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ABSTRACT

A five-year study was conducted to evaluate the effects of varying intensities of family life education services on samples of high and low-income families (110 of each) in Montreal. The purpose was to provide these families with similar programs for one year and to study them longitudinally for three years to determine whether the programs resulted in measurable changes and if so to assess the durability of those changes. The main service provided was a traditional type nursery school for four-year-olds. Instruments to assess change included IQ tests (WPPSI and Draw-a-Person), stress measures (the Langner scale for the mothers and the Glidewell scale for the children), and a parent-attitude-to-childrearing scale (Hereford). Two years into the project, it was discovered that no significant changes were being registered; it was then decided to add cognitive stimulation programs to the nursery schools and narrow the focus of the research to study cognitive changes in low-income children only. Results indicate that nursery schools with cognitive stimulation programs can produce modest improvements in IQ test performance of low-income children. (Author/CK)

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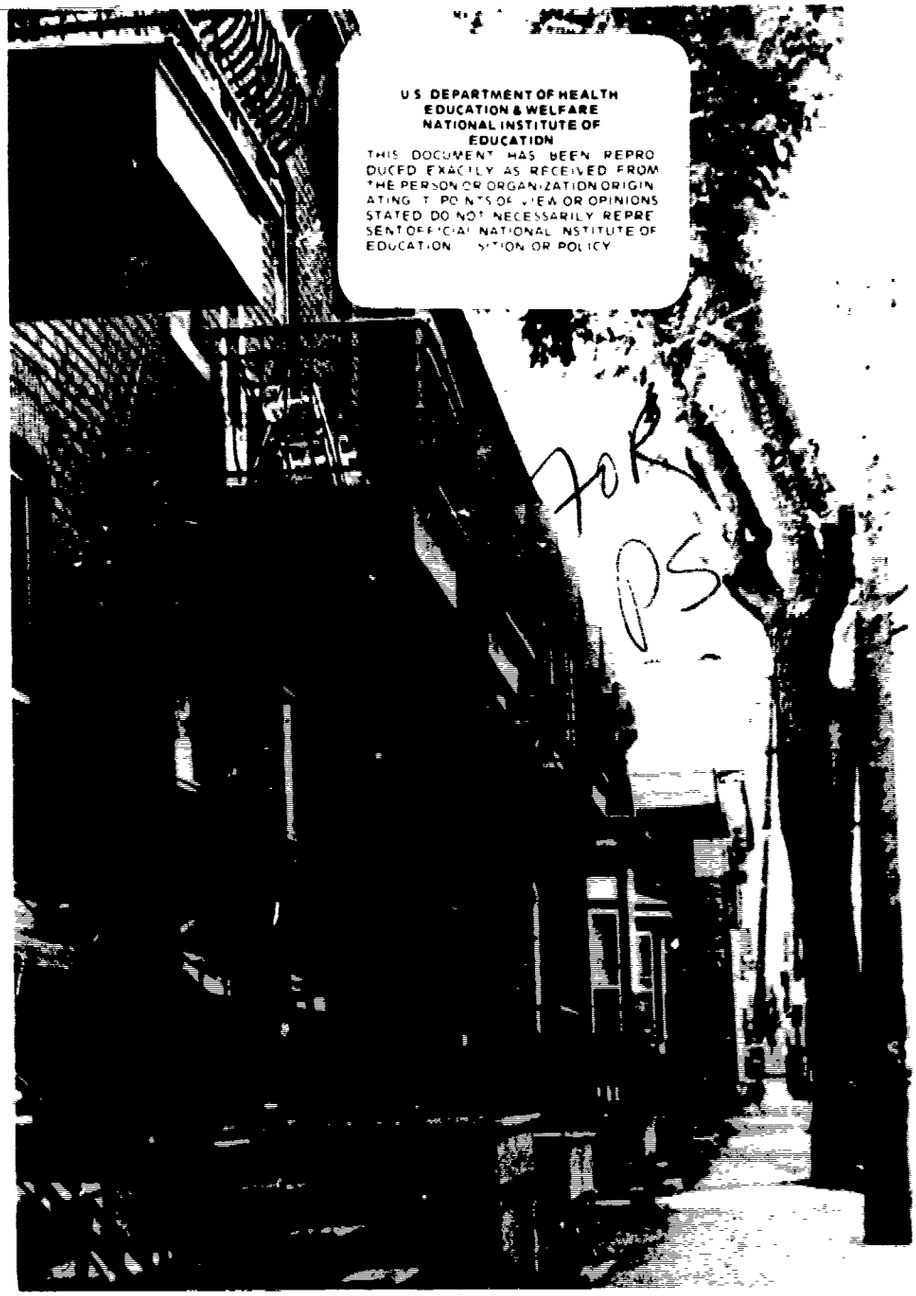



# AN EVALUATION OF SOME FAMILY LIFE EDUCATION SERVICES

raymond prince, margaret kiely, anna boros and frank engelsmann

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The Mental Hygiene Institute Inc.
December, 1972

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**Front and back cover photographs of low and high income housing in Montreal are by Patricia Ling.**

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# AN EVALUATION OF SOME FAMILY LIFE EDUCATION SERVICES

## I INTRODUCTION

Over the past twenty-five years the Mental Hygiene Institute has pioneered in the development of methods for fostering community mental health, or, in the terminology of public health, in exploring primary prevention techniques in the mental health field (Cameron and Silverman, 1965). Services such as marriage counselling, "well-being interviews" (MacLeod et al, 1957), consultation services to schools, social agencies, industries and recreation programmes, as well as a wide spectrum of family life education programmes have involved thousands of Montreal families.

In the early development of these services little attention was paid to the nature of the populations that were being served or, even more important, to programme efficacy. Were our programmes really accomplishing what they were designed for? Like most other health and welfare programme organizers, we did not concern ourselves as to whether the programmes were reaching the populations that most needed them; we tended to provide services that we intuitively "knew" would be efficacious, without bothering to verify these intuitions.

This study is an attempt to come to grips with this very difficult problem of evaluation of primary prevention activities. In brief, we set out to measure the effects of varying intensities of services on groups of high and low-income families. Our original aim was to provide these sets of families with similar programmes over a one year period and then to study

them longitudinally over a three year period (a) to determine whether there were any measurable changes resulting from the programmes, and (b) if there were any changes, to assess how permanent they were. Because one of the most popular programmes over the years has been one in which four year olds attended nursery school while their mothers were concurrently involved in discussion groups, we decided to make this service the central focus of our study.

The project began in May, 1967. The first panel of some 120 families entered the programme in October 1967 and the second in October 1968. By 1969 it had become clear that our methods of measurement were failing to detect any significant changes either immediately after the one year period of "treatment" or, in the case of the first panel, after two years had gone by. This failure to find treatment effects led us to examine the nature of our nursery school programmes and also to narrow the focus of our study to the assessment of changes in IQ and socialization in low-income children. We felt that poverty was the major problem in the community and that the key factor for breaking out of poverty was the improvement of the educational potential of low-income children.

These decisions led to the introduction of two different nursery school programme techniques which seemed to hold promise according to the research of others; the cognitive stimulation programme, Distar, and the popular educational television programme, "Sesame Street". We ran these special programmes in two separate nursery schools for two consecutive years from October 1970 to June 1972.

Part I of this report describes in detail the aims and design of

the study, the features of the populations concerned and the evaluation of the traditional nursery school and family life education programmes. Part II presents the results of the introduction of Distar and "Sesame Street" and data on the overall effects of the five year programme on socialization of children who had attended nursery school as compared with a control group.

We learned two main lessons from this research. The first was that our present methods of evaluation are at a very primitive level; the second is that if we place at least some credence in these primitive methods, it behooves us to be very sceptical of the therapeutic effects of even the most cherished of our primary prevention programmes.

# PART ONE

## EVALUATION OF TRADITIONAL SERVICES

## II THE AIMS OF THE STUDY

To recapitulate, we were interested in discovering (a) whether there were any measurable changes resulting from a variety of traditional services offered by the Mental Hygiene Institute, (b) how persistent such changes would prove to be, (c) whether changes were more or less marked or lasting depending on the intensity of services offered, and (d) whether the income level of the families served influenced the degree of change or durability of change.

Our hypotheses for testing were (1) that the performance on intelligence tests of low-income children would be significantly poorer than the performance of high-income children (2) that children and mothers from low-income areas would have more psycho-physiological stress symptoms than children and mothers from high-income areas (3) that low-income mothers would be more authoritarian in their attitudes towards child rearing than high-income mothers (4) that when four year old children attend nursery school for one year their performance on intelligence tests will improve; and that symptoms reported by their mothers would decrease (5) that low-income children would improve more on intelligence tests as a result of nursery school experience than would high-income children (6) that mothers attending group discussions would change from a more authoritarian to a more permissive attitude in child rearing and that this would be more marked in the low-income mothers (7) that mothers attending group discussions would show a reduction in psycho-physiological stress symptoms (8) that changes in intelligence test performance and symptom reduction

will be more lasting when both mothers and children are involved in the programme as compared with the programmes in which the child only is involved.

## III METHOD

Our research design called for two panels of eight groups of fifteen preschool children and their mothers for study. Two panels of four of these groups were selected from low-income areas; two panels of four groups were selected from high-income areas. The two panels were used (one entering the system in 1967 and one in 1968) because we feared a high drop-out rate especially in the low-income population. The groups from each of the class levels received increasing intensities of service: (1) Control Groups: One each from low and high income areas; families receive no Family Life Education services. (2) Minimal Treatment: Child attends nursery school for a one year period; mothers not involved. (3) Medium Treatment: Child attends nursery school and mother involved in weekly discussion groups. (4) Maximal Treatment: Child attends nursery school; mother involved in group discussions; mothers have well-being interviews on the basis of which further psychiatric services, marriage counselling services or social work involvement is provided. Each family was appraised for its nutritional status and advice and assistance were provided where it was indicated.

Our original design called for testing of children and mothers at the time of entry and six to eight months later (after completing the programme;) and, to assess the durability of changes at twelve month intervals for three subsequent years. Instruments used include measures of intelligence and symptom formation in children and measures of attitude change and symptom formation in mothers. These will be described below.

(a) The Samples

To conduct this research it was first necessary to locate nursery schools in the appropriate income areas of the city and where such nursery schools were not in operation to set these up. Nursery schools with comparable philosophies were easy to locate in high-income areas. However, it was necessary to organize nursery schools in an area of low-income English-speaking population. For our sample of treated high-income children we used those already attending nursery schools. For the control group in the high-income population we identified families with children at the appropriate age levels in high-income areas of the city using our contacts at the Mental Hygiene Institute. Although this was not entirely a random sample we felt that the children would be fairly representative.

The low-income sample presented more difficulty. The ideal procedure would have been to obtain a comprehensive listing of all children in the appropriate age group and then to select randomly the children to be involved in the four levels of intervention. This, however, was not a feasible scheme here for a variety of practical reasons (some mothers could not attend discussion groups, etc.) We did, however, obtain a listing of children in the appropriate age brackets from the local grade school and various social agencies in the area. Children were assigned as randomly as possible to the four groups.

(b) Services Provided

The following services were provided depending on the intervention group. (1) Nursery Schools: The nursery schools were similar in their general format although the personalities and training of the nursery school teachers did vary somewhat. The equipment used was similar throughout. The

schools were held five mornings a week and the children attended from 9.00 until 11.30 in the morning from October to May. Structured periods followed more unstructured periods, usually in regular sequences. There were periods of book-reading, story telling, music and projects in which the teacher gradually left the initiative and organization to the children as their creative abilities developed. Several trips were made to parks, museums, the aquarium, etc. Close contact was maintained between teacher and mothers as well as with the consultants in psychiatry, speech and nutrition who assessed the children in the maximal intervention groups. There were twelve to fourteen children in each nursery school with one full-time teacher and one or two assistants in each. (2) Mothers' Discussion Groups: For the medium and maximum treatment groups the mothers were involved in group discussions. The format differed slightly according to class level. For the middle class women a program of fifteen sessions was arranged. The mothers met once a week, spent thirty minutes observing the group of children in the nursery school then retired to discuss the behaviour of the child or other relevant subjects. Two of these sessions were held at night so that fathers could attend. In the low-income group the mothers attended once weekly for the whole period of the nursery school. It was difficult to have them observe their children because they were reluctant and somewhat embarrassed. Topics discussed by these mothers included their own problems with child-rearing as well as social problems. The high-income mothers showed very little interest in continuing the group discussions following the fifteen session programme. However, the low-income mothers showed definite signs of wishing to continue and a number of women's groups grew out of these programmes

including one social action group. (3) Well-being Interviews: This technique was developed by MacLeod et al (1957) and provides a public health service related to mental health rather than physical health. The purpose is to offer a routine periodic check-up for mental health just as well-baby clinics offer routine physical health check-ups. The interview is usually of one hour duration and is focused on determining how well or how poorly the individual is doing in his everyday life. He is asked to review his functioning in each major life area, e.g. work, his role as husband or wife, his social activities, church activities, etc. His goals are discussed and he is asked what he is doing about achieving them. For this research each of the maximal treatment group mothers received a well-being interview; on the basis of the results the mother or other family member might be advised to seek further assistance for a psychiatric problem in the family, a speech problem, a health problem, etc. (4) Other Services: In addition to the well-being interview the maximal treatment group each received a nutritional assessment. Staff members of the Montreal Diet Dispensary visited each family to determine the adequacy of its nutrition. Assistance and advice were given wherever necessary. In addition, all children in the maximal group were assessed by a speech therapist and treatment was provided where indicated.

