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The effects of relaxation and positive suggestion on early symptoms of senility in older adults in an institutional setting

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THE EFFECTS OF RELAXATION AND POSITIVE
SUGGESTION ON EARLY SYMPTOMS OF SENILITY IN
OLDER ADULTS IN AN INSTITUTIONAL SETTING.

THE COLLEGE OF WILLIAM AND MARY IN VIRGINIA,
ED.D., 1979

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THE EFFECTS OF RELAXATION AND POSITIVE SUGGESTION
ON EARLY SYMPTOMS OF SENILITY IN OLDER ADULTS
IN AN INSTITUTIONAL SETTING

A Dissertation
Presented to the
Faculty of the School of Education
College of William and Mary in Virginia

In Partial Fulfillment
Of the Requirements for the Degree of
Doctor of Education

by
Helen G. Simons
August 1979

APPROVAL SHEET

We the undersigned to certify that we have read this dissertation and that in our individual opinions it is acceptable both in scope and quality as a dissertation for the degree of Doctor of Education.

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THE EFFECTS OF RELAXATION AND POSITIVE SUGGESTION
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Chapter I

Introduction

The steadily increasing life span, the extended age for retirement and the growing population of adults over 65 have resulted in an intensified focusing of attention on people in the upper age brackets. The media have emphasized the importance of the contributions they can make to society. However, unless senility is absent or minimal, constructive living is impossible. The popular press has carried accounts of crowded conditions in hospitals, some of it due to the necessity of maintaining geriatric wings for the senile elderly. Many homes for the aged are committed to enrichment programs, but senile symptoms can make it impossible for a resident to benefit from any program. Experimental research on the topic of the reversal of senile symptoms is not extensive. Therefore, the data generated by this study may be of interest to elderly individuals wishing to prevent senility, to institutions which would benefit from arresting or reversing the symptoms, and to a society interested in the benefits to be gained from the productive lives of its experienced older citizens.

Statement of the Problem

The purpose of the present study was to investigate the extent to which certain early symptoms of senility may be lessened through the practice of progressive relaxation coupled with direct positive

suggestion. The subjects were four residents in a denominational home for older adults. The particular residents were chosen because their behavior was exhibiting the beginning of deterioration in three specific areas, to wit initiation of interpersonal contacts, the ability to make an appropriate verbal response to a designated stimulus remark and short term memory.

Hypotheses

For purposes of the research, the following hypotheses were formulated.

Hypothesis 1

There will be a positive change in trend in the number of interpersonal contacts initiated by the subjects during the intervention phase of the study.

Hypothesis 2

There will be a positive change in the number of appropriate verbal responses given by subjects to a specified stimulus remark due to diminishing anxiety as a result of relaxation and positive suggestion.

Hypothesis 3

There will be a positive change in score on a measure of the subjects' short term memory again due to diminishing anxiety as a result of relaxation and positive suggestion.

Theory

Mental hospitals, nursing homes and homes for the aged have their share of elderly residents who have withdrawn from reality and are living in their own detached world. Exhibiting such symptoms as memory loss, disorientation, confusion, agitated behavior, rambling

speech and progressively deteriorating into phobias, hallucinations, delusions and infantile regressive behavior, they have been herded into one category and labeled "senile". Their condition has often come to be regarded as a fact of life to be accepted and dealt with as one deals with terminal illness, i.e. keep the patient as comfortable as possible until he breathes his last.

Locker (1976) points out that "the move... to an institution is a separation from home, community and a way of life", as well as a loss of the dignity of independence and privacy. Consider, for instance, the trauma of selling one's home and moving with a minimum of personal possessions into an institutional setting. Frequently at about this same time it becomes necessary for the elderly person to relinquish his driver's license. Taken together these events constitute a blow of no mean proportions to security and independence. Reaction to such situations may manifest itself in any number of symptoms. Kastenbaum (1969) stated that "the System" ill prepares us for living with limits, living with losses and living with the prospect of death. Oberleder (1969) proposed that, given these circumstances, when adults attain advanced years and encounter stress, they are unprepared to handle it and grab at senile symptoms to end tension.

Labenne and Greene (1975) affirm the importance of the self concept in determining an individual's actions. "It is what a person believes he is, what he feels about himself that directs his behavior... What a person believes about himself is partly a function of his interpretation of how others see him. Since he really has no way of knowing precisely how other persons see him, he infers this

from their behavior toward him. Therefore, his concept of self rests in part on what he thinks others think of him." Stenner and Katzenmeyer (1975), in connection with their study on the determinants of the self concept, suggested that during childhood successful performance results in a positive self concept, but that during adolescence the "causal relationship has inverted, and self concept becomes a determiner of performance". In the case of senility it seems likely that the self concept has suffered. Following the reasoning of Stenner and Katzenmeyer, a damaged self concept should result in deteriorating task performance and social behavior. A restored self concept might be expected to manifest itself in improvement in these areas. Therefore, such improvement might be anticipated from a program which encourages interaction in order to produce positive feedback and thus enhance the self concept. Linst, Howe and Pinkston (1975) studied group work in a home for the aged in an effort to discover effective methods for encouraging verbal communication and reducing withdrawal. Results demonstrated that "systematic question-asking was... effective in increasing rates of verbalization with an elderly population". Follow-up data showed that the level of resident participation remained at a point similar to the level maintained during the study, which suggests that the effects are of lasting duration. On the basis of this research, the incorporation of systematic questioning into the program suggested above might prove beneficial.

Benson (1975) pointed out that overstress elicits a physical response which can have a detrimental effect on mental functioning. Faced with acute and chronic stressful situations, situations which

require adjustment in behavior, "an involuntary response increases our blood pressure, heart rate, rate of breathing, blood flow to the muscles, and metabolism, preparing us for conflict or escape". When not used appropriately this fight-or-flight response contributes to high blood pressure with its accompanying atherosclerotic condition. Benson described atherosclerosis as "the deposition of blood clots, fat and calcium within the walls of the arteries, causing the normally soft, elastic, open arteries to become hard, inelastic or completely blocked". The blockage retards circulation. Since body tissues depend on proper circulation for nutrients, a slowing of this process ultimately results in death to the cells thus deprived. If arteries to the brain become obstructed, impeding circulation to the brain, "there is death of brain tissue because the brain tissue is cut off from sufficient oxygen and other nutrients to continue its normal metabolism and function". The result is mental impairment. Benson reported investigations which supported his hypothesis that relaxation decreases and counteracts the increased sympathetic nervous system activity that accompanies the arousal of the fight-or-flight response. Since this is the condition primarily responsible for atherosclerosis, which contributes largely to the mental impairment defined in this study as senility, it follows that neutralization of the fight-or-flight response should be followed by an arresting of senile symptoms. Danskin and Walters (1972) associated training in deep muscle relaxation with improved memory and increased learning ability. Fromm and Shor (1972) pointed out the heightened susceptibility of the mind to suggestion during a deeply relaxed state.

In view of the above, it was judged appropriate to investigate

the feasibility of progressive relaxation, accompanied by direct positive suggestion, as one tool in a program designed for the treatment and prevention of senility, assuming anxiety to be the underlying cause.

Limitations of the Study

A limitation inherent in the methodology of this study was the utilization of elderly subjects whose life histories were free of psychosis or organic brain damage prior to age 65, and whose senile symptoms were in the early stages of manifestation. Certain physical requirements were necessary for subjects' participation in the study. These requirements were indicated on the Parachek Geriatric Rating Scale (1976) as:

1. partially ambulatory (can go to dining room),
2. sees well enough to read or do handwork,
3. may have some difficulty hearing but usually understands what is said,
4. is not incontinent,
5. can handle tableware and feed self with minimal supervision,
6. responds appropriately (verbal or non-verbal) to attention initiated by others.

This study was restricted to elderly persons exhibiting early symptoms of non-organically connected senility.

Definition of Terms

For purposes of clarification the following definitions have been derived.

Senility

Senility is defined as the mental infirmity of old age.

Three areas of mental activity were isolated for observation and measurement. They are:

1. Initiation of interpersonal contacts. When a subject approached another person without having been prompted to do so and spoke to, touched or made eye contact with that person, the subject was considered to be initiating interpersonal contact.
2. Making appropriate verbal responses. Such a response was directly related to a particular stimulus remark presented at a designated time by the researcher.
3. Short term memory. Morgan and King (1975) designated the short term memory as the memory bank which stores the information most recently learned. If not rehearsed and entered in the long term memory, this information is usually lost in less than a minute. Disruptions of short term memory can be produced by lack of oxygen in the brain.

Relaxation

Benson (1975) described progressive relaxation as emphasizing "the relaxation of voluntary skeletal muscles... This technique seeks to achieve increased control over skeletal muscles until a subject is able to induce very low levels of tension in the major muscle groups, such as the arms and legs... The subject is taught to recognize even minute contractions of his or her muscles so that he or she can avoid them and achieve the deepest degree of relaxation possible". The concept of progression was introduced by instructing the subject to relax the muscles in the feet and move the relaxation progressively throughout the remainder of the body as the researcher named the body areas from the feet to the top of the head.

Direct Positive Suggestion

This technique implied stating directly to the subject who had attained a deeply relaxed state that he would begin to experience a specific mental or emotional state. The direct positive suggestions presented to the subjects in this study were related to the three areas of deterioration mentioned above. The suggestions were as follows:

1. You will begin to find pleasure in approaching other people.
2. You will begin to enjoy having conversations with people.
3. You will begin to find it easier to remember new things.

Overview

The presentation of the investigation is organized into five chapters. In the present chapter the area under investigation was introduced, the theoretical framework for the study was established, terms were defined and the limitations of the study were discussed. In the next four chapters the following areas dealing with the investigation are presented: (a) a review of the literature; (b) the methodology employed in the study; (c) the results of the investigation; (d) summary, conclusions, and recommendations for further research.

Experimental research dealing with the reversal of senile symptoms has not been extensive. The studies presented in the following chapter were selected for review because of their relationship to the theory on which this study was based.

Chapter 2

Review of the Literature

Dr. Muriel Oberleder (1969) expressed the conviction that senility represents an emotional breakdown in the elderly similar to a breakdown at any age. She stated that the condition has its roots in conflict during middle age. As the individual progresses through the middle years of life, the repressed and unexpressed angers accrued during childhood, adolescence and young adulthood begin to fester, and the idea of aging becomes a menace. Given these conditions, Oberleder felt that by middle age most adults are blocking consideration of old age. She identified three particular threats of middle age which persist into old age, namely the threats to sexual ability, to status and to one's sense of security. Approaching late adulthood with these anxieties unresolved, Oberleder felt, injected otherwise ordinary experiences with dangerous implications. Losing one's teeth, for example, can make eating in front of people a traumatic experience. Acquiring a hearing aid puts into one's hands a concrete reminder of deteriorating faculties. She reasoned that there are more anxiety-evoking situations and fewer anxiety-reducing opportunities in old age than in other periods of life. Such circumstances can produce fragile persons as afraid to look ahead or behind in time, as they are to look inside or outside of themselves. For these persons, experiences such as the above can precipitate instant

senility. Oberleder observed that the elderly use somatic complaints, bodily preoccupations and relationships with their physicians to fulfill frustrated needs for sexual satisfaction or at least some physical contact. She felt, therefore, that more senile symptoms were substitutes for frustrated impulses or buffers against inner conflict. Memory loss, for instance, appeared to Oberleder to be selective. The older adult may forget threatening things, or things which disrupt the happy dream he has set for himself, or things which evoke other distressing memories. It is an effective way of tuning one's self out of an unbearable situation.

Kastenbaum (1969) expressed the opinion that the aged person may withdraw because he is likely to feel no longer capable of making the best use of the time left to him. A sense of inner depletion, impotence and frustration plus the appraisal that his environment offers very little that is inspiring or rewarding places him squarely in the center of a double bind regarding time, i.e. the awareness that future time is scarce, yet having too much time that cannot be put to satisfying use.

