

APRIL 1, 1964 - APRIL 30, 1965

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BEHAVIOR PROSTHESIS LABORATORY
WALTER E. FERNAUD STATE SCHOOL

- 6.0 **ADMINISTRATION:** AS YET WE HAVE NOT COMPLETELY OVERCOME THE DELAYING EFFECTS OF THE SEVEN MONTH CONSTRUCTION PERIOD DURING OUR FIRST YEAR OF THE GRANT. HOWEVER, IN SPITE OF THIS, THE CURRENT YEAR HAS BEEN A WHIRLWIND OF ACTIVITIES ON ALL FRONTS IN THE NEW LABORATORY FOR BEHAVIOR EVALUATION.
- 1.1 **PERSONNEL:** OUR CURRENT COMPLEMENT OF STAFF INCLUDES A SECRETARY (HT), 2 LABORATORY ASSISTANTS (BOTH FT), A REGISTERED NURSE, A PART TIME ELECTRONIC TECHNICIAN, AND A DATA ANALYSIS ASSISTANT (HT) RECENTLY ACQUIRED FROM DR. OGDEN LINDSLEY'S LABORATORY. DUE TO MARRIAGES WE HAVE HAD 100% TURNOVER IN LABORATORY ASSISTANTS. ELECTRONIC ASSISTANCE HAS BEEN PARTICULARLY SPORADIC DUE TO THE VICISSITUDES OF STUDENT EMPLOYMENT. WITH A FULL TIME TECHNICIAN FOR THE SUMMER AND EXPECTATION OF A FULL TIME MAN IN THE FALL, WE PLAN TO MAKE UP FOR A GOOD PART OF THE TIME LOST DURING MIT EXAMS, VACATIONS, ETC.
- 1.2 **OFFICE FACILITIES:** A THIRD OFFICE HAS BEEN PARTIALLY EQUIPPED AND NOW HOUSES OUR DATA ANALYSIS, DATA STORAGE, AND MANUSCRIPT DUPLICATING OPERATIONS. A DITTO MACHINE AND TWO STENOGRAPHS HAVE BEEN PURCHASED TO REPLACE EQUIPMENT PREVIOUSLY BORROWED FROM DR. LINDSLEY. ADDITIONAL FILING CABINETS, A TYPEWRITER, AND A PHOTO COPY MACHINE HAVE BEEN ACQUIRED THROUGH THE GENEROSITY OF THE FERNAUD CORPORATION. A FIVE STATION INTERCOM SYSTEM HAS BEEN INSTALLED TO SAVE TIME IN COMMUNICATING WITH STAFF MEMBERS.
- 1.3 **LABORATORY FACILITIES:** SIX OF OUR EIGHT CONDITIONING CUBICLES HAVE BEEN EQUIPPED WITH CUSTOM FITTED CONCEALING AND PROTECTIVE SCREENING IN THE REAR CEILING AND A PERISCOPIC OBSERVATION SYSTEM DESIGNED ESPECIALLY FOR OUR APPLICATION. MASKING NOISE NOW REACHES FOUR OF THESE ROOMS. CUSTOM FITTED SOUND-ATTENUATED ACCESS PANELS HAVE BEEN INSTALLED IN THE CONTROL AREA BEHIND EACH OF THESE ROOMS. MOST OF THE PAINTING OF THESE ADDITIONS HAS BEEN DONE BY THE STAFF DURING OFF-DAYS AND WEEKENDS.
- TWO MORE CONDITIONING CUBICLES HAVE BEEN EQUIPPED AND PUT INTO DAILY OPERATION SINCE JUNE 1, 1964. THESE ADDITIONAL ROOMS PERMIT US TO STUDY MORE CHILDREN WITH A BROADER RANGE OF POTENTIALLY USEFUL REINFORCING AGENTS ON A VARIETY OF SCHEDULES.
- A ROOF ANTENNA WAS INSTALLED TO IMPROVE THE SIGNALS TO OUR TELEVISION-REINFORCEMENT ROOM, AND A MONITOR NOW ENABLES US TO CHECK THE CONTENT AND QUALITY OF THE VIDEO FOR WHICH EACH CHILD WORKS.
- DIRECT MEASUREMENT OF THE PATTERNS AND RATES OF LOCOMOTION DURING DISCRIMINATION LEARNING IS NOW PROVIDED BY PRESSURE-SENSITIVE MATS CONCEALED BY CARPETING. CONTINUOUS, DIRECT MEASUREMENT OF THE RATE OF VOCALIZATION VIA VOICE-OPERATED RELAYS IS ALSO AVAILABLE IN TWO OF OUR CONDITIONING ROOMS.
- 1.4 **STUDENT SCHEDULING AND TRANSPORTATION:** OUR NURSE AND LABORATORY ASSISTANT CONTINUE TO WORK ON MORE EFFECTIVE MEANS OF SCHEDULING CHILDREN IN THE LABORATORY, COORDINATING THEIR LAB VISITS WITH THEIR OTHER ACTIVITIES, AND ARRANGING FOR TRANSPORTATION TO AND FROM THE LAB. DUE TO THE GROSS INADEQUACY OF THE INSTITUTION'S TRANSPORTATION FACILITIES, MOST OF OUR CHILDREN ARE DRIVEN PERSONALLY BY THESE TWO STAFF MEMBERS.
- 1.5 **DATA RECORDING AND PROCESSING:** OUR RESEARCH ASSISTANT HAS RESPONSIBILITIES FOR ORDERING THE FLOW OF EXPERIMENTAL DATA FROM THE DIRECTOR'S WEEKLY INSTRUCTIONS FOR EACH CHILD TO THE SYSTEMATIC RECORDING OF EXPERIMENTAL RESULTS THROUGH THEIR DAILY SUMMARIZATION TO THEIR PLOTTING BY OUR DATA ANALYSIS ASSISTANT. PRINTED CARDS HAVE BEEN PROVIDED FOR RECORDING NUMERICAL AND CLINICAL SUMMARIES OF EACH SESSION WITH EACH CHILD AS WELL AS SUMMARIES OF THE TOTAL DAILY LABORATORY OPERATIONS. FORMS ARE ALSO IN USE FOR RECORDING THE WEEKLY SEQUENCE OF EXPERIMENTAL PROGRAMS FOR EACH CHILD. A TIME CLOCK IS USED FOR STAMPING EACH CHILD'S DATA IMMEDIATELY UPON COMPLETION OF EACH SESSION.
- 1.6 **STORAGE OF SUPPLIES AND APPARATUS** HAS BEEN ORGANIZED TO MAKE MAXIMUM USE OF VERY LIMITED SPACE AND TO ASSIST IN LOCATING AND INVENTORYING OUR STOCK.
- 1.7 **JANITORIAL SERVICE** HAS BEEN FURNISHED IN PART BY OUR VOCATIONAL REHABILITATION TRAINEE (SEE TRAINING BELOW) AND BY PROFESSIONAL FLOOR CLEANERS PAID OUT OF INDIRECT COST ALLOWANCE.
- 1.8 **ADEQUATE PARKING SPACE** IMMEDIATELY OUTSIDE THE LABORATORY WAS RECENTLY ACQUIRED THROUGH THE COOPERATION OF THE FERNAUD ADMINISTRATIVE OFFICES. SNOW REMOVAL IN THIS AREA WAS BEGUN TOWARD THE END OF LAST WINTER SO OUR HANDICAPPED RESIDENTS HAVE A LESS HAZARDOUS ENTRANCE TO THE LABORATORY.