(c) Methods for Measuring Change in Children:

The principal instrument for measuring change was the Wechsler Preschool and Primary Scale of Intelligence. This test was chosen because it provides an assessment of mental abilities at the preschool level which can

be related to the WISC and the WAIS which are intelligence scales for school children and adults respectively. The tests assembled within all three instruments are similar.

A second measure employed was the Draw-A-Person Test. In young children there is a close relationship between concept development as shown in drawing and general intelligence (Goodenough, 1954; Goodenough & Harris, 1960). In this research the Draw-A-Person was employed as a measure of intelligence and not as a projective technique.

A third measure of change was the Child Symptom Checklist. Studies by Glidewell (1957) and others have indicated that there is a good correlation between the symptoms reported by the mother and the degree of disturbance of the child. Although reported symptoms do not seem to have been used as a method of measuring change in children in other studies, it was felt that such a technique might be useful for the assessment of change.

Finally for the low-income group, data was collected from the kindergarten and Grade 1 of the low-income grade school including school attendance and a rating by the teachers of their performance in various areas. (This data was not collected for the high-income group because of their wide dispersement in some twenty-five schools throughout the city.) This data was collected on all low-income children, and the performance and attendance of our treated groups were compared with the performance and attendance of those who had not been involved in the programme.

(d) Methods for Measuring Changes in Mothers

The Hereford Attitude Survey was used to measure changes in attitudes

towards child rearing on the part of the mothers. This instrument was developed by Hereford in Austin, Texas (1963). It consists of 75 items divided into 5 sections dealing with confidence in parental role, causation of child behaviour, parental acceptance of children, parental understanding and parental trust. Basically the scale seems to differentiate between authoritarian and permissive attitudes on the part of the mothers.

A second measure of change was the Langner psycho-physiological stress scale. This is a widely used 22-item scale which derives from the Midtown Manhattan mental health survey.

## IV DEMOGRAPHIC FEATURES OF THE SAMPLES

The samples obtained in the described manner provided groups of families which are clearly distinguishable along socio-economic lines as indicated by family income and parental education (Table IV-1 and IV-2). Most of the low-income samples are in the two to five thousand dollars income range and parental education is at the high school level or below; most of the high-income samples[1] are in the six thousand or more income range with a parental education level of some university training or better.

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1. A deficiency in our research method is that we failed to ask for specific income levels above $6,000. It is clear that most of our high-income families were on incomes considerably in excess of $6,000, ranging up to $20,000-$30,000 per annum.

TABLE IV-1

INCOME LEVELS OF LOW AND HIGH INCOME AREA

SAMPLES AT TIME OF ENTRY INTO PROGRAMME

| FAMILY INCOME (PER ANNUM) | LOW INCOME (N=113) | HIGH INCOME (N=116) |
|---|---|---|
| Below $2000. | 13 | 0 |
| 2000 - 3000 | 20 | 0 |
| 3000 - 4000 | 32 | 0 |
| 4000 - 5000 | 27 | 2 |
| 5000 - 6000 | 11 | 8 |
| 6000 or more | 10 | 106 |

TABLE IV-2

EDUCATION LEVELS OF PARENTS IN LOW AND HIGH INCOME SAMPLES

| EDUCATION LEVEL | LOW INCOME (N-113) | | HIGH INCOME (N=116) | |
|---|---|---|---|---|
| | FATHER | MOTHER | FATHER | MOTHER |
| None | 4 | 2 | 0 | 0 |
| Some Grade School | 23 | 22 | 1 | 1 |
| Completed Grade School | 29 | 42 | 3 | 1 |
| Some High School | 44 | 39 | 9 | 10 |
| Completed High School | 11 | 8 | 15 | 21 |
| Some University | 2 | 0 | 23 | 42 |
| Completed University | 0 | 0 | 65 | 41 |

As regards ethnicity (Table IV-3), the low-income group is somewhat more homogeneous than the high income group. Both samples are predominantly English but the high income sample contains a sizable Jewish group as well as some of Asiatic origin, and considerably fewer French Canadians.

TABLE IV-3

ETHNICITY OF FATHERS ACCORDING TO INCOME

| | ENGLISH | FR.CANADIAN | EUROPEAN | JEWISH | OTHER |
|---|---|---|---|---|---|
| LOW INCOME (N=113) | 90(81.8%) | 13(11.8%) | 10(6.4%) | 0 | 0 |
| HIGH INCOME (N=116) | 76(66%) | 7(6.0%) | 10(8.6%) | 19(16.5%) | 4(2.9% |

As we have pointed out, the method of assigning a given family to one or other subgroup (control, minimal intervention, etc.) was not random because some mothers were working and therefore could not attend the discussion groups, some did not want to attend, some failed to attend after one or two discussion groups, etc. This lack of randomness did influence the comparability of the subgroups to some extent (Tables A-1 and A-2 in Appendix); for example the high-income control group has a lower mean level of parental education than the other high-income groups and the control and medium intervention, low-income groups have a somewhat lower income level. The mean ages of children and maternal ages at the time of entry are however roughly comparable in all groups.

## V FINDINGS: LOW AND HIGH INCOME CONTRASTS AND ETHNIC VARIATIONS

(a) General: There proved to be striking differences between the high and low-income samples on all the measures we used except the child symptom check-.

list (Table V-1). These differences are in the expected directions, the mean WPPSI for the high income children is 17 points above that of the lower income children; the mothers' stress symptoms are twice as high among the low-income group and their attitudes to children (as measured by the Hereford scale) are much more authoritarian.

It will be noted that the subgroups (control, minimal, etc.) within the high-income and within the low-income samples are comparable on all the dimensions measured (Table V-1). T-tests indicated that there were no significant differences between the subgroups within both the high and low-income sample but that there were significant differences between the total low and high-income samples.

(b) Intelligence Test Patterns

As has repeatedly been found in other studies, IQ test scores of our low-income children are significantly poorer than those of our high-income children; this is true for the WPPSI (including almost all its subtests) as well as the Draw-a-Person test (Table V-2).

There is an interesting trend relating income to intelligence and to verbal and performance relationships. The trend is consistent with the idea that verbal abilities are relatively more developed in higher income families. Table V-3 indicates that the IQ's of children in families with an income of $4000 or less lie in the mid-eighties with the performance tending to be higher than the verbal scores; children from $4-6000 families have IQ's in the high 90's with equal verbal and performance scores; children in the $6000 or more range have a mean IQ of 107 with verbal score higher than performance. This trend confirms the finding of Seashore (1951) that in children of professional class parents, verbal scores are higher than performance (Table V-4).

TABLE V-1

CHILD'S INTELLIGENCE AND SYMPTOMS AND MATERNAL STRESS SYMPTOMS AND ATTITUDES: COMPARABILITY OF SUBSAMPLES AT TIME OF ENTRY

| SUB GROUP | NUMBER | CHILD'S IQ (WPPSI) (mean) | CHILD'S SYMPTOMS | MOTHERS' ATTITUDES (Hereford) | MOTHERS' STRESS (Langner) |
|---|---|---|---|---|---|
| **LOW INCOME** | | | | | |
| CONTROL | 26 | 89.88 | 1.96 | 27.27 | 4.88 |
| MINIMAL | 25 | 92.56 | 1.48 | 34.08 | 4.40 |
| MEDIUM | 35 | 89.14 | 1.77 | 30.40 | 4.91 |
| MAXIMAL | 24 | 89.88 | 1.71 | 37.63 | 5.42 |
| TOTAL GROUP | 110 | 90.25 | 1.74 | 32.07 | 4.90 |
| **HIGH INCOME** | | | | | |
| CONTROL | 33 | 105.33 | 1.00 | 47.97 | 2.03 |
| MINIMAL | 35 | 109.34 | 1.49 | 67.23 | 2.34 |
| MEDIUM | 23 | 109.13 | 1.91 | 71.30 | 2.22 |
| MAXIMAL | 24 | 105.83 | 0.88 | 70.83 | 2.58 |
| TOTAL GROUP | 115 | 107.42 | 1.30 | 63.27 | 2.28 |

The numbers are somewhat less than in earlier tables; several cases were dropped because of inadequate data.

TABLE V-2

IQ MEASURES OF HIGH AND LOW INCOME
FOUR YEAR OLD CHILDREN AT THE TIME OF ENTRY

| TEST | LOW INCOME N = 110 | | HIGH INCOME N = 115 | | t-VALUE |
|---|---|---|---|---|---|
| WPPSI | MEAN | S.D. | MEAN | S.D | |
| Full Scale | 90.25 | 13.65 | 107.42 | 11.54 | -10.17 xxx |
| Verbal | 89.75 | 16.46 | 108.37 | 11.82 | - 9.75 xxx |
| Performance | 91.47 | 13.27 | 104.97 | 12.73 | - 7.77 xxx |
| Information | 8.51 | 3.01 | 11.77 | 2.48 | - 8.87 xxx |
| Vocabulary | 8.37 | 2.71 | 11.06 | 2.86 | - 7.22 xxx |
| Arithmetic | 9.36 | 5.00 | 10.70 | 2.65 | - 2.52 x |
| Similarities | 8.83 | 5.06 | 11.63 | 2.64 | - 5.22 xxx |
| Comprehension | 9.07 | 7.32 | 11.63 | 2.48 | - 3.53 xxx |
| Animal House | 9.04 | 7.32 | 10.17 | 2.88 | - 1.54 NS |
| Picture Comp. | 8.79 | 2.47 | 10.86 | 2.51 | - 6.21 xxx |
| Mazes | 8.65 | 2.46 | 10.90 | 2.65 | - 6.60 xxx |
| Geometric Design | 8.46 | 2.82 | 10.23 | 2.41 | - 5.06 xxx |
| Block Design | 9.83 | 9.09 | 11.46 | 2.72 | - 1.84 NS |
| DRAW-A-PERSON | 93.49 | 20.82 | 105.04 | 19.55 | - 4.28 xxx |

xxx Difference significant at greater than .001 level

x Difference significant at .05 level

TABLE V-3

INCOME AND IQ: INCOME AND VERBAL AND PERFORMANCE SCORES ON WPPSI

| INCOME | NUMBER | FULL SCALE | VERBAL | PERFORMANCE | DIFFERENCE Verbal-Perf. |
|---|---|---|---|---|---|
| $4000 and less | 62 | 85.3 | 83.4 | 87.7 | -4.3 |
| $4000-6000 | 50 | 99.0 | 98.5 | 98.8 | -0.3 |
| $6000 and over | 113 | 107.0 | 108.3 | 104.2 | +4.1 |

But it is contrary to the findings of a caretul study by Dudek et al (1967) on $5000-$10,000 level 5-6 year old children whose performance score exceeded the verbal by 7 points! It is probable that some of the discrepancy is due to the fact that the mean income levels of the high-income group in our study are considerably higher than those in the Dudek study.[1] Table V-4 illustrates this general point using data from Seashore (1950), our own material and Dudek's. Why Dudek's findings should be so different is not clear and the relationship and significance of verbal and performance abilities calls for further study.

A group of high IQ individuals (34 McGill Medical Students) show trends consistent with this general pattern on the WAIS. Their mean global IQ was 126.4; Verbal 128.2; Performance 120.3; Difference, +7.9. (Schwartzman et al, 1961)

What of the effects of culture upon IQ patterns? Table V-5 shows the relationship between ethnicity of the father (French Canadian and English Canadian) and IQ patterns of children in our low-income samples. There are

1. See footnote page 10.

TABLE V-4

CLASS, INTELLIGENCE AND VERBAL AND PERFORMANCE RELATIONSHIPS IN CHILDREN

| INVESTIGATOR AND DATE | TEST | N | CLASS LEVEL (PARENTS) | GLOBAL IQ | VERBAL IQ | PERFOR-MANCE IQ | DIFFERENCE VERBAL PER-FORMANCE |
|---|---|---|---|---|---|---|---|
| Seashore et al 1950 | WISC | 176 | Professional and Semi-Prof. | 110.3 | 110.9 | 107.8 | 3.1 |
| Present Study, 1971 | WPPSI | 114 | $6000 plus | 107.0 | 108.3 | 104.2 | 4.1 |
| Seashore et al 1950 | WISC | 280 | Clerical and Sales | 105.2 | 105.2 | 104.3 | 0.9 |
| Dudek et al 1967 | WISC | 107 | $5000 - 10,000. | 105.0 | 101.9 | 109.0 | -7.1 |
| Seashore et al 1950 | WISC | 303 | Farm labourers and foreman and other labourers | 94.2 | 94.6 | 94.9 | - .3 |
| Present Study,1971 | WPPSI | 62 | $4000 or less | 85.2 | 83.4 | 87.7 | -4.3 |

significant differences in the verbal aspects of the IQ measures, particularly on the information, arithmetic and vocabulary sub-tests while the performance sub-tests are highly similar as is the Draw-a-person score.

