

MEALTIME BEHAVIOUR IN THE PROFOUNDLY SUBNORMAL

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INTRODUCTION

Not surprisingly, the profoundly subnormal are over-represented in hospital populations as compared with the numbers living at home (MacKay and Elliott, 1974). Several aspects of their behaviour have posed considerable problems for those members of staff who want to blend a positive approach in training procedures with the traditional, kindly, but at the same time fatalistic philosophy of routine care. First, many general textbooks on subnormality, particularly those published before about 1950, portrayed the profoundly subnormal individual as a hopeless case with hardly a single redeeming feature. They pointed up the lack of any skills and, by implication at least, the futility of trying to develop them. In many ways, the care philosophy helped to make the text-book descriptions a self-fulfilling prophecy. The relationship between passive care and the lack of spontaneous behavioural maturation in the profoundly handicapped is clearly evident in the survey by Balthazar *et al.* (1973).

Second, it has been our experience that the lower the grade of intelligence the more idiosyncratic behaviour becomes. This means that conventional group training also becomes less effective. To be successful, conventional group training must meet two basic requirements: there has to be some sort of co-operation between patients and staff; patients should be able to understand and act upon verbal instruction. Anyone who has spent an appreciable amount of time in a ward for the profoundly subnormal will acknowledge that **group** co-operation is difficult to achieve and that physical prompts or guidance often have to accompany a verbal instruction for that instruction to be effective. Ideally, the staff:patient ratio in a training programme should be one:two, but ideal conditions rarely, if ever, occur. Nevertheless, progress can be made with a ratio of one:six provided that intensive individual attention is afforded on a rotational basis.

Third, "targets" in training must be clearly defined. If the target is to be dressing, for example, one needs to know what items of clothing are to be used and the various sequential steps in dressing have to be analysed. Some questionnaires or check-lists of social competence (e.g., the Vineland Social Maturity Scale, Doll, 1953) assume that basic self-help skills improve by leaps and bounds during the first few years of life. While this may well be true of normal development, it certainly is not true in the case of the profoundly subnormal. Hence, check-lists have to be much more detailed, each global action in a particular aspect of dressing being broken down into constituent parts. Fourth, the experimental literature suggests that "spin off" effects of training become more restricted at lower I.Q. levels, that is to say, there are less generalisation effects from one activity to another.

The target of the present study was the development of eating skills in five profoundly subnormal patients under residential care. Most investigators have focused their attention on the effectiveness of reinforcement schedules to eliminate undesirable behaviour (Lemke and Mitchell, 1972; Thompson and Grabowski, 1972; Henriksen and Doughty, 1967; Barton, Guess, Garcia and Baer, 1970). Mild punishment procedures included timeout from the eating session (Barton *et al.*, 1970); physical restraint (Henrikson and Doughty, 1967); removing the food from the subject for short periods (Whitney and Barnard, 1966), and interrupting the subjects' actions when performing an incorrect response (Larsen and Bricker, unpublished).

Various training techniques have been used in the training of self-help skills in the profoundly subnormal. Minge and Ball (1967) used physical prompts in the

teaching of dressing and undressing. In their study of eating habits, Zeiler and Jervey (1968) separated out the various stages and trained their subjects by means of a technique popularly known as "backward training." In the early stages of their programme, Patterson and Overbeck (1968) stipulated that patients be given physical guidance. The child's hand was guided through the required sequence. As his eating behaviour was gradually shaped, so the trainer moved his own hand away to grasp the child's forearm, then the elbow and eventually the shoulder. In short, the physical guidance became progressively more remote.

The individuals who took part in the present investigation were selected on the grounds that while they did not apparently suffer from gross or fine motor deficits they, nevertheless, showed no self-dependence in eating and relied entirely on the nurses' help. The programme used was the one outlined by Naor and Balthazar (1973).

Leibowitz and Holcer (1974) remarked that little attention has been paid to the question of permanence in newly acquired skills. That is to say, investigators have been generally content to assess behaviour at the end of a particular programme but have not carried out further assessments following the discontinuation of the training. The paradigm of the present study therefore contains two main stages: one of training (with pre- and post-test measures) followed by one of no-training (also with measures).