2.0 LABORATORY BEHAVIOR AND DEFICIT BEHAVIOR DEFICITS ARE BEING MEASURED IN OVER 100 CHILDREN, 70% OF WHOM ARE MALE. NEARLY ALL OF THESE NEW SUBJECTS ARE CONSIDERED TO BE MENTALLY AND PROFOUNDLY RETARDED. MOST ARE NON-VERBAL, MANY ARE NOT TOILET TRAINED, A WELL KNOWN SUBJECT IS NON-AMBULATORY AND IS CONSIDERED TO BE DEAF. APPROXIMATELY 2700 HOURS OF LABORATORY DATA HAVE BEEN COLLECTED ON THESE CHILDREN IN THE LAST YEAR.

2.1 CLINICAL PROBLEMS PRESENTED. WE ARE EXCEEDING THE LIMITS OF THE INSTITUTIONALIZED RETARDED POPULATION AND THE TYPES OF PROBLEMS TO WHICH OUR METHODS ARE APPLICABLE. FOR THIS REASON, MOST OF OUR CHILDREN HAVE BEEN SELECTED FROM THE MORE UNRESPONSIVE OR MORE SEVERE BEHAVIOR MANAGEMENT PROBLEMS ON WARDS HOUSING THE "LOWEST LEVEL" FEDERAL SCHOOL RESIDENTS. OTHER CHILDREN WERE SELECTED IN AN ATTEMPT TO ANSWER QUESTIONS RAISED IN PEDIATRIC-NEUROLOGICAL CONFERENCES WITH OUR CONSULTANTS FROM MASSACHUSETTS GENERAL HOSPITAL. EIGHT CHILDREN FROM OUR ORIGINAL GROUP PRESENT BEHAVIOR DEFICITS WHICH WE ARE STILL ANALYZING.

BEHAVIOR BASELINES ON TWO CHILDREN WITH PKU WERE STARTED PRIOR TO INITIATION OF LOW PHENYLALANINE DIET IN HOPES OF PICKING UP BEHAVIORAL EFFECTS. TWO OTHER CHILDREN INITIALLY PRESENTED SEVERE ATAXIA AND ARE BEING FOLLOWED TO DETECT BEHAVIOR CHANGES RESULTING FROM CHANGES IN ANTICONVULSANT MEDICATION. ONE TUBERCULOSIS SUFFERER CHILD PRESENTS THE OPPORTUNITY TO TRACE BEHAVIOR DETERIORATION ASSOCIATED WITH PROGRESSIVE NEUROLOGICAL DISEASE. SIX CHILDREN PRESENT A VARIETY OF REPETITIVE MOTOR SYMPTOMS INCLUDING ROCKETING, FINGER FLICKING, AND HEAD HITTING. FOUR ARE MONGOLOIDS AND TWO ARE MICROCEPHALIC WITH A VARIETY OF BEHAVIOR PROBLEMS; TWO ARE SAID TO BE AUTISTIC.