Robbins, Meyersburg and Lanck (1974) investigated the relationship between reports of interpersonal stress and the onset of physical symptoms in older adults. An inventory containing items designed to measure, among other areas, interpersonal stress and depression was administered. Both factors showed a consistent and positive relationship to the appearance of symptoms. The study also revealed that symptoms appeared on the day during which subjects experienced interpersonal stress.

A logitudinal study was undertaken at the Philadelphia

Geriatric Center. The purpose of the study was to "operationalize and test the feasibility of the concept of excess disability (ED) in the treatment of mentally impaired aged" (Kleban, Lawton, Brody and Moss, 1975). For purposes of the research, ED was defined as "areas of deficit functioning unwarranted by either physical health or environmental conditions; they were thus presumed to be capable of amelioration." ED's were determined and treatment devised on an individual basis. Relevant aspects of each subject's history, as well as the current condition were considered. Experimental and control groups were matched on the basis of functional health, and scores on the Kahn-Goldfarb Mental Status Questionnaire. Criteria for selection of subjects were as follows:

1. moderate to severe mental impairment, determined by a score of 0 - 6 correct on the Kahn-Goldfarb Questionnaire and confirmed by psychiatric-neural examination;
2. freedom from a history of early life psychosis or organic brain damage prior to age sixty;
3. minimum of three months residence in the Center to avoid possible effects of relocation.

Treatment was administered for one year. At that point the current condition was re-evaluated. A follow-up evaluation was conducted nine months after treatment ended. At the end of the entire procedure members of the experimental group showed a significantly higher level of functioning than members of the control group. Subject age was found to be the most consistently predicting factor for subjects in both groups. The ED treatment appeared to capitalize on the greater energy and vitality of the younger (65-82) members of both

groups. Some success was experienced in redeveloping previously used and personally important functions which had fallen into disuse from the influence of institutionalization or from disabilities which cause involuntary attrition of function. There were, in addition, significant increases in production due to variables other than age, which led the investigators to suggest that progress under an individualized program based on the ED concept can be made regardless of age.

Spear (1975) investigated the use of non-drug induced altered states of consciousness in the prevention of recidivism. The research was conducted with the cooperation of the Tulsa Rehabilitation, Research and Evaluation Programs, Inc. Borderline recidivists were referred for therapy by state and federal parole boards. During therapy sessions subjects were taught to induce a deeply relaxed state. While in this state they examined earlier life situations which contributed to the problem at hand. They were also trained to automatically recall this deeply relaxed state and utilize it when under stress. Three factors were frequently noted in the subjects. Two have also been noted among the senile elderly, namely low levels of self esteem and depression. Of the 52 subjects referred, 17 completed 15 hours or more in therapy and 35 completed 14 hours or less. According to Spear, "it was postulated that those in the first year having fewer hours of therapy would be among the first to recidivate and with an increasing rate into the second year and future year". One year after the investigation the expected pattern had not begun to materialize. Spear concluded that self-esteem was

strengthened by the individual's ability to induce the deeply relaxed condition at will, "to have more control over himself during stress periods and the change in attitude in those around him as he or she changes". The basic purpose of the therapy was to change the individual entelechy, which was defined as "the functioning of the individual, his or her ways of responding to what happens to him (or her) and eventually aspiring to an ideal that conforms to his or her own inner goals and reality."

Miele (1978) described the work of Mankind Research Unlimited (MRU) in Silver Spring, Maryland. The organization teaches foreign languages with the Lozanov method, which utilizes deep relaxation and direct suggestion. According to the president of MRU, Dr. Carl Schleicher, both hemispheres of the brain - the logical left and the non-logical right - are employed in learning. Traditionally, while students use the left hemisphere to pay attention, they are unconsciously absorbing through the right hemisphere signals entirely unrelated to the task at hand. In a relaxed state the right hemisphere is open to experience and the logical, critical left is passive. The material to be learned can "piggyback in" unobstructed by distractions. The theory underlying the method is that in organizing the unconsciously received signals, more of the brain is focused on learning. A major innovation of the method has been described as "undoing the harmful suggestions we all absorb in daily life, suggestions which tell us that the older we get the more difficult it is to learn ... and that when we relax we daydream and accomplish nothing". On standard language tests, the scores of students who have completed the Lozanov

program were compared with scores of students who learned a language in a conventional classroom. The Lozanov Method was shown to be five times more effective.

Summary

Fitts (1972) described the psychiatric category of "adult situational reaction" as a "maladjustment to a difficult situation or newly experienced environmental factors with no serious underlying personality defects or chronic patterns." The definition appeared to embrace senility as it is interpreted in this study. The observations of Oberleder and the Kleban Group also followed this line of thought. Both Fitts and Oberleder have identified anxiety as the root from which senile symptoms grow. Oberleder asserted that dysfunction occurs because external stresses overtax the older person's ability to function and that when the stresses are removed function returns. Fitts noted that if untreated, the symptoms may progress into psychoneurotic reactions or personality disorders. Viewed from this perspective, senility appears not only preventable, but reversible. Both Spear and Miele noted the increased learning ability of the human organism in a deeply relaxed condition. The present study has attempted to demonstrate the feasibility of combining these two theories. Relaxation has been employed to implement the reduction of anxiety in an effort to alleviate symptoms of senility and facilitate the learning of new, more adaptive behaviors. The dependent variables were the number of interpersonal contacts initiated, the number of appropriate verbal responses and the scores on a test for short-term memory.

Chapter 3
Methodology

In chapter 3 a detailed description of the research procedures and methods utilized in the preceding investigation is presented. Descriptions of the following are included: (a) single case experimental design, (b) population, (c) measurement instruments, (d) procedures, (e) statistical methods.

Single Case Experimental Design

Since the mid twentieth century research in the social sciences has been concerned primarily with people in groups in order to discover characteristics, reactions and phenomena common to a given segment of society. This approach, labeled nomothetic, yields results that can be generalized to similar populations. The nomothetic method is particularly suited to laboratory research and has yielded much valuable data with which social scientists have worked. In contrast to this approach is the idiographic orientation which emphasizes the in-depth study of the individual. The ideographic method is peculiarly suited for research by those engaged in counseling in a clinical setting.

Sue (1978) noted a number of specific advantages for the practicing counselor inherent in the ideographic method: "(a) studying a rare or unusual phenomenon, (b) demonstrating novel procedures in diagnosis and treatment, (c) challenging universal assumptions, (d) generating future hypotheses for controlled research, and (e) evaluating the effectiveness of an intervention strategy."

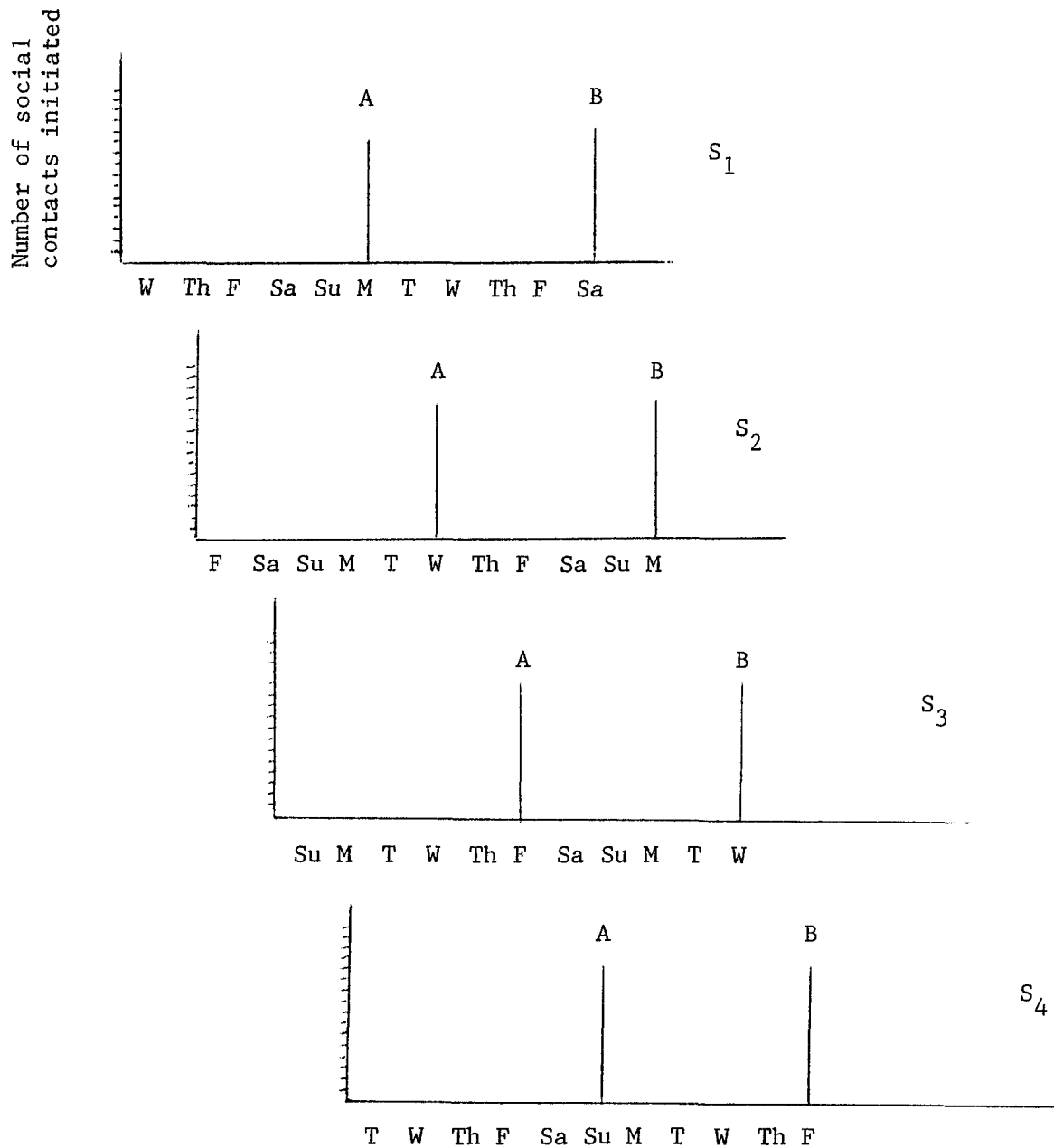
The present study was concerned principally with (b), (d) and (e) above.

Experimental psychology had its beginnings in the late nineteenth century in the single case study. Boring (1950) cited Fechner's development of measures for determining sensory thresholds and just noticeable differences in various sense modalities as the seed bed from which the design grew. Hersen and Barlow (1976) noted that Fechner was among the first to apply statistical methods to psychological problems. Fechner's concern was with variability within the individual, and he replicated his studies across series of subjects. Fechner was followed by Ebbinghaus and the invention of the nonsense syllable for his work in establishing principles of learning. His emphasis was on repeated measures of performance in a single individual over time. Chaplin and Kraweic (1960) pointed out that he "worked so carefully that the results of his experiments have never been seriously questioned". Pavlov's basic findings in the area of principles of association and learning were based on the study of single organisms. Skinner's studies in human behavior were similarly based on controlled observation of individuals. The single case experimental design was the basis for clinical investigation until the mid twentieth century. A large proportion of psychological theory grew from it. During the years when it was being established as a sound research procedure, descriptive statistics were developed to analyze individual differences. Hersen and Barlow (1976) defined the ultimate goal of applied research as the effecting of "meaningful clinical or socially relevant behavioral change". The single case experiment makes possible repeated, frequent measures in

the search for sources of individual variability. Its purpose is to look at individuals within groups in order to determine who progressed or regressed during a time of specific treatment, to isolate mechanisms of change in the therapeutic process and to construct new procedures based on a combination of variables whose effectiveness was demonstrated in a single case experiment (Hersen and Barlow, 1976). The design yields three types of generality: (1) across subjects, (2) across behavior change agents, (3) across settings. Direct systematic replication is possible.