In no sub-test does the French child perform better than the English. It should be noted that in administering the tests, if a child spoke French he was given the French version of the test by a bilingual psychologist. It

TABLE V-5
IQ PATTERNS OF LOW INCOME
CHILDREN WITH ENGLISH AND FRENCH FATHERS

| | Low income: English Fathers (N=87) | Low income: French Fathers (N=13) | t-value |
|---|---|---|---|
| Global IQ | 91.14 | 80.77 | 2.68 xx |
| Verbal | 90.9[illegible] | 79.31 | 2.39 x |
| Perform. IQ | 91.36 | 86.92 | 1.17 |
| Information | 8.84 | 6.08 | 3.19 xx |
| Vocabulary | 8.60 | 7.00 | 1.96 |
| Arithmetic | 9.75 | 6.77 | 1.98 x |
| Similarities | 9.09 | 7.23 | 1.20 |
| Comprehension | 9.34 | 7.23 | 0.93 |
| Animal House | 9.30 | 7.23 | 0.91 |
| Picture Comp. | 8.91 | 7.54 | 1.91 |
| Mazes | 8.57 | 8.31 | 0.36 |
| Geometric Des. | 8.36 | 8.15 | 0.26 |
| Blocks | 9.92 | 8.54 | 0.49 |
| Draw-a-Person | 92.61 | 88.69 | 0.66 |

xx Difference significant at .01 level
x Difference significant at .05 level

seems probable that these differences are class differences rather than cultural differences, for as we see in Table V-6, the low-income French Canadian families have a somewhat lower level of income than the total low-income sample; some 70% of the French Canadian families earn $4000 per annum or less as compared with only 57% of the total low-income sample. Similarly

TABLE V-6

FAMILY INCOME OF FRENCH CANADIAN
LOW-INCOME FAMILIES VERSUS ALL LOW INCOME FAMILIES

| | French Canadian Father | | Total Low Income Sample | |
|---|---|---|---|---|
| Income | N | % | N | % |
| Below $2000 | 2 | 15 | 13 | 11 |
| 2000-3000 | 2 | 15 | 20 | 18 |
| 3000-4000 | 5 | 40 | 32 | 28 |
| 4000-5000 | 2 | 15 | 27 | 24 |
| 5000-6000 | 2 | 15 | 11 | 10 |
| $6000 and above | 0 | 0 | 10 | 9 |
| | 13 | | 113 | |

the French Canadian fathers and mothers have a lower education level on the average.

When we examine the high-income French Canadian versus English Canadian families (Table V-7) we find no significant differences. The French Canadian group does the Draw-a-Person test almost significantly better than the English group, yet there are no differences or even trends in the performance sub tests of the WPPSI. It is interesting ecologically that this is a rather special group of French Canadian families: none of the mothers is French Canadian; five out of the seven are English, one is Jewish and one Japanese. These wives, moreover, have a level of education at least the equal of their husbands - as opposed to the usual high-income pattern in which wives tend to be less well educated than their husbands.

TABLE V-7

IQ PATTERNS OF HIGH INCOME CHILDREN WITH ENGLISH AND FRENCH CANADIAN FATHERS

| | High Income: English Fathers (N = 69) | High Income:French Fathers (N = 7) | t-value |
|---|---|---|---|
| Global IQ | 108.97 | 109.71 | -0.16 |
| Verbal IQ | 109.61 | 112.29 | -0.59 |
| Performance IQ | 106.51 | 105.29 | 0.26 |
| Information | 12.25 | 11.86 | 0.42 |
| Vocabulary | 11.45 | 12.29 | -0.73 |
| Arithmetic | 10.55 | 11.29 | -0.69 |
| Similarities | 11.86 | 12.29 | -0.40 |
| Comprehension | 11.67 | 12.29 | -0.64 |
| Animal House | 10.55 | 10.71 | -0.14 |
| Picture Completion | 11.10 | 11.14 | -0.04 |
| Mazes | 11.16 | 10.29 | 0.80 |
| Geometric Designs | 10.42 | 9.57 | 0.88 |
| Blocks | 11.57 | 12.71 | -1.15 |
| Draw-A-Person | 104.16 | 117.57 | -1.59 |

No differences are significant

Although we fail to find clear cultural differences in IQ patterns between the French and English groups in our sample, there do seem to be some when we compare the Jewish high-income group with the English high-income group (Table V-8). The striking difference is the discrepancy between the verbal and

performance scales in the Jewish children. (Verbal, 108.33; Performance, 99.33; Difference 9.00) How unusual this discrepancy is can be seen by reference to Table V-4. This finding agrees with others (for example Lesser et al, 1965) indicating that high verbal abilities may be an important Jewish cultural feature.

TABLE V-8
COMPARISON OF IQ PATTERNS IN HIGH INCOME AREA
JEWISH AND ENGLISH GROUPS

| | English Fathers N=69 | Jewish Fathers N=24 | t-test |
|---|---|---|---|
| Global IQ | 108.97 | 104.54 | 1.71 |
| Verbal IQ | 109.61 | 108.33 | 0.49 |
| Performance IQ | 106.51 | 99.33 | 2.43 xx |
| Information | 12.25 | 11.00 | 2.18 x |
| Vocabulary | 11.45 | 10.75 | 1.07 |
| Arithmetic | 10.55 | 11.38 | -1.33 |
| Similarities | 11.86 | 11.42 | 0.75 |
| Comprehension | 11.67 | 12.21 | -0.97 |
| Animal House | 10.55 | 9.00 | 2.44 xx |
| Picture Completion | 11.10 | 10.17 | 1.54 |
| Mazes | 11.16 | 10.21 | 1.49 |
| Geometric Design | 10.42 | 9.63 | 1.47 |
| Blocks | 11.57 | 10.54 | 1.59 |
| Draw-A-Person | 104.16 | 103.33 | 0.18 |

xx significant at .02 level
x significant at .05 level

On the other hand a recent study of 1072 Israeli born Jewish children, age 4 to 6.5 years randomly sampled from large Israel urban areas and using the same IQ measure as the present study failed to show this distinctive verbal pattern (Lieblich et al 1972). It studied children whose parents derived from Eastern Europe, the Middle East and North Africa, and looked for differences in WPPSI subtest patterns and levels according to class and area of origin. The researchers found that Israeli ethnic groups differ significantly in the level of IQ but only negligibly in pattern. Pattern differences were found only for two subtests (Information and Comprehension) in which the Eastern European and Israeli groups were significantly higher than the Middle East and North African subgroups. They suggest that the superiority in verbal subtests may be related to home environmental features such as amount of reading, verbal interchange, etc. It is clear that class features are much more powerful determinants of IQ performance than is culture; levels are varied but not patterns. What is significant in view of our findings is that no special verbal abilities are demonstrated in these Jewish groups (Tables V-9 and V-10).

TABLE V-9
MEAN I.Q. SCORES FOR THE FOUR ISRAELI GROUPS
(LIEBLICH ET AL, 1972)

| Origin | N | Total I.Q. Mean | Verbal I.Q. Mean | Performance I.Q. Mean |
|---|---|---|---|---|
| Israel | 255 | 106.3 | 105.7 | 105.3 |
| Eastern Europe | 186 | 106.0 | 105.7 | 105.6 |
| Middle East | 263 | 93.8 | 93.9 | 94.7 |
| North Africa | 180 | 91.8 | 91.8 | 93.5 |

TABLE V-10

MEAN ISRAELI I.Q. SCORES BY ORIGIN AND SES
(N's IN PARENTHESES)
LIEBLICH ET AL,1972

| SES | Father's origin | | | |
|---|---|---|---|---|
| | Israel | Eastern Europe | Middle East | North Africa |
| High | 114.4 | 110.5 | 101.5 | 98.9 |
| | (100) | (92) | (39) | (24) |
| Low | 101.5 | 102.1 | 93.2 | 90.9 |
| | (125) | (94) | (224) | (156) |

Returning to our own data, what are we to make of the distinctive Jewish pattern (Table V-11)? It will be remembered that we do not have a random sample but merely a group of children who were self-selected to attend nursery schools in high-income areas. One possible interpretation has to do with the high upward mobility of the Jewish family in Montreal. Jewish families can "make it" when they have high verbal abilities in spite of having poorer performance levels. In some sense they might be described as over-achieving families. This would fit with the high premium our culture places upon verbal abilities.

TABLE V-11

IQ OF HIGH INCOME SAMPLE

| | N | Verbal | Performance | Global |
|---|---|---|---|---|
| French Canadian father | 7 | 112.29 | 105.29 | 109.71 |
| English Canadian father | 60 | 109.61 | 106.51 | 108.97 |
| Jewish father | 24 | 108.97 | 99.33 | 104.54 |

(c) Variations In Stress Patterns

It will be recalled that we used two instruments to measure stress: the 22-item Langner scale for the mothers and the Glidewell child-symptom checklist for the children (mothers' reports of symptoms in their children.) There were significant differences between the high and low-income samples on both measures, but the differences in mothers' symptoms were much greater than the children's. (Table V-12).

TABLE V-12

STRESS SYMPTOMS OF MOTHERS AND CHILDREN ACCORDING TO FAMILY INCOME

| | Low Income N=110 | High Income N=115 | t-Test |
|---|---|---|---|
| Langner Scale | 4.90 | 2.26 | 5.69 xxx |
| Glidewell Scale | 1.74 | 1.30 | 2.06 x |

xxx significant at the .001 level
x significant at the .05 level

Regarding the mothers' stress symptoms, we find the usual relationship; the lower the income (or class level) the higher the symptoms. This relationship has been well documented in other studies and is one of the most consistent findings using self-report symptom checklist techniques (Star, 1950; Phillips, 1966; Roberts et al, 1966). Table V-13 shows ethnic variations in mothers' stress symptoms. Once again the high-income French Canadian families emerge as a special group. The mothers have very low Langner scale scores and the children very few symptoms. The low-income English mothers

appear to be a very highly stressed group. It is interesting that although the low-income French Canadian group are on the average more economically disadvantaged (see Table V-6) the mothers display fewer symptoms than the English mothers.

TABLE V-13

STRESS SYMPTOMS OF MOTHERS AND CHILDREN
ACCORDING TO ETHNICITY OF FATHER AND INCOME

| | N | Langner Scale | Glidewell Scale |
|---|---|---|---|
| Jewish (High Income) | 24 | 2.96 | 1.33 |
| English (High Income) | 69 | 2.12 | 1.33 |
| Other (High Income) | 15 | 2.00 | 1.33 |
| French (High Income) | 7 | 1.36 | 0.86 |
| English (Low Income) | 87 | 5.18 | 1.60 |
| French (Low Income) | 13 | 4.00 | 2.08 |
| Other (Low Income) | 10 | 3.63 | 2.59 |

How does the Langner scale correlate with our other measures? It might be thought for example that a high level of stress in the mother might correlate with high symptom rates and poor IQ test performances of their children. Correlations of this kind were rather rare. Table V-14 shows that there is a somewhat different pattern of such correlations in the high and low-income samples. In the high-income sample there is a significant relationship between frequency of mothers' symptoms and frequency of children's symptoms; but this correlation is much weaker in the low-income sample. In the low-income sample the relationship between the mother's

symptoms and the authoritarian child rearing attitudes is stronger. This latter association is understandable; under pressure, authoritarian attitudes and behaviour tend to manifest themselves. In the higher income groups with significantly fewer symptoms and pressure, this relationship is not as clear; there is no correlation between the total Hereford score and mothers' symptoms; but the one subscale that deals with uncertainty over parental role does correlate at the .05 level. The highly anxious, high-income mother expresses uncertainty over her maternal role though she is adequately understanding, trusting and accepting and has the "right" attitudes about causation of the child's behaviour.

In the low-income sample there is some evidence that the highly distressed mother may be related to impaired cognitive abilities of her child; this is evident in the verbal IQ and the draw-a-person test. Such a relationship is not apparent in the high-income sample.

Finally, in considering the stress levels of the mothers, we were interested in whether mixed ethnic marriages might be a source of added stress. There were 34 couples in all that were of mixed ethnic origin (e.g. French Canadian mother married to Irish father, etc.) These mixtures did not seem to give rise to significantly higher stress levels in the mothers (Table V-15).