2.2 BEHAVIORAL METHODS IN USE

2.21 SIMULTANEOUS MEASUREMENT OF RESPONSE DIFFERENTIATION AND STIMULUS DISCRIMINATION STILL PROVIDES OUR MOST POWERFUL METHOD FOR DELINEATING INDIVIDUAL PATTERNS OF DEFICIT AMONG RETARDED CHILDREN. WE HAVE BEEN SCREENING DIURNALLY IN THE RANGE OF RETARDATION ATTEMPTING TO ESTIMATE THE PERCENTAGE OF THE POPULATION WITH WHICH THIS METHOD IS USEFUL. THUS FAR 84% OF THE CHILDREN HAVE RESPONDED FAVORABLY TO THIS METHOD OF BEHAVIOR MEASUREMENT. OTHER METHODS ARE NECESSARY FOR 8% AND THE REMAINING 8% HAVE BEEN WITH US TOO SHORT A TIME TO YIELD DEFINITIVE DATA.

MOST OF OUR CHILDREN WHO ARE "UNTESTABLE" BY CONVENTIONAL PSYCHOMETRIC STANDARDS PRESENT SUFFICIENT BEHAVIOR TO BE ANALYZED BY THIS METHOD, AND ALREADY WE HAVE UNCOVERED SKILLS NOT HERETOFORE SHOWN IN THIS GROUP. ONE OF OUR MOST ADEPT CHILDREN IS A 16 YEAR OLD MONGOLOID WHO HAS NEVER BEEN CONSIDERED ELIGIBLE BY THE INSTITUTION'S EDUCATION DEPARTMENT. A CHILD PRESUMED TO BE BOTH "DEAF" AND "AUTISTIC" HAS REVEALED CLOSE TO NORMAL DISCRIMINATION OF LIGHT CONFIGURATIONS AND DIFFERENTIATION OF RESPONSE POSSIBILITIES. HIS BEHAVIOR DOES NOT EVEN APPROACH THE RANGE OF DEFICIT FOUND IN A RECENT STUDY OF BONAFIDE AUTISTIC CHILDREN WITH IDENTICAL METHODS.

IN CHILDREN WHO DO NOT TELL THE DIFFERENCE BETWEEN THE "PAYOFF" AND THE "NON-PAYOFF" PLUNGER, WE ARE CURRENTLY EXAMINING THE EFFECTS OF 1) ADDING NEW RESPONSE POSSIBILITIES, 2) INCREASING THE PHYSICAL ENERGY REQUIRED TO PULL THE "WRONG" PLUNGER, 3) SPECIFIC INSTRUCTIONS WITH RESPECT TO THE "RIGHT" AND "WRONG" PLUNGERS, AND 4) LOCKING THE "WRONG" PLUNGER THEREBY MAKING IT IMPOSSIBLE TO OPERATE. WITH CHILDREN WHO DO NOT DISCRIMINATE THE DIFFERENCES BETWEEN THE LIGHTS, WE ARE CHANGING THE COLORS OF THE LIGHTS, INCREASING THEIR BRIGHTNESS DIFFERENCES, AND ADDING PURE TONES TO DETERMINE WHETHER THE DISCRIMINATION DEFICIT CROSSES BOTH VISUAL AND AUDITORY SENSORY MODALITIES.

2.22 EXPLORATION OF REINFORCER APPROPRIATENESS: 8% OF OUR CHILDREN HAVE FAILED TO ENIT ENOUGH BEHAVIOR FOR CANDY IN THE DISCRIMINATION ENCLOSURE TO PERMIT SPECIFIC DEFICIT ANALYSIS. IN AN EFFORT TO DETERMINE WHETHER THIS UNRESPONSIVENESS IS A PRODUCT OF THE TYPE OF REINFORCER OR THE COMPLEXITY OF THE SCREENING DISCRIMINATION SITUATION, WE HAVE PROVIDED THREE HIGHLY SIMPLIFIED EXPERIMENTAL ENVIRONMENTS IN WHICH WE CAN COMPARE REINFORCER AND SCHEDULE EFFECTIVENESS IN "REACHING" THESE APPARENTLY AIMLESS, UNDIRECTED CHILDREN.

COLORED TRANSPARENCIES OF BIRDS, FISH, ANIMALS, CHILDREN AROUND THE WORLD, AND ALPHABET CARTOONS ARE AVAILABLE IF THE CHILD OPERATES A SINGLE PLUNGER IN ONE OF OUR RECENTLY EQUIPPED CONDITIONING ROOMS. MUSIC CAN BE HEARD EITHER CONTINUOUSLY OR IN EPISODES BY OPERATING A PUSH-BUTTON SWITCH IN ANOTHER ROOM. IMMEDIATE COMPARISONS BETWEEN THE EFFECTS OF MUSIC AND SLIDES AS WELL AS BETWEEN CANDY AND MUSIC FOR A GIVEN CHILD ARE POSSIBLE SINCE THESE ROOMS ARE SET UP FOR MULTIPLE APPLICATION.