METHOD

Subjects

Three males and two females resident in Tower Hill Special Care Hospital took part in the programme. As was indicated earlier, they were selected on the grounds that they were entirely dependent on the nurses' help at mealtimes, although they showed no evidence of motor deficits. Their mean chronological age was fifteen years six months (SD: 1.4) and their mean social age on the Vineland Social Maturity Scale (Doll, 1953) was twenty-one months (SD: 3.5). Their level of competence as assessed by the Fairview Self-Help Scale was twenty-three months (SD: 3.2).

Procedure

Training Session

Before the programme began, detailed notes were prepared about the procedures to be followed during mealtimes. At mealtimes, the five subjects were separated from other patients on the ward. One nurse and an assistant were allocated to this group. The training programme lasted twelve weeks and involved the main meals, that is, breakfast, lunch and tea.

Mealtime behaviour was analysed into sequential stages and the appropriate training procedures were as follows:—

Stage A. Using manual help, the nurse guided the subject through all the appropriate movements. She clasped her hand over the subject's hand to ensure that the spoon was grasped properly. Keeping her hand on the subject's, she dipped the spoon into the plate, filled it and then moved it to the subject's mouth.

Stage B. At this stage the subject's hand was released when the filled spoon was approximately two inches from his mouth.

Stage C. The subject's hand was released when the filled spoon was approximately six inches from his mouth.

Stage D. The subject's hand was released when nine inches from his mouth.

Stage E. The subject's hand was released if he could fill the spoon and carry out one feeding action, i.e., fill the spoon and raise it to his mouth.

Stage F. At this stage only verbal prompts were used.

Stage G. Following verbal instructions, the subject filled the spoon, raised it to his mouth, lowered it again, refilled it and continued eating without further verbal instruction.

This is a summary of the stages. In actual practice, the physical prompts were supplanted by gestural prompts. Verbal instructions were used freely and gestural prompts were faded out once the spoken word was effective by itself.

Several methods were used to reduce inappropriate behaviours. Time-out procedures (i.e., the physical removal of the patient from the training area) were used if the patient was aggressive or developed a severe temper tantrum. Improper responses were "punished" by removing the plate for short periods of time or physically restricting the patient for a few seconds (Larsen and Bricker, unpublished; Whitney and Barnard, 1966). All correct responses were verbally praised in the early stages of training at least.

During the week preceding the training programme the five subjects were assessed in detail on three types of behaviour. First, there were the eating skills themselves. Subjects were made to sit at the table and observations were made on their ability to respond (if at all) to verbal instructions, whether they could lift a spoon, whether they made any attempt to feed themselves in the absence of nurse's help, etc. Second, there were what we termed "peripheral" skills in eating; did the subject come to the table when called, could he carry a plate from the hatch to the table, could he draw a chair up to the table, and so on? Third, there was the incidence of inappropriate behaviour, e.g., throwing food, rocking, continually leaving the table, refusing to sit. To assess the patients on this type of inappropriate behaviour, a check-list was drawn up on the basis of scales prepared by Balthazar (1973) and Barton *et al.* (1970).

At the end of twelve weeks, re-assessments were carried out. An independent observer obtained both the pre- and post-test measures.

No-Training Period

Following the twelve-week training programme, the five subjects were returned to base-line conditions (i.e., no training) for a period of three weeks. At the end of this period, they were again re-assessed in order to determine the permanence of the newly-acquired skills. Finally, the training programme was reinstated for a further three weeks and the last of the assessments were made.

RESULTS

Scoring of eating skills and "peripheral" activities (e.g., approaching table when instructed verbally) was based on a simple pass/fail basis. It will be recalled that assessments were carried out four times—before the twelve-week training programme began and during the last week of it; at the end of a three-week period in which the group was returned to base-line conditions and, finally, at the end of a further three-week period during which formal training was reinstated.

The percentage of items passed by the group during each of the four assessment periods are shown in Figure 1. The stippled bars show their competence in eating skills. The blank bars in Figure 1 show to what extent the patients were competent in "peripheral" eating activities.

FIGURE 1

Degree of competence in eating skills and "peripheral" eating activities displayed by the group during the four assessment periods.