Turning now to the stress symptoms of the children, it will be remembered that there were significant differences between the high and low-income groups but that this difference was much less contrasty than with the differences in stress in the mothers. Glidewell (1968) also found

TABLE V-14

CORRELATION COEFFICIENTS:
MOTHERS' STRESS SYMPTOMS AND VARIOUS OTHER MEASURES

| | HIGH INCOME (N=115) | LOW INCOME (N=110) |
|---|---|---|
| Global IQ | -0.11 | -0.16 |
| Verbal IQ | -0.04 | -0.23 x |
| Performance IQ | -0.14 | -0.08 |
| Information | -0.01 | -0.16 |
| Vocabulary | -0.02 | -0.16 |
| Geometric Designs | -0.22 x | -0.09 |
| Mazes | -0.07 | -0.05 |
| Draw-A-Person | -0.18 | -0.28 xx |
| Hereford | -0.09 | -0.21 x |
| Confidence Subscale | -0.20 x | -0.19 |
| Causation Subscale | -0.15 | -0.22 x |
| Understanding Subscale | -0.12 | -0.16 |
| Child's Symptoms | 0.32 xx | 0.11 |

xx significant at .01 level or better
x significant at .05 level

that there was little correlation between class level and childrens' stress, using the mothers' report of symptoms as the index. Why should this be so? From our knowledge of low-income children, we would expect that in reality they would suffer much more from symptoms of withdrawal, aggressivness, bed wetting, etc. than the higher income children. One plausible explanation is that the low-income mothers with so many other difficulties to cope with

TABLE V-15

STRESS OF MOTHERS IN
MIXED ETHNIC MARRIAGES

| | Number | Mean Langner Score |
|---|---|---|
| All Mixed Marriages | 34 | 3.3 |
| Mixed Marriages, income below $6000. | 16 | 5.2 |
| Total Low Income Sample | 110 | 4.9 |
| Mixed Marriages, income $6000 or more | 18 | 1.7 |
| Total High Income sample | 115 | 1.3 |

are not as aware of or concerned by these kinds of symptoms in their children. In order to become noteworthy these symptoms would need to be much more severe than for the high-income mother. Some support for this hypothesis is provided by Table V-16 which shows correlations between child symptoms and other dependent variables. It will be seen that there are no correlations between the high-income children's reported symptoms and IQ measures, whereas there are several highly significant correlations in the low-income group. This might suggest that symptoms so intense as to be worthy of note to the low-income mothers are also severe enough to interfere with the low-income child's intellectual functioning. Some further support for this idea is to be found in Table V-13. It will be seen that when the low-income group is divided into ethnic segments, the more stressed mothers report fewer symptoms in their children. This is the reverse of the trend in the high-income mothers where there is a high correlation between high mothers' stress and high children's symptoms (Table V-14).

TABLE V-16

CORRELATIONS BETWEEN CHILDREN'S REPORTED SYMPTOMS AND VARIOUS IQ MEASURES

| | HIGH INCOME | LOW INCOME |
|---|---|---|
| Global IQ | -0.02 | -0.26 xx |
| Verbal IQ | -0.06 | -0.20 x |
| Performance IQ | -0.03 | -0.17 |
| Information | -0.08 | -0.25 xx |
| Vocabulary | -0.04 | -0.22 x |
| Picture Completion | -0.02 | -0.26 xx |
| Mazes | -0.01 | -0.21 x |
| Draw-A-Person | -0.02 | -0.09 |

xx significant at the .01 level or higher
x significant at the .05 level

(d) Variations in Maternal Attitudes

It will be recalled that the Hereford scale was developed to measure parental attitudes towards their children. In general the scale seems to concern itself with permissive as opposed to authoritarian attitudes, but other areas are covered as well. The Hereford team drew some items from other parent attitude scales and formulated some themselves. The scale is divided into 5 sub-scales and is scored so that a low score indicates that (1) parent feels that he has more problems than other parents and he is uncertain as to how to handle them; there is also the idea that the parents' role is difficult and thankless and calls for self sacrifice

(Confidence Subscale); (2) parent believes that the child's behaviour is innate and not modifiable by environmental or parental influence (Causation Subscale); (3) parent does not accept the child's behaviour, particularly as regards need for affection, aggressiveness and developmental changes (Acceptance Subscale); (4) parent denies the individuality of the child: the child is regarded as an extension of the parent; he is not to be trusted and must constantly be watched (Trust subscale); (5) parent does not foster freedom of expression, the talking out of problems or joint participation in decision making (Understanding Subscale).

Hereford found a clear relationship (at the .001 level) between class level and parental attitudes with the scores from the higher class levels (as measured roughly by type of neighbourhood) being higher on all subscales than the lower class levels. As Table V-17 indicates, our own findings accord with Hereford's.

TABLE V-17
MATERNAL ATTITUDES AND INCOME LEVEL

| | LOW INCOME (N=110) | HIGH INCOME (N=115) | T-TEST |
|---|---|---|---|
| Hereford Total | 32.07 | 62.91 | -9.07 xxx |
| Confidence | 6.55 | 10.94 | -6.46 xxx |
| Causation | 10.09 | 13.99 | -4.84 xxx |
| Acceptance | 6.45 | 13.33 | -8.95 xxx |
| Trust | 7.55 | 12.72 | -6.09 xxx |
| Understanding | 9.85 | 14.39 | -4.34 xxx |

xxx All differences significant or greater than .001 level

We have already seen that there are some relationships between maternal attitudes and various measures of the child's intelligence. Table V-18 shows these relationships in more detail. The relationships are stronger in the low-income sample and are to be found both in the verbal and performance aspects of IQ. In the high-income sample there are significant relationships but they are restricted to the verbal subscales. The Draw-A-Person score relates to maternal attitudes at the same level in both high and low-income groups but doesn't quite reach statistical significance. As regards cultural origins of father, although there are some trends, family income is a much more important variable (Table V-19). The small sample of Italian households stand out as the most authoritarian. Once again the high-income French sample emerges as the group with the highest, most favourable score.

Let us now examine the relationships between the Hereford subscales and various other measures. Table V-20 indicates that the Causation subscale relates the most significantly to other measures, both as regards the IQ of the child and stress symptoms of the mother and the child. It will be remembered that the Causation subscale consists of items concerning whether the mother views the child's behaviour as innate or environmentally determined; a strong belief in the unchangeable nature of the child is related to poor performance on IQ tests, high stress in the child (in the high-income group) and high mothers' symptom levels. The Confidence subscale is also correlated at a low level with mothers' stress symptoms; if the mother has high symptom levels she also expresses a lack of confidence in raising her children in the right manner. This is more marked in the high income sample.

TABLE V-18

CORRELATIONS BETWEEN MATERNAL ATTITUDES (HEREFORD SCORE) AND CHILDREN'S IQ MEASURES

| | HIGH INCOME (N=115) | LOW INCOME (N=112) |
|---|---|---|
| Global IQ | .18 | .27 xx |
| Verbal IQ | .27 xx | .21 x |
| Performance IQ | .05 | .20 x |
| Information | .18 | .20 x |
| Vocabulary | .23 x | .19 |
| Arithmetic | .16 | .09 |
| Similarities | .23 x | .20 x |
| Comprehension | .18 | .16 |
| Animal House | .01 | .09 |
| Picture Comp. | -.01 | .15 |
| Mazes | .06 | .26 xx |
| Geometric Des. | .17 | .14 |
| Block Design | -.03 | .01 |
| Draw-A-Person | .17 | .17 |

xx significant at .01 level

x significant at .05 level

TABLE V-19

MATERNAL ATTITUDES AND CULTURAL ORIGIN OF FATHER

| GROUP | N | HEREFORD SCORE | GROUP | N | HEREFORD SCORE | t-value |
|---|---|---|---|---|---|---|
| Upper Jewish | 24 | 56.21 | Upper Other | 15 | 58.93 | -.28 |
| Upper English | 69 | 65.16 | Upper Jewish | 24 | 56.21 | 1.41 |
| Upper Other | 15 | 58.93 | Upper French | 7 | 72.29 | -1.08 |
| Lower English | 87 | 33.00 | Lower French | 13 | 29.38 | .49 |
| Lower Other | 6 | 34.33 | Lower Italian | 4 | 17.25 | 1.95 x |

x significant at .10 level

TABLE V-20

CORRELATIONS OF HEREFORD SUBSCALES AND VARIOUS OTHER MEASURES IN BOTH LOW AND HIGH INCOME SAMPLES

HIGH INCOME GROUP
(N=115)

| Hereford Subscale | Global IQ | Verbal | Performance | Child Symptom | Mother Symptom |
|---|---|---|---|---|---|
| Confidence | 0.06 | 0.15 | -0.05 | -0.09 | -0.20 x |
| Causation | 0.19 | 0.20 x | 0.13 | -0.22 xx | -0.15 |
| Acceptance | 0.10 | 0.19 | -0.02 | 0.09 | 0.00 |
| Trust | 0.11 | 0.16 | 0.03 | 0.02 | 0.00 |
| Understanding | 0.05 | 0.01 | -0.01 | 0.00 | -0.12 |

LOW INCOME GROUP
(N=110)

| | | | | | |
|---|---|---|---|---|---|
| Confidence | 0.17 | 0.19 | 0.17 | 0.03 | -0.19 |
| Causation | 0.25 xx | 0.19 | 0.17 | 0.02 | -0.22 xx |
| Acceptance | 0.07 | -0.01 | 0.17 | 0.08 | -0.10 |
| Trust | 0.17 | -0.13 | 0.19 | -0.04 | -0.12 |
| Understanding | 0.11 | 0.10 | 0.07 | -0.13 | -0.16 |

xx significant at the .01 level
x significant at the .05 level

## VI FINDINGS: THE FAILURE TO PRODUCE CHANGE

Thus far we have considered the demographic features of the population we worked with emphasizing the gross contrasts between the rich and poor in all the measures we employed and the relatively minor differences associated with ethnicity. We have also reported the interrelationships between the various measures at the time of entry into the project.

Let us now turn to the main focus of our research. Were the various intensities of service provided associated with any changes in the treated populations compared with the controls? As we have already intimated in the introduction, none of our measuring instruments registered significant changes. Tables VI-1 to VI-8 demonstrate this failure in detail. In no single group and by no single measure is significant change registered. The same is true of all the individual WPPSI subtests and of each of the Hereford subscales.

Why is this so? There are four possible reasons: (1) the programmes in fact did not produce any changes (2) the programmes produced changes but not the sort we expected and therefore they did not register on our instruments (3) the programmes produce the changes we expected but the tests were faulty and did not register changes that were indeed present (4) the programmes produced change, the instruments were the right ones but the testing procedures were faulty or biased. We will discuss each of our areas of measurement along these lines.

TABLE VI-1

BEFORE - AFTER GLOBAL IQ (WPPSI)

LOW INCOME

| GROUP | BEFORE | | AFTER | | DIFFERENCE | t-TEST |
|---|---|---|---|---|---|---|
| | Mean | S.D | Mean | S.D. | | |
| Control N=26 | 89.88 | 12.95 | 92.88 | 13.87 | 3.00 | 0.34 |
| Minimal N=25 | 92.56 | 12.93 | 97.76 | 10.74 | 5.20 | 0.95 |
| Medium N=35 | 89.14 | 14.29 | 94.31 | 12.70 | 4.12 | 0.34 |
| Maximal N=24 | 89.88 | 13.89 | 93.21 | 12.77 | 3.33 | 0.42 |

HIGH INCOME

| | | | | | | |
|---|---|---|---|---|---|---|
| Control N=33 | 105.33 | 10.61 | 109.88 | 10.07 | 4.55 | 0.52 |
| Minimal N=35 | 109.34 | 13.19 | 114.69 | 13.35 | 5.35 | 0.90 |
| Medium N=23 | 109.13 | 8.40 | 113.70 | 7.67 | 4.57 | 0.87 |
| Maximal N=24 | 105.83 | 11.81 | 109.42 | 11.60 | 3.59 | 0.56 |

## TABLE VI-2
## BEFORE-AFTER VERBAL IQ
## (WPPSI)

### LOW INCOME

| GROUP | BEFORE Mean | BEFORE S.D. | AFTER Mean | AFTER S.D. | DIFFERENCE | t-TEST |
|---|---|---|---|---|---|---|
| Control N=26 | 85.88 | 20.79 | 91.58 | 12.58 | 5.70 | 0.29 |
| Minimal M=25 | 93.52 | 14.01 | 96.72 | 10.37 | 3.20 | 0.37 |
| Medium N=35 | 89.37 | 14.54 | 93.49 | 12.15 | 4.12 | 0.34 |
| Maximal N=24 | 90.58 | 15.09 | 93.96 | 12.49 | 3.38 | 0.37 |

### HIGH INCOME

| | | | | | | |
|---|---|---|---|---|---|---|
| Control N=33 | 105.45 | 12.17 | 109.27 | 11.16 | 3.82 | 0.37 |
| Minimal N=3ɔ | 110.80 | 11.46 | 114.20 | 11.70 | 3.40 | 0.40 |
| Medium N=23 | 109.35 | 9.58 | 109.87 | 8.12 | 0.52 | 0.08 |
| Maximal N=24 | 107.88 | 12.60 | 111.46 | 10.92 | 3.58 | 0.35 |

