementary School, Riverside, California. Bobby, who was aggressive and erratically violent towards peers, immediately and profoundly alienated his classmates by his virulent behavior. Simultaneously, school authorities began the process of evaluating Bobby in terms of a more restrictive educational placement. As part of this evaluative process, sociometric measures were introduced into the classroom environment in order to gain a measure of peer response to

and any changes in perception of the new, aggressive student. Sociometric data was obtained near the original date of Bobby's entrance into the LD/SDC and again proximate to the time of his exit from the class. The data indicated that the student was unpopular with his peers (not accepted as a friend) both at the origination date and ending date of his tenure in the class. Also evaluated sociometrically was Bobby's perceived ability to be academically helpful to his fellow students. The initial and final sociometric tests describing Bobby's academic helpfulness were in distinct contrast. Initially, Bobby was perceived as incapable of providing any academic assistance to his peers. Subsequently, recognizing the existence of significant academic abilities, his peers evaluated Bobby as one of those most capable of providing academic help.

The following school year (1987-1988) a similar situation evolved with a student who exhibited many of the same class-disturbing characteristics as Bobby had the previous year. Jimmy, although considerably less infused with violence, proved quickly adept at irritating, enraging, and finally alienating most of his fifth and sixth grade classroom peers. Jimmy's style was more subtle and peripheral than that of Bobby, but the general direction of peer disavowal was unmistakeable. Jimmy possessed significant academic ability, often times latent, but

nevertheless responsive to certain group interactive situations. A decision was made to evaluate the class' perception of Jimmy, both socially and academically, through the periodic administration of sociometric testing.

Sociometry, particularly in the past thirty years, has surfaced as a viable analysis tool in psychological, sociological, and educational research. The word sociometry derived from the Latin "socius", meaning companion, and the Greek "metron", meaning a measure, was first used publicly by its founder, J. L. Moreno, in 1916. At the time he was describing work in progress on a sociometrically planned community for a group of 10,000 Austrian war refugees (Evans, 1962). The Horace Mann Institute (1947) describes a sociogram as:

> A chart of the interrelationships within a group. Its purpose is to discover group structure (subgroup organization, friendship patterns, etc.) and the relation of any one person to the group as a whole. Its value to the teacher is in its potentiality for developing greater understanding of group behavior so that he may operate more wisely in group management and curriculum development. (p. 1)

Essentially a sociogram is formulated in order to provide an objective picture of the relationships existing between members of a group and between an individual and the group.

Sociometric testing can be divided into two major categories: (1) specific choice criteria testing; (2) non-specific attitude or survey testing (Bonney & Hampleman, 1962). Given the need for highly specific information detailing interpersonal acceptance and rejection, sociometry, based on a specific choice criteria was utilized in this study.

The intent of the sociometric testing in the LD/SDC at Twinhill School was to provide a periodic (every two weeks) insight into the perceptual configuration of Jimmy in terms of his peers. The information generated can be of useful purpose in three significant areas: (1) the ongoing social relationship between Jimmy and his peers; (2) the more extended process of his classmates distinguishing an "academic" Jimmy from a "social" Jimmy; (3) the possible implication that the process of peer-judgment can be utilized to develop bases of academic strength (and acceptance) for a socially-ostracized student such as Jimmy. In specific conjunction with the sociometric testing, a program of partner and group interactive tasks and projects was implemented. As described later, the tasks and projects were designed to provide highly specific academic and social classroom contact among all students, and thereby insure that Jimmy's academic abilities (as well as his social liabilities) were shared directly with each of his classroom peers.

In addition to focusing on Jimmy, this study also evaluates the perceptions of the students as a group and in terms of selected individual and paired students. Of particular interest are the correlative relationships involving peer perceptions of friendship and academic ability, to what degree, if any, students are able to discriminate in their perceptions of friendship and academic ability, and to what extent either area (friendship or academics) is more changeable in the context of student perception.

II
Review of the Literature

Current and past educational and sociological literature was reviewed to determine trends in and applications of sociometric testing, particularly in the context of the Learning Disabled (LD) student. The Learning Disabled student (Federal Register, 1977) is one who has a specific learning disability defined as follows:

> Specific Learning Disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, or of environmental, cultural, or economic disadvantage. (p. 42478)

Results of the research indicate that sociometry is a utilized and viable tool in assessing both LD and regular

student peer relationships in a social context, but that information regarding peer perceptions of academic ability or helpfulness is relatively sparse.

Sociometric tests are frequently used in researching the function and structure of children's groups. Educational settings are natural for this research and the results are often formulated in the broad bands of social context, such as peer rejection and peer acceptance. Hartup and Glazer (1967) found that social acceptance among preschool children was significantly correlated to the frequency of the accepted child providing positive reinforcement, but not with the frequency of the accepted child giving negative reinforcement. Conversely, this same sociometric study suggested that social rejection was highly correlated to the giving of negative reinforcement, but not correlated to providing positive reinforcement.

Specific sociometric studies of LD children generally evaluate the peer acceptance of the LD child who is mainstreamed into the regular class environment. Sociometric evaluations by Bryan (1974) concluded that the peer popularity (or lack thereof) of the mainstreamed LD child falls in the cognitive realm of the child's learning disability. That is, the lack of peer popularity is another symptom of the general learning disability. Also focusing upon the mainstreamed LD student, Markus (1980) assessed

social achievement in handicapped and regular students utilizing sociograms. The results proved to be integral to the development of optimum seating plans for regular and handicapped classmates in the context of their social perceptions of and needs for each other.

Measuring LD children in the more restrictive environment of special day classes, Anderson (1985) suggested that cooperative learning tasks may be helpful in developing acceptance and cooperation. Sociometric results from the Anderson study indicate that peer acceptance can be gained, in part, through the implementation of cooperative tasks. However, the results are to be tempered by the unknown influence of variables such as student IQ and emotional explosiveness.

Unpopular, low-achieving students in a regular classroom were found to be capable of improving personal peer approval based on sociometric measurements (Lilly, 1971). Integrating low-acceptance students with popular peers in specific projects, produced demonstrably significant gains in peer acceptance for previously low sociometric status students. Nevertheless, a six week sociometric follow-up to the program revealed that the gains did not persevere, and that, in essence, the class had returned to its original perceptions of social-hierarchical status.

Extraneous to the educational setting, many significant sociometric studies have been conducted with

implications bearing on the school environment. Becker (1970), tracing the diffusion paths of two innovative proposals among health departments in three states, concluded that, contrary to popular theory, the innovative, creative person also becomes a central person in the communications network of an environment. In light of Becker's conclusions, one must recognize the possibility that creativity and innovation are core characteristics of those students revealed to be central figures in a sociometric, classroom scheme. Further, Davis (1970), in evaluating a data bank of 742 sociograms from small, diverse groups, re ommends numerical relativity as a component for sociometric measures. He contends that a quantifiable (or numeric) evaluation may be appropriate for measuring the degree of perception (such as liking, disliking, acceptance) to be reflected in sociometric testing results. The implication is clear in terms of educational sociometric testing: ranking tests or order tests may provide statistically adequate information; quantitative tests may be more definitive.

A failure to mention the work of Janet Lerner (1973) would be remiss in this review of the literature. Stressing the need for systems analysis in all aspects of education, Lerner specifically encourages the development of flow diagrams, hierarchical, classification, feedback and correction systems as being appropriate

methodology for the analysis and construct of special education processes.

A summation of the literature would conclude that the sociometric testing being conducted in the classroom setting is focused upon social perception rather than academic-performance perception among peers. Employed for years in a non-educational context, sociometry is now becoming more accepted and thus functional in the educational community. In particular, the field of special education, whose constituency is so affected by the vagaries of peer perception and acceptance, has a unique potential to utilize analytical methodology, as Lerner (1973) promotes, to evaluate the myriad of interactive processes intrinsic to the classroom environment.

III
Procedures/Sequencing

The following section, describing the procedures and sequencing to be utilized in this study, is comprised of: (I) the sociometric test description and scoring procedures; (II) the sociometric testing chronology; (III) the interactive student tasks and projects used in partner and group situations.

I Test Description and Scoring Procedures

The Behavior Rating Profile (BRP) devised by Brown and Hammill (1978) provided the sociometric testing device utilized in evaluating the interpersonal social and academic rankings for the LD/SDC at Twinhill School. The following procedure was used every two weeks in obtaining data from the class of seventeen students:

(1) Students' first names (and some last initials) were listed on the blackboard in a (differing each time) random order.

(2) Students received an index card marked "M" for "Most" on one side and "L" for "Least" on the other.

(3) Students were asked to write on the "M" side of the card the names of three students from the blackboard (excluding themselves) whom they would choose in

answer to the following question:

(3.a) Who, in this class, would you most like to have as your friend?

(4) Students were asked to write on the "L" side of the card the names of three students from the blackboard (excluding themselves) whom they would choose in answer to the following question:

(4.a) Who, in this class, would you least like to have as your friend?

(5) Upon completion of the card on both sides, students were reminded to check their cards to make sure that they had written three names on each side of their card.

(6) Cards were collected from the students.

(7) Steps (2 - 6) listed above were repeated for the following pair of questions:

(7.a) Who, in this class, would most be able to help you if you had a problem with your school work?

Who, in this class, would least be able to help you if you had a problem with your school work?

Procedures for scoring the Behavior Rating Profile on each question are as follows:

(1) Tally the number of acceptances and rejections which each student in the class received on the sociogram.

An acceptance is a name identification in response to a positively stated question (Who, in this class, would you most....?). A rejection is a name identification in response to a negatively stated question (Who, in this class, would you least....?).

(2) Subtract the number of rejections from the number of acceptances for each student. This subtraction score yields a difference score for each student which may be positive, zero, or negative.

(3) List all of the difference scores in order from largest to smallest.

(4) Assign ranks to the difference scores. The largest positive difference score is ranked first and the largest negative difference score is ranked last.

(5) When two or more students have the same difference score, find the average rank and assign it to each student. To find the average, determine the rank positions the tied students would have held, sum these ranks, and divide by the number of students who were in the tied group.

II Sociometric Testing Chronology

Sociometric testing of the LD/SDC at Twinhill School took place over a period of nearly three months. Testing required approximately fifteen minutes, was done in the morning, and occurred at two-week intervals given some

variation and delay for school holidays. Each of the sociometric tests included the two pairs of questions as described in the preceding section. Nine sociometric tests were given to the class. The testing dates were:

10-8-87	12-17-87
10-22-87	1-4-88
11-5-87	1-19-88
11-19-87	2-1-88
12-3-87	

III Sociometric Testing Chronology

Running concurrently with the sociometric testing was a series of 39 partner and group interactive tasks in which all of the students participated. The initial 17 tasks were partner-based and, by number, designed to insure that each student in the seventeen-member class had the opportunity to work with every other classmate in a one-to-one situation. The final 22 tasks were group-based with groups ranging in membership from three to nine depending upon the task. Partner-based tasks were initiated on 10-8-87 and concluded with the task of 11-18-87. Group-based tasks began on 11-23-87 and concluded with the task of 1-29-88.

The partner-based tasks, as previously mentioned, were designed to provide direct one-to-one contact between all students. The seventeen students were assigned

to their partners on a random, rotating basis such that they would not have the same partner twice. The seventeenth and last partner-task was utilized as a catch-all task by which to partner those students who had not been together previously due to absence. The seventeenth task required partnering some students for the second time.

The group-based tasks were also established on a random, rotating basis insuring that all students would work with each other in numerically-balanced, predetermined groups. The size of the group ranged from three to nine students depending upon the type of activity involved. No attempt was made to stabilize the groups in terms of academic ability, sex, ethnicity, or any other variable.

The tasks, both partner and group, were developed in order to provide classroom exposure among classmates. Some of the tasks were highly academic in nature and others were lesser so. Certainly significant components of social interaction were involved in all tasks. Nonetheless, the focus was on designing tasks in which the academic abilities of the students involved might be spotlighted and recognized. The tasks in chronological order follow:

Partner-based Tasks

#1 (10-8-87)

Portable sports equipment and laminated pictures of sports equipment are displayed for the class. Teacher lists names of equipment on the blackboard as the students identify them. Teacher asks for and writes the names of other sports equipment not on display in the classooom. Students, working as partners, compete to see which pair can be the first to correctly alphabetize the list of equipment (Green & Martin, 1984).

#2 (10-12-87) - Follow-up to #1

Teacher randomly calls out one sports-related word at a time, which partner-teams race to locate in a dictionary. After the list of random words is accumulated on the blackboard, partners are asked to alphabetize the list (Green & Martin, 1984).

#3 (10-14-87)

Partners are given a single wordsearch sheet and compete against all other partner teams to find as many words as possible in ten minutes.

#4 (10-16-87)

Both partners look at a variety of small objects (20) on a tray for 30 seconds. The objects are then covered. The partners make a list of at least 15 objects on the tray.

#5 (10-19-87)

Partners design a "Partner Flag" using markers and an 11" x 18" piece of white paper (Green & Martin, 1984).

#6 (10-21-87)

Partners receive a dry cell battery, insulated copper wire, flashlight bulb, and masking tape. Teacher helps students to observe that the dry cell has positive (+) and negative (-) sides. Using the bulb, battery, wire, and tape, partner-teams are to make the bulb light. Discussion follows regarding electrical circuitry.

#7 (10-23-87)

Partners receive uninflated balloon and are asked to help the balloon overcome gravity. Students are given time to experiment. If gravity-defying method is not discovered, concept of static electricity is introduced.

#8 (10-26-87)

Partners write the letters of the alphabet in a column down the left side of their papers (each partner has a paper). Teacher chooses a category (such as sports, fruits, countries) and writes it on the board. Partners are given ten minutes to write a word that relates to the category for each letter of the alphabet. Partners are able to help with each other's sheets. Spelling does not count.

#9 (10-28-87) - Follow-up to #8

Partners are given category list (such as cities, vegetables, TV shows) and a column of alphabet letters (A-M-E-R-I-C-A). The goal is to write down as many words as possible, corresponding to the various categories, which begin with one of the given letters. Spelling does not count.

#10 (10-30-87)

The word "Mathematics" is written by the teacher on the blackboard and partner-teams are asked to find as many words inside "Mathematics" as possible by using the letters in any order and as many times as necessary (words such as "the", "math", "hat", "scheme"). Ten minute time limit. Dictionaries are provided.

#11 (11-2-87)

Partners receive a sheet of paper printed with one large square completely filled in a checkerboard style with smaller squares. Partners are to determine how many possible squares exist (large, small, different combinations of adjoining squares).

#12 (11-4-87)

The following words are put on the blackboard and reviewed with the students:

snow	glide	flat	eagle	chirp
bee	yard	ice	plane	that
moo	popsicle	meow	splat	kite
oink	plate	bat	pepsi	helicopter

Working as partners, each team receives a ditto of the above words. Partners are asked to cross out any words fitting the following categories:

(1) Things that fly

(2) Animal noises

(3) Cold things

(4) Things that rhyme with hat

What word is left?

#13 (11-6-87) - Follow-up to #12

Students make up their own category word lists and present them to the class.

#14 (11-11-87)

Partners draw a T-shirt on a large piece of drawing paper (T-shirt model is drawn on the blackboard by the teacher). Working as partners, students design and decorate their T-shirt based upon one of the following ideas:

(1) A sport
(2) A movie
(3) A book
(4) A place to visit

#15 (11-13-87)

Following a class unit on food groups, partners cut and paste from magazines displaying pictures of food. Each team of partners receives a large sheet of butcher paper divided into categories headed by:

Grains/Cereals Meat/Eggs Fruit/Vegetables Dairy Products

#16 (11-16-87)

Partners are to determine the number of and identify the hidden animals in an invisible hidden picture puzzle (Evans, 1977).

#17 (11-18-87)

Working as partners, students formulate as many words as possible using the initial and final letters of given four-letter words. On the blackboard are listed the following combinations:

(1) L _ _ P (leap, loop, etc.)
(2) N _ _ E
(3) P _ _ L
(4) M _ _ T
(5) F _ _ D
(6) B _ _ N
(7) G _ _ N
(8) D _ _ E

Group-based Tasks

#18 (11-23-87)

Each group has a supply of newspapers and masking tape but no scissors. The group decides on a costume to make from the newspaper and then dresses a student, chosen by the group, in the costume (Anderson, 1985).