A FOURTH ROOM PROVIDES COMMERCIAL TELEVISION. THE CHILD MAY WORK FOR CONTINUOUSLY AVAILABLE VIDEO WHILE RECEIVING AUDIO "FREE" OR VICE VERSA, THUS ENABLING US TO ASSESS THE EFFECTIVENESS OF VISUAL VERSUS AUDITORY INPUT AS A REINFORCER FOR INDIVIDUAL CHILDREN.

THE INDIVIDUAL DIFFERENCES IN RESPONSE TO THIS VARIETY OF REINFORCERS IS CONSIDERABLE. NOVELTY MAY PRODUCE INITIALLY DECEPTIVE EFFECTS WHICH DISAPPEAR UNDER MORE PROLONGED USE. IT BEGINS TO APPEAR THAT OUR TECHNIQUES MAY PROVE USEFUL IN DETERMINING THE RELATIVE EFFECTIVENESS OF VISUAL VERSUS AUDITORY FORMS OF COMMUNICATION WITH EACH CHILD. THE EFFECTS OF DIFFERENT CONTENT, AND THE DIFFERENTIAL EFFECTS OF EPISODIC PRESENTATION VERSUS CONTINUOUS AVAILABILITY OF VISUAL AND AUDITORY STIMULI ARE STILL IN QUESTION.

2.23 HYPERMOTILITY AND REPETITIVE MOVEMENTS: THE PRESENT STUDY WILL BE INTERMITTENT AND INTRA-INDIVIDUAL VARIABILITY OF BEHAVIOR. MOTILITY REQUIRES PROLONGED STUDY TO REVEAL ANY LAWFULNESS, AND OUR ANALYSIS IS CURRENTLY INCOMPLETE. OUR REPETITIVE MOVEMENT ANALYSIS HAS BEEN TEMPORARILY SHELVED PENDING COMPLETION OF A MORE DURABLE, AND MORE MOVEMENT-SPECIFIC TRANSDUCING SWITCHES AS WELL AS MORE RELIABLE TRANSMISSION AND RECEIVING EQUIPMENT. OUR INITIAL RESULTS INDICATE THAT, FOR A GIVEN TOPOGRAPHY OF MOVEMENT, E.G. ROCKING, THERE ARE MARKED INDIVIDUAL DIFFERENCES WITH RESPECT TO 1) ROCKING RATE, 2) INTERMITTENCY OF ROCKING EPISODES, AND 3) THE EXTENT OF COMPETITION WITH REINFORCED BEHAVIOR.

3.0 RELEVANT CLINICAL OBSERVATIONS FOR FURTHER ANALYSIS: WHILE CHILDREN ARE IN THE LABORATORY WAITING ROOM WE HAVE OPPORTUNITY FOR MANY TYPES OF OBSERVATIONS WHICH MAY PROVIDE CLUES FOR FURTHER EXPERIMENTATION AND FOR WARD APPLICATION. TWO MAJOR CATEGORIES OF BEHAVIOR ARE CURRENTLY BEING ANALYZED BY INFORMAL OBSERVATION TECHNIQUES.

3.1 DEGREE OF SELF-HELP AND LABORATORY OPERANT BEHAVIOR: OF THESE CHILDREN WHO FAIL TO RESPOND FOR CANDY REINFORCEMENT, NEARLY ALL CURRENTLY RESIDE IN A DORMITORY COMPLEX WHERE SPOON FEEDING OF PUREED FOOD BY AN ATTENDANT PREVAILS IRRESPECTIVE OF THE CHILD'S MOTOR CONTROL, AGE, OR ABILITY TO MASTICATE SOLID FOOD. FURTHER LABORATORY ANALYSIS SUGGESTS THAT THE LACK OF RESPONSIVENESS IN THESE CHILDREN DOES NOT SEEM TO BE SPECIFIC TO CANDY BUT GENERALIZED TO MOST OF THE REINFORCERS AVAILABLE IN THE LABORATORY. MORE COMPREHENSIVE OBSERVATION OF CARE-TAKING PRACTICES ON THEIR WARDS INDICATES THAT, FOR THE MOST PART, NEARLY EVERYTHING IS DONE FOR THESE CHILDREN. LITTLE OPPORTUNITY IS GIVEN THEM TO ACQUIRE NORMAL METHODS OF DEALING WITH THEIR ENVIRONMENT. WHETHER THEIR LABORATORY-MEASURED BEHAVIOR WILL BE ALTERED BY CHANGES IN CARE-TAKING PRACTICES REMAINS A QUESTION FOR INVESTIGATION. AS YET WE CANNOT ASSUME THAT THEIR LACK OF RESPONSIVENESS IS A PROPERTY OF THE TYPE OR SEVERITY OF THEIR RETARDATION.