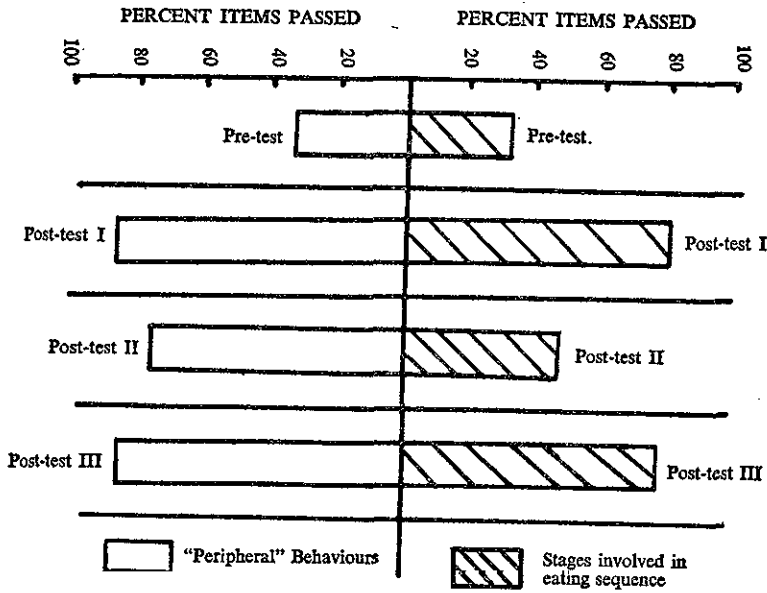
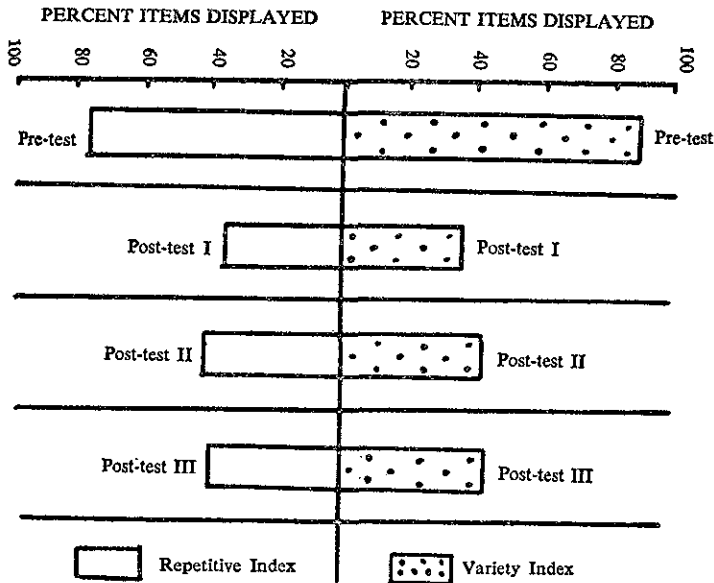


FIGURE 2

Pre- and Post-test scores of disturbed behaviour.



Analyses of covariance were carried out on the arc-sin transformations of the percentage scores. In order readily to understand the various comparisons, the assessments are identified as follows:—

<u>12-week Training</u>	<u>3-week No-Training</u>	<u>3-week Training</u>
Pre-test Post-test I	Post-test II	Post-test III

Levels of significance associated with differences between adjusted treatment means are given below:—

Conditions	Eating Skills	“Peripheral” Eating Skills
Pre-test v-s. Post-test I	$p < 0.01$	$p < 0.01$
Pre-test v-s. Post-test II	$p > 0.05$	$p < 0.01$
Pre-test v-s. Post-test III	$p < 0.05$	$p < 0.01$

The checklist of inappropriate behaviours contained thirty items. During the assessment periods the checklist was completed daily over six days. A given sign was taken to be either present (1) or absent (o). For example, one item read, “Has been throwing food around during the past 24 hours.” If the patient had indeed been throwing food around, that item was rated as (1). If he had been quiescent in that respect the rating was (o). These scores can be interpreted in two ways. One can sum all the positive scores for each patient and therefore have some idea of the overall extent of inappropriate behaviour. Because the repetition of positive scores are taken into account this total is referred to as an index of repetitive disturbed behaviour. One can also sum the positive scores for different types of inappropriate behaviour, disregarding their repetitive frequency. This total is referred to as the index of the variety of inappropriate actions.

