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Study on Birth Order and Affiliation in Social-Help Organizations

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STUDY ON BIRTH ORDER
AND AFFILIATION
IN SOCIAL-HELP ORGANIZATIONS

BY
RUTH G. RADIN

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE
IN
CHILD DEVELOPMENT AND FAMILY RELATIONS

UNIVERSITY OF RHODE ISLAND
1978

THESIS ABSTRACT

This study researched the relationship between birth order and affiliation in three social-help organizations and represents a replication and extension of a study done by Dr. Stephen Misovich¹ in 1973. The three social-help organizations included Lean Line, an organization to help members to reduce weight; Alcoholics Anonymous, an organization to help members stop drinking; and 5-Day-Plan-To-Quit-Smoking, an organization to help members stop smoking.

✕ Birth order is defined as the ordinal position of an individual among his or her siblings. "Only" children were defined as first borns. The size of a family was the total number of siblings in the family.

It was hypothesized that there would be a significant difference between the expected number of first borns and the observed number of first borns in each social-help organization, i. e., significantly more observed first borns than expected first borns.

Birth order information was obtained from one hundred members of Lean Line, fifty-two members of Alcoholics Anonymous, and thirty-six members of 5-Day-Plan-To-Quit-Smoking. The same birth order questionnaire was administered in the same manner to each of the groups with changes in wording suiting each organization.

¹Stephen Misovich, "Birth order, affiliation, and membership in Weight Watchers," Psychological Reports, 1973, 32, 94.

Subjects came from varied social and economic backgrounds. Geographically, subjects were in attendance at meetings in the New London, Connecticut general vicinity.

Both males and females were subjects in the study. The mean age for Lean Line, Alcoholics Anonymous and 5-Day-Plan-To-Quit-Smoking was 41.2 years, 42.3 years, and 39.8 years, respectively.

The lengths of time members enrolled in Lean Line varied from one day to thirty-two weeks. Alcoholics Anonymous subjects were members from a range of one day to thirty years. Smokers were members for only five days as that was the length of the withdrawal clinic.

The data from the questionnaire was compiled and results tabulated. Significantly more first borns were observed in the Lean Line group. ($\chi^2 = 3.62$, $df = 1$, $p < 0.6$). Significantly more first borns were observed in the Alcoholics Anonymous group. ($\chi^2 = 8.11$, $df = 1$, $p < .005$). Less than the expected number of first borns were observed in the 5-Day-Plan-To-Quit-Smoking group. Thus, two of the three hypotheses were verified.

This study adds further support to prior studies that indicate a definite relationship between birth order and affiliation as defined by a desire to belong to certain groups.

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I

INTRODUCTION

Birth order, the ordinal position of a sibling within a family, and its relationship to personal characteristics has been the subject of extensive, but conflicting research since the pioneering studies of Schacter.¹ Two lines of investigation have emerged. Early studies attempted to indicate that personality traits are related to specific ordinal positions. More recent works have centered on the connection between birth order and behavior patterns.

One area in the behavioral field which has received attention is the relationship between birth order and affiliation. Several studies have shown that first born or only children have stronger affiliative tendencies than later born children; i. e., to yield to group pressure to conform. One such study was done by Stephen Misovich² and serves as the basis of this writer's investigation into birth order.

This writer's study will replicate and extend Misovich's research, "Birth order, affiliation, and membership in Weight Watchers," Misovich hypothesized that first borns would demonstrate a preference

¹Stanley Schacter, The Psychology of Affiliation, Stanford University Press, Stanford, Cal., 1959.

²Stephen Misovich, "Birth order, affiliation, and membership in Weight Watchers," Psychological Reports, 1973, 32, 94.

for social, as opposed to individual, methods of coping with anxiety-associated eating behavior. To test his hypothesis, Misovich designed a questionnaire to obtain birth order information, age, number of siblings, length of membership, and weight loss. Information was obtained from twenty-nine female members of a Weight Watchers class. The class mean family size (3.8) yielded an expected frequency of eight first borns and twenty-one later born members. The obtained frequency of fourteen first borns and fifteen later born members differed significantly from the expected values lending support to the hypothesis. No significant differences were found in regard to age, length of membership and weight loss between first born and later born members. Misovich suggests that his findings must be interpreted with caution since most of the members had only recently enrolled in the program and were members for less than six months.

In order to replicate this study, this writer received permission from Misovich. Based on his recommendation, the data collection was enlarged to include other social-help organizations to determine if the phenomenon generally holds true.

Therefore, this writer's study will examine first borns (vs. later borns) and indicate whether they not only demonstrate a preference for social methods (as opposed to individual methods) of coping with weight loss, but also examine if this is valid in other organizations that help individuals to stop smoking, and to stop consuming alcohol.

Three hypotheses emerge:

1. There will be a significant difference between the expected number of first borns in a Lean Line group (a weight-reduction organization) and the observed number of first borns in this group.
2. There will be a significant difference between the expected number of first borns in an Alcoholics Anonymous group (a drinking withdrawal organization) and the observed number of first borns in this group.
3. There will be a significant difference between the expected number of first borns in a 5-Day-Plan-To-Quit-Smoking (a smoking withdrawal group) and the observed number of first borns in this group.

As Misovich's hypothesis proved true, and this is a replication of his study, it would follow that these hypotheses, particularly the first one, will be verified.

II

REVIEW OF LITERATURE

No review of birth order-affiliation literature would be complete without an examination of Schacter's studies.¹ Subjects for his study were female students enrolled in Introductory Psychology at the University of Minnesota. Two experimental conditions were created, one of high anxiety and one of low anxiety.

In the high anxiety condition, girls entered a room filled with an array of electrical equipment and were told that they were to receive electrical shocks as part of the experiment. "These shocks will hurt, they will be painful," the girls were told.

In the low anxiety condition, girls again entered a room with the identical conditions. However, this time the experimenter told the group, "I assure you that what you will feel will not in any way be painful."