3.2 DEFECATION AND/OR URINATION AS OPERANTS: A NUMBER OF OUR MORE RECENTLY ADDED CHILDREN DEFECATE AND/OR URINATE IN THEIR CLOTHING WITH AMAZING REGULARITY DURING THEIR FIRST FEW WEEKS IN THE LABORATORY. NEARLY ALL OF THESE CHILDREN ARE NON-VERBAL. IT APPEARS LIKELY THAT THESE CHILDREN USE URINATION AND DEFECATION AS A MEANS OF GETTING ATTENTION WHEN OTHER RESPONSES ARE UNSUCCESSFUL. IF THEIR DIAPERS AND/OR CLOTHING ARE CHANGED IMMEDIATELY, THEY PERSIST IN THIS BEHAVIOR EACH DAY. IF THEY ARE ALLOWED TO REMAIN IN THEIR SOILED CLOTHING STRICT ATTENTION TO THIS ELIMINATIVE RESPONSE BUT WITH ATTENTION TO OTHER DESIRABLE RESPONSES, THE FREQUENCY OF URINATION AND DEFECATION DECREASES MARKEDLY UNTIL, IN MOST CASES, IT DISAPPEARS COMPLETELY (WHILE IN THE LABORATORY). WE ARE BEGINNING TO GATHER SYSTEMATIC DATA ON THIS BEHAVIOR IN HOPES OF OBTAINING SOME EVIDENCE TO GUIDE US IN COUNSELING WARD PERSONNEL IN TOILET TRAINING THESE CHILDREN.

4.0 COMMUNICATION

4.1 NEW PUBLICATIONS:

4.11 A PERISCOPE FOR BEHAVIOR OBSERVATION. J. EXP. ANAL. BEHAV., 1964, 7, 450. (WITH S. ASANO) DESCRIBES OUR OBSERVATION SYSTEM DESIGNED WITH THE AID OF A CONSULTANT OPTICAL ENGINEER. THE DEVICE, WITH MINOR MODIFICATION, IS APPLICABLE IN BOTH ANIMAL AND HUMAN BEHAVIOR OBSERVATION. IT IS FAR MORE ECONOMICAL THAN CLOSED CIRCUIT TELEVISION AND IS USEFUL WHERE "ONE WAY VISION" MIRRORS ARE IMPRACTICAL. THIS DEVICE IS NOW COMMERCIALY AVAILABLE.

4.12 ACQUISITION OF OPERANT DIFFERENTIATION AND DISCRIMINATION IN INSTITUTIONALIZED RETARDED CHILDREN. SUBMITTED TO AMER. J. MENT. DIS.. THIS PAPER SUMMARIZES EARLY LEARNING PATTERNS SHOWN BY 25 RETARDED CHILDREN AND SUGGESTS APPLICATION OF THE FINDINGS TO ASSESSMENT AND TRAINING PROCEDURES.

4.2 ARTICLES ANTHOLOGIZED:

4.21 DEFICITS IN ACQUISITION OF OPERANT DISCRIMINATION AND DIFFERENTIATION SHOWN BY INSTITUTIONALIZED RETARDED CHILDREN. AMER. J. MENT. DIS., 1962, 67, 424-436. REPRINTED IN ULLMAN, L. & KRASNER, L. (EDS.) CASE STUDIES IN BEHAVIOR MODIFICATION. NEW YORK: HOLT, RINEHART, & WINSTON, 1963.

4.22 REDUCTION IN RATE OF MULTIPLE TICS BY FREE OPERANT CONDITIONING METHODS. J. NEUR. MENT. DIS., 1962, 195, 187-195. REPRINTED IN:

A) EYSENCK, H.J. (ED.) EXPERIMENTS IN BEHAVIOR THERAPY. NEW YORK: PERGAMON, 1964, 237-241.

B) FRANKS, C. N. (ED.) CONDITIONING TECHNIQUES IN CLINICAL PRACTICE AND RESEARCH. NEW YORK: SPRINGER, 1964, 303-314.

C) ULLMAN, L. & KRASNER, L. (EDS.) CASE STUDIES IN BEHAVIOR MODIFICATION. NEW YORK: HOLT, RINEHART, & WINSTON, 1963.

4.3 FEATURE NEWS ARTICLE: THE JUNE, 1964, ISSUE OF CHILDREN LIMITED, BIMONTHLY NEWSPAPER OF THE NATIONAL ASSOCIATION FOR RETARDED CHILDREN, CARRIES A FULL PAGE FEATURE ON OUR WORK ENTITLED "BEHAVIOR PATTERNS REVEAL MANY CLUES."