TABLE VI-3
BEFORE-AFTER PERFORMANCE IQ
(WPPSI)

LOW INCOME

| GROUP | BEFORE | | AFTER | | DIFFERENCE | t-TEST |
|---|---|---|---|---|---|---|
| | Mean | S.D | Mean | S.D. | | |
| Control N=26 | 91.92 | 13.04 | 95.73 | 15.68 | 3.81 | 0.32 |
| Minimal N=25 | 92.92 | 11.38 | 99.56 | 12.34 | 6.64 | 1.01 |
| Medium N=35 | 91.23 | 14.78 | 96.09 | 12.91 | 4.86 | 0.62 |
| Maximal N=24 | 89.83 | 13.77 | 93.63 | 13.51 | 3.80 | 0.39 |
| HIGH INCOME | | | | | | |
| Control N=33 | 104.09 | 10.88 | 108.70 | 11.94 | 4.61 | 0.62 |
| Minimal N=35 | 105.86 | 15.28 | 112.40 | 14.45 | 6.54 | 0.39 |
| Medium N=23 | 107.52 | 9.24 | 115.17 | 9.54 | 7.65 | 1.32 |
| Maximal N=24 | 102.42 | 13.04 | 105.17 | 13.22 | 2.75 | 0.66 |

TABLE VI-4

BEFORE-AFTER, DRAW-A-PERSON SCORES

LOW INCOME

| GROUP | BEFORE | | AFTER | | DIFFERENCE | t-TEST |
|---|---|---|---|---|---|---|
| | Mean | S.D | Mean | S.D. | | |
| Control N=26 | 97.31 | 17.10 | 96.58 | 19.18 | -0.73 | 0.05 |
| Minimal N=25 | 91.20 | 22.23 | 99.48 | 18.87 | +8.28 | 0.45 |
| Medium N=35 | 93.26 | 2.30 | 91.83 | 22.99 | -1.43 | 0.08 |
| Maximal N=24 | 92.08 | 26.40 | 96.25 | 25.80 | 4.17 | 0.15 |

HIGH INCOME

| | | | | | | |
|---|---|---|---|---|---|---|
| Control N=33 | 110.67 | 16.24 | 112.21 | 13.21 | 1.54 | 0.11 |
| Minimal N=35 | 103.03 | 23.75 | 103.20 | 14.07 | 0.17 | 0.01 |
| Medium N=23 | 103.57 | 15.12 | 109.00 | 19.05 | 5.43 | 0.25 |
| Maximal N=24 | 101.67 | 18.68 | 109.33 | 15.82 | 7.66 | 0.50 |

(a) Intelligence Measures

The desire to improve intelligence test performance, particularly that of low-income children was central to our programmes. In 1966-67 when we were planning our study, there was a good deal of discussion and glowing mass media reports about the American experience with head-start programmes which were a major weapon in the war on poverty. Head-start had begun as two to three month summer programmes in 1965 and the following year many thousands of children were involved in six to eight month programmes. Many of the early evaluations of head-start indicated significant gains in IQ. Grey and Klaus (1965) reported that children attending the summer Nashville head-start programme gained 5 to 6 points on both Stanford-Binet and WISC whereas a control group lost 4 to 6 points. Similar gains by treated groups and losses by control groups were reported by Goldstein (1965) in New York using Stanford-Binet and the Peabody Picture Vocabulary Test. Beller reported a 6 point gain in Philadelphia using the Stanford-Binet but no consistent differences between controls and treated groups on the Goodenough Draw-a-Person test. Even at this early stage there were some sceptical voices. Alpern (1966) reported that 5-year old children who attended a pre-school programme for seven months made substantial gains on the Metropolitan Readiness Test, but so did children in the control group and both made slight but non-significant gains in Stanford-Binet scores. A follow-up study 17 months later showed no difference between experimental and control subjects in first grade scores on the Metropolitan Readiness

Test or in ratings by teachers of academic motivation and progress.

Looking at our own programme, it is clear that research findings at the time we started would have led us to expect that some improvements in IQ might result from our nursery schools. As regards the tests we used, the WPPSI and the Goodenough Draw-a-Person are both considered valid indicators of IQ; and certainly the WPPSI is comparable if not superior to the Stanford-Binet or the WISC for assessing IQ's of 4-year olds. As far as the testing method itself is concerned, the tests were administered by several different psychologists who attended briefing sessions to ensure methods of administration and scoring. Each protocol was reviewed by a senior psychologist. It is clear that the IQ testing, particularly with the WPPSI was the most valid and best controlled measure we used in the study.

Looking at our results, we find that both low and high-income children show Global IQ gains of from 3 to 5 points on the WPPSI but unlike some of the studies noted earlier the control groups also showed the same order of gains. Our results for the Draw-a-Person showed considerable variability and certainly no clear pattern of improvement is visible. The tests we used, particularly the WPPSI, were valid measures and were acceptably administered. Our conclusion must be that the kind of traditional nursery school programmes we provided to four year old children had no effects in improving I.Q.

(b) Maternal Attitude Scores

Unlike the other instruments we used in our study, the Hereford Scale was especially designed as an instrument to measure changes in a psychological attribute. Our other instruments were originally designed to

give a snapshot picture of some attribute at one point in time. In his study, Hereford was able to demonstrate changes in parental attitudes resulting apparently from discussion groups of a type very similar to ours. Table VI-5 shows some of Hereford's before-after differences.

TABLE VI-5
BEFORE - AFTER DIFFERENCES IN PARENTAL ATTITUDES
RESULTING FROM DISCUSSION PROGRAMMES
COMPARED WITH CONTROL GROUPS
(Hereford, 1963)

| GROUP | Number | Before (mean score) | After (mean score) |
|---|---|---|---|
| Experimental[1] | 363 | 47.7 | 57.1 |
| Lecture[2] | 91 | 56.3 | 51.8 |
| Non-Attenders[3] | 138 | 52.1 | 51.8 |
| Random Controls[4] | 256 | 49.9 | 49.7 |

[1] Group of parents who attended at least one group discussion. Measures taken before the programme and four to six weeks after the last of six weekly discussion meetings.

[2] Parents who did not participate in discussion groups but who did attend at least one of a series of lectures by professionals in the field of parent-child relations.

[3] Parents who registered for either the discussion groups or the lecture series but who did not attend.

[4] Parents selected randomly from school files but who registered neither for discussion group or for lecture series.

Besides indicating that there were significant changes in attitudes in the desired directions in the group involved in group discussions but not in the control groups, Hereford's study showed, surprisingly enough, that

these changes were not dependent upon how many sessions the parents attended - those attending only one session changed as much as those attending all six.

Contrary to Hereford's findings, Table VI-6 demonstrates no significant differences in before-after Hereford scores. Nor are they any very clear trends visible. The mothers who did not take part in discussion groups showed more improvements in their scores than the mothers who did in several instances!

In examining our results in detail to assess the Hereford scale as an instrument some of our findings suggest that it does not have a high test-retest reliability. Hereford did not assess this stability of response aspect of his scale in his original study. In his own work, however, the means of the scores, at least, look quite stable over a three month period when the parents were not involved in the group discussion programme. As Table VI-5 indicates, those who were non-attenders and random controls dropped only .3 and .2 points respectively.

In our study on the other hand, both the low-income and the high-income control groups and the high-income minimal intervention group showed a considerable change where none was expected. The low-income control group showed an increase in mean Hereford score from 27.27 to 37.27; without any programme and over a six month period this group of 26 low-income mothers improved by 10 points in their attitudes to child rearing! Clearly there is some problem here. Is it a matter of the instrument itself or our administration of it? Looking at alterations in individual scores, we find that some of the most discrepant before-after scores in the low-income control group occurred when two different interviewers were involved. In case 105

TABLE VI-6

BEFORE-AFTER MOTHER'S ATTITUDE MEASURES (HEREFORD)

LOW INCOME

| GROUP | BEFORE | | AFTER | | DIFFERENCE | t-TEST |
|---|---|---|---|---|---|---|
| | Mean | S.D. | Mean | S.D. | | |
| Control N=26 | 27.27 | 17.70 | 37.27 | 25.01 | 10.00 | 0.51 |
| Minimal N=25 | 34.08 | 25.08 | 34.44 | 20.88 | 0.36 | 0.02 |
| Medium N=35 | 30.40 | 24.01 | 45.51 | 27.28 | 15.11 | 0.71 |
| Maximal N=24 | 37.63 | 26.51 | 52.42 | 27.74 | 14.79 | 0.74 |

HIGH INCOME

| | | | | | | |
|---|---|---|---|---|---|---|
| Control N=33 | 47.97 | 24.89 | 55.30 | 29.86 | 7.33 | 0.32 |
| Minimal N=35 | 67.23 | 26.57 | 76.26 | 27.97 | 9.03 | 0.47 |
| Medium N=23 | 71.30 | 18.80 | 73.65 | 20.21 | 2.35 | 0.14 |
| Maximal N=24 | 70.83 | 24.53 | 81.42 | 27.52 | 10.59 | 0.59 |

for example, prior to commencing the programme the mother's Hereford score was 36; six months later, with a different interviewer her score jumped to 100! Comparing the two records, she gave many diametrically opposite responses to the same attitude question; for example, at the time of the first administration she strongly disagreed with the proposition "Children who are not watched will get in trouble". Six months later she strongly agreed with the same proposition! This same sort of discrepancy occurred however even when the interviewer was the same at both interviews; Case 114 jumped from -26 to 40 after a six month interval, and case 108, from 24 to 61 when the interviewer was the same at both testings.

These low-income mothers had little schooling and it is possible that some did not understand clearly what was expected of them; also most of the interviews with the controls and minimal intervention groups were conducted at home often under adverse circumstances (crying children in crowded rooms, etc.) Did the high-income mothers (with much higher education levels and better interviewing conditions) show any more consistency? Not really. Three mothers out of the eighteen admitted into the high-income control sample in 1967 for example showed a before-after discrepancy of 50 points or more. In two of these the interviewer was different but in one the interviewer was the same.

We must conclude therefore that the Hereford instrument is not very satisfactory for measuring changes in attitudes resulting from therapeutic programmes because it is highly unstable. Quite marked changes in attitudes may occur in a relatively short time due to factors unrelated to

the given therapeutic programme. Of course the stability of the instrument might be considerably improved if standard interviewing situations (same interviewer same environment) were adhered to.

(c) Mother and Child Stress Measures

Although neither the Langner scale (for mothers) nor the Glidewell scale (for the children) registered statistically significant stress reduction, it will be seen in Table VI-7 that there was a clear trend in the hoped-for direction registered by the Langner scale. In both low and high-income and in both maximal and medium intervention groups there is a greater drop in symptoms than in the control and minimal intervention groups where the mothers were not involved in the programme. Similar trends are not seen, however, for the Glidewell scale (Table VI-8). Indeed the low-income control group dropped most!

If one is attempting to measure the stress-relieving aspects of a given therapeutic programme, it seems reasonable to inquire about symptoms of stress before and after. But few researchers have used symptom check lists for such purposes. Perhaps the closest approach to this usage was by Manis et al (1963) who studied psychiatric patients on an admission ward and later on a pre-discharge ward. The mean score was 6.1 and 2.8 respectively. We have used the Langner scale on several occasions to try to register stress reductions resulting from therapeutic programmes.

The results have varied. In a home treatment programme (Prince, 1969), the treated group showed slightly less stress reduction than a control group (a drop of 1.6 in the treated group as compared with a drop of 1.8 in the control group). But when we looked at stress reduction according

TABLE VI-7

BEFORE-AFTER MOTHER'S STRESS SCORES (LANGNER)

LOW INCOME

| GROUP | BEFORE | | AFTER | | DIFFERENCE | t-TEST |
|---|---|---|---|---|---|---|
| | Mean | S.D. | Mean | S.D. | | |
| Control N=26 | 4.88 | 3.37 | 4.81 | 3.32 | -0.07 | 0.02 |
| Minimal N=25 | 4.40 | 3.06 | 4.12 | 3.67 | -0.28 | 0.09 |
| Medium N=35 | 4.91 | 5.53 | 4.17 | 3.33 | -0.74 | 0.13 |
| Maximal N=24 | 5.42 | 4.10 | 3.92 | 3.63 | -1.50 | 1.71 |

HIGH INCOME

| | | | | | | |
|---|---|---|---|---|---|---|
| Control N=26 | 2.03 | 2.65 | 1.79 | 1.93 | -0.24 | 0.10 |
| Minimal N=25 | 2.34 | 2.50 | 2.37 | 4.07 | 0.03 | 0.01 |
| Medium N=35 | 2.22 | 2.36 | 1.26 | 1.77 | -0.96 | 0.56 |
| Maximal N=24 | 2.58 | 2.00 | 1.17 | 1.14 | -1.41 | 0.67 |

TABLE VI-8

BEFORE-AFTER CHILD'S STRESS MEASURES

LOW INCOME

| GROUP | BEFORE | | AFTER | | DIFFERENCE | t-TEST |
|---|---|---|---|---|---|---|
| | Mean | S.D. | Mean | S.D. | | |
| Control N=26 | 1.96 | 1.81 | .92 | 1.44 | -1.04 | .56 |
| Minimal N=25 | 1.48 | 1.17 | 1.36 | 1.55 | - .12 | .08 |
| Medium N=35 | 1.77 | 1.84 | 1.89 | 2.31 | + .12 | .05 |
| Maximal N=24 | 1.71 | 1.46 | 1.58 | 2.48 | - .13 | .05 |
| HIGH INCOME | | | | | | |
| Control N=33 | 1.00 | 1.30 | 0.88 | 1.22 | - .12 | .62 |
| Minimal N=35 | 1.49 | 1.86 | 0.91 | 0.94 | - .58 | .32 |
| Medium N=23 | 1.91 | 1.44 | 1.30 | 1.83 | - .61 | .27 |
| Maximal N=24 | 0.88 | 0.88 | 0.42 | 0.64 | - .46 | .57 |

to the doctors giving the treatment, we found that some doctors reduced stress more than others, and one doctor increased the stress level of his patients! These findings were moreover consistent with our clinical impressions about the relative efficacy of the doctors concerned. (Table VI-9).