#19 (11-25-87)

Students are divided into groups of five members. The teacher writes a five-letter word on the blackboard (such as "roses"). Each member of Group I is required to quickly name another word beginning with one of the letters of "roses" in letter-sequence order ("roar, orange, stop, egg, squash"). Groups receive a point for completing the word. A time limit may be necessary for each student's response.

#20 (11-30-87)

Each group has an auction list and 100 chips for purchasing auction items. The list consists of items such

as: "Get five minutes extra recess for a week", "Get all A's on your report card". Each group chooses a bidder, and, as a group, decides which events to bid most of their chips on (Anderson, 1985).

#21 (12-2-87)

Having studied measurement and measuring systems as a class, groups are asked to develop a method and the materials necessary (and feasible!) to measure the area of the school's grass playing field.

#22 (12-4-87) - Follow-up to #21

The same groups from task #21, using the methods previously developed, measure the area of the school's playing field. Groups report to the class their findings.

#23 (12-7-87)

The class is divided into two groups, lined up facing each other. The teacher names a category (such as toys, games, grocery store items) and then names a letter of the alphabet (such as "m"). The leader of Group I identifies a category item beginning with "m". The leader of Group II follows suit, and the leaders alternate until one fails to name an item. The player giving the last correct answer earns a point for his

team. Both contestants go to the end of their lines and the game begins anew with the next two contestants.

#24 (12-9-87)

Each group has a supply of straws and masking tape. The group is to make the highest free-standing tower possible with everyone participating in the construction (Anderson, 1985).

#25 (12-11-87)

Word cards are prepared by the teacher (such as "baseball", "door", "banana"). The class is divided into two teams. The teacher holds a word card so that only members of Team #1 may see it. The first player on Team #2 may ask any player on Team #1 any question to help learn the word identity. The question can be answered only "yes" or "no". The person on the answering team remains standing if the question is answered "yes" and is seated if the answer is "no". The questioning team wins if it guesses the word before all opposing team members are seated. Teams alternate roles.

#26 (12-14-87)

Students are divided into two groups for a Backwards Spelling Bee. Dolch list words (grade levels 1 and 2 are used) and students follow same procedures as normal spelling bee except that words are to be spelled in reverse letter order.

#27 (12-16-87)

Each group is given the following list of ten people in a lifeboat:

scientist	lumberjack
ballerina	musician
policeman	secretary
waitress	librarian
nurse	welder

The lifeboat can safely hold only seven people. Each group is to decide collectively which three people should leave the lifeboat and why.

#28 (12-18-87)

Each group draws a picture of an island in the ocean where 200 people have been shipwrecked. The task for each group is to decide how the island will look 100 years after the shipwreck. The group is responsible for showing what improvements have been made on the island (Anderson, 1985).

#29 (1-4-88)

Students work together in a group for ten minutes teaching each other a set of times facts (8x) using flash-cards. Students then take timed (30 second) tests and the results are tabulated as an aggregate score for the group. Process is immediately repeated using an easier set of times facts (4x).

#30 (1-6-88)

Objects (similar to those in Task #5) are placed on a table. Each group is given 30 seconds to study the objects. A group leaves the room, and while it is gone, one object is removed from the table. The group returns and must identify the removed object. If successful, it is their turn to run the game.

#31 (1-8-88)

All groups choose a spokesperson. They are asked to decide the following question:

Which last longer?

An Ice Cube A Cookie

The teacher stresses that there is no right or wrong answer but that groups must arrive at their answer and the spokesperson must present this answer. Follow-up question

Which is louder?

A Smile A Frown

#32 (1-11-88)

A group of students mimics the actions of a machine while the others try to guess the kind of machine. Students are divided into teams of four and go to separate areas of the room. Each team decides on a machine it will be. Each team member decides on the part of the machine he or she will act out. Teams practice being their chosen machine. Each team takes a turn presenting its machine to the class. Emphasis should be made that all members of a team are to be <u>parts</u> of the same machine (Bereiter & Anderson, 1975).

#33 (1-13-88)

A coded message is put on the blackboard by the teacher. Part of the alpha-numeric code is placed on the blackboard (such as: 1 = a, 2 = b, 3 = c) and groups are asked to complete the code. Upon "breaking" the code and decoding the teacher's message, groups are asked to develop a message of their own using this particular code.

#34 (1-15-88) - Follow-up to #33

Groups share their coded messages from Task #33 with the class for decoding. Groups are asked to develop their own alpha-numeric codes for sending messages.

#35 (1-19-88)

Each group assumes that it has crash-landed a space-ship on the moon 200 miles from the location of the mother ship. Survival depends upon reaching the mother ship. Each group has a list of fifteen items which are to be used for survival and the return journey to the mother ship. Each group is to prioritize the listed items according to importance with number one being the most essential through number fifteen, which is the least essential (Anderson, 1985).

#36 (1-21-88)

Each group is to develop and agree upon a list of ten things that could be done to improve the school. Items on the list must be specific and realistic.

#37 (1-25-88)

Each group is given one badminton birdie, one old tennis shoe, one jump rope, and one shoe box. All groups are provided 20 - 30 minutes to create a sport using only the furnished items. A spokesperson for each group is chosen and describes the rules and procedures of the new sport to the teacher who writes the rules on poster board (Green & Martin, 1984).

#38 (1-27-88) - Follow-up to #37

A person, other than the previously selected spokesperson, teaches the group's sport to another group which plays the sport while the class observes. Each group has an opportunity to attempt at least one sport (Green & Martin, 1984).

#39 (1-29-88)

After having studied the skeletal system as part of a class science unit, groups are given a list of ten bones and their descriptions (such as, "sternum - long, flat breastbone"). Groups are provided with butcher paper, rubber cement, and a variety of pasta, including spaghetti, rigatoni, macaroni, and mostacciolli. Groups are to create a bone structure mosaic by drawing a body outline, using the list of ten bones, and selecting the pasta which most closely resemble the bone structure they are creating (Green & Martin, 1984).

The sociometric test, the Behavior Rating Profile, was administered and scored on a periodic basis during the interval of time when partner- and group-based tasks were taking place. No attempt was made to adjust the size or the composition of the partners or groups based on interim test results. The chronology of the testing and tasks proceeded as described, and the

partners and groups were designated on a pre-selected, random basis insuring one-to-one and group exposure for all class members.

IV
Data

The data for this sociometric study are described in the following sections: (I) individual student graphs depicting the sociometric ranking results by plotting perceptions of friendship ("F") and academic helpfulness ("H") versus test dates (Figures A-1 - A-17, Appendix A); (II) whole sample correlations between "F" and "H" and correlations within the separate categories of "F" and "H" (Tables 1 - 6); (III) graph (Figure 1) and data (Table 7) showing the dispersion of probability in the consistency of discrimination between "F" and "H" for individual students; (IV) data depicting the change or volatility in student perceptions of "F" and "H".

I Student Graphs

The student ranks for the Behavior Rating Scale sociometric test were tabulated. The rank scores for friendship ("F") and academic helpfulness ("H") were plotted in the chronological sequence of the nine tests administered (Figures A-1 - A-17, Appendix A).

II Correlations

The Spearman rank correlation coefficient (r_s) was utilized (Siegel, 1956) in assessing the correlation between student perceptions of friendship and academic helpfulness, and in assessing the correlations within the separate areas of perceived friendship and academic helpfulness.

To compute r_s, a list of N subjects is drawn with corresponding ranks for "X" variable and "Y" variable. Determine the various values of d_i = the difference between the two ranks. Square each d_i and sum all values of d_i^2. Enter this value into the formula:

$$r_s = 1 - \frac{6 \sum_{i=1}^{N} d_i^2}{N^3 - N}$$

As r_s approaches +1.000, a higher correlation exists for the variables tested. For a sample of 17, $r_s = .411$ or greater (significance level $p = .05$) and $r_s = .581$ or greater (significance level $p = .01$), indicate an associated probability for the two variables tested. Tables 1 - 6 reveal a probability of correlation for all variables tested.

Table 1

Correlation between being perceived as a helper "H" on 10-8-87 and being perceived as a friend "F" on 10-8-87.

Student	(d_i)	$(d_i)^2$
Anglish	3.00	9.00
Cathie	1.50	2.25
James	.50	.25
Jim	1.50	2.25
Jimmy	.00	.00
John M.	3.00	9.00
John M^{c}.	.50	.25
Julie	3.50	12.25
Levi	.50	.25
Marty	.50	.25
Michelle	.50	.25
Mike	7.00	49.00
Scott	3.00	9.00
Sean	4.00	16.00
Sophie	.00	.00
Terri	4.50	20.25
Thomas	.50	.25
	Total =	130.50

$r_s = .840$

Table 2

Correlation between being perceived as a helper "H" on 2-1-88 and being perceived as a friend "F" on 2-1-88.

Student	(d_i)	$(d_i)^2$
Anglish	3.00	9.00
Cathie	4.00	16.00
James	3.00	9.00
Jim	.50	.25
Jimmy	5.50	30.25
John M.	4.00	16.00
John Mc.	1.00	1.00
Julie	.50	.25
Levi	1.00	1.00
Marty	5.00	25.00
Michelle	1.50	2.25
Mike	2.00	4.00
Scott	4.50	20.25
Sean	3.00	9.00
Sophie	7.00	49.00
Terri	1.50	2.25
Thomas	1.00	1.00
	Total =	195.50

$r_s = .760$

Table 3

Correlation between being perceived as a friend "F" on 10-8-87 and being perceived as a friend "F" on 2-1-88.

Student	(d_i)	$(d_i)^2$
Anglish	3.00	9.00
Cathie	.00	.00
James	1.50	2.25
Jim	.50	.25
Jimmy	.00	.00
John M.	1.50	2.25
John Mc.	.50	.25
Julie	2.50	6.25
Levi	1.50	2.25
Marty	2.00	4.00
Michelle	1.50	2.25
Mike	2.00	4.00
Scott	1.00	1.00
Sean	1.50	2.25
Sophie	4.00	16.00
Terri	5.50	30.25
Thomas	4.50	20.25
	Total =	102.50

$r_s = .874$

Table 4

Correlation between being perceived as a friend "F" (average score of first four tests) and being perceived as a friend "F" (average score of last four tests).

Student	Aver. (d_i)	$(d_i)^2$
Anglish	.50	.25
Cathie	2.13	4.54
James	.00	.00
Jim	.13	.02
Jimmy	.00	.00
John M.	1.63	2.66
John Mc.	.50	.25
Julie	2.38	5.66
Levi	1.88	3.53
Marty	1.25	1.56
Michelle	2.25	5.06
Mike	1.88	3.53
Scott	.63	.40
Sean	3.63	13.18
Sophie	.63	.40
Terri	2.13	4.54
Thomas	2.75	7.56
		Total = 53.14

$r_s = .935$

Table 5

Correlation between being perceived as a helper "H" on 10-8-87 and being perceived as a helper "H" on 2-1-88.

Student	(d_i)	$(d_i)^2$
Anglish	3.00	9.00
Cathie	2.50	6.25
James	1.50	2.25
Jim	.50	.25
Jimmy	5.50	30.25
John M.	8.50	72.25
John Mc.	1.00	1.00
Julie	.50	.25
Levi	.00	.00
Marty	2.50	6.25
Michelle	.50	.25
Mike	7.00	49.00
Scott	.50	.25
Sean	2.50	6.25
Sophie	8.50	72.25
Terri	.50	.25
Thomas	3.00	9.00
	Total =	265.00

$r_s = .675$

Table 6

Correlation between being perceived as a helper "H" (average score of first four tests) and being perceived as a helper "H" (average score of last four tests).

Student	Aver. (d_i)	$(d_i)^2$
Anglish	1.38	1.90
Cathie	4.25	18.06
James	.50	.25
Jim	3.38	11.42
Jimmy	3.50	12.25
John M.	2.63	6.92
John M^{c}.	.63	.40
Julie	4.00	16.00
Levi	.13	.02
Marty	.63	.40
Michelle	3.50	12.25
Mike	1.25	1.56
Scott	1.13	1.28
Sean	.75	.56
Sophie	5.50	30.25
Terri	.50	.25
Thomas	2.50	6.25
	Total =	120.02

$r_s = .853$

III Dispersion Probability

Using the probabilities inherent for an unbiased sample of 17 students making nine yes-no type decisions, a plotted curve was depicted showing the normal dispersion of the students in making those decisions (Figure 1). Had a coin been flipped nine times by 17 different students, the probability (p) of dispersion of the ratios (heads to tails) would normally be as follows:

9 Heads to 0 Tails,	p = .0019	x 17 = .03 students
8 Heads to 1 Tail,	p = .0176	x 17 = .30 students
7 Heads to 2 Tails,	p = .0702	x 17 = 1.19 students
6 Heads to 3 Tails,	p = .1638	x 17 = 2.78 students
5 Heads to 4 Tails,	p = .2457	x 17 = 4.18 students
4 Heads to 5 Tails,	p = .2457	x 17 = 4.18 students
3 Heads to 6 Tails,	p = .1638	x 17 = 2.78 students
2 Heads to 7 Tails,	p = .0702	x 17 = 1.19 students
1 Head to 8 Tails,	p = .0176	x 17 = .30 students
0 Heads to 9 Tails,	p = .0019	x 17 = .03 students

In this particular study about student perceptions, if students were not distinguishing between friendship and academic helpfulness, their collective peer rankings would show the normal random distribution to be expected from flipping a coin. There would not be a tendency toward repeatedly ranking any one specific student higher

in one variable ("F" or "H") as opposed to the other variable ("F" or "H"). Each student was evaluated for each test date in terms of whether his "F" or "H" was ranked higher on that particular date. For example, Mike's graph (Figure A-12, Appendix A) shows that on 10-8-87, his "F" = 5.0 and his "H" = 12.0. His "F" therefore ranked higher on 10-8-87, and in examining the remaining test dates, one finds that Mike's "F" ranked higher on six of the nine. His peers had a tendency to rank Mike higher as a friend than as a helper. The other 16 students' rankings were evaluated (Table 7) along with Mike's, yielding ratio-rankings distributed as follows:

9 "F" to 0 "H" =	0 students
8 "F" to 1 "H" =	1 student
7 "F" to 2 "H" =	1 student
6 "F" to 3 "H" =	5 students
5 "F" to 4 "H" =	2 students
4 "F" to 5 "H" =	2 students
3 "F" to 6 "H" =	3 students
2 "F" to 7 "H" =	3 students
1 "F" to 8 "H" =	0 students
0 "F" to 9 "H" =	0 students

The graph (Figure 1) shows the tendency of the students to discriminate in their perceptions of their individual peers

(between "F" and "H") in contrast to what might be expected from a normal dispersion such as flipping a coin.

A test of binomial expansion (Siegel, 1956) was given to determine the probability of just 4 students out of 17 having ratios of 5 - 4 or 4 - 5. Where N = number in sample, x = probability of objects in one category, P = proportion of cases expected in one category, Q = 1 - P = proportion of cases in other category, the probability of 4 or less students out of 17 having ratios of either 5 - 4 or 4 - 5 is

$$p(x) = \binom{N}{X} P^{x} Q^{N-x}$$

$$p(x) = \binom{17}{4} (.49)^{4} (.51)^{13}$$

$$p(x) = .0219$$

for a one-tailed test and .0438 for a two-tailed test.

