

BEHAVIOR RESEARCH DEPARTMENT

Annual Report

1 July 1965 - 30 June 1966

1.0 Administration.

1.1 Support from Federal and Institutional Sources.

- 1.11 Federal grant support. Half of the last fiscal year was devoted largely to the matter of obtaining grant support for future work. Toward this end, a detailed, comprehensive progress report covering our first two and one-half years of operation plus a grant application and a supporting publication (see Communication section) occupied 70% of the laboratory director's time.

We were informed by telephone that our current grant was renewed for four more years at the full level requested and with high priority at a time when a large percentage of applications were either cut back or rejected due to war expenditures.

- 1.12 Institutional support. Interdepartmental collaboration within Fernald School was begun during the past year when the Departments of Nursing, Education, and Psychology each made available a position to assist in developing our plans for concurrent evaluation and training of severely and profoundly retarded children in Wheatley Hall (see Personnel section). The individuals in these positions have begun developing a working collaboration with the Director of In-Service Nursing Education aimed at training Wheatley Hall attendant personnel to perform in an rehabilitative rather than in a custodial role.

Due to turn-over within the In-Service Nursing Education Program as well as various outdated personnel and operating procedures and policies at Fernald, our joint efforts have been grossly attenuated. Top level administrative support in the form of ACTION to permit new programs to contribute to the welfare of Fernald School children is absolutely essential to the future survival of these programs.

1.2 Facilities.

- 1.21 Laboratory facilities have been increased by the partial equipping of a fifth conditioning enclosure in which closed circuit television permits a child to operate a switch to see his own image. This enclosure is now being combined with a second closed circuit television system to permit analysis of the visual and auditory communication between two individuals: e.g., child and attendant, child and teacher, etc.

Additional equipment to measure and analyze repetitive rocking has been installed in one of the enclosures.

Display panels for data inspection were installed in the Data Room.

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1.22 Training facilities of a primitive sort have been created by some of our staff members who solicited donations of paint, furniture, supplies, and labor to provide a classroom area in the Wheatley Hall Basement. One end of the basement was painted by staff members and volunteer Kelley Hall residents, and daily classes are now available for children hitherto denied this opportunity.

1.3 Personnel.

1.31 Regular staff additions during the past year include:

- (1) Miss Florence Littell, M. Ed., Special Education Teacher jointly affiliated with the School Department;
- (2) Mrs. Patricia Politoff, M.S., Psychologist, jointly affiliated with the Psychology Department;
- (3) Mr. Mauro DiGregorio, former attendant at Lavers Hall, replaced Mr. Ronald Calvanio as laboratory assistant when the latter returned to Harvard.

1.32 Student staff members on "field" placement: With the aid of Miss Littell's efforts we received approval from Northeastern University as a field placement training unit available for undergraduate Education students on their "off" quarters. Two such students have spent one quarter each functioning as teaching assistants in Wheatly Hall under an arrangement with the Nursing Department. Under Miss Littell's supervision, these highly motivated young people have made valuable contributions to the behavior development of Wheatley Hall children. Both have been sufficiently stimulated by their experiences to seek a second quarter's placement with us during the coming year.

1.33 Volunteers. Seven volunteer workers have assisted Miss Littell and Mrs. Politoff in their efforts at Wheatley Hall.

. 1.4 Operating procedures:

1.41 Laboratory maintenance. We have had three floods during the past year in the laboratory due to toilet back up over a weekend and breaks in the GBU basement plumbing. One such flood barely missed the \$50,000 worth of electronic equipment purchased on Federal and NARC grants. Repeated leaks occur both in our data room and our apparatus control area. Repeated requests for preventive maintenance has produced nothing but temporary repair.

Carpentry repair of two wooden doors (one the main entrance) has likewise been only temporary. Both doors will need replacing by

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another year unless Fernald School can provide the personnel and supplies necessary for competent permanent repair.

- 1.42 Availability of children to participate in Behavior Evaluation Program. Transportation of children to and from the laboratory has been so inefficient that it not only grossly impairs laboratory functioning but also requires undue waiting by children who could otherwise be benefiting from other available programs. A conference with garage personnel produced improved transportation procedures. However, there remains a severe problem with Lavers Hall children, many of whom are simply not gotten ready for their laboratory appointments, and thus they miss the "ride". Repeated calls to the matron and head nurse of that building as well as to Dr. Sidman have not produced substantial changes.

Many tens of thousands of dollars have been invested in our evaluation of these children. Unless we can continue with them, the large portion of our funds already spent with them will have been wasted. Agreements during February, 1965, between Drs. Farrell and Sidman with respect to the problem have apparently not been followed.