The present study followed the multiple baseline design. (See figure 1.) For each subject the number of interpersonal contacts initiated was monitored until a trend was established. A two-phase treatment was introduced when the pattern of the baseline trend became evident. Subjects were started in treatment at intervals of approximately two days. A daily count of the interpersonal contacts initiated was maintained during the course of treatment, and the trends of the baseline and treatment periods were compared for each subject.

Conversations with each subject were tape recorded. The number of appropriate verbal responses offered by a subject before treatment was begun was compared with the number offered by the same subject at the time treatment was terminated. Short term memory was also compared before and after treatment on an individual bases.



At point A client-centered counseling was initiated. At point B progressive relaxation with positive suggestion was introduced and continued until the termination of the study.

Figure 1. Multiple Baseline Design

Population

The present study was undertaken at the Virginia Baptist Home in Newport News. The first wing of the Home was opened to residents in 1969. Since then building has continued until the present facility accommodates 262 residents. Of the present 240 residents, 31 are males and 209 females. Age of the residents ranges from 66 to 99. The building includes a 52 bed infirmary wing opened in 1978, with registered nurses on duty around the clock and a doctor on call 24 hours a day. The home in Newport News is one of three owned by Virginia Baptist Homes, Inc., a non-profit corporation. The first of the homes was built in Culpepper and an apartment complex for the elderly has recently been constructed in Richmond.

Each of the homes affords total care and admission is on a voluntary basis. A prospective resident must have been a Baptist for five years prior to making application. He may apply personally or through his pastor and must be ambulatory at the time of admission. Financial arrangements for the Baptist Homes in Culpepper and Newport News require that, upon entrance, "each resident transfer to the ownership of the non-profit corporation any and all assets, real and otherwise, up to a maximum of \$30,000. Assets above this amount remain the property of the resident." However, gifts, legacies and contributions through the Cooperative Program of Virginia Baptists enable the Home to accept residents on the basis of need regardless of financial condition.

The program is varied at the Newport News Home. There are five weekday worship services held on the premises each week, and

those residents who are able to do so, attend the Baptist Church of their choice in the community on Sundays. Two shopping excursions, an outing to a nearby Senior Citizens' Center and a visit from a crafts instructor are on the weekly agenda. The sewing room, laundry rooms, beauty shop and library are open daily, except Sunday. Throughout the course of the year there are many other groups which invite the participation of the residents, such as a drama club, book club, resident council, a class in Conversational French, fashion shows, concerts and game fiestas.

All rooms are single occupancy, except for a limited number of two-room suites for married couples, and residents are responsible for light housekeeping duties in connection with the maintenance of their rooms.

In spite of the varied program, responsibilities and opportunities for social contact, however, there are those in the Home who withdraw and display senile symptoms. Subjects for the study were 4 residents determined by the staff to be exhibiting characteristics of early senility.

Measurement Instruments

The measurement devices used were selected to yield optimum information regarding changes in trend of the behaviors under study. They will be discussed as follows:

1. the number of interpersonal contacts initiated,
2. the number of appropriate verbal responses
3. the Parachek Geriatric Rating Scale
4. a test for short-term memory.

The Number of Interpersonal
Contacts Initiated

Trained observers maintained a daily record of the number of social contacts initiated by the subjects. The observers were selected from the staff of the Baptist Home because the presence of staff members was expected in the corridors and observations could be made without the disrupting effect of a stranger's presence. Interpersonal contact was considered to have been initiated if a subject approached another person without having been prompted to do so and spoke to, touched or made eye contact with that person.

The Number of Appropriate
Verbal Responses

The researcher tape recorded a conversation with each subject. Identical stimulus remarks were presented. A doctoral candidate and a counselor with a doctoral degree monitored the tapes and rated the number of appropriate verbal responses. A response was judged appropriate if it was directly related to the stimulus remark presented.

Observer Training

The four observers selected from the staff of the Baptist Home received approximately one hour of training prior to beginning their baseline ratings of the subjects. A video tape demonstrating the behavior to be rated was made for this purpose at the Home. Using a Pearson product-movement correlation, a minimum interrater reliability of .80 was required among observers of the training tape to assure that they were rating similar behavior.

The counselor and the doctoral student also received

training prior to monitoring the tape recorded conversations, with the same correlation required.

The Parachek Geriatric

Rating Scale

The Parachek Geriatric Rating Scale was used as the basis for the final selection of the subjects for the study. The Scale contains three major categories which are subdivided into ten items as follows:

Physical Condition

- A. Ambulation
- B. Eyesight
- C. Hearing

General Self-Care

- D. Toilet Habits
- E. Eating
- F. Hygiene
- G. Grooming

Social Behaviors

- H. Helps with work on ward
- I. Individual response
- J. Group Activities

Each of the ten items contains ten descriptive statements ranged in developmental sequence. The instrument was designed with a two-fold purpose, (1) as a screening device for the appropriate placement of geriatric patients in goal-oriented treatment programs and (2) as a basis for long-term statistical records of geriatric patients. The Parachek Geriatric Rating Scale correlates .88 with

the Plutchik Geriatric Rating Scale, which is the shortest recognized geriatric screening device. Expectancy tables were derived which yielded cutting scores to categorize patients into treatment programs. Results were compared to therapists judgment and the cutting scores were revealed to have predicted correctly for 74.5 percent of the subjects tested (Parachek, 1976). Thus it seemed safe to conclude that the Parachek Geriatric Rating Scale is a valid instrument for determining level of senility.

Test for Short-term Memory

The free-recall method for testing short-term memory was used. Morgan and King (1975) described a free-recall test as a list of approximately 40 words presented to a subject one at a time. After one run through the subject was asked to recall as many words as possible in any order. A variation of this basic form was presented by Hinkle, Shinkman and Bryant (1975). They suggested preparing a set of flash cards, each card having from 2 to 12 three-letter words, randomly ordered, printed on it. Each card was exposed for the subject for two seconds. After a ten-second pause, the subject was asked to recall the content of the card.

The theory on which the present study is based leads to the assumption that the subjects involved have a high level of anxiety. They have demonstrated memory impairment. Therefore, the lists were shortened, no more than eight three-letter words appearing on a card. Several cards of various length were prepared. The words were selected from the September 1978 issue of The Reader's Digest. This periodical was selected because it is read regularly by residents in the Baptist Home in Newport News. This list was submitted for

review to the staff of the Home and any words not commonly in use there were eliminated. The cards were compiled from the final list.

Woodworth and Schlosberg (1958) discussed the rules which had been developed to govern the compiling of lists to test for short term memory. Ebbinghaus' nonsense syllables consisted of a vowel or diphthong with an initial and a final consonant. Muller and Schumann decreed that there be no alliteration, assonance or rhyming in neighboring words; that no two syllables or words in the same list have the same initial consonant, final consonant or vowel; and that the initial consonant of a syllable or word never be the same as the preceding final syllable. The final word lists conformed to these standards. The word lists as they appeared on the cards are presented in Appendix B.

Procedures

The researcher was assisted at the Baptist Home by four staff members who acted as observers. In addition, one counselor with a doctoral degree and one doctoral candidate in counseling served as monitors of the tape recorded conversations. The following procedures were used to collect and process the data involved in this investigation.

Design

The model for this investigation was the multiple baseline design within the framework of the single case experimental study. The four subjects were randomly selected from a pool of individuals exhibiting the symptoms under study. The independent variable was the program of relaxation and positive suggestion described earlier in this paper. The dependent variables were:

1. number of interpersonal contacts initiated by each subject,
2. number of appropriate verbal responses to a specified stimulus remark, and
3. scores on the test for short-term memory.

A multiple baseline strategy across subjects was used to assess change with the implementation of the relaxation program.

Data Collection

The purpose of the study and the procedures to be implemented were explained to the director and assistant director of the Baptist Home. Four staff members were selected by the administration to participate in the investigation as observers. These staff members met with the researcher for an interpretation of their responsibilities. They were asked at that time to list each resident at the home whom they considered to be senile. The behaviors to be measured were described in detail and the staff members were asked to review their lists and mark with a check (✓) those residents who exhibited these behaviors. Copies of the Parachek Geriatric Rating Scale were distributed. On these copies the minimum behavioral ratings required for subjects had been indicated. The staff members were then asked to underscore on their checked (✓) lists those residents who fit these categories. The final ratings were compared and a pool constructed of the names appearing on at least three of the four lists. From this pool the four subjects were randomly selected, and their willingness to participate in the study was established.

The second phase of the data collection process was the familiarization of the four observers with the procedures to be implemented by them. To demonstrate the initiation of interpersonal contacts, a film was made of residents at the Home. The time and place used in the film were identical to the situations in which the observers were expected to do their tabulations. Criteria for determining initiation of interpersonal contacts were explained and the method for tabulating them on the Daily Behavior Charts was demonstrated. After instruction, the observers were asked to view the film and count the number of interpersonal contacts initiated. An interjudge reliability of .80 was considered the minimum acceptable level. Observers were randomly assigned to subjects and were rotated on a daily basis.

Processing the Data

The first procedure in processing the data in this study was reproducing the graphs derived from the tabulations made by the observers of the interpersonal contacts initiated by the subjects. The graphs were reproduced on the Chart Tracer, and superimposed on the Celeration Finder to determine the degree of slope in the celeration line. This work was done by the researcher.

The second procedure was the rating of the tape recordings of conversations by two trained judges. The criterion for determining an appropriate verbal response was that it be directly related to the stimulus remark.

The final procedure to be used in processing the data on the effects of relaxation and positive suggestion on certain symptoms of senility was scoring the short term memory test. This was

done by the researcher.

Methods of Analysis

Statistical methods were used in the analysis of data to:

1. Determine significant changes in trend in the number of interpersonal contacts initiated by each subject.
2. Determine changes in the number of appropriate verbal responses offered by each subject to specified stimulus remarks.
3. Determine changes in scores on a test of short-term memory for each subject.

There were three statistical methods used to analyze the data. The first hypothesis was subjected to analysis by the split middle procedure and the R_n statistic was computed. The split middle technique determines the slope and level of the celeration line. Hersen and Barlow (1976) define the celeration line as a "line of progress... which points in the direction of behavior change and indicates the rate of change". According to these authors, the term was derived "from the notions of acceleration (if the line of progress is ascending) and deceleration (if the line of progress is descending)". The celeration line is drawn using the data as plotted on a similog chart, and in its final adjustment, divides the data points so that 50 percent fall on or above it and 50 percent fall on or below it. This procedure determines the level of the celeration line. From the celeration line a ratio can be computed which expresses the rate of change in behavior which occurred during any portion of the investigation. Separate celeration lines are drawn for the baseline and intervention phases of a study.

Change across phases of a study is evaluated by comparing the level of the celeration line on the final day of one phase with the level of the celeration line on the first day of the following phase. To do this, the R_n statistic is computed. This statistic evaluates any systematic change which occurs in the behavior of a subject at the point of intervention. Significance level for the R_n statistic can be determined. The second and third hypotheses were analyzed using the chi square procedure.

Summary

Since the present investigation was concerned with determining individual responses to the intervention procedures, the single case experimental design was deemed appropriate. The statistical procedures peculiar to the single case design made possible the analysis of behavior trends in the individual subjects, which was the purpose of this study. The Baptist Home offered a population of elderly people willing to cooperate in the investigation and an administration sympathetic to the goals of the study. The measurement instruments and procedures were tailored to the setting, and the results were generalizable to other individuals in similar settings exhibiting similar symptoms.