- 4.4 INVITED PRESENTATION AT SCIENTIFIC MEETING: "A SOCIAL LEARNING THEORY OF PERSONAL FEELING COMPONENTS," AMERICAN ACADEMY ON MENTAL RETARDATION, WASHINGTON, VIRGINIA, DEC. 1964 (IN SYMPOSIUM ENTITLED "NEW CONCEPTUAL APPROACHES TO MENTAL RETARDATION").
- 4.5 LABORATORY TOURS FOR VISITORS: A TOTAL OF 100 PROFESSIONAL AND STUDENT VISITORS HAVE Toured THIS LABORATORY AND CONFERRED WITH THE PROJECT DIRECTOR ON OUR WORK AND PLANS SINCE JUNE 1, 1964. THE PROFESSIONAL IDENTIFICATION OF OUR VISITORS FINDS MEDICINE, PSYCHOLOGY, EDUCATION, AND NURSING PREDOMINANT. GEOGRAPHICALLY THEY SPAN THE PART OF THE WORLD FROM GERMANY TO MEXICO.
- 4.6 REQUESTS FOR REPRINTS AND DESCRIPTIVE INFORMATION FILLED SINCE SEPTEMBER, 1964, HAVE TOTALLED 156.
- 4.7 ACTIVITY WITH MENTAL RETARDATION PLANNING PROJECT: THE PROJECT DIRECTOR CURRENTLY SERVES ON THE TASK FORCE ON RESIDENTIAL PROGRAMS OF THE MASSACHUSETTS MENTAL RETARDATION PLANNING PROJECT. OUR OBSERVATIONS OF CURRENT CONDITIONS WITHIN THE INSTITUTION AND OUR SUGGESTIONS FOR CHANGES TO IMPLEMENT RATHER THAN IMPEDE CHILD DEVELOPMENT ARE BEING COMMUNICATED TO A VARIETY OF GROUPS SELECTED OUT OF PERSONNEL AT ALL LEVELS IN THE FOUR STATE SCHOOLS WHO MEET WITH THE TASK FORCE EVERY THREE WEEKS.
- 4.8 ATTENDANCE AT PROFESSIONAL AND SCIENTIFIC MEETINGS: A MAJOR AVENUE OF COMMUNICATION, IN ADDITION TO FORMAL PRESENTATIONS, IS THE INFORMAL CONTACT PROVIDED AT REGIONAL AND NATIONAL MEETINGS. DURING THE PAST YEAR THE PROJECT DIRECTOR HAS ATTENDED MEETINGS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION, THE AMERICAN ACADEMY ON MENTAL RETARDATION, THE EASTERN PSYCHOLOGICAL ASSOCIATION, AND THE REGIONAL MEETING OF THE AMERICAN PSYCHIATRIST ASSOCIATION.

5.0 TRAINING

- 5.1 PREDOCTORAL FELLOW: OUR PREDOCTORAL NIMH FELLOW SUCCESSFULLY COMPLETED HER YEAR OF TRAINING IN THIS LABORATORY AND PASSED HER QUALIFYING EXAMINATIONS FOR CANDIDACY IN THE PH. D. PROGRAM IN PSYCHOLOGY AT HARVARD.
- 5.2 VOCATIONAL REHABILITATION TRAINEE: DURING THE PAST YEAR ONE OF THE TEEN-AGE FERNALD RESIDENTS HAS JOINED OUR STAFF AS A TRAINEE. HE IS LEARNING TO FUNCTION IN A CUSTODIAL CAPACITY, BUT HE ALSO HELPS OUR LAB ASSISTANT AND OUR NURSE. WE HAVE SET UP A SCHEDULE OF PAY BASED ON INCREASINGLY SUCCESSFUL PERFORMANCE OF SPECIFIC DUTIES IN THE LABORATORY AS WELL AS INCREASINGLY MATURE GENERAL BEHAVIOR. OUR LABORATORY TRAINING PROGRAM, USING A VISIBLE POINT SYSTEM TRANSLATED INTO ACTUAL MONEY DISPENSED DIRECTLY TO THE TRAINEE, HAS BEGUN TO SHOW DESIRABLE EFFECTS FASTER THAN THE INSTITUTION'S MORE REMOTE AND INDIRECT METHOD OF REINFORCING TRAINEES BY DEPOSIT SLIPS FROM THE TREASURER'S OFFICE.

PLANS: JUNE 1, 1965 - AUGUST 31, 1966

- 1.0 BEHAVIOR EVALUATION: THE DATA DURING OUR FIRST YEAR OF OPERATION MAKE IT CLEAR THAT OUR PROJECTED TIME SCHEDULE HAS BEEN OVER-OPTIMISTIC. NOT ONLY HAVE WE FOUND UNANTICIPATED METHODOLOGICAL PROBLEMS, BUT WE HAVE BEGUN TO EXPERIENCE THE DELAYING EFFECTS OF THE MONOLITHIC INERTIA CHARACTERIZING MANY OF THE PERSONNEL AND OPERATING PROCEDURES OF THE INSTITUTION. IN ADDITION, DELAYS FROM PERSONNEL TURNOVER WITHIN THE LABORATORY HAVE THROWN US SOMEWHAT BEHIND SCHEDULE. IN VIEW OF THESE CONSIDERATIONS, OUR EXPECTATIONS FOR THE FORTH-COMING YEAR HAVE BEEN SOMEWHAT MODIFIED.