Figure 1

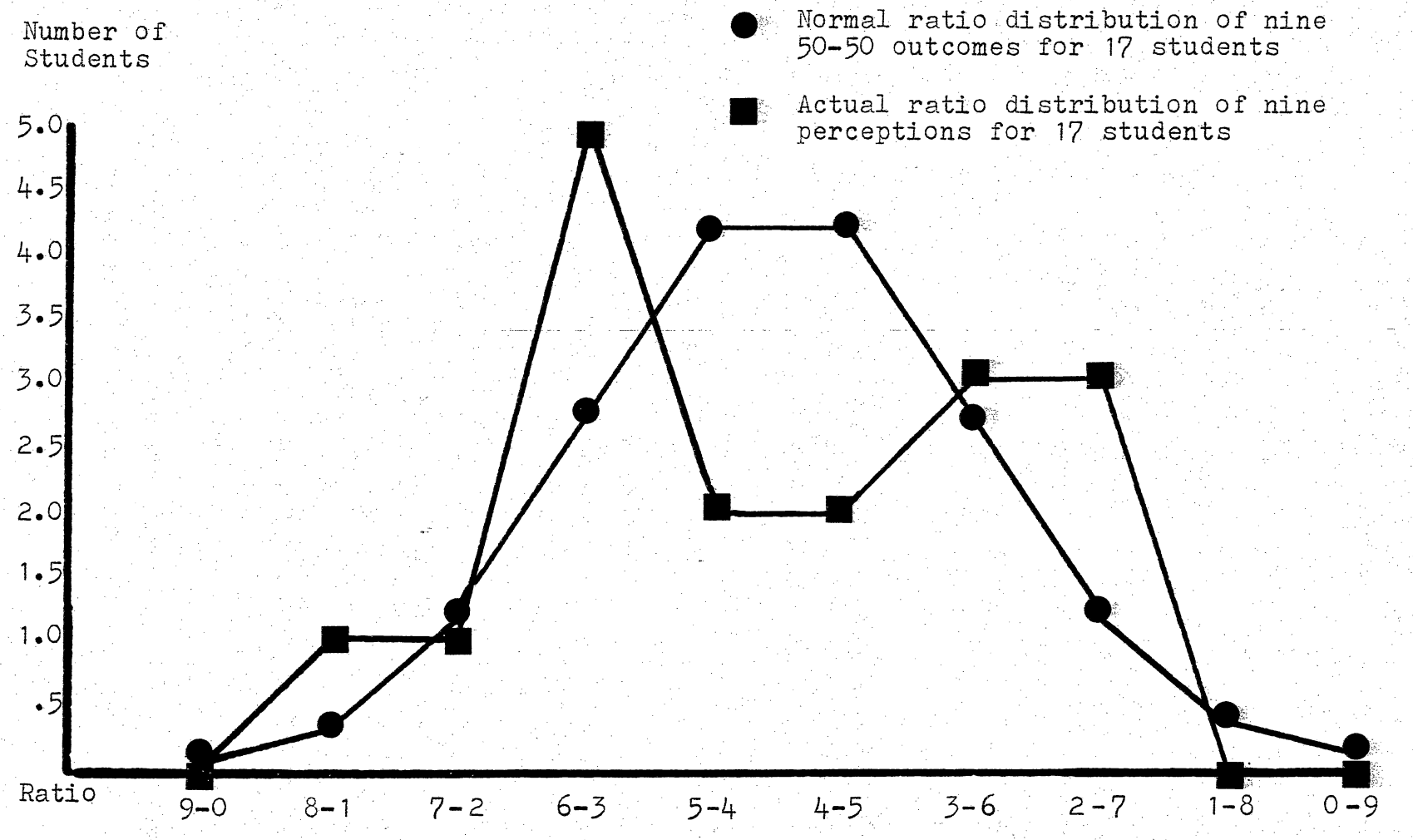

Number of Students
Normal ratio distribution of nine 50-50 outcomes for 17 students
Actual ratio distribution of nine perceptions for 17 students
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
Ratio
9-0
8-1
7-2
6-3
5-4
4-5
3-6
2-7
1-8
0-9

Table 7

Data shows number of times individual student ranked higher as a friend "F" or as a helper "H" on a given test. Total tests = 9.

Student	"F"	"H"	Tie
Anglish	7	2	0
Cathie	6	2	1*
James*	4	3	2*
Jim	6	3	0
Jimmy	6	1	2*
John M.	6	2	1*
John Mc.	6	2	1*
Julie	6	3	0
Levi	7	1	1*
Marty	7	2	0
Michelle	5	4	0
Mike	6	3	0
Scott	7	2	0
Sean	5	4	0
Sophie*	3	3	3*
Terri	6	3	0
Thomas	8	1	0

* For purposes of evaluation, ties were discarded and students assigned a ratio by the total number of "F" (i.e. Jimmy's 6 - 2 - 1 ratio became a 6 - 3). Both Sophie and James were described as 5 - 4 ratios.

IV Volatility in Student Perceptions

The change in rank for each student's "F" (friendship) and "H" (helper) was examined in terms of magnitude of change from test date to test date. A student's rank change for "F" was compared to that same student's change for "H" in determining which class perception ("F" or "H") was subject to more change. For example, Anglish's "F" on 10-8-87 = 5.0 and his "H" = 8.0. On the test date of 10-8-87, Anglish's "F" = 3.0 and his "H" = 5.0. Between the two test dates, Anglish's "F" changed in rank by 2.0 (5.0 - 3.0) and his "H" changed by 3.0 (8.0 - 5.0). In this instance, Anglish's "H" underwent a larger rank change than his "F". Rank changes were likewise compared for all 17 students, disregarding ties and measuring only magnitude, not direction, of rank change. Of the 118 cases demonstrating a larger magnitude of change in comparative rank, 69 of those cases were in the "H" category and 49 cases were in the "F" category.

The sign test was applied to the 69 "H" (designated as "+" for the sign test) and the 49 "F" (designated as "-"). Where the value of z yields a probability in the normal distribution, where x = number of "+" responses, where N = number in sample, the value of z is given by

$$z = \frac{(x \pm .5) - \frac{1}{2}N}{\frac{1}{2}\sqrt{N}}$$

$$z = \frac{(69 - .5) - \frac{1}{2}(118)}{\frac{1}{2}\sqrt{118}}$$

$$z = 1.76$$

The probability of $z = 1.76 = p(z) = .0392$ for a one-tailed test.

A summary of the preceding four data sections discloses that the friendship component "F" was highly correlative to the academic helpfulness component "H", both in the initial ($r_s = .840$) and final ($r_s = .760$) correlations done in the study. For "F" there was a continuity of correlation in that for initial "F" and final "F", $r_s = .874$. To a lesser degree, initial "H" remained correlative to final "H" ($r_s = .675$). The test of binomial expansion, which described the probability of how distinctly the students perceived each other as either "F" or "H", indicated that the likelihood of this particular sample's perception was $p(x) = .0438$ for a two-tailed test. The students, in all probability, were categorizing each other as either "F" or "H". Utilizing the sign test, 118 cases of student changes in perception were evaluated. Based on a .0392 for p(z), the sign test indicated that the perceptions of the students were not

made randomly, but rather that the changes in the students' perceptions of "H" were subject to more volatility than the changes in the students' perceptions of "F".

V
Conclusions

Fundamental to this sociometric study is the premise that fifth and sixth grade Learning Disabled students can perceive differences among their peers in the areas of academic ability and friendship desirability. The data obtained from the LD/SDC at Twinhill School tends to corroborate the premise of differing student perceptions in the following areas: (1) the peer-perception of Jimmy, who was the original focus of the study, is distinctly different in reference to his academic ability by the study's end; (2) significant patterns and trends, indicative of how students perceive each other, emerge relative to specific individuals and pairs of individuals; (3) within the class structure definite correlations, social-perceptual discriminations, and patterns of change (volatility) in those discriminations appear. Each of these areas of student perception is worthy of further discussion.

The graph (Figure A-5, Appendix A) indicates that the class' perception of Jimmy as a friend ("F") was basically a flat curve with Jimmy at the very bottom of the class (Rank 17.0). In contrast, the class' perception

of Jimmy as someone academically helpful ("H") showed a variation from the bottom rank during the early tests (as high as Rank 14.0 on 10-22-87) and significant variation from the bottom rank in the later testing. Jimmy's final "H" rank on 2-1-88 was 11.5, and this rank had been immediately preceded by the test of 1-19-88 which had ranked Jimmy at his highest point ever, 9.5 on the "H" scale. In terms of percentage change on the "H" scale, Jimmy's rank changed by 32.4% in a more positive direction based on the initial (10-8-87) and final (2-1-88) sociometric tests administered. Conversely, the initial and final tests showed no change (Rank 17.0) in the class' "F" perception of Jimmy.

The process of being recognized academically by his peers had probably already begun for Jimmy by the onset of the study. Initial sociometric results reveal that there were recognitions, however slight, of Jimmy's academic abilities early in the testing. As the testing continued toward completion, a more discernible, graphic line of class recognition for his academic ability developed. The fact that Jimmy was paired and eventually grouped with his peers in academic-based tasks may have contributed to the group's recognition of his academic helpfulness. Certainly the interactive process between Jimmy and his peers in an academic setting was a major component leading to peer recognition of academic ability. The paired- and grouped-

tasks served, in all probability, to heighten the process of recognition and more fully insure its equal distribution among Jimmy's peers.

In examining the pattern of Jimmy's rankings (Figure A-5, Appendix A), the outstanding feature evident is that the class' perception of Jimmy remained constant in respect to desiring him for a friend, but changed significantly in the area of academic helpfulness. A gap developed, which can be plotted graphically, between the "academic" Jimmy and the "social" Jimmy. The class gradually, sometimes erratically, came to recognize Jimmy's academic helpfulness despite his consistently aberrant behavior. However, this same aberrant behavior made rigid the class' perception of Jimmy in terms of friendship. The class did not like Jimmy and remained inflexible in that perception. Nonetheless, that inflexibility did not completely sustain into academic areas wherein initial perceptions gave way to gradual and demonstrable change.

One of the basic findings of this study, not unexpectedly, is that a distinct correlation exists between peer-perceptions of friendship and academics (Tables 1 and 2). Although no evidence manifested itself in terms of Jimmy's "F" rank being correlatively increased in conjunction with an increased "H" rank, further study may show a stronger correlation between the class' higher perceptions of academic ability and resultantly higher perceptions of

social standing. The class' increasing respect for Jimmy's academics may be a precursor of greater social acceptance.

Other individuals and pairs of individuals also displayed unique, visible paths in relation to the class' perception. John M. (Figure A-6, Appendix A) was initially (10-8-87) perceived three ranks higher (Rank 8.0 versus Rank 11.0) for his academic ability in contrast to his desirability as a friend. At the conclusion of the study, while his "F" had dropped only 13.6% to Rank 12.5, John's "H" had fallen by 106.3% to Rank 16.5. According to standardized tests and by teacher observation, John M. is extremely limited in his academic functioning. Based on the accumulated data, his peers increasingly recognized John's academic limitations and consigned him to lower ranks in reference to academic helpfulness. However, the perception of John's academic abilities did not seem to particularly affect the class' estimation of him as a friend. His "F" remained fairly constant, and if affected by his diminished "H", was influenced only marginally.

As the data indicated (Tables 3 - 6) and as will be discussed later, a distinct correlation is present internal to the separate perceptual regions of both friendship and academic helpfulness. A friend at the beginning of the study tends to be a friend at the end of the three-

month study, and, to a lesser degree, academic helpfulness tends to have a high initial and final correlation. Within those correlations, however, exists a constancy of peer discrimination between the two perceptual areas pertaining to each specific student. The graphs of Levi (Figure A-9, Appendix A) and John M^{c}. (Figure A-7, Appendix A) serve to exemplify the peer discrimination. Both students are highly ranked in the categories of academic helpfulness and friendship throughout the entire course of the study. Levi's graph demonstrates that he is consistently perceived to be a better helper than friend. In contrast, John's "F" is consistently higher than his "H". The boys are both, in the context of the class rankings, well-liked and capable of academic helpfulness. However, the class draws distinct lines of perception, and <u>maintains</u> those lines for these two students. There would be a logic to the expectation that either John M^{c}. or Levi would be the higher ranked student in <u>both</u> perceptual areas. The class did not do this. Instead of that, a fine-line distinction was consistently made between the academic helpfulness and friendship of two students, and, by implication, a hierarchy of perception developed for each individual student. In effect, the class was saying (and repeating) that Levi was more valued, if only slightly, as a helper than he was as a friend. Conversely, John M^{c}. was more valued as a friend than a helper.

Similar to the consistency in perception displayed by the class regarding Levi and John Mc. are the graphic perceptions of Scott (Figure A-13, Appendix A), Marty (Figure A-10, Appendix A), Anglish (Figure A-1, Appendix A), and Thomas (Figure A-17, Appendix A). For each of these students, the class, as a whole, maintained a definite perception throughout the duration of this study. In the cases of Thomas and Anglish, their classroom peers consistently perceived them as better friends than academic helpers. Of the nine sociometric tests given, Thomas" "F" rank was higher than his "H" rank eight times and lower only once; Anglish's "F" rank was higher seven times and lower twice. Marty's and Scott's class roles were dissimilar from Thomas' and Anglish's in that they were both perceived as better academic helpers than friends. Both Marty and Scott were ranked higher seven times as helpers and only twice as friends. In all of these cases, Marty, Thomas, Scott, and Anglish, the class chose a definition for a particular student (friend or helper) and maintained that distinction through the test period.

A final relationship to note involving individual data is the relationship between Marty and Michelle. These two students have been inseparable friends during the school year, and are, by teacher observation, the closest pair of friends of any students in the classroom.

Sociometrically, the two girls are perceived by their classmates to be relatively equal in their desirability as friends. However, the class perceived them to be distinctly divergent in their abilities to provide academic help. Whereas Marty's "H" ranked consistently higher than her "F", Michelle's "H" tended to vacillate and ranked lower than Marty's seven out of nine times. The class again made a distinction, over a period of time, between friendship and academic capability.

In reference to whole class or group tendencies, the data has been evaluated in three specific areas: (1) using the Spearman rank correlation coefficient, correlations have been established between beginning and ending friendship and helper rankings, and cross-correlations have been established correlating friendship desirability to academic helpfulness (Tables 1 - 6); (2) the consistency with which the class perceived individual students as either helpers or friends was evaluated utilizing the binomial expansion test (Figure 1 and Table 7); (3) the degree or volatility of change in the students' perceptions was compared in the given areas of friendship and academic helpfulness by an application of the sign test.

There existed a strong correlation between a student being perceived as a friend in this study and the same student being recognized as academically helpful (Table 1). Correlations between initial "F" and initial "H"

rankings (r_S = .840) tended to confirm the high correlation between perceptions of friendship and academic ability. However, another distinction was also made by the class. When beginning rank friendship is correlated with final rank friendship (Table 3), r_S = .874. When the first four "F" tests are averaged for each student and correlated with the final four "F" tests (Table 4), r_S = .935. In some contrast, r_S for "H" (initial and final) = .675, and r_S for "H" (averaging) = .853 (Tables 5 and 6). The perception of friendship desirability remained a highly correlative area throughout the study. The perception of academic helpfulness did not show the same high correlation between beginning and ending dates, as did friendship. While it is evident that there is a distinct correlation between beginning and ending friendship perceptions and likewise between beginning and ending academic helpfulness perceptions, it is also apparent that r_S for academic helpfulness (.675; .853) is not as highly correlative as r_S for friendship (.874; .935). The implication being that perceptions of friendship are more rigid and perceptions of academic capability are more mutable. To a degree, while still highly correlative, the data suggest that a distinction is being made between friendship and academic helpfulness.

The binomial expansion test reveals further evidence that the students drew lines of distinction between the

areas of friendship and academics. All things being equal, it would be expected that any one student would be ranked higher on his particular "F" score than on his "H" score on 50% of his tests and higher on his "H" score than on his "F" score on the other 50%. At the end of nine tests, the probability that a given student would have a 5 - 4 ratio of either higher "F" or higher "H" is .4914 (Siegel, 1956). In other words, .4914 (or nearly 50%) of the time, one could assume that the perceptions of a student's friendship desirability and academic helpfulness would be in a ratio of 5 - 4.

In a given sample of 17 students, 8.35 (.4914 x 17) students could be expected to have ratios of 5 - 4. Instead only four of the 17 students in this study had ratios of 5 - 4. The other 13 students all had ratios exceeding, in either direction, 5 - 4; they were perceived and ranked notably higher either in terms of friendship or academic helpfulness. Students were evaluating each other, not randomly as if flipping a coin, but in distinctly consistent patterns of perception. The binomial test given for the probability that only four out of 17 students would have a 5 - 4 perception ratio, yields a $p(4) = .0438$ for a two-tailed test. Given a significance level of .05, a hypothesis that students are random in their peer-rankings is rejected, at $p(4) = .0438$. Clearly a distinction was made repeatedly between

a particular individual's desirability as a friend and that same individual's capacity for academic helpfulness.