From this point on, experimental procedures were the same. The experimenter told the group that there would be a slight delay and, subjects were given to opportunity to wait together or alone. Via questionnaires filled out by the subjects, information was then collected.

¹Stanley Schacter, The Psychology of Affiliation, Stanford University Press, Stanford, Cal., 1959.

The results provide some insight into affiliative behaviors. In the high anxiety condition, 18.8 percent of the subjects refused to continue: 0 percent in the low anxiety condition refused to continue. In the high anxiety condition, 63 percent of the subjects chose to remain "together" while only 33 percent chose to be "together" in the low anxiety situation. Thus, Schacter indicated that anxiety leads to the arousal of affiliative tendencies.

Schacter hypothesized that first born and only children would manifest stronger affiliative needs than later born children. Pooled results from his experiments showed that thirty-two of the first born subjects in the high anxiety situation chose to be together compared to twenty-one later born subjects. In the low anxiety condition, fourteen of the first born subjects chose to be together compared to twenty-three later born subjects.

On Schacter's born scales of anxiety, first borns and only borns indicated that they were considerably more nervous than later borns. On the measure of willingness to go through with the experiment, 28 percent of all first borns and only born subjects were unwilling to continue and only 8 percent of all later borns refused to continue the experiment.

Schacter attempted to apply his findings that anxious first borns tend to affiliate to psychotherapy, fighterpilot effectiveness, dependency, alcoholism, and hunger.

As Schacter's studies have served as a landmark in birth order research, it follows that other researchers would attempt to replicate and possibly disprove his theories. In fact, a major part of the birth-order affiliation research stems from Schacter's work. However, studies attempting to replicate and extend Schacter's findings have reported conflicting evidence.

In 1962, Weller² did an exact replication of Schacter's study using students at the University of Connecticut. Students were presented with the same apparatus and high and low anxiety conditions were presented. No significant birth order differences were revealed that would contradict Schacter's research. Weller suggests that there were some socio-economic variations in his group compared to Schacter's group. Weller suggests that results are in accordance with the findings in birth order literature. They are, "...for the most part, contradictory and inconclusive."

Sarnoff and Zimbardo³ attempted to replicate Schacter's research on affiliation arousal. However, their focus was to differentiate between fear and anxiety. Seventy-two subjects were randomly assigned to four experimental treatments in which high and low levels of fear and anxiety were manipulated. The results showed that while the desire to affiliate as fear increases (in accordance with Schacter's findings), the opposite is true of anxiety; as anxiety increases, the desire to affiliate decreases. Thus, Sarnoff and Zimbardo indicated a distinction between fear and anxiety.

²Leonard Weller, "The relationship of birth order to anxiety: A replication of the Schacter findings," Sociometry, 1962, 25 (4) 415-417.

³I. Sarnoff and P. Zimbardo, "Anxiety, fear and social affiliation," Journal of Abnormal and Social Psychology, 1961, 62, 355-359.

Joseph Masling⁴ used three samples of students to test Schacter's work on birth order and the need for affiliation. Masling hypothesized that for freshmen students about to enter college, the thought of dormitory life and leaving home imposes anxiety. Therefore, first born and only born children should choose to room with another student to alleviate this anxiety. Questionnaires completed by students showing their preferences for single or double rooming situations were examined to obtain the necessary statistics. No relationship was found between first and later borns and a preference from rooming alone or with others.

Smart's⁵ study was also based on the findings of Schacter's research. Birth order and social group information was collected from 370 university students. The results of the data lend support to Schacter's affiliative behavior theory. First born males more often than later born males are social group members. But, there were no birth order differences for females. Thus, Smart assumes that first born males have greater affiliative needs than later born males.

Other studies on affiliation use Schacter's findings as a basis for their research but do not attempt to replicate Schacter's work. For example, Strumpfer⁶ collected data via a questionnaire

⁴Joseph Masling, "Birth order and need for affiliation," Psychological Reports, 1965, 16 (2) 631-632.

⁵Reginald Smart, "Social-group membership, leadership and birth order," The Journal of Social Psychology, 1965, 67, 221-225.

⁶D. J. W. Strumpfer, "Fear and affiliation during disaster," Journal of Social Psychology, 1970, 82 (2) 263-263.

from 161 adults after a flood. He found significant positive inter-relationships between fear and affiliative tendencies. First borns reported higher fear than did later borns. Affiliation also showed this association.

In another disaster situation, Zucker, Manosevitz, and Lanyon⁷ collected data through questionnaires. Following the 1965 power failure in New York City, information was collected from 100 adults. It was hypothesized that first borns would be more anxious and more affiliative than later borns stranded in this situation. While the results supported the anxiety hypothesis, the affiliation hypothesis received only some confirmation. Fifty-three percent of the first born women expressed a strong preference for affiliation. Only 21 percent of the first born men expressed this preference.

While many studies have shown a relationship between anxiety and affiliation, and affiliation and birth order, little research has correlated the variables of anxiety and birth order. In an Indian secondary school, students were tested on the Taylor's Manifest Anxiety Scale. Researchers George and Devadas⁸ found that first born students had a significantly higher level of anxiety than did other ordinal positions.

⁷Robert Zucker et al., "Birth order, anxiety, and affiliation during a crisis," Journal of Personality and Social Psychology, 1968, 8, 354-359.

⁸E. I. George and R. Devadas, "Manifest anxiety as a function of birth order," Journal of Indian Academy of Applied Psychology, 1971, 8, 39-40.

Examination of the affiliative tendencies of first borns can be applied to membership in organizations such as fraternities and sororities. Baker and O'Brien⁹ did such a study at Lehigh University. Data was collected concerning ordinal position from 90 percent of an entire freshmen class in 1963. Contrary to prior literature on affiliation, significantly more later born students affiliated with a fraternity than did first borns. Baker and O'Brien speculated about the cause of this by considering the elements of familial relationships rather than the first born's jealous protection of the exclusive relationship he has had with his parents (as is speculated in the majority of the literature). According to these researchers, a fraternity provides certain surrogate parental figures. Moreover, a newly-joined fraternity "brother" would be treated as a "little brother". Thus, first borns may be reluctant to join fraternities and enter into a subordinate position.