1.1 LABORATORY METHODS:

- 1.11 ANALYSIS OF DEFICITS SHOWN BY SEVERELY RETARDED CHILDREN: DURING THE FORTHCOMING YEAR WE PLAN TO CONTINUE THE ANALYSIS OF DISCRIMINATION DEFICITS, DIFFERENTIATION DEFICITS, APPARENT MOTIVATIONAL DEFICITS, AND GENERAL HYPERMOTILITY. WE HOPE TO DEFINE MORE PRECISELY THE GENERALITY OF OUR INITIAL RESULTS AS MORE SEVERELY RETARDED CHILDREN ARE STUDIED. IN ADDITION WE HOPE TO ISOLATE MORE SPECIFICALLY THE CONDITIONS WHICH PRODUCE CHANGE IN THOSE BEHAVIOR PATTERNS ALREADY REVEALED BY SCREENING PROCEDURES. WE WILL BE COMPARING THE SEVERELY AND PROFOUNDLY RETARDED CHILDREN WITH OUR EARLIER GROUP OF MODERATELY AND MILDLY RETARDED CHILDREN AS WELL AS WITH AUTISTIC CHILDREN AND CHRONIC PSYCHOTIC ADULTS STUDIED WITH THE SAME METHODS.
- 1.12 DESIGN OF A CONTINUOUS DIRECT MEASURE OF ROCKING: OUR EARLY FINDINGS WITH A TAKE-SHIFT PICKUP HAVE DISCLOSED RELATIONSHIPS BETWEEN REPETITIVE SYMPTOMATIC MOTOR BEHAVIOR AND REINFORCED BEHAVIOR WHICH CONTRADICT THOSE SHOWN BY HUMAN OBSERVATION USING SHORT TIME-SAMPLING PROCEDURES. SINCE REPETITIVE MOTOR SYMPTOMS CHARACTERIZE (AND STIGMATIZE) SUCH A LARGE SEGMENT OF THE INSTITUTIONALIZED RETARDED POPULATION, WE PLAN TO PURSUE MEASUREMENT AND FUNCTIONAL ANALYSIS OF THE MOST FREQUENT FORMS OF ROCKING. FUTURE WORK WILL APPLY OUR FINDINGS ON ROCKING TO OTHER TYPES OF REPETITIVE MOVEMENTS.
- 1.13 ANALYSIS OF AUDITORY AND VISUAL COMPONENTS OF SOCIAL REINFORCEMENT WILL BEGIN THIS SUMMER. WE WILL BE PARTICULARLY INTERESTED IN WHETHER OR NOT THE CHILDREN WHO HAVE THUS FAR BEEN UNABLE TO USE OTHER FORMS OF REINFORCEMENT WILL RESPOND FOR THE SIGHT AND/OR THE SOUND OF ANOTHER PERSON.

- 1.2 OBSERVATION AND MANIPULATION OF WARD BEHAVIOR: WITH THE AID OF A SPECIAL EDUCATION TEACHER AND A TEACHER'S ASSISTANT PLUS WHATEVER ADDITIONAL STAFF THE INSTITUTION CAN OBTAIN, WE HOPE TO BEGIN DEVELOPMENT OF TECHNIQUES FOR OBSERVING AND RECORDING SELECTED WARD BEHAVIOR OF SOME OF OUR "UNRESPONSIVE" CHILDREN. WE WILL THEN ATTEMPT TO INITIATE SPECIFIC CHANGES IN THE CURRENT PROCEDURES OF MANAGING CERTAIN SELF-HELP BEHAVIORS IN THESE CHILDREN IN ORDER TO 1) DETERMINE THEIR EFFECTS ON THE CHILD'S WARD BEHAVIOR AND 2) TO EVALUATE THE EFFECTS OF THESE CHANGES ON THE CHILD'S "UNRESPONSIVENESS" IN THE LABORATORY. BY EVENTUALLY REVERTING TO WARD CARE PROCEDURES CURRENTLY IN USE, WE WILL ATTEMPT TO DETERMINE THE PROSTHETIC (REVERSIBLE) VERSUS THE THERAPEUTIC (IRREVERSIBLE) EFFECTS OF PROCEDURAL CHANGES AND THE EXTENT TO WHICH PREVAILING METHODS OF WARD MANAGEMENT ARE REFLECTED IN THE CHILD'S LABORATORY BEHAVIOR.

2.0 ADMINISTRATION

- 2.1 PERSONNEL: BY SEPTEMBER WE EXPECT TO HAVE A FULL TIME ELECTRONIC TECHNICIAN. WE ALSO HOPE TO HAVE FULL TIME SECRETARIAL SERVICE.

A BOSTON UNIVERSITY-TRAINED M. ED. IN SPECIAL EDUCATION OF THE RETARDED WILL JOIN OUR STAFF UNDER APPOINTMENT WITH THE SCHOOL DEPARTMENT TO HELP DEVELOP TECHNIQUES FOR OBSERVING, RECORDING, AND MODIFYING WARD BEHAVIOR. TO ASSIST US ON THE WARD, A FORMER NURSERY TEACHER HAS BEEN HIRED BY THE NURSING DEPARTMENT AND ASSIGNED TO WORK JOINTLY WITH THE LABORATORY AND THE WARD PERSONNEL.

- 2.2 WARD TRAINING FACILITIES ARE SORELY NEEDED IN THE DORMITORY HOUSING OUR MOST SEVERELY RETARDED CHILDREN. WE HOPE TO MAKE SOME ARRANGEMENT WITH EITHER THE FERNALD PARENTS LEAGUE AND/OR THE INSTITUTION'S MAINTENANCE STAFF TO PARTITION OFF BASEMENT SPACE AND TO FURNISH AND EQUIP WHATEVER TRAINING AREA WE CAN OBTAIN. THE SCHOOL DEPARTMENT AND THE DIRECTOR OF IN-SERVICE TRAINING ARE COLLABORATING WITH US IN THIS CONNECTION, AND ALREADY SOME MINOR CHANGES HAVE BEEN REQUISITIONED.