The sign test was applied to the group data in order to determine the relative volatility of student perceptions. The degree of rank change in a student's "F" was compared to the degree of rank change in a student's "H" between two consecutive tests. When all student rank changes were compared between tests for volatility of "H" and "F", there existed 118 comparable changes in value between "H" and "F". Of 118 values, 69 demonstrated a larger "H" change and 49 demonstrated a larger "F" change. Using the sign test, a z of 1.76 was determined yielding a one-tailed probability of .0392. Given a significance level of .05, a hypothesis that students are random in the volatility of their perceptions of friendship and academic helpfulness, is rejected, at $p(69) = .0392$. The sign test measuring the volatility of change in student perceptions suggests that the perceptions of students in terms of academic helpfulness are more subject to change than the perceptions of students' friendship desirability.

In summation, it can be stated that peer-perceptions of friendship and academic helpfulness are highly correlative. Similarly, a high degree of correlation exists between initial and final peer-perceptions of friendship desirability. Correlative, to a lesser degree, are peer-perceptions of academic helpfulness. There appears to be

more flexibility in student perceptions in the area of academics. Jimmy exhibited significant improvement in rank in the area of academic peer-perception, but did not experience a similar increase in the area of friendship. In a similar context, many students' degree of change on the "H" scale exceeded their degree of change on the "F" scale (sign test). Student perceptions of academic ability appear to be more mutable than perceptions of friendship. In a sense the students also revealed some rigidity of perception. Any one student tended to be perceived as either a better friend or a better helper (binomial test). This rigidity of perception, while negative in a stereotypical sense, may also be positive in that it further portrays the students' capacity for discriminating in their perceptions.

The capacity for peer discrimination between areas of friendship and areas of academics may be beneficial in several educational situations. For students like Jimmy, who so desperately need success in some venue, peer recognition in academic areas may be part of the process in achieving that success. Certainly Jimmy's chances for developing a basis for self-esteem are limited in the social (or friendship) context of peer recognition. Not only is Jimmy disliked by his peers, his persona seems to thrive on that dislike and to heighten its intensity when given the chance. However, in the context of academic

recognition, Jimmy's aversion to social recognition was largely nullified. His academic instincts, often in the group situations, generally superseded any of his social liabilities. He was usually interested in achieving the "right" answer or designing the right "plans" for the group, rather than exhibiting any disruptive or self-destructive behaviors. Thus, Jimmy's peers came to recognize an academic contour to Jimmy that had initially gone unrecognized. What, if any, effect this peer recognition had on Jimmy is difficult to assess. Without question, based on the results of the sociometric testing, he did not gain in popularity with his peers. However, in observing him, it became apparent that he derived satisfaction in being able to display his academic talents. His success, in academic areas, became important, not only because he was succeeding, but also because his peers were recognizing his success. The peer recognition of Jimmy's success cannot be minimized. It can lead in many directions, including the generation of self-esteem, and ultimately may manifest itself full-circle in the form of increased social recognition and acceptance by classroom peers.

Learning Disabled students were the subject of this sociometric study, and whether or not their disability had any effect on the texture or results of the study, is not readily discernible. It is encouraging that the

participating LD students demonstrated a capability to discriminate in their peer-perceptions and to recognize that a fellow student, such as Jimmy, may have more to offer academically than in terms of friendship. Peer recognition, in the educational setting, is a viable commodity whether it evolves through academics, the processes of friendship, or any other school-related activity. In the case of this particular class, academic peer recognition, derived in significant part from the partner- and group-based tasks, expressed itself in the sense of a classroom which was less divisive. Some of the barriers created between students socially were discarded, at least temporarily, through the shared process of academics. Academic recognition came to those students who frequently went unrecognized socially. The general tone of the classroom improved perceptively, and it appeared to reflect a better basic understanding (often respect) among peers. In the world of a Learning Disabled student in a special day class, where the at-large school environment is often synonymous with ostracization, it is especially critical that the LD student's classroom be a place of peer acceptance. If the LD/SDC is to be a sanctuary providing hope and respite for its students, as it must to some certain degree, it is important that peer recognition for academic ability be specifically promoted and underscored through the utilization of specific partner- and group-

based tasks. The shared learning experiences at the Twinhill LD/SDC were genuinely positive, not only in terms of Jimmy, but also in relation to the academic integration of the class as a whole. The class became cohesive, and the rough edges of being a learning disabled student were somewhat mollified by increased peer respect and understanding.

Finally, peer recognition, in specifically academic areas, should have a corollary in the delicate process of mainstreaming the LD child into a regular classroom. Basic to the process of effective mainstreaming is the successful integration of the LD student in both social and academic areas. If, as this study suggests, there exist related, but separate, peer-perceptual hierarchies for academic and social acceptance, it is important that both areas of recognition be explored for the mainstreamed child. In fact, social acceptance in the regular classroom, for some LD children, may be an eventual derivative of academic recognition and acceptance. Until the child "fits" into a regular classroom, peer acceptance is withheld, and the first, lasting "fit" may come in an academic mode.

The typical LD child, entering a mainstreaming situation in a regular class, seldom achieves instant academic success in his new environment. Academic survival is paramount, frequently teacher focus is strictly on that

very survival, and often the prevailing educational vision becomes myopic to the point of excluding critical forms of peer recognition. It is not essential that the mainstreamed child achieve academic success on his own in order to be accorded much needed academic peer recognition. Peer recognition can more logically be generated by the LD student's successful participation in partner- and group-based learning activities. Success does not need to be a direct function of the LD child, but merely a component of the group-based process as a whole. The LD child does not need to know the correct answer, but he must be recognized as among those who actively pursued it. The process of academic group interaction, even in a regular class, can serve dual purposes. It provides the LD mainstreamed student with a better chance for academic recognition which may translate into social recognition. It can also establish a basis for academic recognition among both regular and learning disabled students, and thus lay a foundation for a more cohesive and accepting educational environment.

This particular sociometric study provides statistical indications that students discriminate, to a degree, in their academic and social perceptions of their peers. This ability to discriminate can be critical for those students who otherwise are not recognized nor accepted by their peers. Utilizing group-based tasks, it is possible to

provide these students with an opportunity for academic recognition, not only in the LD classroom, but also in the regular class environment.