Chapter IV

Results

The purpose of the present study was to investigate the extent to which certain early symptoms of senility may be lessened through the practice of progressive relaxation coupled with direct positive suggestion. To test the data the first hypothesis was subjected to analysis by the split middle method of trend estimation and the R_n statistic was computed. The second and third hypotheses were analyzed using the chi square procedure. Findings are reviewed and interpreted by hypothesis.

Hypothesis 1

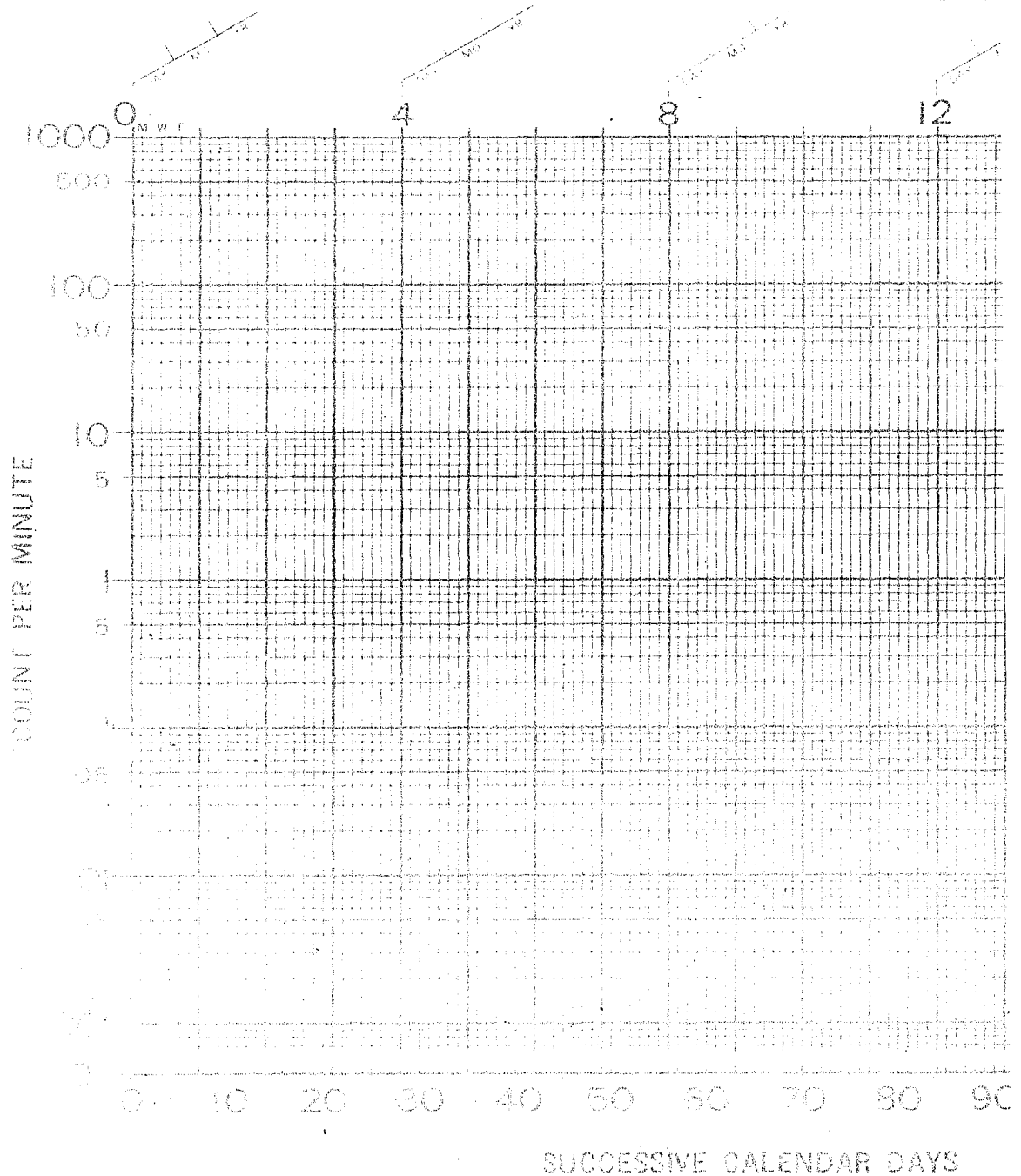
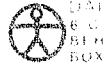
There will be a positive change in trend in the number of interpersonal contacts initiated by the subjects during the intervention phase of the study.

Hersen and Barlow (1976) represent the split middle procedure as a technique which provides:

A method of describing the rate of behavior change over time for a single individual or group. The technique is designed to reveal a linear trend in the data, to characterize present performance and to make predictions about future performance.

A chart (see figure 2) has been developed for graphically displaying data to be analyzed using this method (Pennypacker, Koenig and Lindsley, 1972). The chart is designed with an equal-distance horizontal axis to indicate time, and an equal-ratio vertical axis

CALENDAR WEEKS



SUPERVISOR

ADVISER

MANAGER

DEPOSITOR

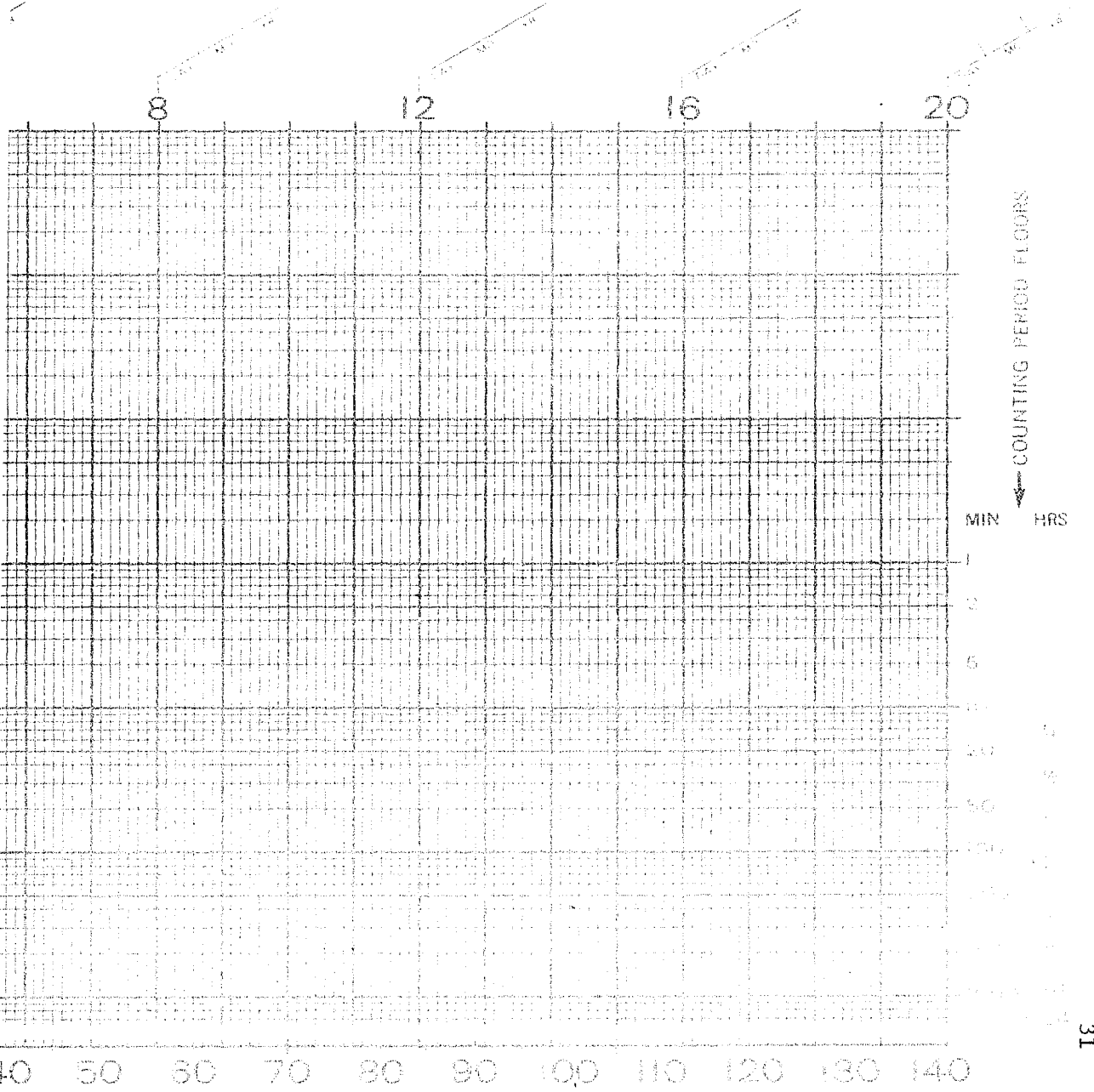
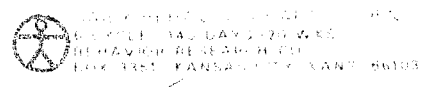
AGENCY

TIMER

COUNTER

Figure 2

WEEKS



SUCCESSIVE CALENDAR DAYS

TIMER	COUNTER	CHARTER	BEHAVIOR	AGE	LABEL	COUNTED
-------	---------	---------	----------	-----	-------	---------

TIMER

COUNTER

CHARTER

Figure 2

for plotting frequency. Frequency is defined as the number of movements per minute and is determined by dividing the number of movements (M) occurring during an observation period by the number of minutes (m) in the observation period. Thus, frequency = M/m .

The chart has been devised to accept frequencies ranging from .001 movements per minute (one movement during a one-thousand minute observation period) to 1,000 movements per minute on any given day. There is no provision for charting a behavior frequency of absolute zero. A zero frequency is interpreted as meaning that no instances of the measured behavior occurred during a specified observation period. This allows for the possibility that the measured behavior could have occurred at some time other than during the observation period. To chart a behavior frequency of zero during an observation period, a record floor is determined. The record floor is defined as "the lowest behavior frequency our recording procedure allows us to detect. The record floor may be calculated as:

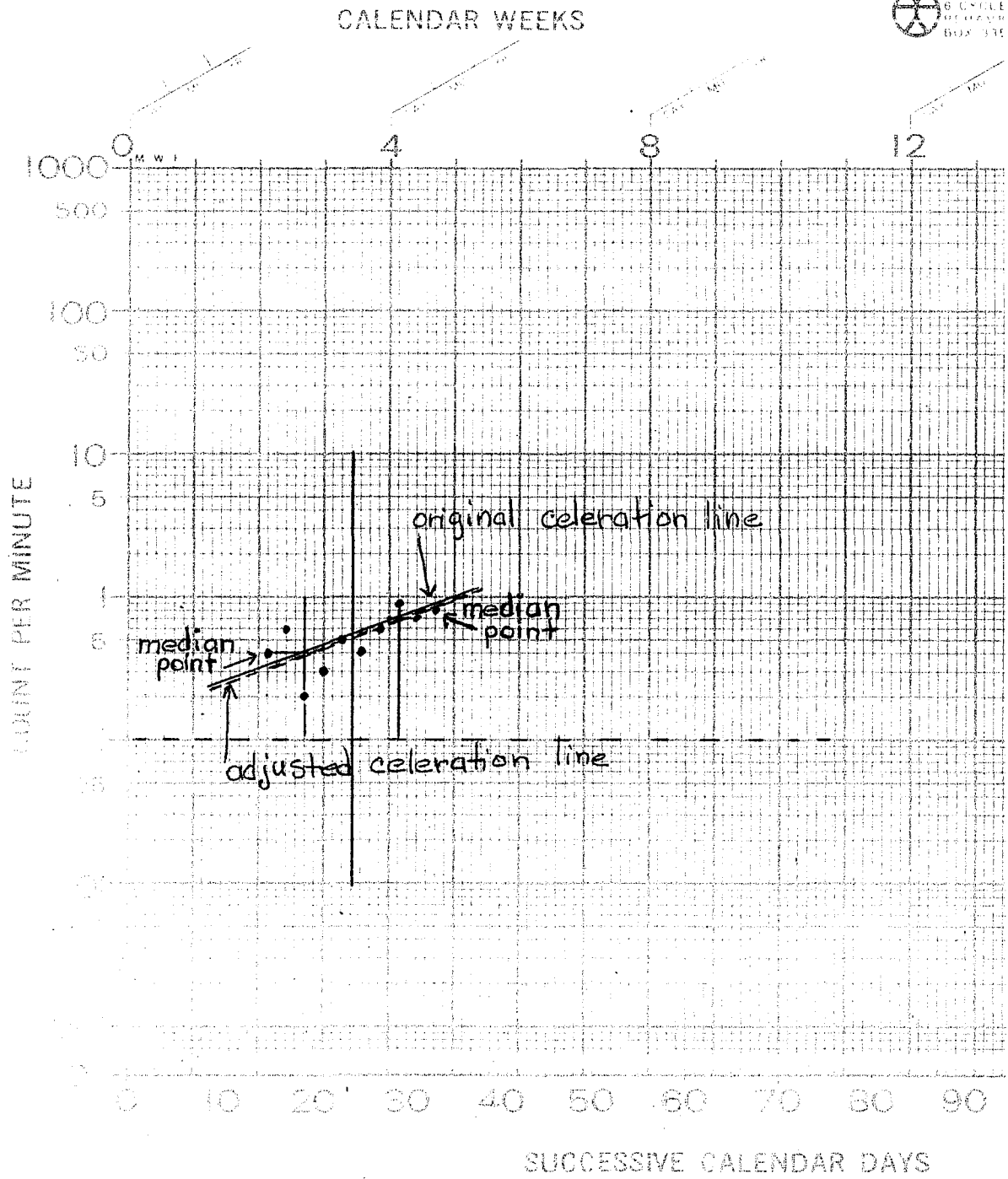
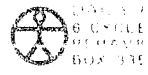
$$\frac{1}{\text{No. of minutes spent recording}}$$
 (Ibid., p. 24). For purposes of this study, the observation periods were ten minutes in length. The record floor was therefore, determined to be .1 M/m ($\frac{1 \text{ movement}}{10 \text{ minutes}}$), and is indicated on the chart by a broken line. To chart zero the frequency dot for the day under consideration is placed just beneath the record floor. The record floor provides two pieces of information:

- (1) A place to chart "zero" frequencies that takes into account the period of time during which no behavior was observed;

- (2) A record of the duration of each day's recording interval
(Ibid., p. 26).

The split middle method of trend estimation is a technique for calculating the slope of the celeration line, from which estimated trends in future behavior may be predicted. For each phase of the study a separate celeration line is drawn. A number of computations are required. Initially, the phase is divided by drawing a vertical line at the median number of session days. Each of the resulting halves is then divided in the same manner. Within each half the median data point is selected and a horizontal line drawn through it until it intersects the vertical line which divides that half. A line is then drawn connecting the two points of intersection. The result is the celeration line. The line is adjusted to divide the data points so that 50 percent fall on or above it and 50 percent on or below. The adjusted line remains parallel to the original line. Thus, its level may change, but not the degree of its slope. These procedures are illustrated in Figure 3.

To calculate the rate of change, a time period meaningful to the situation is selected. For purposes of this study a period of seven days was selected. A point on the celeration line (day x) is determined and the data value of that point is noted. The data value on the celeration line for day $x+7$ is obtained. The numerically larger value is divided by the numerically smaller value and the resulting ratio expresses the slope of the celeration line. In Figure 3, the data value at which the celeration line crosses the first Sunday line is 3. The data value at which the celeration line crosses



SUPERVISOR ADVISER MANAGER

DEPOSITOR AGENCY TIMER COUNTER

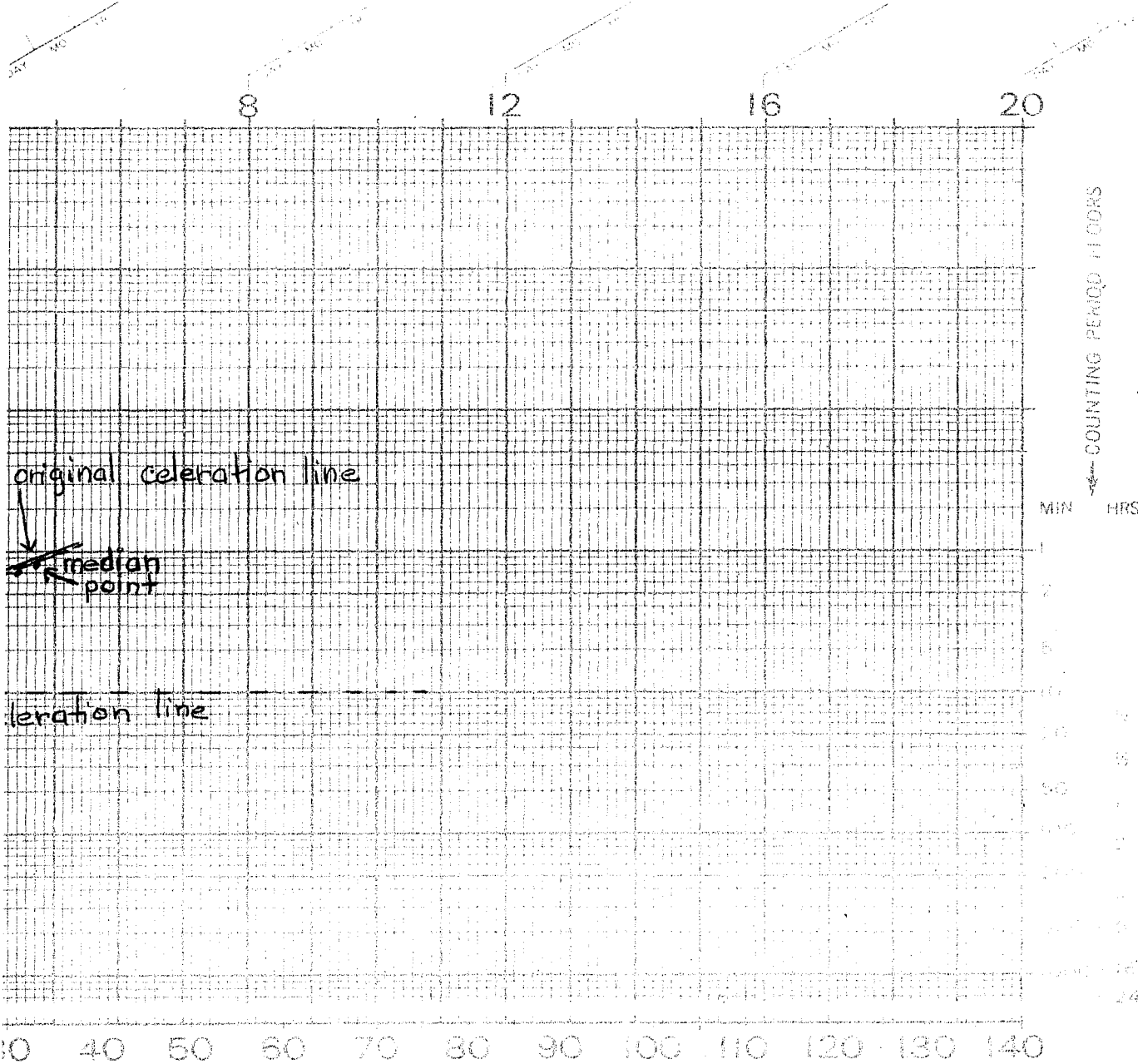
Split Middle Method of Trend Estimator

Figure 3

NDAR WEEKS



U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF RADIATION PHYSICS
WASHINGTON, D.C. 20460
RPT 4581 KANSAS CITY KANSAS MISSOURI



34

GER	BEHAVIOR	AGE	LABEL	COUNTED
Split Middle Method of Trend Estimation				
TIMER	COUNTER	CHARTER		

Figure 3

the following Sunday (day $x+7$) line is 4.1. The ratio for the rate of change, the slope of the celeration line, is $x1.37$. The average rate of responding for a given week is 1.37 times greater than for the prior week.

A celeration finder, a transparent overlay with the rate of change ratios indicated on it, has been developed for ease in determining the slope of the celeration line. This device was used in the analyses which follow.

Change across phases is evaluated by comparing levels and slopes. Hersen and Barlow (1976) describe the process as follows:

To estimate the change in level, a comparison is made between the last data point in baseline and the first data point during intervention. The larger value is divided by the smaller value, yielding a ratio ... A \times or \div sign is used to denote an increase or decrease in behavior as a function of the intervention... Similarly, for a change in slope, the larger slope is divided by the smaller slope, yielding a (ratio) value... The change in level and slope summarizes the differences in performance across phases (p. 307).

When the celeration line of the baseline phase of a study is projected beyond the baseline phase, the result is an estimated prediction of what the rate of behavior under investigation would have been without intervention. Extending the celeration line of the intervention phase predicts, within a limited time, the estimated rate of behavior beyond the intervention phase.

The data chart for Subject A reveals a frequency of zero

during the observation period on the last day of Baseline 2, and a frequency of four on the first day of the Intervention Phase. Computing the comparison with a slide rule yields a ratio of $\times 4.1$. The slope of the celeration line during the Baseline 1 phase, when there was no contact between researcher and Subject, is $\times 1$. For the Baseline 2 phase, when the Subject was engaged in non-directive counseling situations with the researcher, the slope is also $\times 1$. During the intervention phase, when progressive relaxation and positive suggestion were introduced, the slope is $\times 1.2$.

The data chart for Subject B reveals that on the final day of Baseline 2 no observations were possible. The last plotted frequency in Baseline 2 is six, which occurred three days before the beginning of the intervention phase. The plotted frequency for the first day of Intervention is four. Computation yields a ratio of $\div 1.5$. The slope of the celeration line during the Baseline 1 phase is $\div 1.3$ and during Baseline 2, $\div 4$. The slope of the line during Intervention phase, however, is $\times 1.1$.

Neither Subject C nor Subject D completed the study due to illness. Subject C was terminated the day after intervention was introduced and Subject D three days following intervention. The data chart for Subject C reveals a frequency of four during the observation period on the last day of Baseline 2 and a frequency of three on the first day of the Intervention Phase. Computation yields a ratio of $\div 1.3$.

The data chart for Subject D reveals a frequency of one during the observation period on the last day of Baseline 2 and a frequency

of two on the first day of Intervention. The resulting ratio is x^2 . Although celeration lines are drawn for Subjects C and D, consideration of the implications of the celeration lines has not been included in the analysis of results, since Intervention was terminated early in the study.

The main purposes of the split middle technique are prediction and description. It has not been designed as a method of statistical analysis. However, the R_n statistic has been devised to test the significance of change in rate of behavior at the point of intervention in multiple baseline design studies. Hersen and Barlow (1976) describe the procedure as follows:

Baseline data are gathered for given behavior separately across different clients. Treatment is introduced to each individual at different points in time... In the use of the statistic R_n , it is important that individuals are subjected to the intervention one at a time in random order. The performance of an individual subject who receives treatment is compared with "control" subjects for whom treatment has not yet been introduced. The statistical comparison is achieved by ranking scores of each individual at the point when treatment is introduced for any one of the subjects... The sum of the ranks ... constitutes the R_n statistic (p. 298).

Table 1 displays the data for the R_n statistic across the four subjects observed in the present study. With four subjects the maximum value of R_n for significance at the .05 level is 4 (Ibid., p. 300).