TABLE VI-9

MEAN LANGNER SCORE CHANGES AFTER TREATMENT ACCORDING TO DOCTOR AND HOURS OF TREATMENT

| | Number Treated | Change in Langner Score | Mean Hours Spent |
|---|---|---|---|
| Dr. A. | 8 | -3.6 | 5.2 |
| Dr. B. | 5 | -1.4 | 4.8 |
| Dr. C. | 4 | 0.0 | 2.3 |
| Dr. D. | 3 | +0.7 | 4.3 |

In another programme (Kiely, 1972) involving 18 mothers who had returned to university for further study (a day-care centre was provided for their young children) we found a slight drop in their Langner score but we had no control group. One problem was that they were an exceptionally "healthy" group of young higher income women so that there was hardly any room for improvement! Other stress relieving aspects of the programme were registered in the reduction of problems according to the Mooney Problem Checklist (Table VI-10).

A third programme of group discussions for 14 low-income mothers-without-husbands increased slightly their stress levels as measured by the Langner scale. Again we had no controls. (Langner score before, 7.8; after, 8.0, Vincent & Arseneau 1969)

TABLE VI-10

MOTHERS RETURN TO COLLEGE: MEAN STRESS SCORES BEFORE AND AFTER
(N=18)

| | Before | After |
|---|---|---|
| Langner Score | 2.28 | 1.99 |
| Mooney Problem Checklist | 26.11 | 19.99 |

Assuming that these programmes do have stress-relieving potentialities, why does the Langner scale do such a poor job in registering this effect? Goldberg (1972) has recently made some remarks about the Langner scale which are pertinent. He points out that 10 of the 22 items in the scale are about past history and of the form "Have you ever suffered such and such symptom" and three others are phrased as character traits such as "Are you the nervous type?" These kinds of questions, he points out are likely to be highly stable over time and therefore unlikely to register the alleviations of stress that we might expect to occur from programmes of the type we are here considering. Goldberg himself has devised a scale (called the GHQ - General Health Questionnaire) which is designed to be much more responsive to changes in stress level rather than measuring "neuroticism" as a character trait. Goldberg's scale should be tried out as a before-after measure in programme evaluation.

## PART TWO

# A CHANGE IN NURSERY PROGRAMMES

# AND SOME SIGNIFICANT RESULTS

## VII THE RESULTS OF TWO COGNITIVE STIMULATION PROGRAMMES

Whether the fault lay in our family life education programmes or in our evaluation instruments, our efforts thus far had failed to register any significant changes in IQ, stress levels or parental attitudes. We therefore decided to narrow our focus to study the children only: to measure the cognitive effects and socialization effects of attending nursery school programmes. And since poverty is a major social problem we decided to further narrow our focus to study only low-income children. We felt that it was first necessary to discover a nursery school programme that would produce measureable changes in cognitive performance of low-income children, and then we would be in a position to explore further whether mothers' discussion groups or other techniques would maximize these effects and render them more durable. We were back to square one. Is it possible to find programmes that will improve the educability of four-year-old low-income children?

A review of the literature suggested that the cognitive stimulation programme, Distar, and the popular television programme "Sesame Street" held the most promise.

The Distar[1] system was developed on the basis of work by Bereiter and Engelmann over a period of six years using deprived children in a Chicago area. To quote the Distar manual, "The Distar systems are designed to

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[1] The Distar system is available from SCIENCE RESEARCH ASSOCIATES, 44 Prince Andrew Place, Don Mills, Ontario, Canada.

teach basic concepts at a fast pace so that children who start out behind average children can catch up. Each of the three Distar systems - Language, Reading, and Arithmetic - focuses on the critical skills that children must develop without wasting time teaching them what they need to know. The teacher must determine the level at which a given child is functioning and must make sure that the child learns all the easier prerequisite skills in an area before he is faced with more complex skills". For our nursery school programme we decided to use only two of the three systems, the language and reading systems. If these proved valuable we could add the arithmetic system later.

The language system was designed to teach children "how words are used and what words mean in a clear, direct and logical manner". The language programme focuses on the language of instruction which the child will have to follow throughout his academic career. "Basically, the children acquire the language tools they will need to succeed in school". Since the words to be taught were selected from reading lists, achievement tests and from observations of what children who live in the city and in the country see, hear, and do, the "children acquire the tools they need to think and generalize about the world."

The Reading programme is different from traditional reading programmes because of the way it is sequenced. The programme takes one step at a time, concentrating on the basic skills children acquire in order to read. They are taught first sounds associated with the letters, then to read from left to right, they learn to break up words by "saying it slowly" and then to reconstruct it by "saying it fast". If a child does not master a lesson in a given day, the lesson is to be repeated until the task is learned.

Both systems also incorporate take-home material. At the end of each lesson, a "take-home" is given to each child which is designed to provide practice at home of the lessons he has learned in the daily presentations. "Take-homes" are also intended as a reward for working hard and learning the day's lesson.

The designers recommend that the children be divided into small groups of 4 or 5 and the instruction given for 30 minutes a day. This is the method we used in our programme and several regroupings were necessary during the first few months of the programme because the children advanced at different rates. While the teacher was instructing one group, the other children were left with the volunteers. As the year progressed the volunteers became more familiar and proficient with the Distar material and were able to take groups on their own. A "pull-out" system was also utilized to give individual children help where and when they needed it. If a child was absent for some time, he was given individual instruction to help him to catch up.

It was found that at the beginning of the year the children's attention span was quite short. They were not able to concentrate for 30 minutes at a stretch and the lessons had to be broken down into short periods. As the year progressed, the children's power of concentration increased and they were able to have longer periods of structured learning. For our research the Distar programme was initiated in one nursery school class of 14 children.

Turning now to the other programme innovation, Sesame Street, this is an hour-long television programme designed for pre-school children. It is intended both to entertain children and to foster their intellectual and

cultural development. The show is unique in that it combines attention-holding techniques (fast movement, variety, humor and animation) with a carefully planned educational programme. The objective of introducing this programme into our research project was that they should watch the programme every day for an hour with some drill to be given by the teacher before the show started. The children in both schools were tested with the same measures that were used in previous years, that is the Wechsler Preschool and Primary Scale of Intelligence and the Draw-A-Person. A new measure was also introduced, the Peabody Picture Vocabulary Test, which has been used extensively with educationally and culturally deprived children. All tests for the mothers were eliminated, although a mothers' group was offered in both schools.

Turning to the before-after results and the t-tests of significance (Tables VII-1 and VII-2), it becomes apparent that significant improvements were made in both schools in various subtests during 1970-1971. As Table VII-1 shows, the Distar children increased their scores ($p < .05$) on the information, picture completion and geometric design subtests. The gain in the performance and global IQ scores was significant at ($p < .01$). Table VII-2 indicates that the small group of Sesame Street children made gains in the verbal IQ as well as the vocabulary subtest at ($p < .05$). The performance IQ, global IQ, arithmetic and geometric subtests were significantly improved ($p < .01$). The children watching "Sesame Street" made more advances in the verbal tests than did those who were being drilled language and reading using Distar.

TABLE VII-1

IQ MEASURES OF DISTAR CHILDREN
BEFORE AND AFTER (1970-71)

| Variables | Before Sept. 1970 N=18 | | After May 1971 N=18 | | t-value |
|---|---|---|---|---|---|
| WPPSI | Mean | S.D. | Mean | S.D. | |
| Verbal | 99.72 | 9.11 | 104.33 | 8.91 | -1.969 |
| Performance | 95.06 | 9.82 | 101.00 | 12.05 | -3.846 xx |
| Global | 97.39 | 8.54 | 103.22 | 10.72 | -3.653 xx |
| Information | 9.94 | 2.18 | 11.00 | 1.97 | -2.365 x |
| Vocabulary | 8.17 | 1.29 | 9.44 | 1.82 | -2.571 x |
| Arithmetic | 10.67 | 2.35 | 11.44 | 1.82 | -1.570 |
| Similarities | 11.67 | 2.43 | 12.28 | 2.95 | -0.641 |
| Comprehension | 9.44 | 1.76 | 9.39 | 1.38 | 0.142 |
| Animal House | 8.44 | 2.50 | 8.89 | 2.91 | -0.703 |
| Picture Completion | 10.28 | 2.42 | 11.67 | 1.97 | -2.616 x |
| Mazes | 9.06 | 2.65 | 9.94 | 2.78 | -1.917 |
| Geometric Design | 8.50 | 2.46 | 9.67 | 2.61 | -2.817 x |
| Block Design | 10.11 | 2.19 | 10.67 | 1.41 | -1.097 |
| D-A-Person | 99.72 | 9.80 | 103.11 | 16.08 | -0.886 |
| Peabody I.Q. | 89.67 | 17.83 | 93.61 | 14.09 | -1.128 |
| Percentile Score on Peabody | 33.39 | 25.49 | 38.72 | 26.43 | -0.697 |

x - significant at .05 level
xx - significant at .01 level

TABLE VII-2

IQ MEASURES OF "SESAME STREET" CHILDREN
BEFORE-AFTER (1970-1971)

| Variables | Before Sept. 1970 N=11 | | After May 1971 N=11 | | t-value |
|---|---|---|---|---|---|
| WPPSI | Mean | S.D. | Mean | S.D. | |
| Verbal | 99.64 | 11.65 | 108.64 | 10.09 | -2.899 x |
| Performance | 93.73 | 9.19 | 99.91 | 11.25 | -5.164 xx |
| Global | 96.73 | 9.49 | 104.91 | 9.16 | -4.550 xx |
| Information | 10.73 | 2.28 | 12.18 | 2.96 | -1.657 |
| Vocabulary | 8.55 | 2.07 | 10.27 | 1.49 | -2.858 x |
| Arithmetic | 9.09 | 1.45 | 11.73 | 2.05 | -3.677 xx |
| Similarities | 11.55 | 2.50 | 13.27 | 2.49 | -1.929 |
| Comprehension | 10.00 | 2.79 | 9.55 | 2.34 | 0.518 |
| Animal House | 8.64 | 3.17 | 10.00 | 3.26 | -1.614 |
| Picture Completion | 10.73 | 2.20 | 11.73 | 2.49 | -1.427 |
| Mazes | 8.55 | 3.36 | 8.55 | 2.62 | 0.0 |
| Geometric Design | 7.18 | 1.89 | 9.00 | 1.95 | -4.100 xx |
| Block Design | 10.45 | 1.86 | 10.55 | 1.81 | -0.134 |
| Draw-A-Person | 100.09 | 13.23 | 109.45 | 17.95 | -1.693 |
| Peabody I.Q. | 87.18 | 10.60 | 92.29 | 10.63 | -1.201 |
| Percentile Score on Peabody | 24.36 | 18.29 | 32.27 | 24.45 | -0.790 |

x significant at .05 level
xx significant at .01 level

The results obtained from Distar in 1971-1972 (see Table VII-3) were disappointing; the class did not improve significantly in any area. Table VII-4 shows the results of "Sesame Street". As in the previous year, they performed better than did their fellow students on Distar. The performance IQ score was significant at p .05, while mazes, the Peabody Picture Vocabulary Test and the percentile score on the Peabody increased to a statistical level of p .01. It is interesting to note that this is the only instance where the Peabody test registers a significant gain. It would have been expected that if the verbal and global IQ's had increased significantly so would have the Peabody scores.

In summary, both Distar and "Sesame Street" programmes were geared towards cognitive development and achieved their goals to some degree. It is surprising to find that the passive role of watching television should have had a stronger impact than did the intense drilling that is a feature of Distar. Both programmes increased I.Q. levels in one year or both years, but in total, "Sesame Street" significantly increased 10 variables as opposed to 6 variables for the Distar programme.