Figure A-1, Appendix A

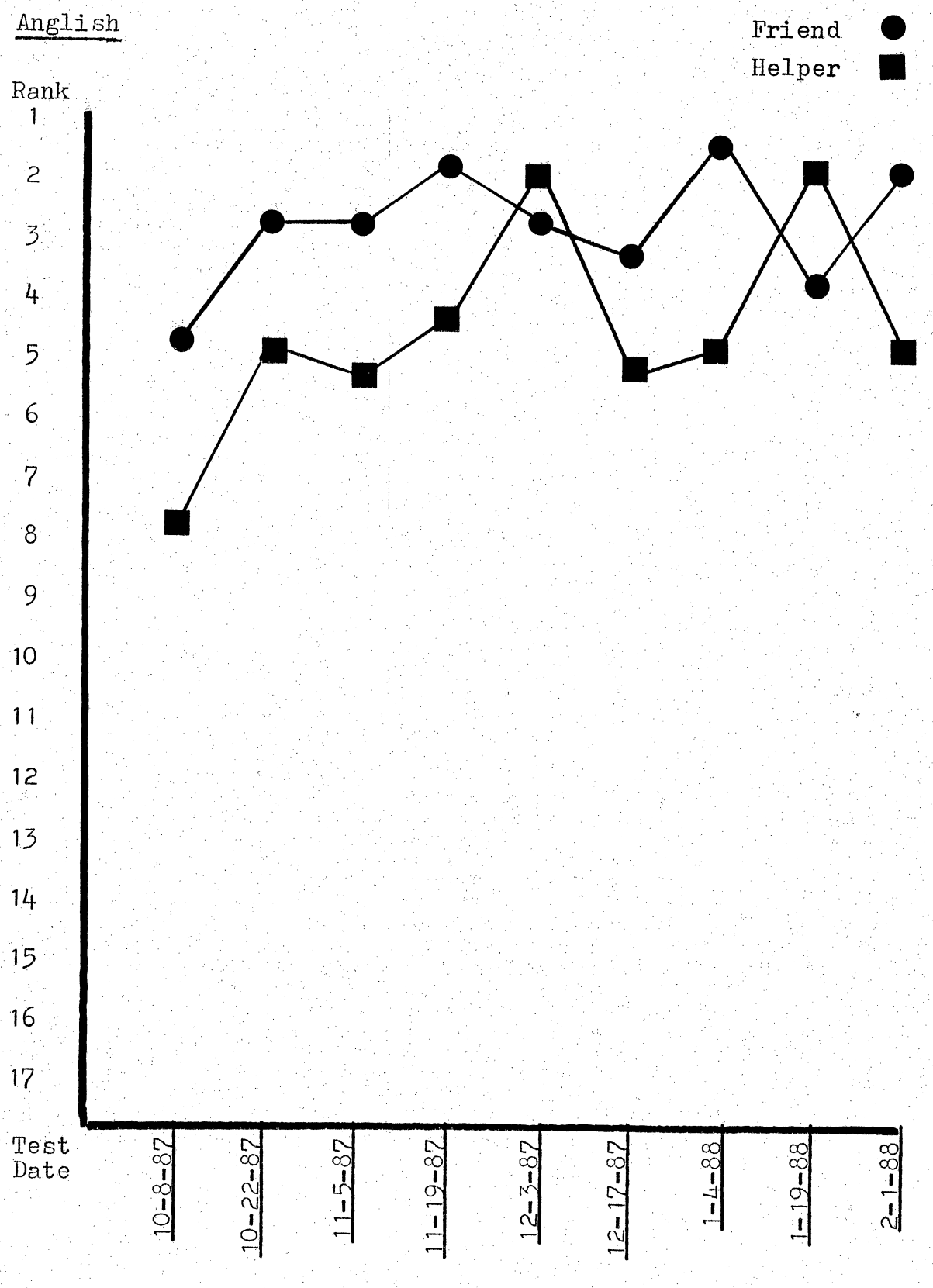


Figure A-2, Appendix A

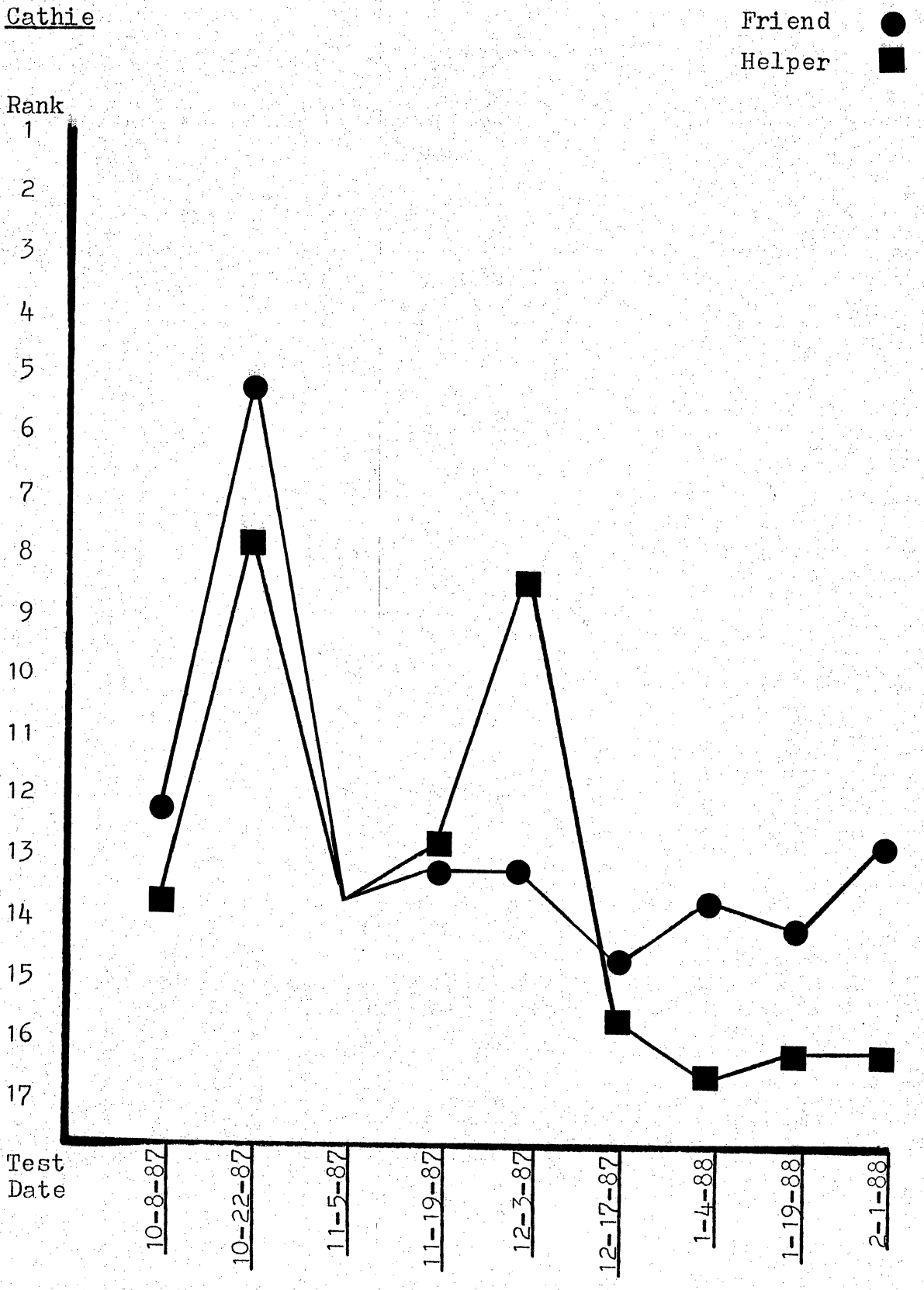


Figure A-3, Appendix A

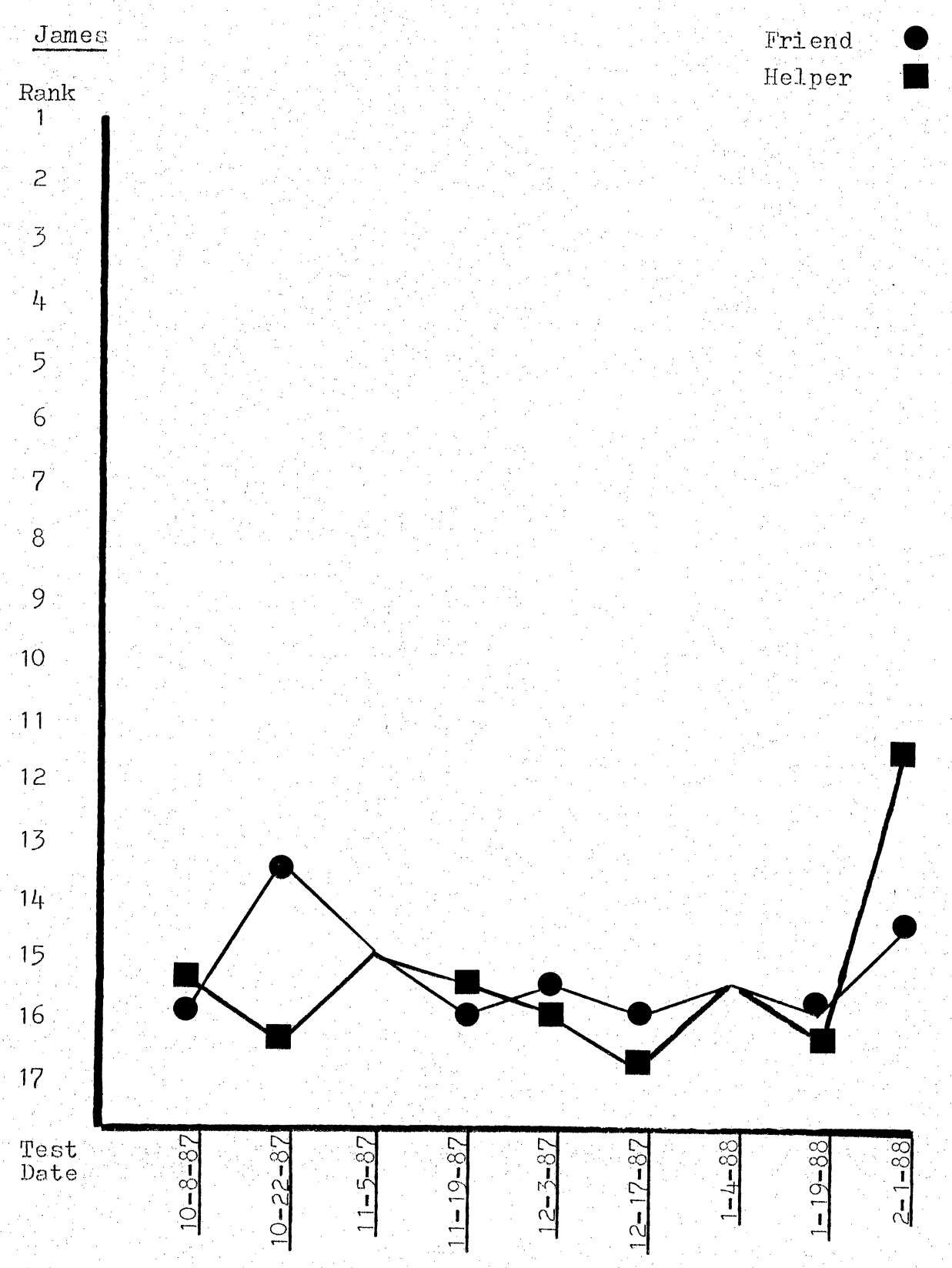


Figure A-4. Appendix A

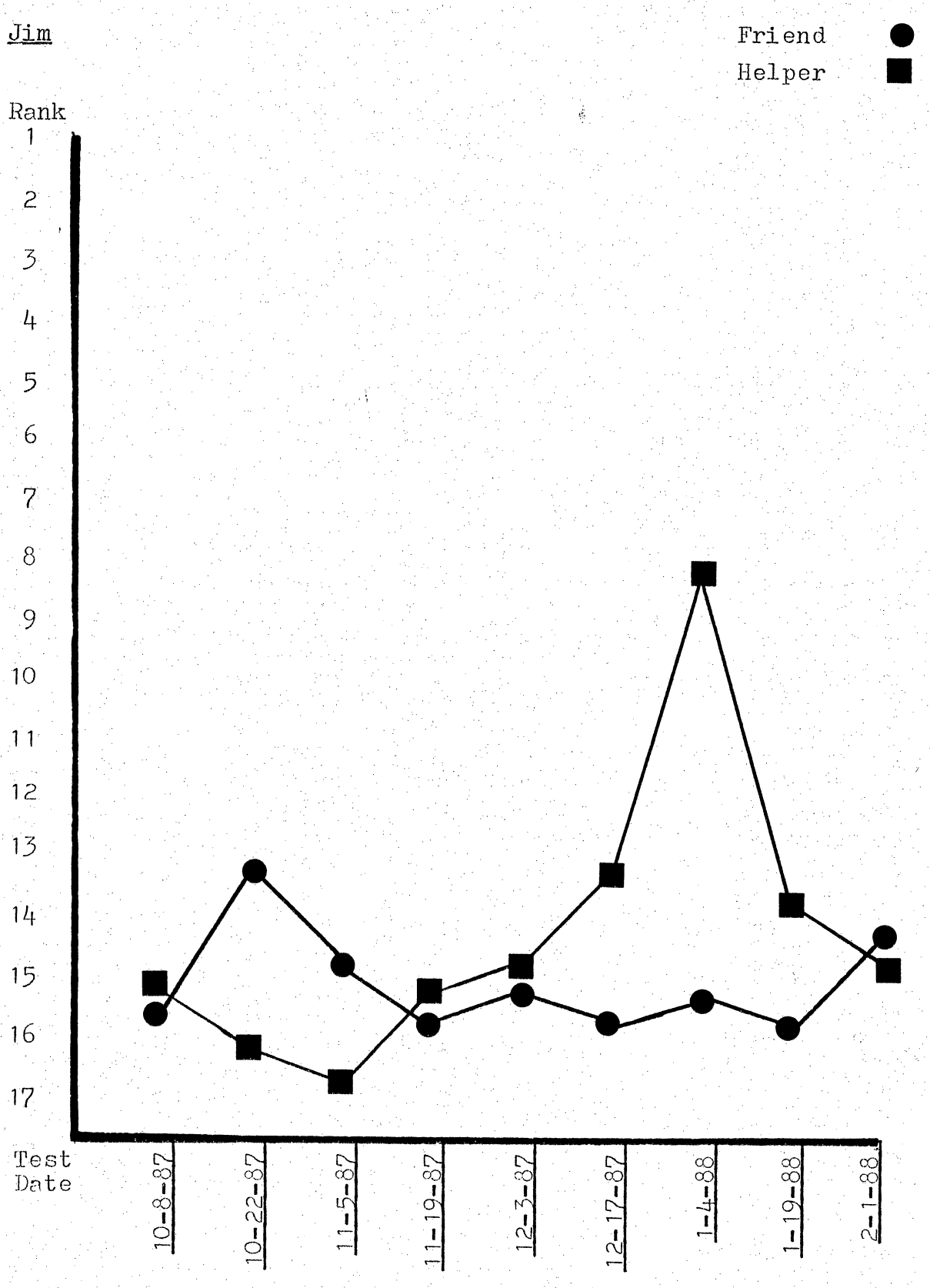


Figure A-5, Appendix A

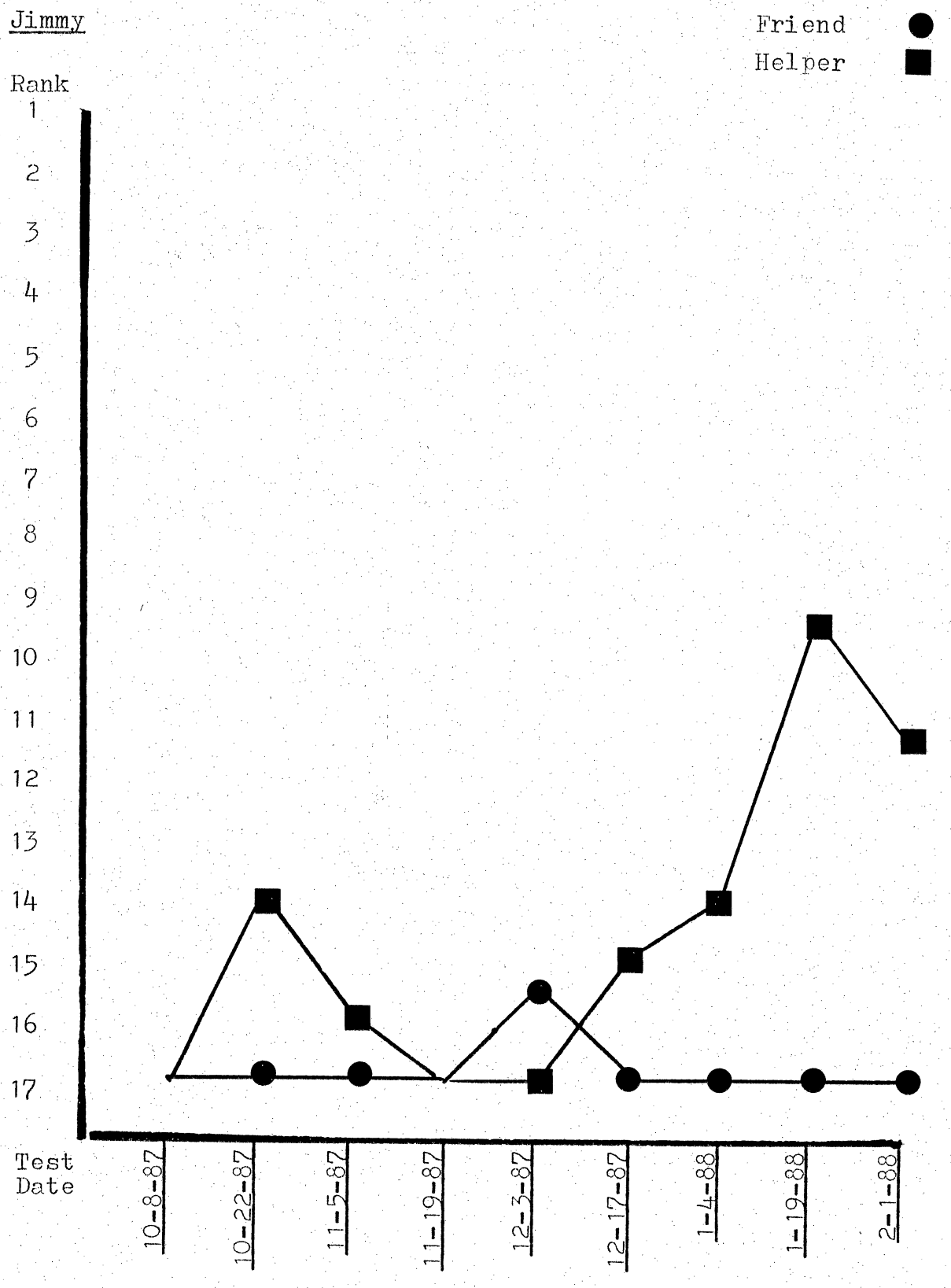


Figure A-6, Appendix A

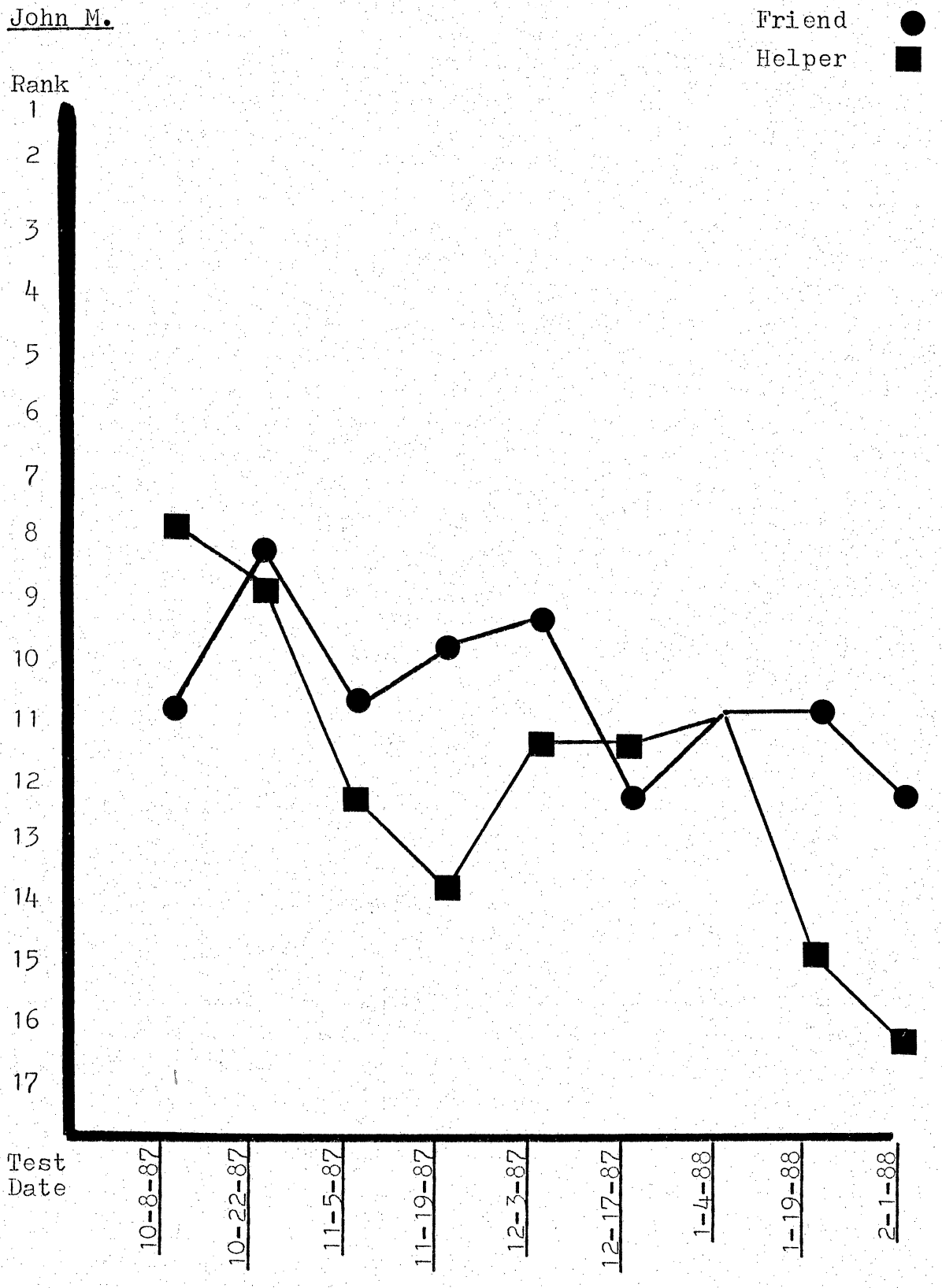


Figure A-7, Appendix A

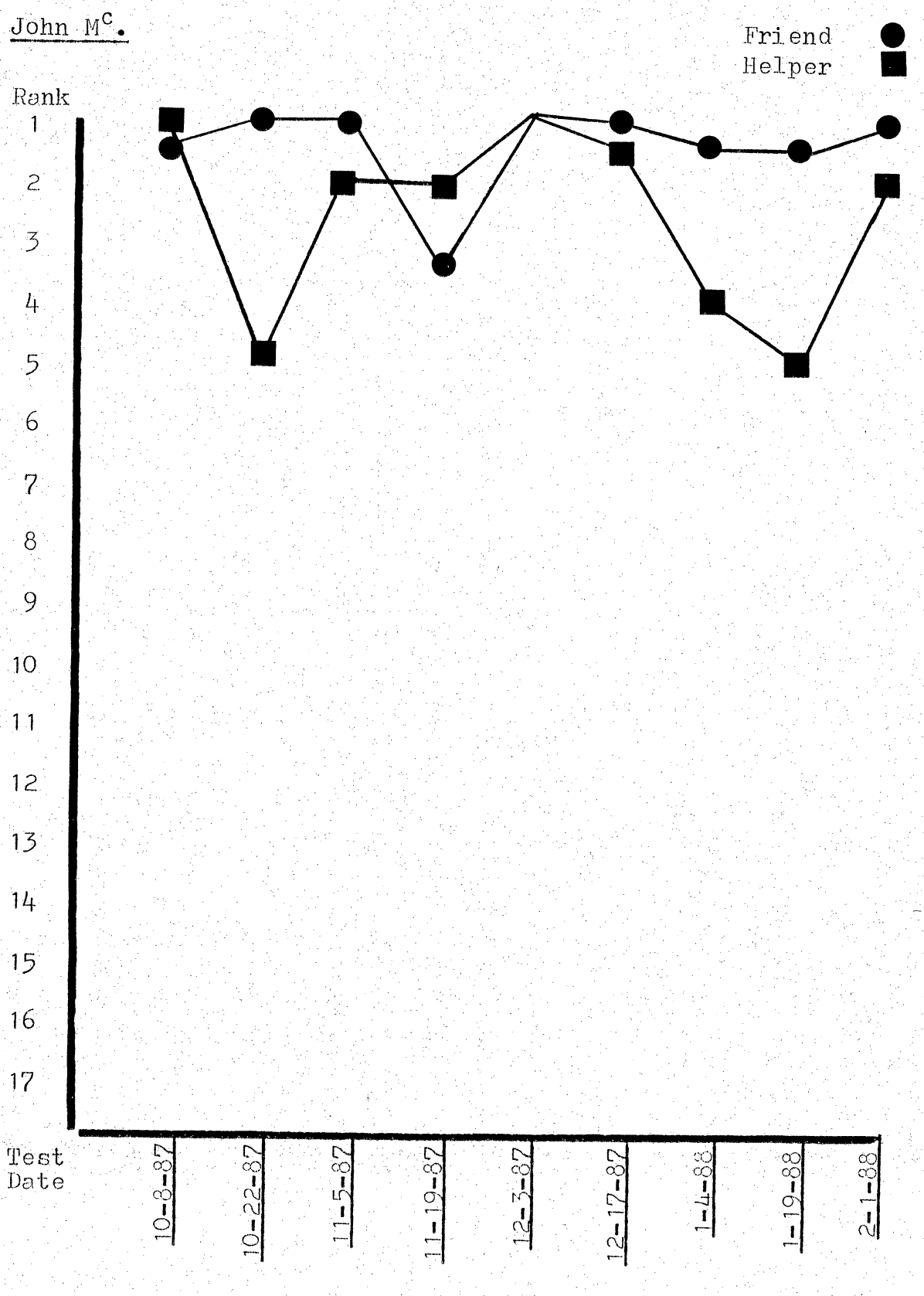


Figure A-8, Appendix A

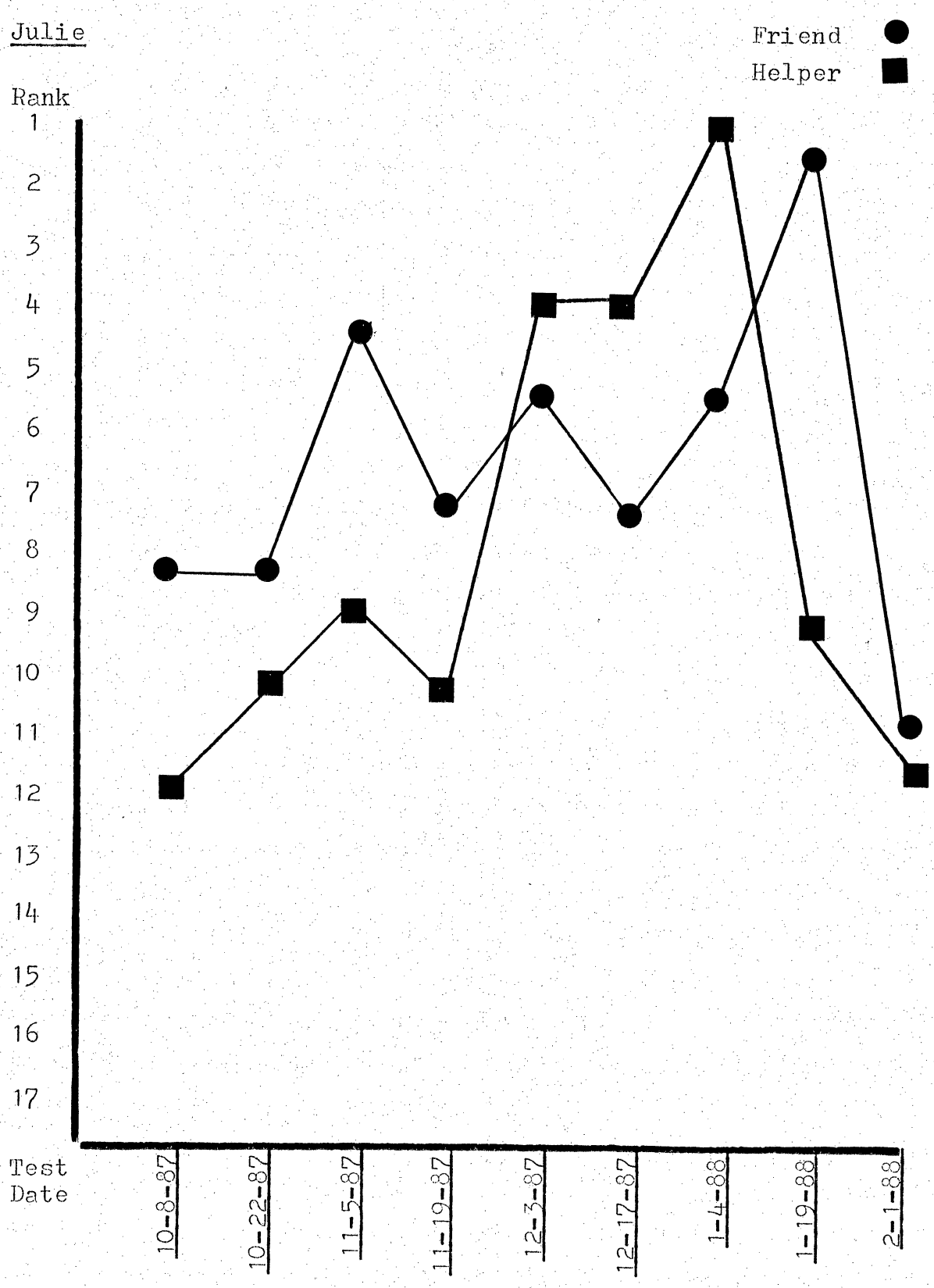


Figure A-9, Appendix A

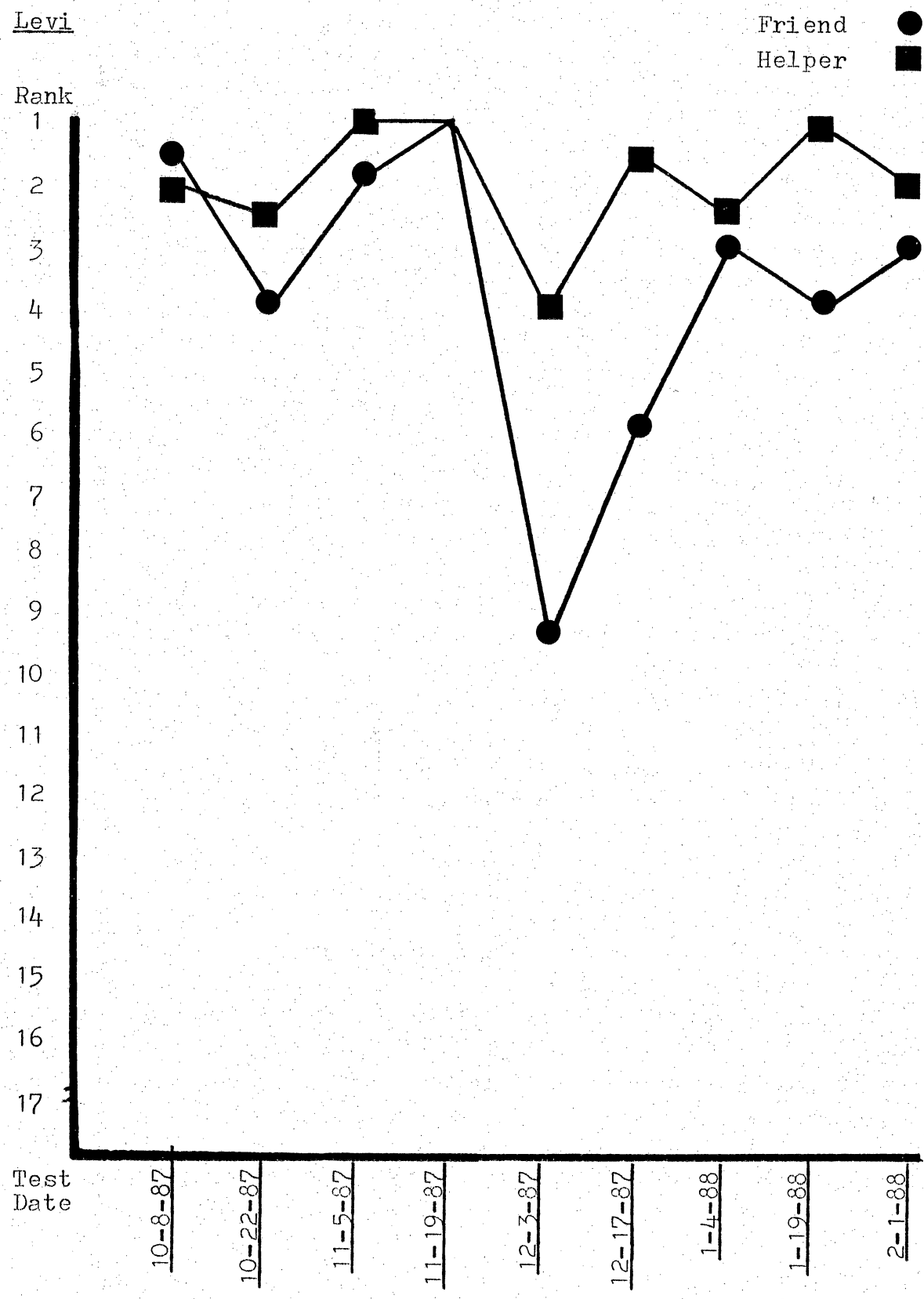


Figure A-10, Appendix A

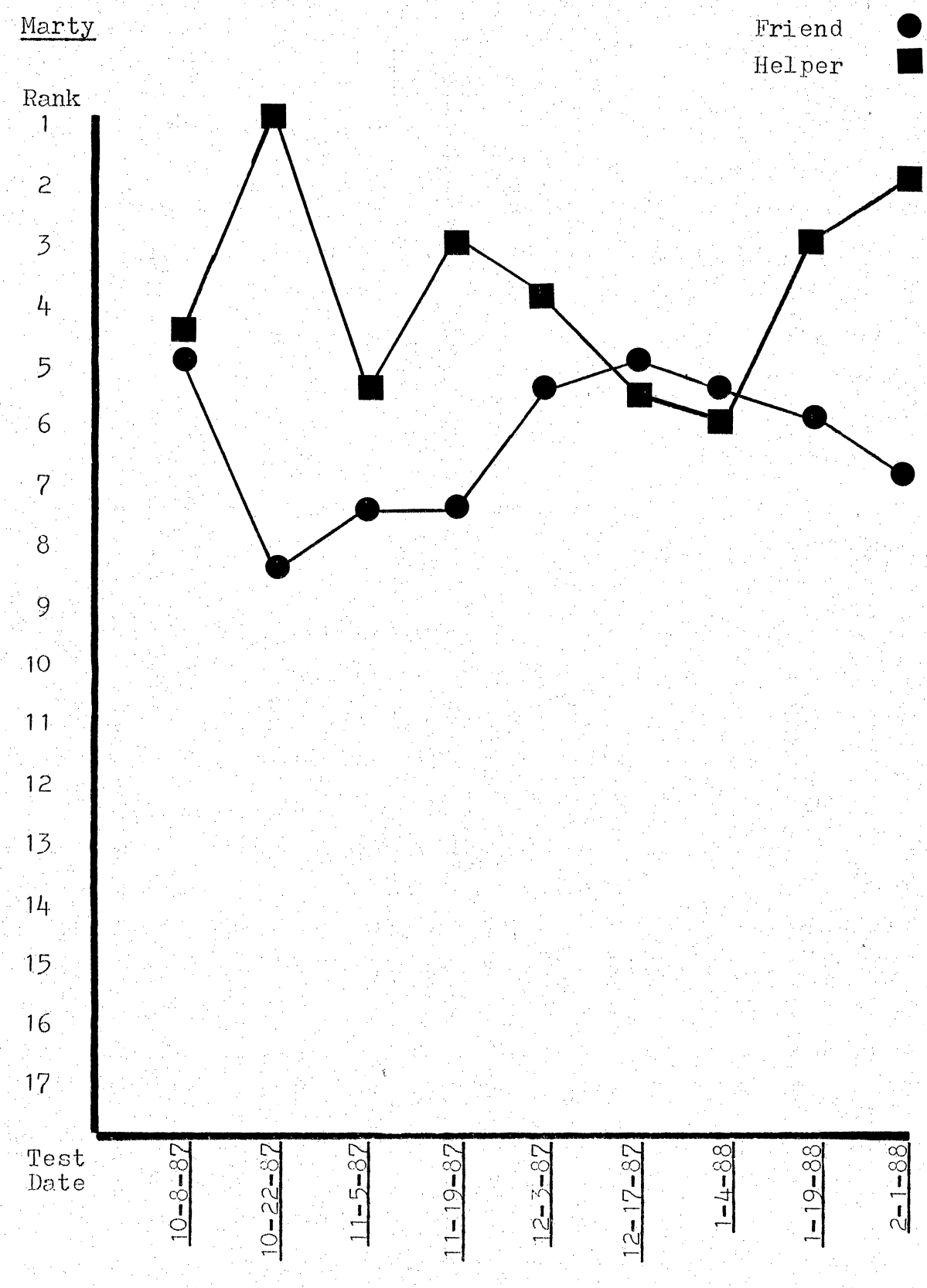


Figure A-11, Appendix A

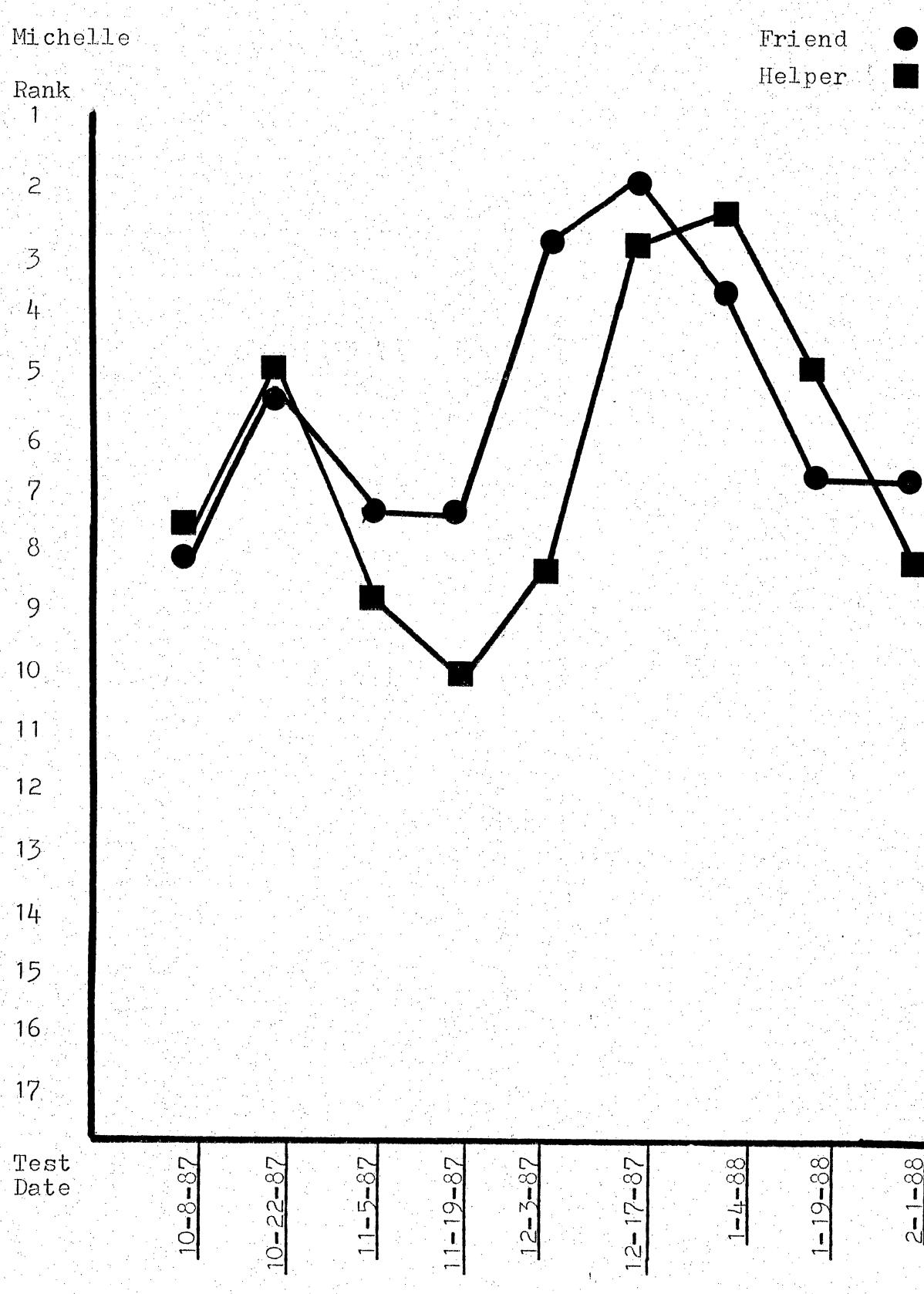


Figure A-12, Appendix A

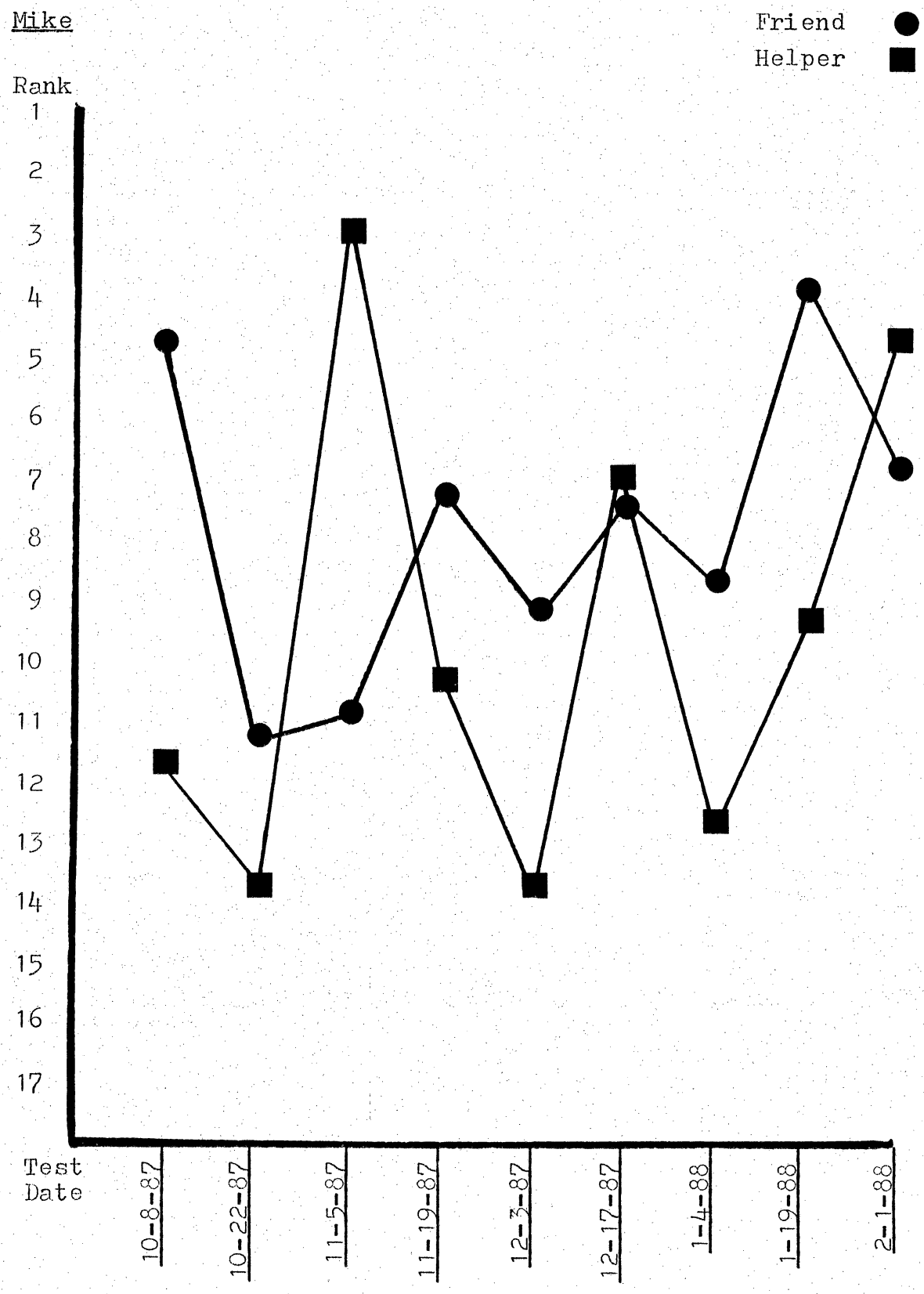


Figure A-13. Appendix A

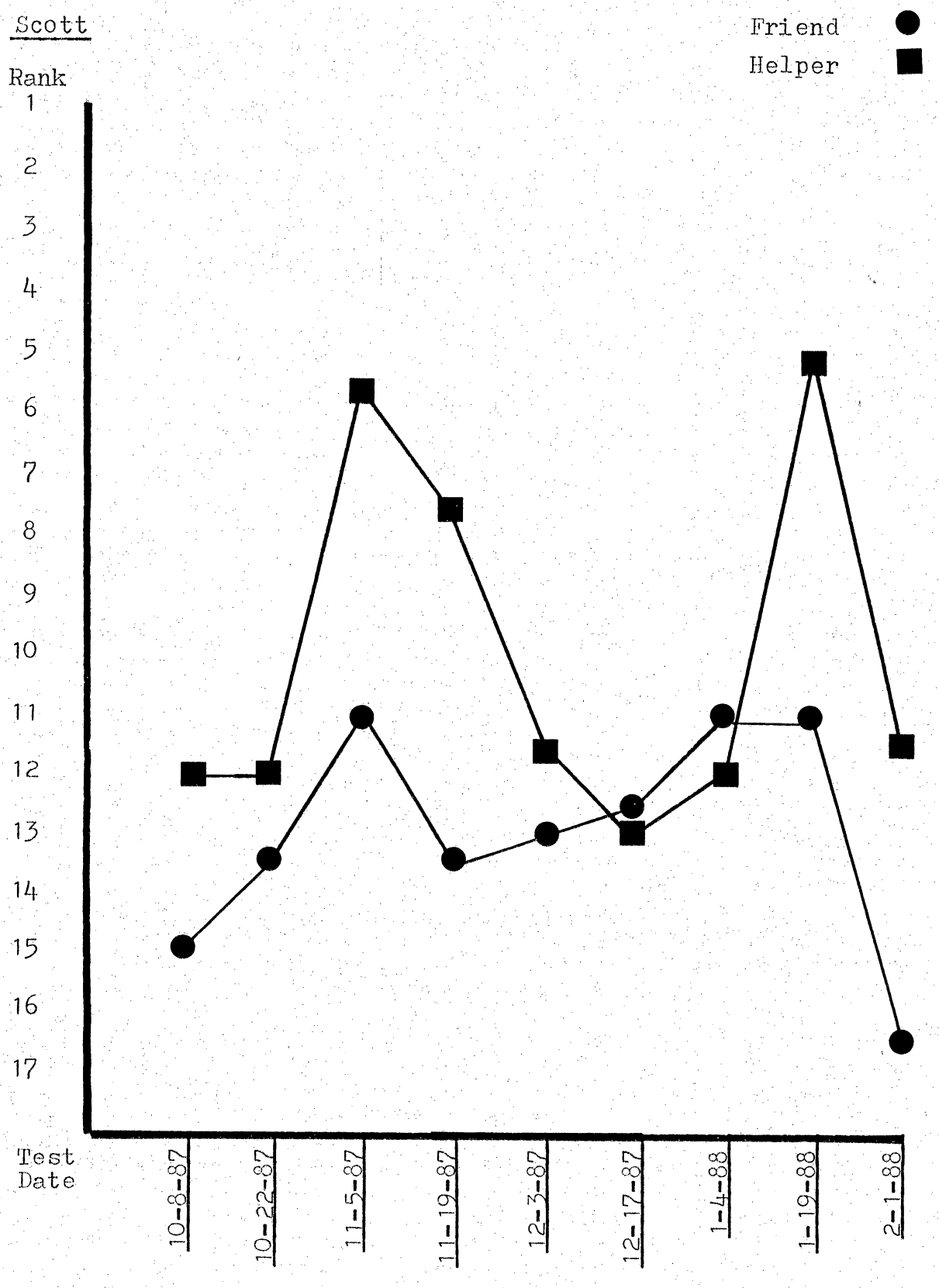


Figure A-14, Appendix A

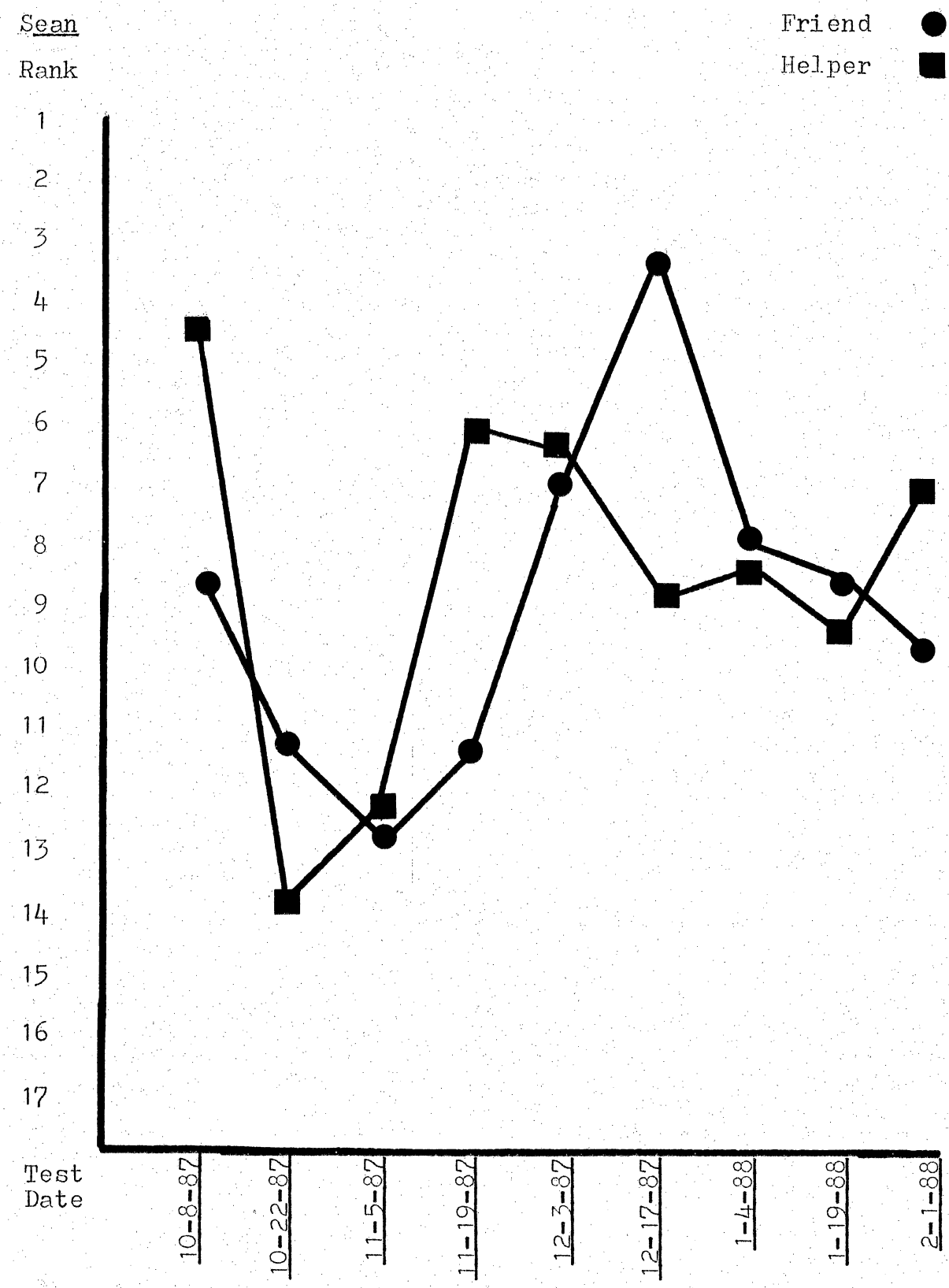


Figure A-15, Appendix A

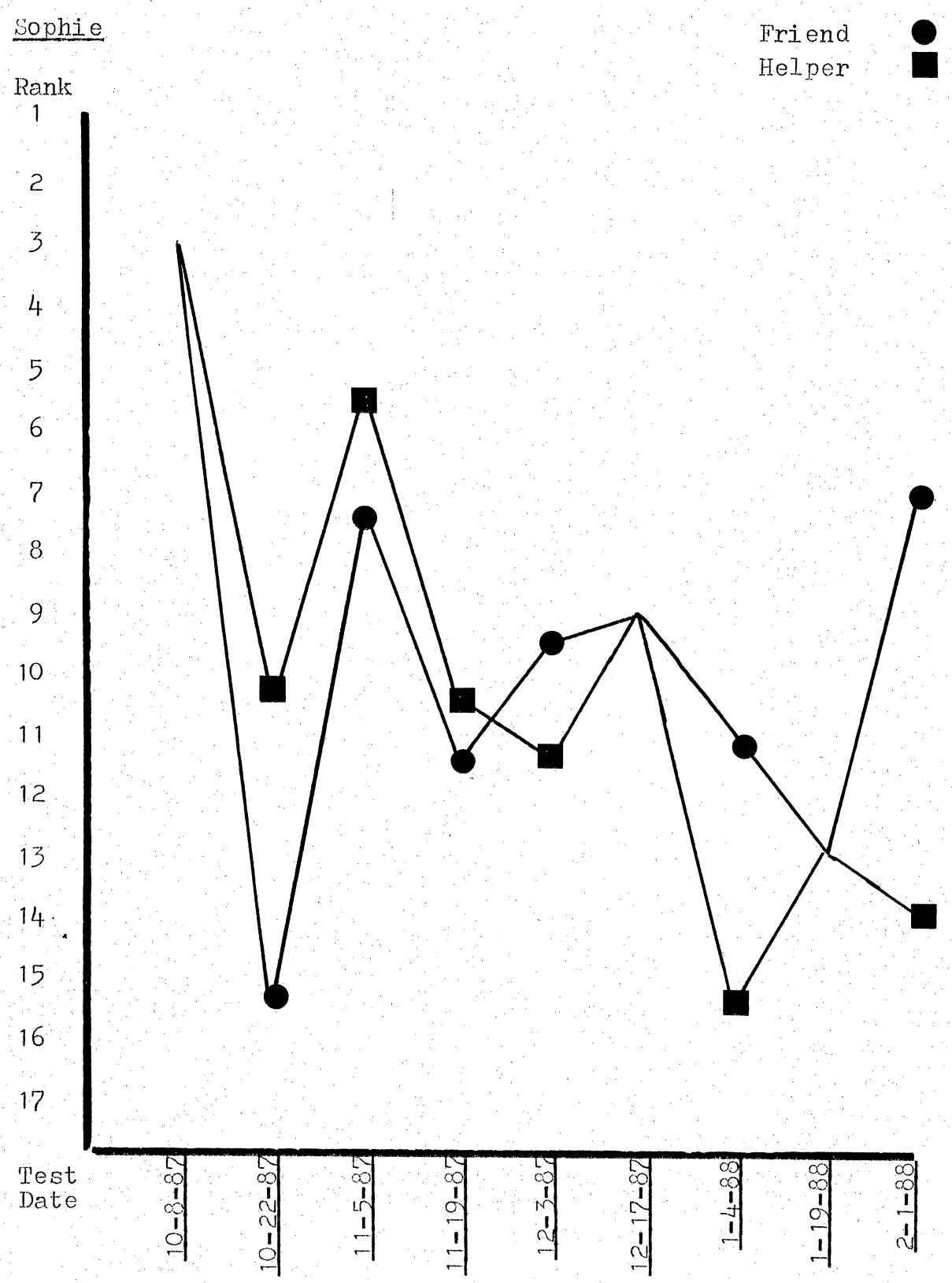


Figure A-16, Appendix A

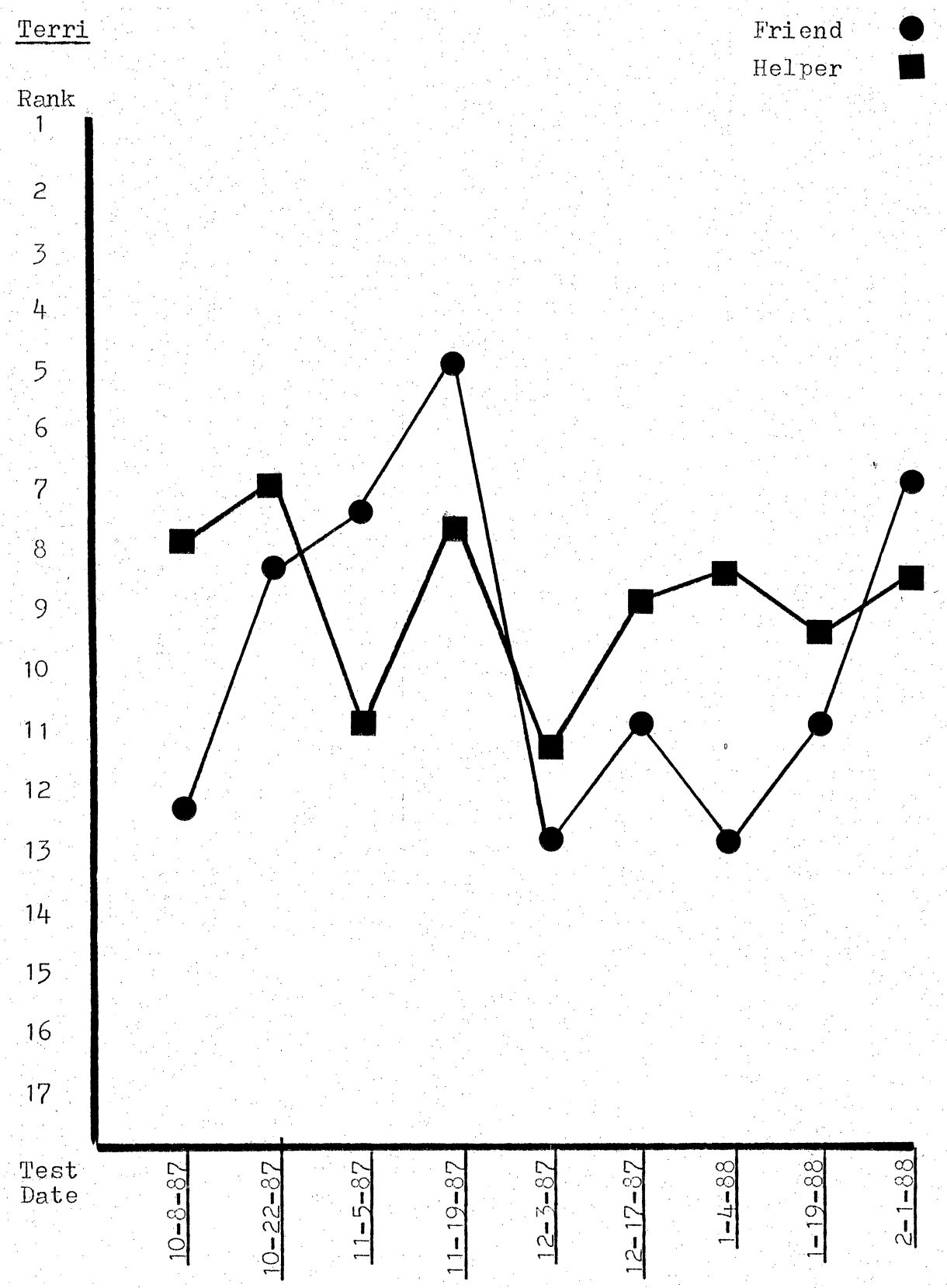
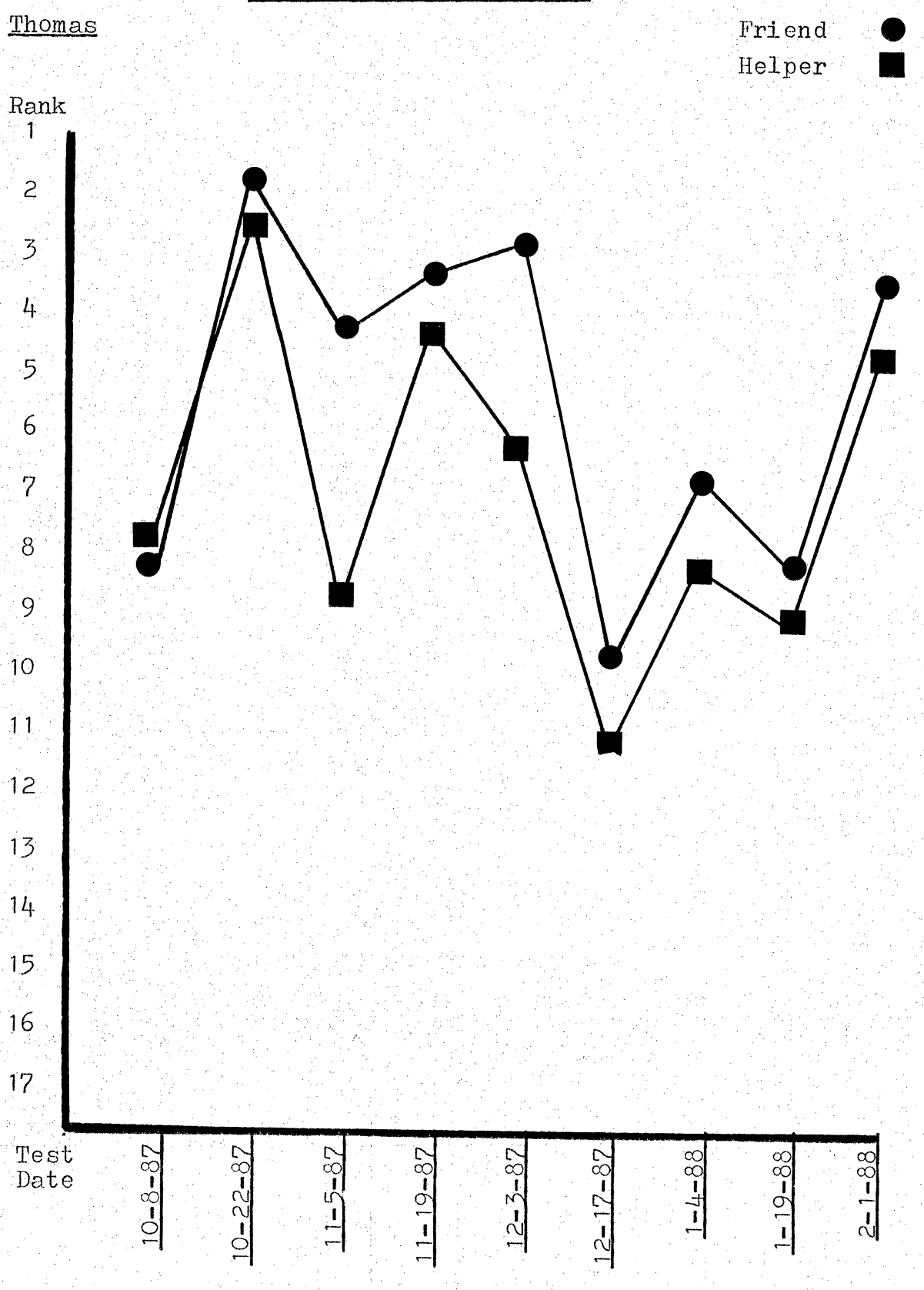


Figure A-17, Appendix A



Appendix B

Results of the Behavior Rating Profile indicating the class rank underlined and points (parenthesis) for each student in terms of desirability as a friend.

Student	10-8-87	10-22-87	11-5-87	11-19-87	12-3-87
Anglish	5.0 (+ 3)	3.0 (+ 3)	3.0 (+ 3)	2.0 (+ 6)	3.0 (+ 4)