Table 1
Interpersonal Interactions Initiated

		Days																									
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21					
Subjects	A	-	4	2	1	0	-	2	0	2	0	1	-	-	1	4 b <u> </u>											
	B	12	-	2	2	11	12	4	1	4	5	6	2	1	6	<u>a</u>	-	<u>4</u> b <u> </u>									
	C	1	3	1	7	-	-	1	3	1	1	2	-	-	-	<u>a</u>	1	<u>o</u> a	<u>a</u>	-	4	<u>3</u> b <u> </u>					
	D	5	3	4	4	-	1	0	6	-	0	-	0	1	-	2 a	-	1 a	2 <u>b</u>								
																Ranks:	1		1	1		1					
																\sum Ranks=4 ($p < .05$)											

a=control days, b=intervention point for subject. Days 1 through 14 serve as baseline days for all subjects and are unmarked.

For the two subjects who continued throughout the study, the charting of behavior frequencies indicates an upward trend during the intervention phase of the study. For Subject A, this is in contrast to a horizontal trend during the baseline. For Subject B it is in contrast to a downward trend. The Rn statistic testing for change at the point of intervention for all four Subjects, is significant at the .05 level. Change was in the hypothesized direction. Therefore, for Hypothesis 1, the research proposition that there would be a positive change in trend in the number of interpersonal contacts initiated by the subjects during the intervention phase of the study is accepted.

Hypothesis 2

There will be a positive change in the number of appropriate verbal responses given by subjects to specified stimulus remarks.

To test this hypothesis, data for Subjects A and B were subjected to a chi square analysis. Responses of the Subjects to the eight stimulus remarks were appropriate in both the pretest and the posttest situations. Chi square yielded a score of zero and no statistical significance. The research proposition that there would be a positive change in the number of verbal responses given by subjects to specified stimulus remarks is rejected.

Hypothesis 3

There will be a positive change in score on a measure of the subjects' short term memory. To test this hypothesis, data for Subjects A and B underwent a chi square analysis. For Subject A, comparison of pretest and posttest scores yielded a chi square of 5.66. With one degree of freedom, this was significant at the .05 level. For Subject B, comparison of pretest and posttest results disclosed no difference in scores. The chi square value was 2.66. With one degree of freedom, this was not statistically significant. Results are displayed on Table 2. The research proposition that there would be a positive change in score on a measure of the Subjects' short term memory is accepted for Subject A and rejected for Subject B.

Table 2

Pretest-Posttest Scores on Short
Term Memory Test

	<u>Pretest</u>	<u>Posttest</u>	<u>Chi Square</u>
Subject A	15	24	5.66*
Subject B	21	21	2.66

* $p < .05$

Summary

Three hypotheses were tested:

1. There will be a positive change in trend in the number of interpersonal contacts initiated by the subjects during the intervention phase of the study;
2. There will be a positive change in the number of appropriate verbal responses given by subjects to specified stimulus remarks;
3. There will be a positive change in score on a measure of the subjects' short term memory.

For Hypothesis 1, the split middle method of trend estimation revealed a positive change in trend in the target behaviors of the two subjects who participated in the investigation until it was completed. The R_n statistic, computed while all subjects were participating, revealed an increase in the number of instances of the target behaviors on the day of intervention which was significant at the .05 level. The hypothesis was accepted.

Analysis of Hypothesis 2 revealed no change in the target behavior. A chi square value of zero was not statistically significant, and the hypothesis was rejected.

Analysis of Hypothesis 3 revealed a positive change in the target behavior for Subject A, with a chi square value significant at the .05 level. Analysis of the same hypothesis for Subject B revealed no change, and a chi square value which was not statistically significant. This hypothesis, therefore, was accepted for Subject A and rejected for Subject B.

Chapter 5

Summary and Conclusions

In Chapter 5 the trends which the data suggest are summarized and conclusions are drawn. These conclusions are discussed in relation to the theory on which this study is based, and implications for further research are presented.

Summary

Analysis of behavior trends revealed that experimental treatment appeared to have an impact on the number of interpersonal contacts initiated by the individual subjects who participated in this investigation. Experimental treatment also appeared to have effected the capacity for immediate recall of one of the subjects. No other effects of treatment were revealed as a result of analysis of the data.

Two of the four original subjects continued with the investigation until its conclusion. Two subjects were prematurely terminated due to illness. The two continuing subjects demonstrated an increasing trend in the number of interpersonal contacts initiated during the time when progressive relaxation and positive suggestion were being presented. During Baseline 1 all subjects showed either a decreasing trend or a constant low level of interaction. During Baseline 2 three of the four continued this pattern and one revealed a minutely increasing trend.

The two continuing subjects participated in a short term memory test at the beginning and at the end of the intervention phase of the study. One subject revealed a significant increase in score as determined by the chi square procedure. Progressive relaxation and positive suggestion did not appear to effect the subjects' ability to respond appropriately to specific stimulus remarks.

Conclusions

The following conclusions may be drawn from the analysis of the data:

1. A trend toward withdrawal from interpersonal contact in the elderly, commonly considered a symptom of senility, can be reversed with treatment when there is no evidence of organic connection.
2. Deterioration in short term memory with no organic basis in an elderly subject can be positively effected by treatment.

Discussion

During the course of this investigation it has been demonstrated that two symptoms attributed to senility, and considered by some to be irreversible, do respond to treatment. The intervention employed has been shown conclusively to reduce anxiety in young and middle age brackets. Transferring this treatment to elderly subjects in this study brought some positive results, implying that certain senile symptoms may be the result of dramatically increased anxiety. The symptom most noticeably effected was withdrawal from interpersonal contact. Anecdotal records maintained on Subjects A and B, in addition to the charted behavior records, indicated what appeared to be an increased enjoyment of life in general. They smiled more often;

they responded in kind to pleasantries offered by others; they chatted at some length with housemothers and began to engage in small group activities. Toward the end of treatment, Subject B attended a church meeting off the premises with approximately thirty people. Previously she had refused to attend meetings at the Home at which ten persons would be in attendance. Subject A had been a librarian and a gardening enthusiast, but had not participated in either actively in many months. She expressed fear that she could not cope with the library at the Home. She felt she "would get things mixed up". Before this study was ended, she was making concrete plans to organize the library at the Home. She had also attended a seminar at the Home on the potting and care of house plants and was growing an hibiscus. Two weeks prior to the end of this investigation Subject A experienced a remarkably stressful situation. A friend of many years, close to her own age, died. She experienced grief at the loss of her friend and anxiety about her own proximity to the end of life. She expressed her sorrow to me and to the housemothers and discussed her anxiety. The staff at the Home indicated that this was a dramatic change from previous reactions to traumatic situations. These responses are encouraging to the continuation of research in this area.

The effect of this treatment on signs of confusion as measured by the number of appropriate responses to specific stimulus remarks, is not known. The subjects who were chosen for the study demonstrated no signs of mental confusion at any time during the investigation. On both pretest and posttest their responses to the stimulus remarks were entirely appropriate.

Subject B. whose pretest and posttest scores on a measure of short term memory showed no difference, demonstrated immediate recall effective to a degree which made it doubtful she could exhibit any significant change. She recalled twenty-one (21) of the twenty-seven (27) words correctly.

Implications for Future Research

Future investigation in this area may increase the possibilities for a fulfilling life for elderly people who are exhibiting senile symptoms as a result of anxiety. A suggestion would be to institute follow-up studies to determine the duration of treatment effects. Follow-up studies might also be useful in defining the duration of treatment necessary to prevent deterioration of positive effects.

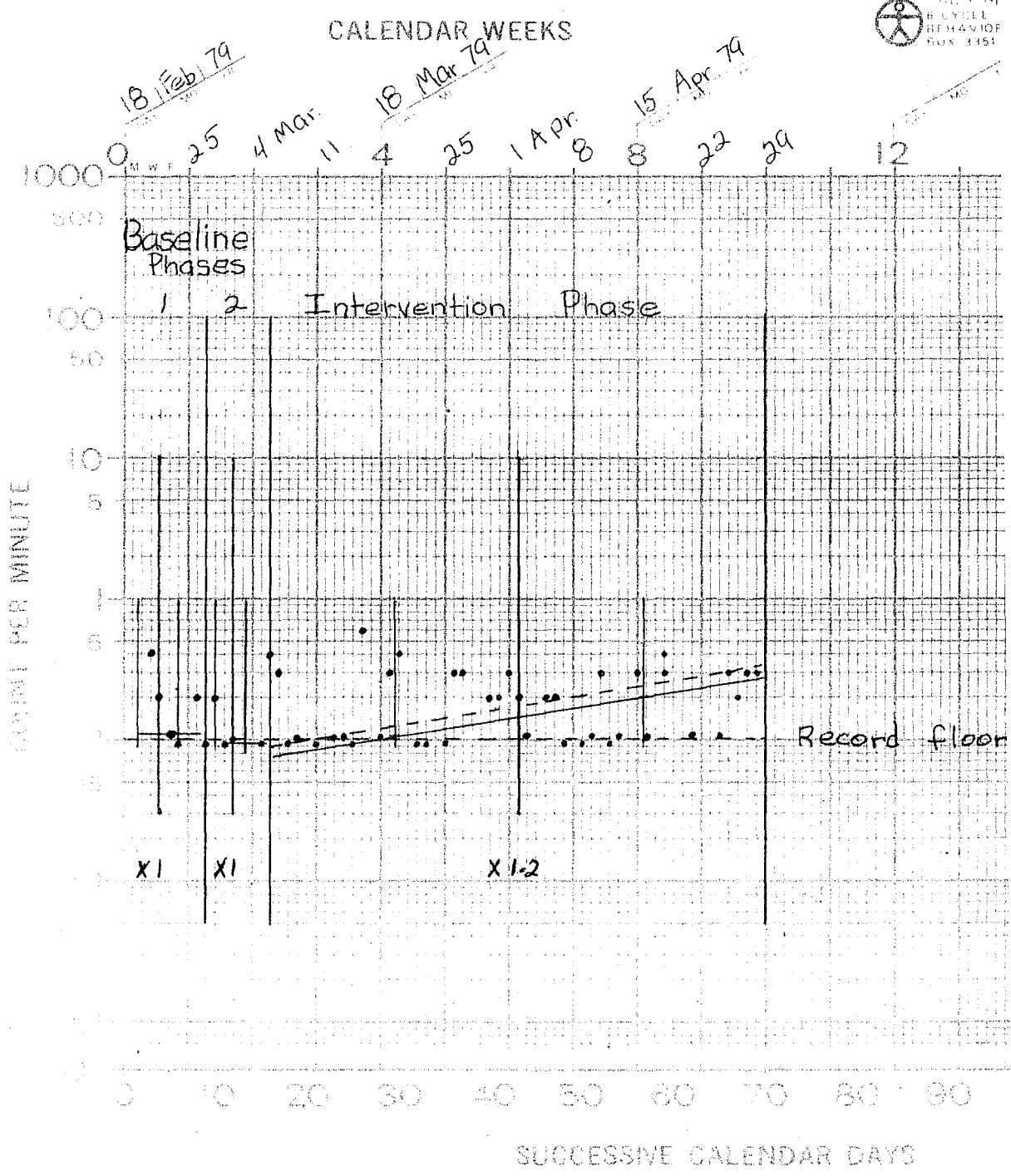
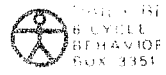
Another investigation might employ longer or more frequent observation periods in order to give the target behavior opportunities to be noted in situations which are more completely representative of the subjects' daily range of activities. This could make it possible to generalize results more widely than the limits of the present study permit.

A more in-depth preliminary study of potential subjects might result in treatment designed more specifically for individual needs. Stress points in the lives of potential subjects might be examined for their relationship to target behavior. In this way particular symptoms could be singled out for treatment in each subject. In other words, subjects might be selected and their needs determined before target behaviors are selected and treatment designed.

It is strongly recommended that the single case experimental design be employed in subsequent studies in this field. For research purposes it is well suited to determine results of intervention with individual subjects. Perhaps more important for this special population, it affords the researcher the opportunity to affirm the personal worth of the subjects, reinforce their self-esteem and attest to their coping ability.