TABLE VII-3

IQ MEASURES OF DISTAR CHILDREN
BEFORE-AFTER (1971-1972)

| Variables | Before Sept.1971 N=18 | | After May 1972 N=18 | | t-value x |
|---|---|---|---|---|---|
| WPPSI | Mean | S.D. | Mean | S.D. | |
| Verbal | 98.89 | 18.28 | 100.17 | 14.83 | -0.451 |
| Performance | 100.11 | 12.65 | 102.28 | 11.69 | -1.223 |
| Global | 99.44 | 16.38 | 101.33 | 13.56 | -0.875 |
| Information | 9.78 | 3.70 | 10.89 | 3.31 | -1.528 |
| Vocabulary | 9.17 | 2.36 | 7.83 | 2.23 | 1.856 |
| Arithmetic | 10.39 | 3.78 | 10.72 | 2.47 | -0.546 |
| Similarities | 10.44 | 3.90 | 11.44 | 3.99 | -1.164 |
| Comprehension | 9.44 | 3.35 | 9.28 | 2.54 | 0.313 |
| Animal House | 9.83 | 2.41 | 10.17 | 2.98 | -0.572 |
| Picture Completion | 11.06 | 3.37 | 11.89 | 2.93 | -1.815 |
| Mazes | 8.44 | 3.71 | 9.67 | 2.45 | -1.388 |
| Geometric Design | 9.22 | 2.88 | 10.11 | 2.32 | -1.917 |
| Block Design | 10.83 | 1.58 | 10.33 | 2.93 | 0.738 |
| Draw-A-Person | 103.83 | 10.76 | 101.39 | 10.02 | 0.656 |
| Peabody I.Q. | 86.89 | 23.05 | 95.00 | 15.30 | -1.986 |
| Percentile Score on Peabody | 34.11 | 29.89 | 38.00 | 32.52 | -0.726 |

x there are no significant differences

TABLE VII-4

IQ MEASURES OF "SESAME STREET" CHILDREN
BEFORE-AFTER (1971-1972)

| Variables | Before Sept.,1971 N=20 | | After May 1972 N=20 | | t-value |
|---|---|---|---|---|---|
| WPPSI | Mean | S.D. | Mean | S.D. | |
| Verbal | 98.55 | 15.69 | 100.50 | 8.55 | -0.627 |
| Performance | 97.25 | 10.66 | 101.75 | 13.89 | -2.219 x |
| Global | 97.50 | 13.02 | 101.30 | 11.18 | -1.532 |
| Information | 9.80 | 3.16 | 11.05 | 1.96 | -1.707 |
| Vocabulary | 8.65 | 2.85 | 8.75 | 2.15 | -0.150 |
| Arithmetic | 10.40 | 2.09 | 10.15 | 2.18 | 0.553 |
| Similarities | 11.15 | 4.02 | 11.25 | 2.83 | -0.108 |
| Comprehension | 8.85 | 3.12 | 9.30 | 1.84 | -0.625 |
| Animal House | 9.25 | 1.80 | 10.15 | 3.01 | -1.433 |
| Picture Completion | 9.90 | 2.75 | 10.25 | 1.59 | -0.717 |
| Mazes | 8.90 | 2.61 | 10.00 | 2.71 | -2.871 xx |
| Geometric Design | 9.95 | 2.14 | 9.85 | 2.60 | 0.184 |
| Block Design | 9.75 | 2.07 | 10.55 | 2.54 | -1.244 |
| Draw-A-Person | 100.75 | 16.44 | 101.80 | 12.42 | -0.256 |
| Peabody I.Q. | 79.70 | 26.42 | 96.10 | 11.76 | -2.965 xx |
| Percentile Score on Peabody | 23.25 | 24.31 | 38.35 | 26.17 | -2.892 xx |

x significant at .05 level
xx significant at .01 level

## VIII ARE THERE LONG-TERM SOCIALIZATION EFFECTS?

As we approached the end of our study and in view of the very limited remedial effects that we were finding, we began to ask ourselves whether nursery school experience might have other effects that we had not yet considered. An obvious possibility was social adjustment. Do nursery schools improve children's relationships with other children and with adults? Thus far we had looked at such effects only in a limited way and through the eyes of the mothers using a few items of the Glidewell scale.

As a more extensive measure of these aspects we chose the Bristol Social Adjustment Guides (BSAG) developed by D.H. Stott and Emily G. Sykes in Britain. It is a socialization measure completed by the child's teacher and consists of phrases which describe behaviour in a given situation. There are nine categories each consisting of several descriptive phrases. The teacher is asked to underline those which best describe the child's behaviour. The phrases in each category are on a continuum in which some characteristics are favourable or positive, some neutral and some have negative connotations. The teacher is not asked to make a judgment on a child but instead to describe actual situations. The average time required to rate one child is about twenty minutes.

The nine sections of the BSAG are briefly defined as follows:

J - Unforthcomingness: apprehensiveness and avoidance in the face of any strange situation or challenging task; and deficiency of natural assertiveness, curiosity and "effectiveness-motivation" (usually accompanied by dependence and a need for adult attachments).

W - Withdrawal: defensiveness against human contact and against affectional relationships.

D - Depression: neural-physical exhaustion, seen in solitariness, lack of motivation, ups and downs of energy, irritability.

XA- Anxiety: concerning interpersonal relations with adults.

HA- Hostility: towards adults

K - Lack of Concern: for adult approval and accepted ethical standards.

XC- Anxiety: concerning peer acceptance.

HC- Hostility: toward peers

R - Restlessness: inability to concentrate and persevere.

Two other dimensions are included:

M - Miscellaneous symptoms of emotional tension, strain or disturbance.

MN- Miscellaneous nervous symptoms.

Most of the low-income children in our study attended two local grade schools in the area after they "graduated" from our programme. We decided therefore to obtain BSAG ratings on all the children in the classrooms which contained some of our graduates. We then compared the BSAG ratings on our graduates with children who had attended other types of nursery schools and with those who had attended no nursery school. Our graduates were to be found in Kindergarten, Grade 2 and Grade 3. The total sample was 198 children, 67 in Kindergarten, 77 in Grade 2 and 54 in Grade 3. A meeting was arranged with the nine teachers concerned to discuss the BSAG and explain the study. The ratings were completed in the seventh month of the school year so that the teacher was very familiar with each child. Letters

were sent to all parents asking them whether their child had attended a nursery school or not and for what period of time. Almost all the parents responded and the cooperation of the teachers was excellent.

The sample of 198 children was divided into three groups

(1) Those who had attended no nursery school (N=115)

(2) Those who had attended one of the nursery schools in our research project (N=50)

(3) Those who had attended some other nursery school (N=33)

Computer analysis using the t-test failed to reveal any significant differences between the three groups. Some interesting trends are visible however (Table VIII-1). The children who had not attended nursery school were more withdrawn from human contacts and more depressed than those who had. At first sight, somewhat less flattering differences (from the point of view of the nursery schools) include: the nursery attenders were more apprehensive with regard to adults and more hostile to them; had more symptoms of tension and anxiety; and were considerably more restless than the non-attenders. The research nursery schools graduated children who were the most restless and most hostile to adults and peers of the three samples! They were also the least depressed and the most forthcoming (i.e. the least fearful of strange situations and the most curious). It would appear then that in a general way we can say that children who attend nursery schools tend to change from a rather inert, defeated state to more aggressive (if anxious) state of self-affirmation.

Of course, since we did not do a Bristol measure before the programme started, we cannot be certain that these differences were not present before

TABLE VIII-1

SOCIALIZATION SCORES (BSAG) OF CHILDREN WHO HAD ATTENDED NURSERY SCHOOLS COMPARED WITH CONTROLS

| BSAG SCALES | NO NURSERY SCHOOL N=115 | | RESEARCH NURSERY SCHOOLS (N=50) | | OTHER NURSERY SCHOOLS (N=33) | |
|---|---|---|---|---|---|---|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| TOTAL BSAG ITEMS CIRCLED | 11.66 | 13.06 | 11.74 | 11.97 | 12.52 | 15.00 |
| TOTAL BSAG SCORE | 93.54 | 103.79 | 93.50 | 106.22 | 102.67 | 121.93 |
| Unforthcomingness | 15.13 | 24.78 | 12.42 | 20.65 | 16.18 | 28.33 |
| Withdrawal | 5.22 | 10.62 | 3.66 | 9.07 | 2.67 | 6.46 |
| Depression | 16.36 | 26.80 | 13.52 | 20.80 | 15.58 | 21.00 |
| Anxiety Toward Adults | 10.36 | 16.23 | 11.12 | 16.97 | 14.88 | 27.87 |
| Hostility Toward Adults | 15.51 | 28.59 | 18.56 | 35.65 | 18.42 | 33.74 |
| Lack of Concern About Adult Approval | 8.01 | 15.16 | 10.28 | 23.34 | 8.48 | 16.28 |
| Anxiety Toward Peers | 6.69 | 13.53 | 5.12 | 9.52 | 8.45 | 18.26 |
| Hostility Toward Peers | 2.68 | 5.69 | 3.50 | 7.45 | 2.55 | 6.76 |
| Restlessness | 4.69 | 9.71 | 8.02 | 13.64 | 7.06 | 14.73 |
| Miscellaneous Emotional Tension | 5.28 | 7.21 | 6.22 | 9.73 | 6.67 | 8.53 |
| Miscellaneous Nervous Tension | 0.85 | 2.07 | 1.12 | 3.10 | 1.24 | 2.55 |

(The higher the score the more intense the symptom)

they participated in the nursery programmes. It is interesting, though, that a letter from a school principal in response to our query about his views of the effects of nursery schools upon his students expresses remarkably similar views.

"One very noticeable feature of the treated nursery group is that they are far more outgoing and they adjusted more readily to the Kindergarten programme. They also recalled their experiences on the various field trips and were more capable of dressing themselves. Strangely, disciplinary control proved more difficult for the kindergarten Teacher with the "treated" group than with the non-treated group."

## IX DISCUSSION

The art of evaluation is in an underdeveloped state and this study should no doubt be regarded as an exercise in the possibilities of evaluation rather than as a reliable judgement of the efficacy of family life education programmes. It has taught us more about the difficulties and intricacies of the evaluative process than about the success or lack of it, of nursery schools.

At the outset a number of points should be made about the limits of our evaluation: (1) The programme had other effects besides the ones we examined. For example we know that several mothers who participated in our group discussions went on to form or join social action groups. It is likely that these action groups achieved positive effects that our study does not register. Similarly there are probably a host of other unmeasured

peripheral effects, some perhaps negative; for example some housewives, after a taste of social activities engendered by our programme may have become deeply involved in such activities with the result that their husbands were antagonized and their homes disorganized. In our evaluation we have concerned ourselves only with immediate effects on those who participated believing that to attempt to assess wider effects - even though these might have been very important - would have taken us into complexities beyond our depth. (2) An important aspect of many evaluation programmes is to ascertain the degree to which the programme reaches the population it is designed for. This aspect is applicable only to programmes in which the project is responsible for a delineated population for then one can compare the potential population to be reached with the proportion actually reached. Our programme was a small pilot project without this type of responsibility so that this aspect of evaluation was not applicable. One point should be made however about the populations involved over the five years. It will be seen from our Tables that the low-income children admitted into the programme in 1967-68 had a mean IQ of about 90 whereas the children who entered the programme in 1970 and 1971 had mean IQ's of 100. Why was this? It is our interpretation that whereas in the first year or two of the study, when the nursery school was a new and unknown project, our recruitment of children was more aggressive and we were dealing with a much more random sample of children in the low-income area. Later on, when the project had become familiar and valued, the programme was being used by the more integrated families in the area. In fact, in the later years the families least in need of the programme were the ones most using it. In the future operation of the nursery

school programme if it is to have its maximum impact a much more vigorous attempt should be made to recruit the more isolated and defeated families.

Turning now to our attempts to measure changes in actual participants. One of our major problems is that inherent in the so called "psychological test" and its use in assessing changes. The psychological test is a technique whereby one obtains from an individual in a brief time interval a sample of his verbal or other behaviour that can be generalized to give significant information about some of his important characteristics. Such tests date back to the late 19th century days of Francis Galton (Kiely, 1971) but until quite recently they have been designed mainly for diagnostic or screening purposes rather than for assessing changes resulting from remedial programmes. Most of these tests have aimed at providing stable readings so that if an individual is given the same test on two occasions a few weeks apart, the results are similar. If results were to fluctuate drastically over time it was felt that the tests were not tapping a significant dimension of personality or behaviour. Stability and "test-retest" reliability have been important considerations for assessing their usefulness.

IQ tests are a good example. They were originally designed to measure a relatively invariant aspect of behaviour. An IQ measure was supposed to remain stable for life. Of course it was realized that children would improve in their various mental competences as a result of maturation, etc., at least up until the age of sixteen or seventeen; but allowances were made for these maturation effects in the scoring process so that the IQ level

would remain an invariant property. It is only to the extent then that the IQ measures fail that they can be used to evaluate changes resulting from remedial programmes.