Cathie	12.5 (0)	5.5 (+ 1)	14.0 (- 3)	13.5 (- 2)	13.0 (- 2)
James	16.0 (-11)	13.5 (- 2)	15.0 (- 4)	16.0 (- 7)	15.5 (- 6)
Jim	14.0 (- 5)	15.5 (- 3)	16.0 (- 6)	15.0 (- 6)	17.0 (- 7)
Jimmy	17.0 (-14)	17.0 (- 6)	17.0 (- 7)	17.0 (- 8)	15.5 (- 6)
John M.	11.0 (+ 1)	8.5 (0)	11.0 (- 1)	10.0 (0)	9.5 (0)
John Mc.	1.5 (+ 7)	1.0 (+ 7)	1.0 (+ 9)	3.5 (+ 4)	1.0 (+ 6)
Julie	8.5 (+ 2)	8.5 (0)	4.5 (+ 2)	7.5 (+ 1)	5.5 (+ 3)
Levi	1.5 (+ 7)	4.0 (+ 2)	2.0 (+ 5)	1.0 (+ 7)	9.5 (0)
Marty	5.0 (+ 3)	8.5 (0)	7.5 (+ 1)	7.5 (+ 1)	5.5 (+ 3)
Michelle	8.5 (+ 2)	5.5 (+ 1)	7.5 (+ 1)	7.5 (+ 1)	3.0 (+ 4)
Mike	5.0 (+ 3)	11.5 (- 1)	11.0 (- 1)	7.5 (+ 1)	9.5 (0)
Scott	15.0 (- 6)	13.5 (- 2)	11.0 (- 1)	13.5 (- 2)	13.0 (- 2)
Sean	8.5 (+ 2)	11.5 (- 1)	13.0 (- 2)	11.5 (- 1)	7.0 (+ 1)
Sophie	3.0 (+ 4)	15.5 (- 3)	7.5 (+ 1)	11.5 (- 1)	9.5 (0)
Terri	12.5 (0)	8.5 (0)	7.5 (+ 1)	5.0 (+ 2)	13.0 (- 2)
Thomas	8.5 (+ 2)	2.0 (+ 4)	4.5 (+ 2)	3.5 (+ 4)	3.0 (+ 4)

Appendix B

Results of the Behavior Rating Profile indicating the class rank underlined and points (parenthesis) for each student in terms of desirability as a friend.

Student	12-17-87	1-4-88	1-19-88	2-1-88
Anglish	3.5 (+ 6)	1.5 (+ 7)	4.0 (+ 4)	2.0 (+ 5)
Cathie	15.0 (- 6)	14.0 (- 4)	14.5 (- 5)	12.5 (- 2)
James	16.0 (- 7)	15.5 (- 7)	14.5 (- 5)	14.5 (- 5)
Jim	14.0 (- 4)	15.5 (- 7)	16.0 (- 7)	14.5 (- 5)
Jimmy	17.0 (- 8)	17.0 (-10)	17.0 (-10)	17.0 (- 9)
John M.	12.5 (- 4)	11.0 (- 1)	11.0 (0)	12.5 (- 2)