Forbes¹⁰ did further studies extending the work of Schacter and Baker and O'Brien. Baker and O'Brien's findings were inconsistent and contrary to Schacter's findings. Forbes' attempt at replication was done at Millikin University, a coeducational college. Data was obtained from 328 males. The percentages of only born, first born, middle born and last born males who were members of a fraternity indicated that there was no association between birth order and fraternity affiliation.

⁹F. Baker and G. O'Brien. "Birth order and fraternity affiliation," Journal of Social Psychology, 1969, 78, 41-43.

¹⁰G. B. Forbes, "Fraternity or sorority membership and birth order: Sex differences and problems of reliability," Journal of Social Psychology, 1970, 82 (2) 227-228.

The percentages of only born, first born, middle born, and last born females who were members of a sorority indicated proportionally more only born and first born females were members of sororities. This is consistent with Schacter's findings.

During the following year, 1969, a second sample of 113 males was obtained. Again, birth order information was obtained. The results indicated proportionally more first borns and last borns were members of fraternities.

On the University of Rhode Island campus a study was done to see if there was a predominance of first borns signing up for sororities.¹¹ Freshman women who had indicated a desire to pledge a sorority were asked to complete a birth order questionnaire. A follow-up compared birth order of those who had signed up for sorority rush with those women that had received bids to join a sorority. Results indicated that a significantly higher number of first borns anticipated sorority acceptance.

British researchers Murdoch and Smith¹² discovered in their affiliation studies that first born males are more frequently fraternity members, prefer company when shopping, and tend to marry earlier. First born females belong to more organizations, obtain dates more easily, and make friends more easily.

¹¹ Carole Cumps, "An investigation of ordinal position and sorority affiliation at U.R.I.," Unpublished Study, 1971.

¹² P. Murdoch and G. Smith, "Birth order and affiliation," British Journal of Social and Clinical Psychology, 1969, 8 (3) 235-245.

While infinite studies on fraternity and sorority membership could be conducted, the results will always vary due to socio-economic differences, geographical differences, and the importance and influence of such organizations on a particular campus.

Affiliation tendencies of first borns can also be indicated through other methods. Dember¹³ administered the Thematic Aptitude Test (TAT) to forty-four students and scored the results for need-affiliation (nAff). Based on previous research, it was hypothesized that first borns had a significantly and markedly higher average nAff than did later borns, which lent support to the hypothesis.

Connors¹⁴ hypothesized that the only child, first born, and later born child receive progressively less attention from parents as a result of the birth of new siblings. This, Connors predicted, would lead to an increase in needs for affiliation and a lower expectation of affection from others. TAT and Schutz's FIRO (Fundamental Interpersonal Relations Orientation) tests were given to 157 fraternity students. As hypothesized, students tended to have lower scores the higher their birth order. This indicated less expectancy of affiliative reward.

Many theories about the cause of the relationship between first borns and affiliation have been developed. Hamilton's¹⁵ study is based on the assumption that "the drive for self-evaluation" is an important

¹³W. N. Dember, "Birth order and need affiliation," Journal of Personality, 1963, 31 (3) 837-852.

¹⁴Keith Connors, "Birth order and needs for affiliation," Journal of Personality, 1963, 31 (3) 837-852.

¹⁵M. L. Hamilton, "Affiliative behaviors as a function of approach and avoidance affiliation motives, opinion, evaluation and birth order," Journal of Social Psychology, 1967, 72, 61-70.

factor in the need for affiliation. He hypothesized that oldest or only children have stronger affiliative tendencies than do later born children. Under his experimental conditions, these early borns would exhibit a high drive for evaluation. One hundred and ninety-two subjects were assigned to two experimental conditions aimed at creating different levels of drive for self-evaluation. Subject differences in affiliation motivation, ordinal position and sex were analyzed. However, no significant differences occurred between the two experimental conditions. Regional and sociological differences were suggested as possible causes.

Zimbardo and Formica¹⁶ evaluated the validity of self-esteem as a variable mediating the relationship between ordinal position and affiliation. They speculated that first borns have lower self-esteem than do later borns. Thus, they tend to affiliate when their self-esteem is questioned. The first born child's desire to affiliate was more intense under conditions of fear arousal or stricter parental control.

Research correlating birth order with membership in any of the familiar social-help organizations, specifically weight reduction, smoking, and alcohol withdrawal, was found to be extremely limited. In addition to the Misovich¹⁷ study, Schacter¹⁸ attempted to make an

¹⁶P. Zimbardo and R. Formica, "Emotional comparison and self-esteem as determinants of affiliation," Journal of Personality, 1963, 31, 141-162.

¹⁷Misovich, op. cit.

¹⁸Schacter, op. cit. 62-63.

analogy based on his demonstrated experimental relationships. He speculated that later borns will be overrepresented among chronic alcoholics and early borns underrepresented. He refers to alcoholism as representing an asocial means of coping with disturbance. Thus, first borns would be less prone to turn to this socially unacceptable method of coping. Smart¹⁹ provided information contrary to Schacter. Schacter found that his subjects all wished, under anxiety situations, to affiliate with persons in the same anxiety situation. It would be expected, therefore, that first born and only child alcoholics would more often become involved in Alcoholics Anonymous, as this therapy constitutes an ideal opportunity to affiliate with persons in the same situations.

Smart's findings indicated that first born and only born children do not become involved in psychotherapy more frequently than do later borns. An explanation for this discrepancy, according to Smart, may be connected to the alcoholic populations studied. Earlier authors present little descriptive data about their populations.

DeLint²⁰ hypothesized that the overrepresentation of youngest children among alcoholics was due to the presence of only one parent in families of last born children. He examined records of 276 women in Toronto and discovered that last borns were greatly overrepresented among those raised since the age of five by only one parent.