- 1.5 Storage and training space has become an increasingly acute problem as our staff enlarges, our functions increase, and our conditioning enclosures become equipped for children's use. The laboratory corridors are not wide enough to provide fire egress if large cartons are stored in them. With expanded training activities, our small classroom in the laboratory is quite inadequate except for work with three or four children. If we are to provide anything more than the very limited training now being conducted with Wheatley Hall children, and if we are to equip all available conditioning enclosures as provided in our grant renewal, we will need additional storage and training space during the coming year.

2.0 Behavior Evaluation.

- 2.1 Selection of children. As per our agreement with Drs. Farrell and Sidman in February, 1965, we have abandoned our training-evaluation plans for Lavers Hall children and have refocused our new activities on Wheatley Hall residents. Our original group of Lavers children continues to be studied despite the obstacles mentioned in section 1.42. They are invaluable for purposes of comparison with the behavior of Wheatley Hall children - equally retarded but existing with very differently oriented staff treatment. All new children added to the laboratory roster have been either from Wheatley Hall or from GBU. We hope to continue more intensive work with both of these groups.
- 2.2 Laboratory behavioral methods, added since last year include (1) direct automatic measurement of stereotyped rocking, (2) simultaneous measurement of the reinforcing power of auditory and visual narrative as presented on commercial television, (3) direct measurement of the extent to which children will work to produce their own images or the images of other persons on closed circuit television, and (4) foot switches in our commercial television enclosure to permit more detailed analysis of apparent deficits in the ability to tell two responses apart (response differentiation).

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2.3 Field methods.

- 2.31 Daily observation and systematic documentation of attendant behavior and child behavior are being carried out to provide base lines against which to evaluate changes that might result from training procedures. During the fall, most observations centered on how attendants, children, and working girls were spending their time. Findings have been summarized in our comprehensive progress report to NIMH dated 1 October 1965 and will be submitted for publication.
- 2.32 More directed observations of specific behavior frequencies on the ward are being daily recorded with selected children who present problems of management. Most of these records focus on self-help skills and specific interactions between selected attendants and selected children. Consistencies and inconsistencies within and between attendants with respect to certain children have been shown.
- 2.33 Classroom observation and recording methods are being developed to locate patterns characteristic of certain attendants with certain children in the classroom setting. If the classroom can be sustained and developed with sufficient personnel, space, equipment, supplies, and administrative support, we hope to correlate specific laboratory findings on individual children with their behavior outside the lab. Hopefully such correlations would enable us to make predictions with respect to individual children and to specify some behavior prosthetic prescription which would enable each child to develop more complex behavior repertoires than the current procedures support.
- 2.34 Specific training of selected children was recently begun in hopes that evidence of progress would stimulate attendant personnel to carry out our simple procedures themselves. While this was partially successful with a few attendants under supervision, most new procedures were abandoned by attendants during the hepatitis quarantine.
- 2.35 Weekly planning and follow-up conferences with In-Service Nursing Education were maintained for a number of weeks prior to Mrs. Teague's departure. These conferences were aimed at coordinating our efforts and directing our methods toward concrete observable changes in the behavior of both children and attendants. Since the hepatitis quarantine, the departure of Mrs. Teague, and the concomitant absence of supervisory personnel at Wheatley, this collaborative effort has suffered. We sincerely hope that the administration of Fernald School will support its recovery.

2.4 Progress in Wheatley Hall program.

- 2.41 Census. Since September 1965 the resident population at Wheatley Hall has diminished from 50 to 48 children. One is deceased and the other was transferred to another building. Dr. Farrell agreed that the census should be reduced eventually to 40 and that homogeneity of age and current behavior competence should be attained. Five children are considered eligible for transfer to Steven Bowen Hall and attendance at

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School Department classes. Request for their transfer was made to Drs. Farrell and Belmont. As yet no action has been taken and these children continue to be deprived of training opportunities geared toward their behavior development.

Several changes have occurred in the children's behavior in different areas.

- 2.42 Feeding. In July 1965 there were 13 children being fed by either attendants or working girls. In July 1966 there is only one child that is fed intermittently and another who is fed at all meals. Of the 15 children who used to eat ground food, there are now only 8 who eat ground food at all meals and three who eat it occasionally. There is one child who has changed from eating strained baby food to ground food and some solids. A group of 12 of the older children have been taught to serve their own food.
- 2.43 Toilet Training. Of the 23 children who were not toilet trained in July 1965 11 have been trained. The seven children who were partially toilet trained then are now completely trained. Three children are now in the process of being trained.
- 2.44 Walking. Of the six non-ambulatory children in September 1965, one is now able to walk several steps unaided, another can walk one or two steps unaided and is now being placed in a walker instead of a rocking chair, and a third one has learned to walk holding onto a walker.
- 2.45 Dressing. The statistics of the dressing of the children are as follows:

	<u>July 1965</u>	<u>June 1966</u>
Dresses self	10	20
Dresses intermittently	11	9
Dressed by attendant	27	19

- 2.46 Classroom. The main objectives of the classroom were

- 1) Observation of attendant-child interaction
- 2) Development of methods of recording certain behaviors
- 3) Attendant training in habilitative procedures applicable both in the classroom and on the ward.