3.0 COMMUNICATION

- 3.1 INVITED PRESENTATION: THE PROJECT DIRECTOR HAS BEEN ASKED TO DELIVER A MAJOR ADDRESS ON THE TOPIC OF "RESEARCH IN REHABILITATION" AT THE NORTHEAST REGIONAL MEETING OF THE AMERICAN ASSOCIATION ON MENTAL DEFICIENCY.
- 3.2 PUBLICATION: WE PLAN TO COMPLETE ONE MORE PAPER DESCRIBING OUR FINDINGS AND INTERPRETING THEIR IMPLICATIONS FOR TRAINING AND REHABILITATION.
- 3.3 INSTITUTIONAL PERSONNEL: AS OUR WORK BECOMES MORE CLOSELY INVOLVED IN WARD ACTIVITIES, OUR CONTACT WITH INSTITUTIONAL PERSONNEL AT ALL LEVELS INCREASES. LABORATORY TOURS BY FERNALD PERSONNEL ARE BECOMING MORE FREQUENT. AS OUR TEACHER AND HER ASSISTANT BECOME ACTIVE ON THE WARD, WE PLAN TO SET UP REGULAR MEETINGS TO DISCUSS APPLICATION OF OUR FINDINGS IN THE TRAINING OF INDIVIDUAL CHILDREN.

THE PROJECT DIRECTOR WILL CONTINUE TO MEET WITH EACH NEW GROUP OF NURSES-IN-TRAINING FROM THE BOSTON UNIVERSITY SCHOOL OF NURSING AND WITH ALL NEW NURSERY SCHOOL TEACHERS ASSIGNED TO TRAIN THE VERY YOUNG AND SEVERELY RETARDED CHILDREN ON WHOM WE ARE FOCUSED.

DISTRIBUTION OF DITTOED PREPRINTS FROM THE LABORATORY HAS ALREADY BEGUN AND SPANS ALL LEVELS OF INSTITUTIONAL PERSONNEL. WE PLAN TO CONTINUE THIS ATTEMPT AT COMMUNICATION.

THE INSULARITY OF THE MEDICAL PERSONNEL WITH RESPECT TO THE BEHAVIORAL DEVELOPMENT OF THEIR CHARGES STILL POSES A MONUMENTAL PROBLEM WITH WHICH WE HOPE TO MAKE SOME PROGRESS AS THE LABORATORY, SCHOOL DEPARTMENT, AND IN-SERVICE NURSING EDUCATION PERSONNEL COMBINE FORCES TO DEVELOP A BEHAVIOR-ORIENTED DEMONSTRATION PROGRAM. THE PROJECT DIRECTOR WILL ACT AS A CONSULTANT IN THIS ENDEAVOR.

4.0 TRAINING

- 4.1 INSTITUTIONAL PERSONNEL:

4.11 CONSULTATION TO OCCUPATIONAL THERAPY DEPARTMENT: THE DIRECTOR OF OCCUPATIONAL THERAPY HAS REQUESTED ASSISTANCE IN DESIGNING A TOKEN-REINFORCEMENT SYSTEM TO GENERATE AND MAINTAIN THE INTEREST OF BLIND AND SEVERELY RETARDED CHILDREN AND ADULTS. A MEMBER OF HER STAFF HAS ALREADY BEGUN INFORMAL EXPERIMENTING WITH THIS METHOD, AND WE PLAN TO SET UP REGULAR DISCUSSIONS TO IMPLEMENT ITS USE.

4.12 CONSULTATION TO HIP STAFF HAS BEEN REQUESTED IN DESIGNING A PROGRAM OF EDUCATION AND RECREATION FOR THE "FORGOTTEN" QUIESCENT ADULT RESIDENTS IN TWO FERNALD DORMITORIES. WHEN AND IF THIS PROGRAM IS APPROVED AND STARTS MOVING, MEMBERS OF THE LABORATORY STAFF WILL BE AVAILABLE TO LEND ASSISTANCE.

- 4.2 RESIDENTS AT FERNALD:

4.21 EXPANDED VOCATIONAL REHABILITATION TRAINING: AS THE WARD TRAINING PROGRAM BEGINS TO CRYSTALLIZE, WE EXPECT TO INVOLVE MORE TRAINEES IN DAILY DEVELOPMENTAL ACTIVITIES WITH YOUNG

AND SEVERELY RETARDED CHILDREN. THE POINT SYSTEM EARNING WEEKLY CASH PAY WHICH APPEARS TO BE WORKING WELL WITH OUR CURRENT TRAINEE WILL BE APPLIED TO WHATEVER TRAINEES ARE SELECTED TO ASSIST THE WARD PERSONNEL.

- 4.22 DEVELOPMENTAL TRAINING OF LABORATORY SUBJECTS: AS MORE COMPETENT PERSONNEL ARE SELECTED FOR THE WARD HOUSING OUR MOST RETARDED SUBJECTS, WE PLAN TO SET UP REGULAR AVENUES OF COMMUNICATION IN WHICH THE LABORATORY DATA, BOTH CLINICAL AND EXPERIMENTAL, MAY BE INCORPORATED IN THE DESIGN OF INDIVIDUALIZED TRAINING PROCEDURES FOR SELECTED CHILDREN. OUR TEACHER AND OUR TEACHER'S ASSISTANT WILL BE INSTRUMENTAL IN SUPERVISING THE TRAINING ACTIVITIES CARRIED OUT BY WARD PERSONNEL ON A DAILY BASIS.