¹⁹R. Smart, "Alcoholism, birth order, and family size," Journal of Abnormal and Social Psychology, 1963, 66, 17-23.

²⁰J. E. E. DeLint, "Alcoholism, birth order and socializing agents," Journal of Personality, 1963, 31, 408-16.

Blane and Barry²¹ examined the relationship between birth order and alcoholism and found that birth order as an independent factor cannot be a causative factor in alcoholism. However, individuals in certain birth positions may be more likely to develop alcoholism.

In a study of Japanese male alcoholics, Kosugi and Tanaka²² found the incidence of alcoholism was significantly higher in first borns. This was contrary to what previous studies had indicated. As Kosugi's focus was on parental deprivation in regard to alcoholism, it was found that more last borns from deprived homes tended to become alcoholics.

As the literature on weight reduction and alcoholism in regard to birth order is sparse, so is the literature correlating smoking and birth order. Many of the traits which distinguish smokers and non-smokers are the types of traits commonly thought to be learned in childhood. Therefore, long-term studies must be conducted to obtain information. It is speculated that adult smoking patterns could be predicted from objective measures obtained in childhood.²³

Based on these theories, Forbes²⁴ hypothesized that if this is true, that a significant relationship should be found between birth order and smoking behavior. Smoking behavior data was obtained

²¹H. T. Blane and H. Barry, "Birth order and alcoholism: A review," Quarterly Journal of Studies on Alcohol, 1973, 34 (3) 837-852.

²²Y. Yosugi and M. Tanaka, "Parental deprivation, birth order and alcoholism," Japanese Journal of Studies on Alcohol, 10 (3) 70-77, 1975.

²³W. E. Simon, "Ordinal position of birth in the family constellation and adult smoking behavior," Journal of Social Psychology, 1973, 90 (1) 277-273.

²⁴G. B. Forbes, "Smoking behavior and birth order," Psychological Reports, 1970, 26 (3) 157-158.

from 804 college students. Subjects were divided into four groups: only borns, first borns, middle borns, and last borns. The percentages of smokers follows respectively: 19, 25, 31, 35. Analysis of the data suggests that increases in birth ranks are associated with increases in the frequency of smoking.

It is obvious that the entire topic of birth order is still a mystery to researchers. Studies followed by replications rarely confirm original findings. The information researchers have obtained is conflicting and inconsistent.

III

PROCEDURE

Sample

Subjects for this study were selected from three organizations: Lean Line, Alcoholics Anonymous, and 5-Day-Plan-To-Quit-Smoking. Subjects were selected from those members who attended meetings of these organizations in the New London, Connecticut area.

Members came from varied backgrounds economically and socially. Subjects remained totally anonymous and were assigned a numeral on their questionnaire for recording purposes.

While no attempt was made to monitor the sex of the subjects, a high percentage of Lean Liners were female (96%). The other two organizations yielded expected percentages of males and females.

Organizations

Lean Line promotes membership by appealing to the public with newspaper advertisements that stress the "psychological approach to losing weight with an exclusive university-tested Behavior Modification Technique." (See Appendix A). The major thrust of the Lean Line program is the belief that the human make-up is both chemical and emotional. As a result, the dieter must accept the fact that familiar foods that give pleasure and comfort are an essential part of a successful diet. By use of a well balanced diet supplemented by these familiar foods, the dieter becomes acclimated toward better eating habits and weight loss.

The program is composed of three stages: Basic Diet, Cruise Diet and Permanent Maintenance Diet. The program begins with the Basic Diet for losing weight. It encompasses a wide variety of foods that

the dieter can eat as well as a select group of the familiar foods described above known as "soul foods". No calorie counting is done. Meals are portioned by weight rather than by size or calorie count. Certain foods are required to be eaten daily to maintain a balanced diet such as fruits, milk and bread as well as a protein portion at each mealtime. A booklet "Passport to Lean Line", is distributed to each member for reference at home.

The format of the Cruise Diet stipulates that the dieter stop dieting for one week at every ten-pound weight loss interval. This is to acquaint the dieter with the reality of weight loss. It is felt, according to Lean Line, that ten-pound intervals are fairly easily attainable and provide a realistic goal. It is the belief of the Lean Line program that human beings need rewards to continue dieting. This is the Lean Line theory of behavior modification. The dieter is rewarded for modifying eating habits by going on the Cruise Diet.

The Maintenance Diet is selected after weight loss to help the dieter to maintain his goal. The Maintenance Diet provides the dieter with a diversified menu to keep weight at an even level.

Once a dieter has reached a goal set by Lean Line (determined by height and body build), membership is free of charge providing members weigh-in every month and do not gain more than two pounds above their goal.

Reinforcements are provided in a variety of ways in addition to the Cruise Diet and Maintenance Diet. Weight losses are announced at each meeting to the group. Also, Lean Line pins are awarded at the first ten-pound weight loss and at goal.

Lean Line group leaders (lecturers) have been through the program and are trained to offer understanding and encouragement to those involved in the mutual problem of weight reduction.

Lean Line has been operating in the area for approximately six months. Group size varied from five to thirty members attending at a class.

The psychology of Lean Line stresses, "You (the dieter) will probably fail on your diet or in attempting to maintain your weight loss at one time or another."²⁵ The program stresses that reactions to food are the result of conditioning. Patterns of eating were established early in life before the dieter had any control. It is vital to accept temporary failure without guilt. Self-approval is of vital importance.

Alcoholics Anonymous is an organization for alcoholics of all ages. It is a non-profit organization without any dues or charges. It is not allied with any organization or sect, although meetings are generally held in religious buildings. According to the Alcoholics Anonymous handbook, A.A. members believe in God or a power higher than themselves.

²⁵ Antonia Marotta and Lorraine Wurtzel, Diet Cybernetics for Lean Lines, Pyramid Books, New York 1974.

The major purpose of this organization is to help members to abstain from alcohol and to help other alcoholics achieve sobriety.