Of these objectives it has been possible to achieve the first two. We need further information on attendant child interaction (in classroom and ward) and we have to develop further our methods of recording behavior. The attendant training was not accomplished. One of the reasons for this was our lack of control over attendant behavior. For the program to function we would have to have 1) the possibility of providing reinforcement to the attendants contingent upon their behavior (e.g., extra money, time off, or a completely different way of paying them their salary), 2) more trained staff members in the program,

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3) materials and labor to modify the ward environment for training purposes, and 4) strong, consistent, competent supervision of ward personnel to support their use of training methods on a 24-hour basis.

- 2.47 Plans and needs. We are in the process of recruiting an extraordinarily well trained Head Nurse to set up a ward training program for both children and attendants at Wheatley Hall. The Department of Mental Health would like to see this become a demonstration-training setting for future attendants and LPN's.

No single individual or subgroup can possibly accomplish revision of outdated, deleterious procedures and policies at Wheatley Hall without the ACTION SUPPORT OF RELEVANT ADMINISTRATIVE OFFICIALS AT FERNALD SCHOOL,

No matter how many top quality supervisory and training personnel we recruit, they are unable to function effectively for the benefit of Fernald children unless the institution's administration becomes active in supporting progress not only with words but with CONCRETE evidence of this intent.

3.0 Communication.

3.1 New publications:

- 3.11 Acquisition of operant differentiation and discrimination by institutionalized retarded children. Amer. J. Orthopsychiat., 1965, 35, 862-885. (Special section on mental retardation)
- 3.12 A behavior evaluation program for retarded children. Comprehensive Progress Report #1 to NIMH for period 1 June 1963-30 September 1965. Distributed by Behavior Prosthesis Laboratory, Walter E. Fernald State School, Waverley, Mass.

3.2 Publications anthologized during the last fiscal year:

- 3.21 Deficits in acquisition of operant discrimination and differentiation shown by institutionalized retarded children. Amer. J. ment. Defic., 1962, 67, 424-436 (with O.R. Lindsley)

Reprinted in:

Ullman, L., & Krasner, L. (Eds.) Case studies in behavior modification. New York: Holt, Rinehart, & Winston, 1965, 348-358.

- 3.22 Reduction in rate of multiple tics by free operant conditioning methods. J. Nerv. ment. Dis., 1962, 135, 187-195.

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Reprinted in:

Ullman, L. & Kramer, L. (Eds.) Case studies in behavior modification. New York: Holt, Rinehart, & Winston, 1965, Pp. 255-263.

- 3.3 Distribution of publications and reports. Since 1 July 1965, we have filled 180 requests for reprints and descriptions of our work, and we have mailed 712 articles and reports. We maintain an active mailing list of 116, including more than 60 Fernald personnel to whom we send progress reports, articles, and news releases.
- 3.4 Presentations by department members to professional groups.
- 3.41 Beatrice H. Barrett, Ph. D. "Potential contributions of operant technology to the habilitation of retarded children." Northeast Regional American Association on Mental Deficiency, Portland, Maine, September, 1965.
- 3.42 Florence E. Littell, Research Teacher. "Methods for evaluating self-help opportunities for the severely retarded." School Department monthly meeting, Walter E. Fernald State School, November, 1965.
- 3.43 Beatrice H. Barrett, Ph. D. "Laboratory free operant conditioning techniques for the analysis and modification of retarded behavior." In-Service Nursing Education Class, Walter E. Fernald State School, October, 1965.
- 3.44 Beatrice H. Barrett, Ph. D., "A behavior evaluation program for retarded children." Professional staff lecture series, Plymouth State Home and Training School, Northville, Michigan, April, 1966.
- 3.45 Beatrice H. Barrett, Ph. D. "Evaluating the effectiveness of behavior modification in techniques." Seminar with HIP program Child Care Workers and Professional Staff, Plymouth State Home and Training School, Northville, Michigan, April, 1966.
- 3.46 Beatrice H. Barrett, Ph. D. Discussant for Teodoro Ayllon, Ph. D. "Explorations in reinforcement therapy," Massachusetts Department of Mental Health Psychologists In-Service/Institute on Behavior Modification, Framingham, Mass. June, 1966.
- 3.47 Beatrice H. Barrett, Ph. D. "Free operant laboratory methods for/analysis and modification of deviant behavior." Children's Bureau Institute on Behavior Therapy, Department of Health, Education, and Welfare, Washington, D.C. June, 1966.