John Mc.	1.0 (+ 9)	1.5 (+ 7)	1.5 (+ 5)	1.0 (+ 8)
Julie	7.5 (+ 1)	5.5 (+ 3)	1.5 (+ 5)	11.0 (- 1)
Levi	6.0 (+ 2)	3.0 (+ 6)	4.0 (+ 4)	3.0 (+ 4)
Marty	5.0 (+ 3)	5.5 (+ 3)	6.0 (+ 3)	7.0 (+ 2)
Michelle	2.0 (+ 8)	4.0 (+ 4)	7.0 (+ 2)	7.0 (+ 2)
Mike	7.5 (+ 1)	9.0 (0)	4.0 (+ 4)	7.0 (+ 2)
Scott	12.5 (- 4)	11.0 (- 1)	11.0 (0)	16.0 (- 7)
Sean	3.5 (+ 6)	8.0 (+ 1)	8.5 (+ 1)	10.0 (+ 1)
Sophie	9.0 (0)	11.0 (- 1)	13.0 (- 2)	7.0 (+ 2)
Terri	11.0 (- 2)	13.0 (- 2)	11.0 (0)	7.0 (+ 2)
Thomas	10.0 (- 1)	7.0 (+ 2)	8.5 (+ 1)	4.0 (+ 3)

Appendix B

Results of the Behavior Rating Profile indicating the class rank underlined and points (parenthesis) for each student in terms of perceived academic helpfulness.

Student	10-8-87	10-22-87	11-5-87	11-19-87	12-3-87
Anglish	8.0 (+ 1)	5.0 (+ 4)	5.5 (+ 2)	4.5 (+ 3)	2.0 (+ 5)
Cathie	14.0 (- 3)	8.0 (0)	14.0 (- 3)	13.0 (- 2)	8.5 (+ 1)
James	15.5 (- 4)	16.5 (- 5)	15.0 (- 4)	15.5 (- 6)	16.0 (- 7)
Jim	15.5 (- 4)	16.5 (- 5)	17.0 (- 7)	15.5 (- 6)	15.0 (- 5)
Jimmy	17.0 (- 7)	14.0 (- 4)	16.0 (- 6)	17.0 (- 8)	17.0 (- 8)
John M.	8.0 (+ 1)	9.0 (- 1)	12.5 (- 2)	14.0 (- 4)	11.5 (- 1)
John Mc.	1.0 (+ 5)	5.0 (+ 4)	2.0 (+ 4)	2.0 (+ 8)	1.0 (+ 7)
Julie	12.0 (- 1)	10.5 (- 2)	9.0 (+ 1)	10.5 (- 1)	4.0 (+ 3)
Levi	2.0 (+ 4)	2.5 (+ 5)	1.0 (+ 6)	1.0 (+10)	4.0 (+ 3)
Marty	4.5 (+ 2)	1.0 (+ 7)	5.5 (+ 2)	3.0 (+ 5)	4.0 (+ 3)
Michelle	8.0 (+ 1)	5.0 (+ 4)	9.0 (+ 1)	10.5 (- 1)	8.5 (+ 1)