Meetings are headed by reformed alcoholics who begin each meeting with a statement that is universal to all Alcoholics Anonymous meetings nationwide and summarizes the major beliefs of this organization,

"My name is _____, and I am an alcoholic. Alcoholics Anonymous is a fellowship of men and women who share their experience, strength and hope with each other that they may solve their common problem and help others to recover from alcoholism. The only requirement for membership is a desire to stop drinking. There are no dues or fees for A.A. membership; we are self-supporting through our own contributions. A.A. is not allied with any sect, denomination, politics, organization or institution; does not wish to engage in any controversy; neither endorses nor opposes any causes. Our primary purpose is to stay sober and help other alcoholics to achieve sobriety."

The sincerity and deep commitment that membership in Alcoholics Anonymous provides is reflected in the A.A. Serenity Prayer, "God grant me the serenity to accept the things I cannot change, courage to change the things I can, and wisdom to know the difference."

By sharing the mutual problem of alcoholism, Alcoholics Anonymous members can receive the encouragement of the group. Members are open about their experiences publicly, but they respect anonymity at meetings.

It is the theory of Alcoholics Anonymous members that an alcoholic should not attempt to tackle all the problems that have occurred due to drinking at once. Rather, each problem and each day should be handled separately. Experiences and problems that are drinking related are vast. Alcoholics must not only deal with personal problems but also those relating to family, job, and society. This awesome task needs the support and affiliation of a group such as Alcoholics Anonymous.

5-Day-Plan-To-Quit-Smoking is an organization whose sole purpose is exactly what the title describes. 5-Day-Plan-To-Quit-Smoking sessions are conducted worldwide for communities by local Seventh Day Adventist churches. These clinics have been conducted periodically for fifteen years. They are held through the cooperation of the American Cancer Society, the American Heart Association, and the American Lung Association. A fee of \$3.00 is charged per clinic lasting five days.

Set meeting plans are designed for each of the five days. Meetings feature films on the effects of smoking. On several of the sessions doctors trained in the hazards of smoking, such as laryngectomists, describe the effects of smoking on the body.

The major emphasis of these meetings is upon the member's desire to stop smoking. Members are frequently called upon to repeat aloud, "I choose not to smoke."

To enable members to overcome initial problems of smoking withdrawal, many hints are given out to alter behavior and eating patterns that affect smoking. 5-Day-Plan-To-Quit-Smoking recognizes the difficulties in smoking withdrawal, and members team up with "buddies" who they call upon during difficult times.

The nightly group meetings serve as a support as each member shares a mutual desire. Meetings are headed by the pastor of the church. A limited number of sessions are held annually.

Instruments

Data was obtained through voluntary anonymous questionnaires. The content of the questionnaires is based on Misovich model. (See Appendix A). Some changes are based on his recommendation. A double check question was added to ensure obtaining correct birth order information.

Collection of Data

The meetings attended were selected purely by random and varied in time, day and location. Information was collected over a period of three months (October - December 1977).

As any member attending a meeting was free to voluntarily participate in the survey, a wide age range was obtained from 11 years to 70 years old.

This writer collected all the data herself, and introduced herself in the same manner at every meeting. The same designated questionnaire was used for each organization for each subject. Questionnaires were administered to the group.

Two of these organizations, Lean Line and 5-Day-Plan-To-Quit-Smoking, advertise through local newspapers. Alcoholics Anonymous is listed in the telephone directory and is advertised mostly through religious organizations and word-of-mouth.

Analysis of Data

Data that was obtained was recorded on charts and examined. Based on the class mean family size, an expected frequency of first borns was determined (based on the Misovich model--group size ÷ mean family size).

A Chi-square level of significance test was performed on each of the three groups of data as follows:

$$X^2 = \sum_{i=1}^2 \frac{(\text{Observed freq. of the } i^{\text{th}} \text{ born} - \text{Expected freq. of } i^{\text{th}} \text{ born})^2}{\text{Expected freq. of } i^{\text{th}} \text{ born}}$$

where $i = 1$ implies first born, $i = 2$ implies all later borns. For these analyses, the number of degrees of freedom = 1 (2 class interval less one constraint). Using the table of percentiles of the Chi-square Distribution with $df=1$, the values of X^2 were used to interpolate the appropriate levels of significance.

Other pertinent data such as member age, membership time, and specific birth order were compiled.

IV

RESULTS

Subjects

Information was obtained from 188 subjects from the three organizations: Lean Line; Alcoholics Anonymous and 5-Day-Plan-To-Quit-Smoking.

Lean Line subjects ranged in age from fifteen years to sixty-five years old. There were 100 subjects in the sample. One hundred questionnaires were distributed and returned. The mean age of the group was 41.2 years, with a standard deviation of 13.63 years. The membership-age distribution shows a wide range of ages. See Table 1.

Table 1

LEAN LINE MEMBERS-AGE DISTRIBUTION

Age in Yrs./	10 - 20	21 - 30	31 - 40	41 - 50	51 - 60	61 - 70
No. of Members	9	16	20	28	19	7

Ninety-six percent of the sample was female (96); four percent was male (4).

Alcoholics Anonymous subjects ranged in age from seventeen years to seventy-two years old. There were fifty-two subjects in the sample. Fifty-two questionnaires were distributed and returned completed or

partially completed. The mean age of the group was 42.3 years old with a standard deviation of 14.54 years. The members-age distribution shows a range of ages. See Table 2.

Table 2

ALCOHOLICS ANONYMOUS MEMBERS-AGE DISTRIBUTION

Age in Yrs./	15 - 25	26 - 35	36 - 45	46 - 55	56 - 65	66 - 75
No. of Members/	8	8	16	9	9	2

5-Day-Plan-To-Quit-Smoking subjects ranged in age from 18 years to 61 years. There were 36 subjects in the sample. There were thirty-seven questionnaires distributed and returned completed or partially completed. One was discarded as no birth order information was obtained. The members-age distribution shows a range of ages. See Table 3.