The dotted bars in Figure II show the variety scores, whereas the blank bars show repetitive scores of inappropriate behaviour. Analyses of covariance were carried out on arc-sin transformations of the data and comparisons of adjusted treatment means showed that, for either index, the pre-test measures differed significantly from any of the post-test scores but that the post-test scores did not differ significantly from each other.

DISCUSSION

The results of this experiment indicate that eating skills can be developed in the profoundly subnormal even though they are in their adolescence and have, up till that time, relied entirely on nursing assistance at mealtimes. It is also fairly evident that if training is discontinued the hard-won skills at the table are lost. Surprisingly, perhaps, the “peripheral” activities (carrying food to the table, clearing plates away, etc.) were not affected by the termination of the programme. Neither was the incidence of inappropriate behaviour. When training was re-introduced, the eating skills re-appeared.

When we look more closely at what happened when the training programme was discontinued the first time, we quickly realise why the “peripheral” skills were unaffected and we could make a reasonable guess as to why the actual eating skills faded away. As soon as formal training was stopped, the five patients joined the others on the ward for their meals. The staff:patient ratio altered drastically from approximately 1:2 to 1:10. The nursing staff simply had to carry out their duties in the most economical manner possible. Gone was the time when the slow or reluctant feeder could be allowed fifteen or twenty minutes practice.

It will be recalled that one of the last stages in the training programme involved the commencement of self-feeding following a verbal request to do so. With the

altered staff:patient ratios, the nurses could no longer stand over, and wait for, a patient to feed himself if he was slow. A few days after the return to base-line conditions, the patients who had been on the training programme could still understand the verbal instruction to commence eating, but their actions were so slow that the nurses fed them their food. However, their "peripheral" skills were kept in trim because such activities as bringing food to the table or clearing their plates away, contributed to the economical running of the ward, no matter how slow the individuals were.

Why inappropriate behaviour did not become evident again during the three-week no-training period is unclear. We would have thought that, on return to their original setting the patients would have reverted to their old habits. It is possible, of course, that inappropriate behaviour takes longer to manifest itself and that the no-training period was too short. Particularly welcome is the fact that eating skills were again very evident once the training programme began again.

Two possible drawbacks to this study must be mentioned. First, the number of subjects was very small and it might be argued that the methods of evaluating change are only appropriate with larger numbers. The answer to this criticism is very simple. We do not enjoy the luxury of having large numbers of staff—to wait until their numbers were sufficient in order that more patients could be included in the experiment would, in all likelihood, mean that our study would never have taken place. Second, it could be argued that we should have used a control group. Our answer is that, while control groups might be necessary with patients of higher ability, they are not necessary with profoundly subnormal patients. In an earlier study we (McDonald, McCabe and Mackle, 1976) confirmed what Balthazar *et al.* (1973) had found, namely, that in the absence of training procedures the profoundly subnormal show no spontaneous improvement in self-help skills.

Changes, as measured by Vineland Social Maturity Scale, were not significant. A disinterested observer might well ask whether the progress as measured by our checklists of social competence was so light as to be negligible. Put another way, he might argue that the stages in the eating programme were so small that any change would be significant. He might also question whether the efforts put into the training programme by the nurses were proportionate to the results obtained. The answers to these questions all depend on the yardstick one uses. By no stretch of the imagination can we envisage our patients taking their place in a refectory in a large grammar school and competing on equal terms and with minimal supervision with boys of normal intelligence in helping themselves to food, buttering bread, pouring orange juice from a jug into tumblers, etc. That sort of yardstick is quite unrealistic.

From our point of view, it is enough to demonstrate that profoundly subnormal patients in a hospital can acquire social skills which some professionals working with the handicapped averred were beyond their capabilities. It is easy to excuse the disinterested observer for asking whether all the effort was worthwhile. After all, his yardstick is probably the rate at which his own youngster of normal intelligence developed. What we do find more difficult to excuse is the fact that while many studies in recent years have shown beyond doubt that subnormals are capable of being more self-dependent than even some experts believed, the facilities and manpower to exploit this potential are still restricted.

Acknowledgements

We should like to thank Dr. J. A. S. Mulligan, Medical Superintendent of Tower Hill Special Care Hospital, Armagh, for his help and co-operation. We should also like to thank Mrs. E. Irwin for her help in the preparation of this manuscript.

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