APPENDIX

APPENDIX A
BEHAVIOR FREQUENCY CHARTS



SUPERVISOR ADVISER MANAGER

DEPOSITOR AGENCY TIMER COUNTER

WEEKS

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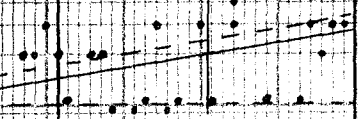
1 Apr 8
15 Apr 79
8 22 24

12 16 20

on Phase

COUNTING PERIOD FLOORS

MIN HRS



Record floor

X1.2

40 50 60 70 80 90 100 110 120 130 140

SUCCESSIVE CALENDAR DAYS

A

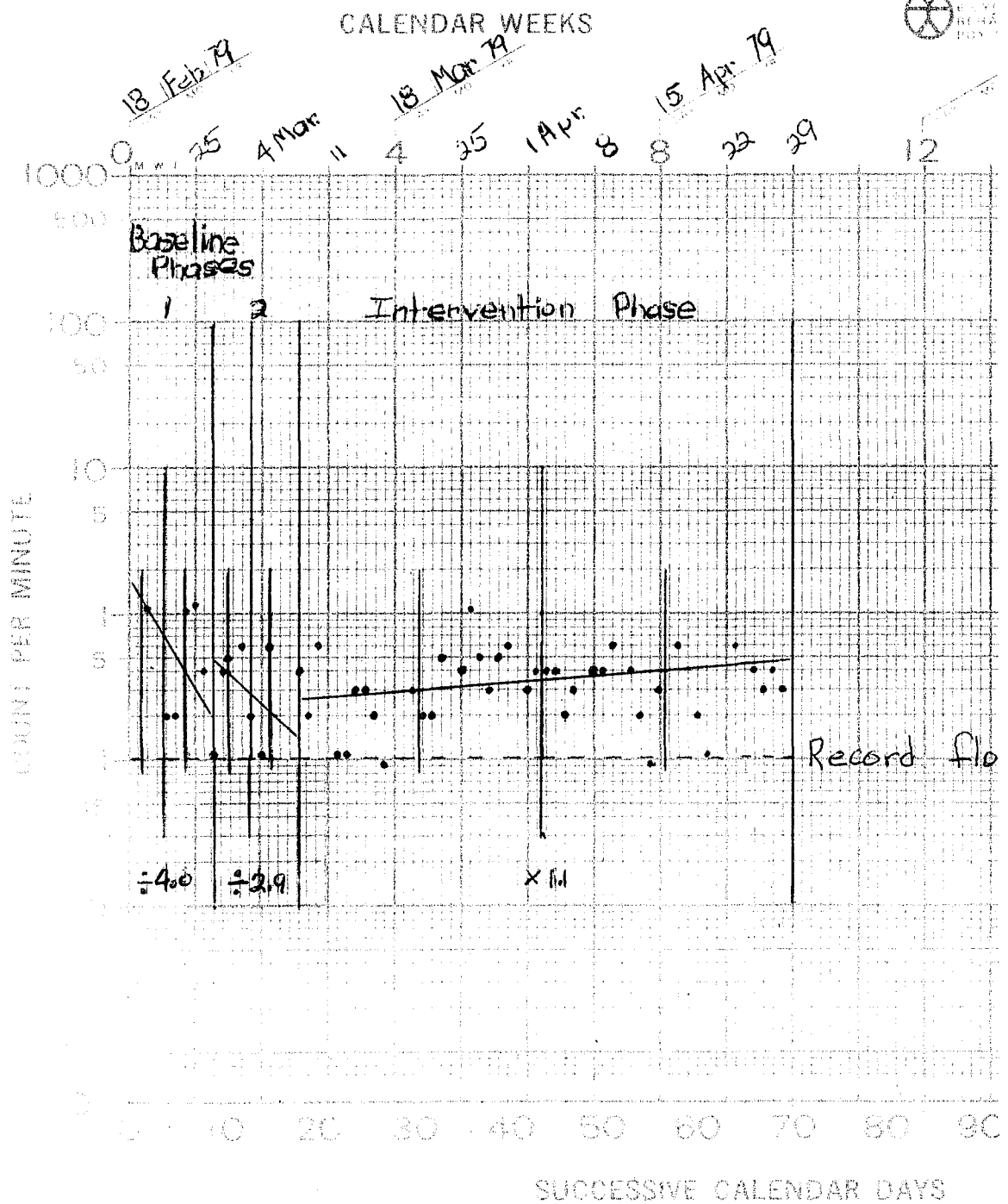
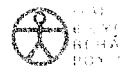
REMARKS AGE LABEL COUNTED

TIMER

COUNTER

CHARTER

87



SUPERVISOR

ADVISER

MANAGER

DEPOSITOR

AGENCY

TIMER

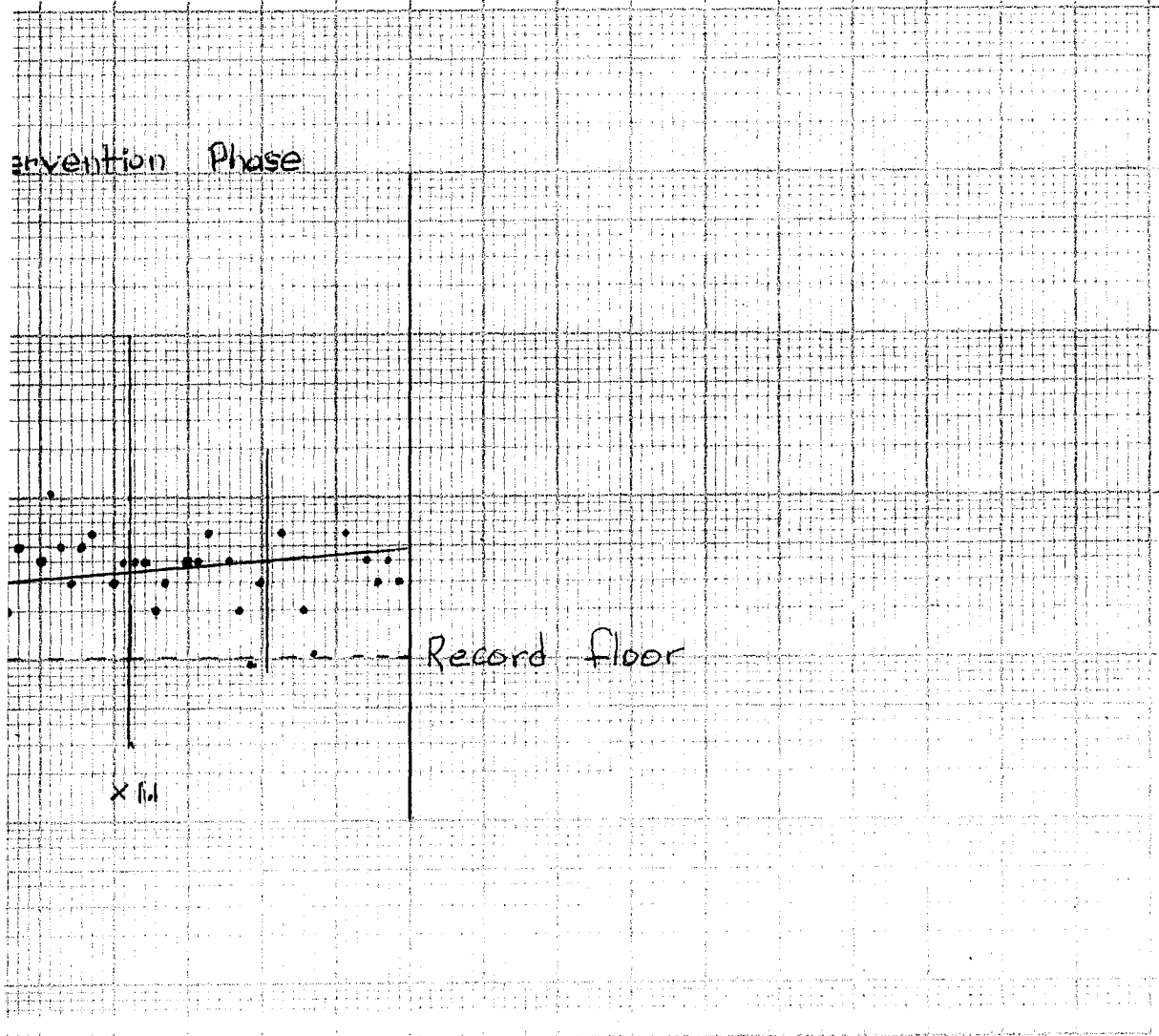
COUNTER

STAR WEEKS

Apr 79
25 1 Apr 8 8 15 Apr 79 22 29



... 11 ... 12 ... 13 ... 14 ... 15 ... 16 ... 17 ... 18 ... 19 ... 20 ... 21 ... 22 ... 23 ... 24 ... 25 ... 26 ... 27 ... 28 ... 29 ... 30 ... 31 ...



COUNTING PERIOD FLOORS
MIN
HRS

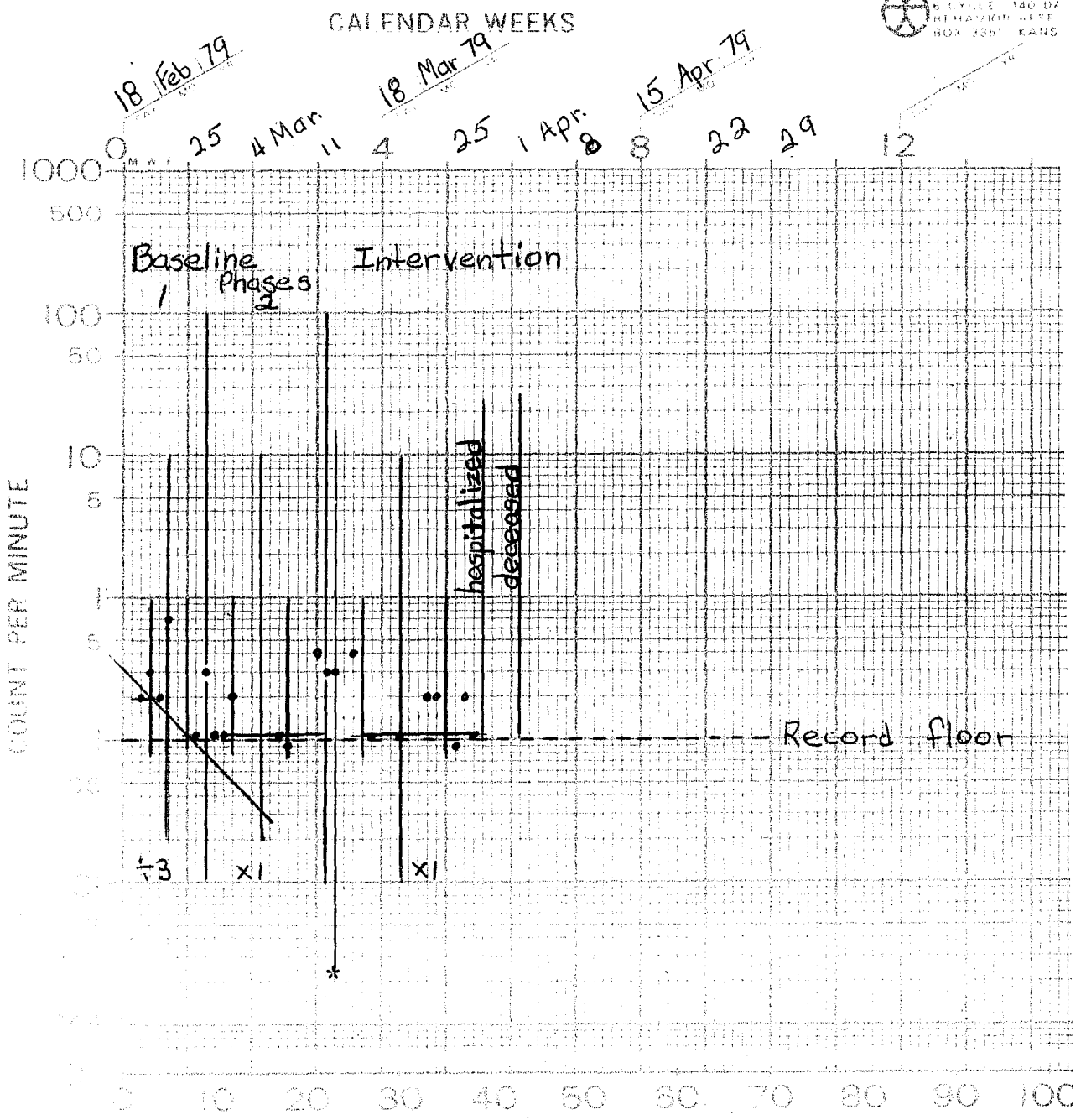
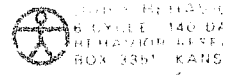
0 40 50 60 70 80 90 100 110 120 130 140