Table 3

5-DAY-PLAN-TO-QUIT-SMOKING

MEMBERS-AGE DISTRIBUTION

Age in Yrs./	15 - 25	26 - 35	36 - 45	46 - 55	56 - 65
No. of Members/	5	8	7	15	1

Seventy-two percent of the sample was female (26); twenty-eight percent was male (10).

Membership-Time Information

Information on subjects' length of membership time was obtained from Lean Line and Alcoholics Anonymous. No information was obtained from 5-Day-Plan-To-Quit-Smoking members as the group only lasted five days.

Lean Line membership time ranged from one week to thirty-two weeks. This information is based on question one of the questionnaire. "How long have you been a member of Lean Line? (If you re-registered, approximate the first time)." The majority of members were enrolled three months or less. See Table 4.

Table 4

LEAN LINE MEMBER-TIME DISTRIBUTION

Time in Weeks./	1-4	5-8	9-12	13-15	17-20	21-24	25-28	29-32
No. of Members/	32	28	14	7	7	3	5	2

The mean membership time was 9.2 weeks with a standard deviation of 7.89 weeks.

Alcoholics Anonymous membership time ranged from one day to thirty-three years. This information is also based on question one of the A.A. questionnaire, "How long have you been a member of A.A.? (If rejoining, approximate the first time)." The membership-time

distribution chart shows the varied membership time. See Table 5.

Table 5

ALCOHOLICS ANONYMOUS MEMBER-TIME DISTRIBUTION

Time in Years	0 - 1	1.08 - 2	2.08 - 5	5.08 - 10	10.08 - 20	21+
No. of Members	18	11	15	4	1	2

The mean membership time was 3.5 years with a standard deviation of 6.23 years.

Examination of the Hypotheses

The first hypothesis states that, "There will be a significant difference between the expected number of first borns in a Lean Line group and the observed number of first borns in this group." To verify if the hypothesis is valid, the mean family size had to be computed. Family sizes range from one member in the family to sixteen members. The mean family size for the group of 100 was 4.71 members in a family with a standard deviation of 2.91 members.

The expected number of first borns was obtained by

$$\frac{\text{group size}}{\text{mean family size}} = \frac{100}{4.71} = 21.23 \text{ expected first borns.}$$

Information from

questionnaires yielded 30 observed first borns.

This information was put into a Chi-square level of significance test (described in Chapter 3, page 22). The results ($\chi^2 = 3.62$) indicated a significant difference at the .94 level of confidence. This lends support to the first hypothesis.

The second hypothesis states that, "There will be a significant difference between the expected number of first borns in an Alcoholics Anonymous group and the observed number in this group." As in the first hypothesis, the mean family size had to be computed. Family sizes range from one member in the family to ten members. The mean family size for the group of fifty-two was 3.65 members in a family with a standard deviation of 2.15 members.

The expected number of first borns was obtained in the same manner as in the first hypothesis and yielded 14.25 expected first borns. Information from questionnaires indicated twenty-five first borns.

This information was recorded into the same Chi-square level of significance test. The results ($\chi^2 = 8.11$) indicated a significant difference at greater than .995 level of confidence. This lends support to the second hypothesis.

The third hypothesis states that, "There will be a significant difference between the expected number of first borns in a 5-Day-Plan-To-Quit-Smoking group and the observed number in the group." The mean family size was again computed. Family sizes range from one member in the family to eleven members. The mean family size for the group of thirty-six was 3.92 members in the family with a standard deviation of 2.51 members.

The expected number of first borns was obtained in the same manner as in the first two hypotheses and yielded 9.18 expected first borns. Information from questionnaires indicated 8 first borns.

The information was not recorded into any significance tests as the observed frequency of first borns was lower than the expected number of first borns. These figures do not verify the third hypothesis.

Other Variables

Examination of the specific birth order of members yielded results that were expected. The table below shows the birth order distribution of the Lean Line group. See Table 6.

Table 6

LEAN LINE BIRTH ORDER DISTRIBUTION

Ordinal Position	1	2	3	4	5-10	10+
No. of Members	30	21	20	8	17	2

Distribution of birth order among the Alcoholics Anonymous group also shows the expected values for ordinal positions other than first born. See Table 7.

Table 7

ALCOHOLICS ANONYMOUS BIRTH ORDER DISTRIBUTION

Ordinal Position	1	2	3	4	5-10	10+
No. of Members	25	15	6	3	3	0

In the 5-Day-Plan-To-Quit-Smoking group, first born members yielded the expected number. However, the observed frequency of second borns was higher than expected. See Table 8.

Table 8

5-DAY-PLAN-TO-QUIT-SMOKING BIRTH ORDER DISTRIBUTION

Ordinal Position	1	2	3	4	5-10
No. of Members	8	15	6	1	5

One of the other questions on the questionnaire also provided some significant results. This question, "Have you ever joined other organizations to stop smoking? lose weight? stop drinking?" was particularly significant for the Lean Line group.

Seventy-three percent of the group (73) have joined other organizations to lose weight. One percent (1) have joined other organizations to stop smoking. Zero have joined other organizations to stop drinking.

In the Alcoholics Anonymous group, seven percent (4) have joined other organizations to lose weight, zero have joined other organizations to stop smoking, and ten percent (5) have joined other organizations to stop drinking.

In the 5-Day-Plan-To-Quit-Smoking group, fourteen percent (5) have joined other organizations to lose weight, twenty-five percent (9) have joined other organizations to stop smoking and seventeen percent (6) have joined other organizations to stop drinking.

V

DISCUSSION AND IMPLICATIONS FOR FUTURE RESEARCH

A discussion of the findings often clarifies certain aspects that may have been ignored in the mechanical listing of the findings. Examination of the sex of the subjects shows that Lean Line members were predominantly female as were 5-Day-Plan-To-Quit-Smoking members. (The Alcoholics Anonymous questionnaire neglected to include a question to obtain this information). Therefore, it could be possible that more females affiliate in social-help organizations. It could also be possible that more females have the problems that these organizations seek to help (*i. e.*, weight reduction, alcoholism, and smoking withdrawal).