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3.5 Invited consultant visits by Dr. Barrett include:

- 3.51 Western Carolina Center, Morganton, Carolina; Professional staff HIP program for non-ambulatory retarded children and professional staff, school department. January, 1966.
- 3.52 Plymouth State Home and Training School, Northville, Michigan; Staff of HIP program for moderately retarded children. April, 1966.
- 3.53 New Castle State Hospital, New Castle, Indiana; Consultation on proposed laboratory research with severely retarded persons and consultation on proposed HIP program for total-push application of operant conditioning principles in the habilitation of chronically hospitalized epileptic retarded adult. June, 1966.

3.6 Professional and scientific meetings attended by department members include; Northeast Regional American Association on Mental Deficiency, Eastern Psychological Association, Counsel for exceptional children, American Association on Mental Deficiency, Joseph P. Kennedy Jr. Foundation Scientific Workshop.3.7 Visitors to the laboratory. during the past year total 202, 156 of whom are professionals and 56 of whom are students. All have toured the facilities, observed and discussed the procedures, and conferred with various staff members regarding our future and training research plans.3.8 Information-seeking visits to other laboratories and institutions. by various staff members include: Seaside Center; Center for Research in Language, University of Michigan; Behavior Pharmacology Laboratory and Laboratory of Experimental Behavior Pathology, University of Michigan Medical School; Children's Unit Experimental Psychology Laboratory, Carter Memorial Hospital, Indianapolis; Experimental Psychology Laboratories, Institute of Psychiatric Research, Indiana University Medical Center, Indianapolis; and the HIP program ward at Wrentham State School.3.9 Dr. Barrett's service with the Task Force on Residential Programs, Massachusetts Mental Retardation Planning Project has been an important means of communicating our laboratory and field findings. It has resulted in concrete recommendations designed to provide improved opportunities for the behavior development of all training school residents within the Commonwealth.4.0 Training.4.1 Institutional personnel.

- 4.11 In-Service Nursing Education Instruction. At the request of the former Director of ~~In-Service~~ Nursing Education, we have set up a regular schedule of laboratory tours, lectures, and discussions as part of the curriculum for successive groups of matrons and attendants.

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- 4.12 Daily ward observation and consultation. In collaboration with the In-Service Education Program, our teacher and our psychologist have been developing a consultative relationship with the ward personnel caring for Wheatley Hall children. Daily observations of both child and attendant activities are being systematically documented. Graphic representations of attendant-child interactions are being developed to illustrate specific child care procedures currently practiced with certain children.

Objective documentation and informal discussion of existing practices with ward personnel serves to point up many untested assumptions about the behavioral limits of these children. We find that most personnel are unaware of these assumptions and have simply become habituated to procedures that have been propagated much in the tradition of folklore.

Through well-documented, openly discussed, demonstrated procedures, we hope to foster a more open-minded, "experimental" approach on the part of the attendants.

- 4.2 Fernald School residents. Training opportunities and principles applied during the past year with severely retarded laboratory participants as well as with a vocational rehabilitation trainee have been summarized in our recent comprehensive progress report to NIMH.

The primary training additions during the past year consist of the classroom for attendants and severely retarded children of Wheatley Hall and the individual training in areas of self-help and locomotion already summarized in section 2.4 above.

- 4.3 Undergraduate training and special education was begun during the past year through the cooperative field placement program at Northeastern University. Students join our staff during one academic quarter for on-the-job training in the Wheatley Hall setting under Miss Littell's supervision.

Concluding comments.

The National Institute of Mental Health has given our work high priority and has backed its verbal approval with funds for our continued efforts through 1970.

The Fernald School has lent new support to the application of our work through the appointment of school-salaried staff members recruited by us in the areas of psychology, special education, and nursing.

Personnel and funds are only the beginning. We humbly but urgently beseech the administration of the Walter E. Fernald State School to join with us in creating updated operating policies and procedures which will nourish the investigative and services aspects of all new programs at Fernald School. If the forces of tradition deprive Fernald residents of new attempts at habilitation, there is little hope for the effective use of the most competent personnel or the increased grant assistance of the Federal Government.

Respectfully submitted

Beatrice H. Barrett, Ph. D.

Director of Behavior Research