SUCCESSIVE CALENDAR DAYS

B

ER BEHAVIOR AGE LABEL COUNTED

TIMER COUNTER CHARTER



SUPERVISOR _____ ADVISER _____ MANAGER _____ BEHA **C**

*Subject terminated due to illness

DEPOSITOR _____ AGENCY _____ TIMER _____ COUNTER _____ CHAR _____



UNIVERSITY OF KANSAS
 A CYCLE 140 DAYS IN WEST
 BEHAVIOR RESEARCH UNIT
 BOX 235 KANSAS CITY, KANS. 66101

S

Pr. 8

15 Apr 79

8

22

29

12

16

20



COUNTING PERIOD FLOORS

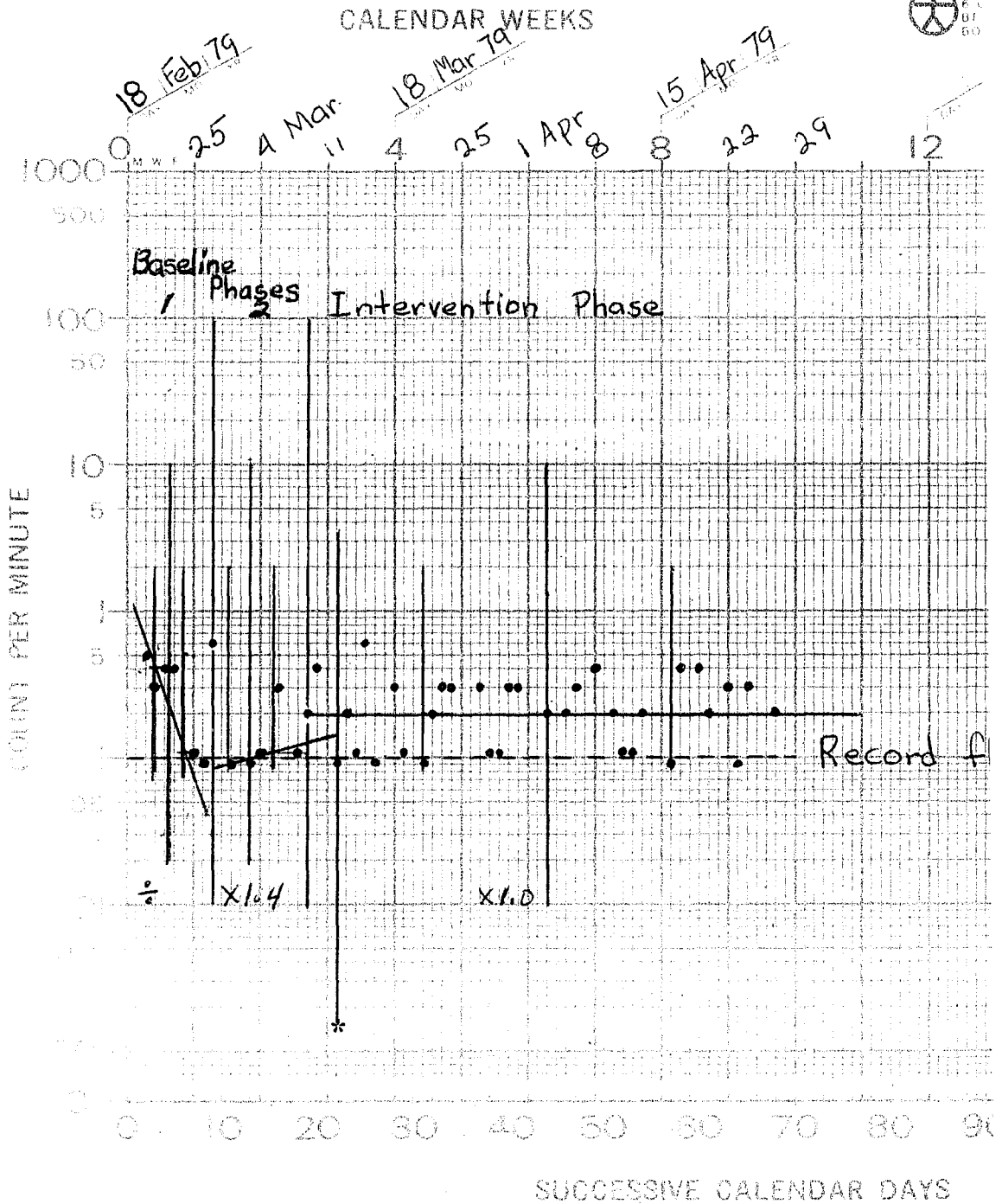
MIN HRS

Record floor

SUCCESSIVE CALENDAR DAYS

terminated due to illness

TIMER COUNTER CHARTER BEHAVIOR AGE LABEL COUNTED



SUPERVISOR

ADVISER

MANAGER

*Subject terminated due to illness

DEPOSITOR

AGENCY

TIMER

COUNTER

WEEKS

APR 8

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29

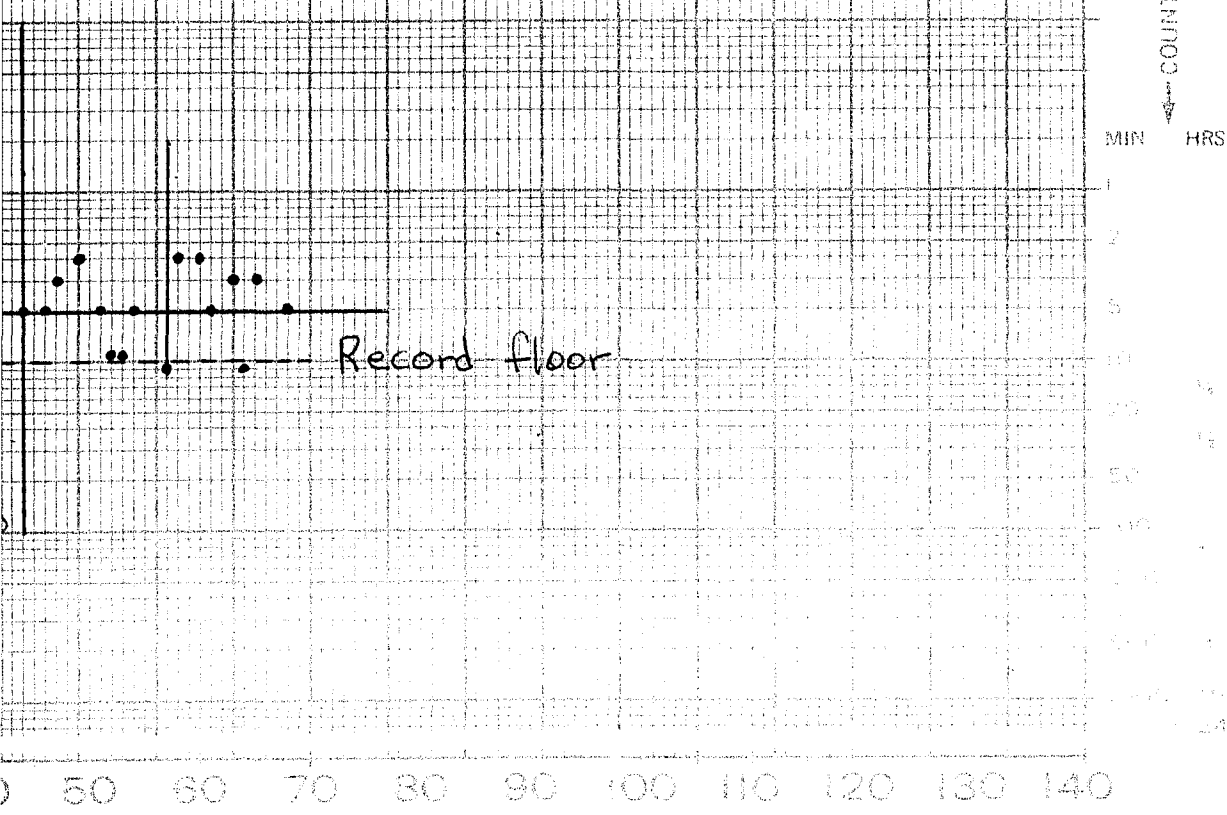
U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL BUREAU OF HEALTH SERVICES
1601 KANSAS CITY KANSAS 64108



16

20

Phase



SUCCESSIVE CALENDAR DAYS

terminated due to illness

D

BEHAVIOR AGE LABEL COUNTED

TIMER

COUNTER

CHARTER

APPENDIX B
VOCABULARY CARDS

Card 1:

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Card 2:

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job

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Card 3:

six

for

new

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Card 4:

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Card 5:

put

gas

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Card 6:

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Card 7:

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cat

her

lit

hid

nor

APPENDIX C

STIMULUS REMARKS

1. Tell me your name, please.
2. Do you know the mailing address of the Baptist Home?
3. What day of the week is it?
4. What month are we in?
5. What is the year?
6. Can you tell me when your birthday is?
7. What was the last holiday you celebrated?
8. What is the next holiday we will celebrate?

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Abstract

The Effects of Relaxation and Positive Suggestion on Early Symptoms of Senility in Older Adults in an Institutional Setting

Simons, Helen G., E.D.

The College of William and Mary in Virginia, 1979

Chairman: Charles O. Matthews, Ph.D.

Symptoms of senility have been traditionally regarded as irreversible. However, current theory is distinguishing between senile symptoms with an organic base such as brain damage, and those without organic connection. In the latter case, research has begun to demonstrate that the symptoms arise from heightened anxiety and respond to treatment. This study explores the impact of progressive relaxation and positive suggestion on three specific senile symptoms in four elderly subjects with no history of brain damage. The three symptoms are withdrawal from interpersonal contact, mental confusion and impairment of short-term memory.

Subjects were selected from among the residents at the Virginia Baptist Home in Newport News. Treatment included meeting individually with each subject for thirty minutes four times each week for eleven weeks. Techniques employed were non-directive counseling, instruction in progressive relaxation and positive suggestion. The multiple baseline, single case experimental design was used.

Testing for the effects of treatment included pre-treatment and post-treatment comparison of results on a vocabulary test for short-term memory and tape recorded conversations designed to indicate mental confusion. The number of interpersonal interactions initiated by the subjects during an unstructured social period each day was tabulated and trends were estimated.

Results indicate the following:

1. Treatment influenced the number of interpersonal contacts initiated by the subjects, causing an increase in trend.
2. Treatment had a significant impact on the capacity for immediate recall in one subject, increasing it.
3. Treatment had no measurable effect on mental confusion.

Vita

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Education

Doctorate of Education in Counseling at the College of William and Mary, August 1979.

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Experience

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1971-1973 Counselor in Drug Rehabilitation at Proclaim Center, Hampton, Virginia.

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