The mean age in all three groups was close. Lean Line mean age was 41.2 years; Alcoholics Anonymous mean age was 42.3 years; 5-Day-Plan-To-Quit-Smoking mean age was 39.8 years. This may indicate that a particular age group has stronger needs for affiliation. In the Lean Line group, the distribution showed the greatest concentration between ages 41-50 years. In the Alcoholics Anonymous group, the greatest age concentration was 36-45 years. In the 5-Day-Plan-To-Quit-Smoking group, the concentration was on the 46-55 distribution. As this is a random sample, it might be speculated that the highest concentration of members in social-help groups will be between thirty-six and fifty-five years.

The length of membership enrollment in the three groups varied. The highest concentration of Lean Liners (60%) were members of Lean Line for eight weeks or less. In the Alcoholics Anonymous group, there was no particular heavy distribution during a particular length of time other than 80 percent of the members were involved in Alcoholics Anonymous for five years or less. The smoker's group lasted five days -- therefore no assumptions about the length of membership can be made. Implications for future research may be the tabulation of daily attrition rates in a 5-Day-Plan-To-Quit-Smoking group. As was warned by Misovich in his study¹, any findings must be approached with caution as most members have been enrolled for a short time period.

The first two hypotheses,

"There will be a significant difference between the expected number of first borns in a Lean Line group and the observed number of first borns in this group."

"There will be a significant difference between the expected number of first borns in an Alcoholics Anonymous group and the observed number of first borns in this group."

were proven.

The first hypothesis was proven at the .94 level of confidence; the second hypothesis was proven at the .995 level of confidence.

¹Misovich, op. cit.

However, hypothesis three, "There will be a significant difference between the expected number for first borns in a 5-Day-Plan-To-Quit-Smoking group and the expected number of first borns in that group," was not proven. The levels obtained of first borns were as expected in any random population sample. Several speculations can be made in regard to the findings. The size of the sample, thirty-six subjects, is small. A larger sample might be needed to obtain an accurate birth order distribution. The infrequency of clinics may have been another factor. In the New London, Connecticut area, these smokers' clinics are held only once or twice a year. Advertisements for clinics are small and not attractive to the public.

Another explanation for the finding of expected first borns may be related to the length of time of the smokers' clinics. 5-Day-Plan-To-Quit-Smoking, as the name describes, is five days' duration. First borns might not be attracted to such a group because its short duration may not fulfill their affiliative needs. It is presumed that more first borns do not join social-help organizations primarily for the social aspects, but instead for the beneficial aspects. This is an important consideration.

It is this writer's contention that the findings related to smokers be approached with caution and that replication of this aspect of the study is needed.

Information collected about membership in other or prior social-help organizations shows nothing significant or noteworthy except in the case of Lean Liners who have been members of other organizations to lose weight. As was noted in the results, seventy-three percent of the hundred Lean Liners had joined other organizations that help members lose weight. This appears to be a very high percentage. It may indicate that prior organizations that help members to lose weight are ineffective.

As was mentioned earlier, the sex of the subjects was not obtained in the Alcoholics Anonymous group. This is a weakness of the study. There are other weaknesses that detract from the validity of the study. In so much as information in the Alcoholics Anonymous group, the study could not be limited to males or females.

A small geographical area was used to obtain the findings; thus, limiting the scope of the study. The Lean Line questionnaire was biased. This questionnaire refers to the writer as a "fellow Lean Liner." The other two questionnaires refer to the writer as a "graduate student at U.R.I." Thus, the subjects may be more sympathetic and biased toward the writer and may complete their questionnaire with a different attitude. When introduced at Lean Line meetings, the writer again was referred to as a fellow Lean Liner. While it is doubtful that this affects the results of the questionnaire, as the information is purely factual, not opinionated, this oversight must be noted.

Equal sized samples were not obtained from the three organizations. (Lean Line 100, Alcoholics Anonymous 52, 5-Day-Plan-To-Quit-Smoking, 36). It may be unfair to compare the three groups. However, the calculations used to obtain the statistics were identical for all groups.

One specific question arose in obtaining the information on the questionnaire. This persistent question was, Do half-siblings and step-siblings count in birth order ranking? The general rule was followed: If the subjects grew up with one of these siblings in the same home, he or she should be accounted for in the birth order listing.

No matter how thorough any researcher is, certain weaknesses are overlooked in a study. While these weaknesses do detract somewhat, the information obtained in them is often quite valuable. The field of birth order research still remains one of varied findings. This study supports Misovich's study as well as other preceding birth order-affiliation studies. While all studies should be approached with caution, this study clearly indicates a definite relationship between birth order and affiliation, as defined by membership in social-help organizations.

It seems imperative that observation and study be done to further understand the effect family interaction has on adult behavior. This needed research may provide the key to understanding birth order.

APPENDIX A
QUESTIONNAIRES AND DIAGRAMS

NEW LONDON-GROTON EAST LYME-NORWICH is in for a loss.

TUESDAY: 9:15 A.M. & 7:15 P.M.
YWCA, BROAD ST., NEW LONDON

TUESDAY: 7:15 P.M. HOWARD
JOHNSON'S, EAST LYME

TUESDAY: 7:15 P.M. KNIGHTS OF
COLUMBUS, HATCH ST., MYSTIC

WEDNESDAY: 7:15 P.M. GROTON ELKS

WEDNESDAY: 9:15 A.M. & 7:15 P.M.

WESTBROOK AMBULANCE SERVICE
ROUTE 1, WESTBROOK

THURSDAY: 9:15 A.M., 3 P.M. & 7:15 P.M.
SHERATON MOTOR INN, NORWICH

Lean Line takes a psychological approach to losing weight with an exclusive university tested "Behavior Modification Technique."

Backed up by an easy-to-live-with diet that even lets you eat spaghetti, bagels, lox and peanut butter.