Mike	12.0 (- 1)	14.0 (- 4)	3.0 (+ 3)	10.5 (- 1)	14.0 (- 3)
Scott	12.0 (- 1)	12.0 (- 3)	5.5 (+ 2)	7.5 (0)	11.5 (- 1)
Sean	4.5 (+ 2)	14.0 (- 4)	12.5 (- 2)	6.0 (+ 1)	6.5 (+ 2)
Sophie	3.0 (+ 3)	10.5 (- 2)	5.5 (+ 2)	10.5 (- 1)	11.5 (- 1)
Terri	8.0 (+ 1)	7.0 (+ 1)	11.0 (0)	7.5 (0)	11.5 (- 1)
Thomas	8.0 (+ 1)	2.5 (+ 5)	9.0 (+ 1)	4.5 (+ 3)	6.5 (+ 2)

Appendix B

Results of the Behavior Rating Profile indicating the class rank underlined and points (parenthesis) for each student in terms of perceived academic helpfulness.

Student	12-17-87	1-4-88	1-19-88	2-1-88
Anglish	5.5 (+ 3)	5.0 (+ 4)	2.0 (+ 4)	5.0 (+ 4)
Cathie	16.0 (- 9)	17.0 (- 9)	16.5 (- 7)	16.5 (- 8)
James	17.0 (-11)	15.5 (- 8)	16.5 (- 7)	11.5 (- 2)
Jim	13.5 (- 3)	8.5 (+ 2)	14.0 (- 5)	15.0 (- 7)
Jimmy	15.0 (- 8)	14.0 (- 6)	9.5 (+ 1)	11.5 (- 2)
John M.	11.5 (- 1)	11.0 (0)	15.0 (- 6)	16.5 (- 8)
John M^{c}.	1.5 (+ 8)	4.0 (+ 5)	5.0 (+ 2)	2.0 (+ 6)
Julie	4.0 (+ 4)	1.0 (+ 7)	9.5 (+ 1)	11.5 (- 2)
Levi	1.5 (+ 8)	2.5 (+ 6)	1.0 (+ 6)	2.0 (+ 6)
Marty	5.5 (+ 3)	6.0 (+ 3)	3.0 (+ 3)	2.0 (+ 6)
Michelle	3.0 (+ 5)	2.5 (+ 6)	5.0 (+ 2)	8.5 (+ 1)
Mike	7.0 (+ 2)	13.0 (- 5)	9.5 (+ 1)	5.0 (+ 4)
Scott	13.5 (- 3)	12.0 (- 3)	5.0 (+ 2)	11.5 (- 2)
Sean	9.0 (+ 1)	8.5 (+ 2)	9.5 (+ 1)	7.0 (+ 2)
Sophie	9.0 (+ 1)	15.5 (- 8)	13.0 (0)	14.0 (- 3)
Terri	9.0 (+ 1)	8.5 (+ 2)	9.5 (+ 1)	8.5 (+ 1)
Thomas	11.5 (- 1)	8.5 (+ 2)	9.5 (+ 1)	5.0 (+ 4)

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