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Classes throughout New York,
New Jersey, Pennsylvania, Florida
and Connecticut.

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Chairman, Dept. of Human Psychology,
State and National Universities
George Mason Ph.D. - Lean Line

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Florida, Connecticut, California, Arizona and Texas.

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and save
\$2.00 when registering.
Expires Feb. 25, 1978

Lean Line Inc. 1978

TUESDAY: 9:15 A.M. & 7:15 P.M.

YWCA, BROAD ST., NEW LONDON

TUESDAY: 7:15 P.M., HOWARD
JOHNSON'S, EAST LYME

TUESDAY: 7:15 P.M. KNIGHTS OF
COLUMBUS, HATCH ST., MYSTIC

WEDNESDAY: 7:15 P.M., GROTON ELKS

WEDNESDAY: 9:15 A.M. & 7:15 P.M.

WESTBROOK AMBULANCE SERVICE
ROUTE 1, WESTBROOK

THURSDAY: 9:15 A.M., 3 P.M. & 7:15 P.M.

SHERATON MOTOR INN, NORWICH

THURSDAY 9:15 A.M. GROTON ELKS

Please do not sign your name

There is a survey being taken by one of your fellow Weight Watchers a college student taking a summer course in psychology. If you are interested in helping her with some information for a term paper, answer the following questions:

How many brothers and sisters do you have? (Please include deceased brothers and sisters as well)

Brothers _____

Sisters _____

What are their ages? (Give age deceased would be if alive today, if possible, the year of their death)

Brothers _____, _____, _____, _____, _____, _____

Sisters _____, _____, _____, _____, _____, _____

What is your age?

Age _____

When did you first join Weight Watchers? (If you have joined several times, give the date at which you joined the first time. If you cannot remember the exact date, give your best estimate)

Date _____
_____ day _____ month _____ year

Approximately how many Weight Watcher meetings have you attended, since first joining?

Number of Meetings _____

What was your weight when you first joined Weight Watchers?

Weight _____

What is your present weight?

Weight _____

Thank you very much.

This is a survey taken by one of your fellow Lean Liners. This information will be used as research data towards her Master's Thesis. Please fill out this questionnaire. Do not sign your name.

1. How long have you been a member of Lean Line? (If you re-registered, approximate the 1st time.)
_____ weeks
2. Have you ever joined other organizations to lose weight? ☐ yes ☐ no
Have you ever joined other organizations to stop smoking? ☐ yes ☐ no
Have you ever joined other organizations to stop drinking? ☐ yes ☐ no
3. How many brothers and sisters do you have? (Please include deceased brothers and sisters as well.)
_____ Brothers
_____ Sisters
4. What are their ages? (Give age deceased would be if alive today.)
Brothers _____
Sisters _____
5. What is your ordinal position or birth order in the family?
_____ 1st born, _____ 2nd born, _____ 3rd born, _____ 4th born or later
6. What is your age?
_____ Age

Thank you for your time.

LEAN LINE QUESTIONNAIRE

This is a survey being taken by a graduate student at U.R.I.. The information will be used as research data towards her Master's thesis. Please fill out this questionnaire. Do not sign your name.

1. How long have you been a member of A.A.? (If rejoining, approximate the first time.)
 _____ weeks or _____ months.
2. Have you ever joined other organizations to stop drinking? yes, _____ no
 Have you ever joined other organizations to stop smoking? yes, _____ no
 Have you ever joined other organizations to lose weight? yes, _____ no
3. How many brothers and sisters do you have? (Please include deceased brothers and sisters as well.)
 _____ Brothers
 _____ Sisters
4. What are their ages? (Give age deceased would be if alive today.)
 Brothers _____, _____, _____, _____, _____
 Sisters _____, _____, _____, _____, _____
5. What is your ordinal position or birth order in the family?
 _____ 1st born, _____ 2nd born, _____ 3rd born _____ 4th born or later
6. What is your age?
 _____ Age

Thank you for your time.

ALCOHOLICS ANONYMOUS QUESTIONNAIRE

This is a survey taken by a graduate student at U.R.I.. The information will be used as research data towards her Master's degree. Please fill out this questionnaire. Do not sign your name.

1. Have you ever joined other organizations to stop smoking? ☐ yes, ☐ no
 Have you ever joined other organizations to lose weight? ☐ yes, ☐ no
 Have you ever joined other organization to stop drinking? ☐ yes, ☐ no
2. How many brothers and sister do you have? (Please include deceased brothers and sisters as well.)
 Brothers
 Sisters
3. What are their ages? (Give age deceased would be if alive today.)
 Brothers , , , , ,
 Sisters , , , , ,
4. What is your ordinal position or birth order in the family?
 1st born, 2nd born, 3rd born, 4th born or later
5. What is your age?
 Age.
6. What is your sex?
 Male, Female

Thank you for your time.

5-DAY-PLAN-TO-QUIT-SMOKING QUESTIONNAIRE

APPENDIX B

GRAPHS

LEAN LINE MEMBERSHIP-AGE DISTRIBUTION

FIGURE 2

ALCOHOLICS ANONYMOUS MEMBERSHIP-AGE DISTRIBUTION

FIGURE 3

5-DAY-PLAN-TO-QUIT-SMOKING MEMBERSHIP-AGE DISTRIBUTION

FIGURE 4

NUMBER OF MEMBERS VS. MEMBERSHIP-TIME FOR LEAN LINE

FIGURE 5

NUMBER OF MEMBERS VS. MEMBERSHIP-TIME FOR ALCOHOLICS ANONYMOUS

FIGURE 6

NUMBER OF MEMBERS VS. ORDINAL POSITION FOR LEAN LINE

FIGURE 7

NUMBER OF MEMBERS VS. ORDINAL POSITION FOR ALCOHOLICS ANONYMOUS

FIGURE 8

NUMBER OF MEMBERS VS. ORDINAL POSITION
FOR FIVE-DAY-PLAN-TO-QUIT-SMOKING

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