When we wish to use tests to measure the effects of a remedial programme, we are much more interested in an instrument that is responsive to changes. Ideally, they would register changes that are significant and durable; it would be unsuitable for example to register levels of opinion that would fluctuate on the basis of reading a newspaper article or a brief discussion with a neighbour. A happy medium between stability and responsiveness must be sought. As evaluation becomes increasingly important, the devisers of tests should be encouraged to expend much more effort in exploring this test attribute. Goldberg's (1972) self-report stress measure may be an important contribution in this endeavour.

But the issue of responsiveness is only one aspect of the problem of evaluation instruments. Instruments of potential use may be categorized as follows:

(1) Assessment of actual physical or mental skills. The subject is requested to perform as well as he can, often in a limited time interval. Examples: IQ tests, Embedded Figure tests, etc.

(2) Self-report of subject's own symptoms, feelings, problems or behaviour. Examples: Langner scale, Cornell Medical Index, etc.

(3) Self-report of subject's own attitudes, beliefs or opinions. Examples: Hereford scale, Authoritarianism Scale (F - scale), etc.

(4) Report of the behaviour of others such as the wife's report

of her husband's behaviour; a mother's, teacher's or doctor's report of a child's behaviour. Examples: Glidewell scale, Katz Social Adjustment scale, etc.

(5) Rater's report of behaviour in actual situations, such as a rater's report on children's behaviour over a brief time interval in a classroom.

In considering which instruments would be best suited for the evaluation of a given programme, we have learned that not only must we decide what kinds of changes are to be expected from the programme, but the nature of the populations being assessed as well. For example, as we have already reported, the Glidewell scale seemed to be inappropriate for assessing stress reduction in children. The highly stressed low-income mothers seemed to report fewer symptoms in their children than the less stressed mothers as though they were so preoccupied with their own stresses that they were not aware of symptoms in their children. As the mother improved the child's stress reports would be expected to get worse! In such circumstances the reports of teachers would have been more useful than the reports of mothers. Similarly if one were attempting to assess changes in adolescents, because of their secretiveness and often antagonistic attitude to adult interviewers, the report of parents on adolescent behaviour might be more appropriate than self-report measures. Clearly, evaluators and makers of evaluation instruments must expend much more effort in exploring the range and extent of such factors.

And of course even if we find suitable instruments to measure changes in the particular populations we are concerned with, we are faced with the even more fundamental problems of values. In our project, for

example, we assumed, with Hereford, that permissive attitudes in child rearing were to be valued more highly than authoritarian attitudes. And we found that low-income mothers were more authoritarian than high-income mothers. But one might legitimately ask whether the more authoritarian attitudes might produce children who were more adaptive to the life conditions in low-income areas. Authoritarian attitudes are appropriate perhaps to circumstances of stress such as the deck of a battleship under bombardment, whereas permissiveness is more acceptable on a summer excursion in the park. Life in a low-income area may be much more like the deck of a battleship than a summer picnic!

Let us turn now to the questions we hoped we would be able to answer on the basis of this study. Are nursery schools valuable in improving the educability of children and are mothers' discussion groups helpful in reducing stress and improving maternal child-rearing attitudes? Does involvement of the mother and the support of other services improve the effects of nursery school experience.

It will be immediately apparent that our results provide us with little help in answering most of these questions. If we assume that IQ test performance reflects educability of children, we can say that traditional nursery schools are not helpful in this respect. On the other hand the cognitive stimulation programmes superimposed upon the traditional programmes did seem to produce significant gains in three out of four classes. These gains were modest - of the order of two or three IQ points above the controls.

What of the relative costs of the two programmes? The Distar programme costs very little, not more than $600 for the stimulation materials

themselves plus perhaps $500 to train the nursery school teacher and assistant. It will be remembered that "Sesame Street" proved slightly more effective than Distar, but the cost of this programme is difficult to estimate. If the programme continues to be broadcast over regular television channels it would cost some $250 for the television set plus some $60 for the cable for eight months. However, if the programme had to be shown on closed TV with the expense of renting individual daily video tapes, it might prove much more expensive. It might be worthwhile at this point to consider the overall expense of running a cognitive stimulation nursery and calculate the cost of producing IQ gains using this method. As an approximation the cost of setting up an eight month nursery school for 20 children for half a day, five days a week is as follows:

| | | |
|---|---|---|
| Nursery school teacher | $3000 | |
| Assistant | 1600 | |
| Rent of room | 800 | |
| Toys and equipment | 2000 | (initial outlay) |
| Distar programme (Reading, Language, and Arithmetic) | 600 | |
| TOTAL | $8000 | |

The $8000 produced an average gain of some three IQ points in 20 children or a total gain of 60 points. This is roughly $135 for each IQ point gain. It will be seen that the cost of adding Distar to the traditional school is a very small proportion of the total cost.

But to return again to our initial questions, because of the viccissitudes of the research as noted above, we are unable to support or reject our original hypothesis that gains in cognitive development of children would be increased when mothers were also involved in the programmes.

Similarly we must leave open the question about the direct effects upon the mothers. We feel that the attitude and stress measures were unsuitable; the Hereford scale was too unstable a measure on the one hand, and the Langner too stable on the other. Further research using the cognitive stimulation programmes plus the mother's discussion groups and comparing cognitive gains and durability with controls will have to be carried out; similarly other stress and attitude measures should be used to further assess these effects of discussion groups on mothers.

## X SUMMARY

(1) This five year study is an attempt to evaluate the effects of varying intensities of family life education services on samples of high and low-income families (110 of each) in Montreal. The original aim was to provide these families with similar programmes for one year and to study them longitudinally for three years to determine whether the programmes resulted in measurable changes and if so to assess the durability of those changes.

(2) The main service provided was a traditional type nursery school for four-year-olds: in one sample (low and high-income) the only service was the nursery school; in a second sample, the mothers were also involved in discussion groups, in a third, in addition to the nursery school and discussion group, other service needs were appraised and met where possible. There were also control groups.

(3) Instruments to assess change included IQ tests (WPPSI and Draw-a-Person), stress measures (the Langner scale for the mothers and the Glidewell scale for the children) and a parent-attitude-to-childrearing scale (Hereford).

(4) Two years into the project, it was discovered that no significant changes were being registered. It was then decided to add cognitive stimulation programmes (Distar and "Sesame Street") to the traditional nursery schools and narrow the focus of the research to study cognitive changes in low-income children only.

(5) The research revealed that the low-income samples were significantly different on all measures employed. The high-income children performed better on IQ tests and had fewer reported stress symptoms; the high-income mothers had fewer stress symptoms and were more permissive in their child rearing attitudes.

(6) Verbal abilities are relatively more highly developed in high-income children. Cultural effects on IQ patterns were not evident except for a group of high-income Jewish children who showed a striking disproportion between high verbal abilities and lower performance abilities. This finding confirms some others which indicate that high verbal abilities are an important Jewish cultural feature. But it is contrary to recent findings in a large sample of children in Israel in which verbal and performance levels were equally balanced.

(7) Some correlations were found between measures of stress, parental attitudes and IQ. In high-income mothers, high maternal stress correlated with high child stress; but this was not so in the low-income sample. A possible interpretation is that the highly stressed low-income mother fails to be aware of these symptoms in her children, having so many other problems to contend with. There are significant correlations between authoritarian attitudes in the mother and poor performance on IQ tests. This effect is more marked in the low-income sample.

(8) There was no evidence that ethnically mixed marriages were related to

increased maternal stress.

(9) Rather striking was a group of high income, French-Canadian-father families. All were married to non-French wives with education levels as high or superior to their own. This group had the best ratings on all scores.

(10) Regarding the failure to register changes resulting from traditional nursery schools, we felt that the reasons varied according to the modality measured. We believe that the programmes genuinely failed to produce improvements in IQ performance of children; that while mothers' attitudes may have changed, the instrument we used was too unstable to register them adequately; that the symptoms of stress in mothers may have been reduced (there was a trend in that direction in the data) but that the instrument we used was measuring comparatively unchanging aspects of personality and was too stable; that the child symptom checklist was unsuitable for our purposes and we do not know whether children's stresses were relieved by the programmes.

(11) Distar and Sesame Street programmes added to traditional nursery schools did produce modest improvements in IQ test performance in low-income children, especially Sesame Street.

(12) A socialization measure (Bristol Social Adjustment Guides) failed to show significant differences between (a) graduates of our low-income nursery schools (b) graduates of other low-income nursery schools and (c) children who had had no nursery school experience. These assessments were made by

school teachers in Kindergarten, Grade 2 and Grade 3. There was a trend however suggesting that experience in nursery school may shift children from an apathetic and defeated state to a more aggressive (if anxious) state of self-affirmation.

(13) We conclude that nursery schools with cognitive stimulation programmes can produce modest improvements in IQ test performance (and therefore educability) of low-income children. Cognitive stimulation programmes can be added to traditional programmes at minimal cost. A good deal more work must be done on the development of evaluation instruments. If we trust our instruments at all we must be very modest about the effects we are producing with present family life education programmes.

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# APPENDICES

## APPENDIX A

### MASTER TABLE A-1

### SOME FEATURES OF LOW INCOME SAMPLE ACCORDING TO INTERVENTION LEVEL (PANEL I AND II COMBINED) N=113

| FEATURE | CONTROL (N=29) | MINIMAL INTERVENTION (N=25) | MEDIUM INTERVENTION (N=35) | MAXIMAL INTERVENTION (N=24) |
|---|---|---|---|---|
| Childrens' Mean Age at Time of Entry (in months) | 55.8 | 56.1 | 60.3 | 53.9 |
| Mothers' Mean Age at Time of Entry | 34.7 | 32.6 | 29.3 | 32.8 |

| Education of Parents | Father | Mother | Father | Mother | Father | Mother | Father | Mother |
|---|---|---|---|---|---|---|---|---|
| None | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 0 |
| Some Grade School | 11 | 9 | 7 | 4 | 3 | 6 | 2 | 3 |
| Complete G.S. | 6 | 13 | 5 | 12 | 10 | 11 | 8 | 7 |
| Some High School | 10 | 7 | 8 | 6 | 16 | 14 | 10 | 12 |
| Complete H.S. | 1 | 0 | 1 | 2 | 5 | 4 | 4 | 2 |
| Some University | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Complete University | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Ethnicity of Parents** | | | | | | | | |
| English Can. | 19 | 22 | 22 | 23 | 26 | 28 | 23 | 23 |
| French Can. | 3 | 6 | 1 | 1 | 8 | 7 | 1 | 1 |
| Jewish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| European | 7 | 1 | 2 | 1 | 1 | 0 | 0 | 0 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Family Income (per annum) | | | | |
|---|---|---|---|---|
| Under $2000 | 5 | 0 | 7 | 1 |
| 2000-3000 | 7 | 5 | 3 | 5 |
| 3000-4000 | 8 | 11 | 7 | 6 |
| 4000-5000 | 2 | 6 | 11 | 8 |
| 5000-6000 | 3 | 1 | 5 | 2 |
| 6000 plus | 4 | 2 | 2 | 2 |

## MASTER TABLE A-2

### SOME FEATURES OF HIGH INCOME SAMPLE ACCORDING TO INTERVENTION LEVEL (PANEL I AND II COMBINED) N=116

| FEATURE | CONTROL (N=34) | | MINIMAL INTERVENTION (N=35) | | MEDIUM INTERVENTION (N=23) | | MAXIMAL INTERVENTION (N=24) | |
|---|---|---|---|---|---|---|---|---|
| Childrens' Mean Age at Time of Entry (in months) | 54.8 | | 52.5 | | 53.4 | | 53.3 | |
| Mothers' Mean Age at Time of Entry | 34.2 | | 32.5 | | 31.7 | | 31.9 | |
| **Education of Parents** | **Father** | **Mother** | **Father** | **Mother** | **Father** | **Mother** | **Father** | **Mother** |
| None | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Some Grade School | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Completed G.S. | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Some High School | 6 | 8 | 1 | 0 | 0 | 1 | 2 | 1 |
| Completed High School | 10 | 11 | 1 | 3 | 2 | 4 | 2 | 3 |
| Some University | 8 | 9 | 6 | 11 | 6 | 12 | 3 | 10 |
| Completed University | 6 | 4 | 27 | 21 | 15 | 6 | 17 | 10 |
| **Ethnicity of Parents** | | | | | | | | |
| English Canadian | 19 | 19 | 23 | 25 | 19 | 19 | 15 | 17 |
| French Canadian | 2 | 1 | 2 | 1 | 2 | 3 | 1 | 0 |
| Jewish | 8 | 8 | 5 | 5 | 0 | 0 | 6 | 6 |
| European | 3 | 3 | 3 | 1 | 2 | 0 | 2 | 0 |
| Other | 2 | 3 | 2 | 3 | 0 | 1 | 0 | 1 |
| under $2000 | 0 | | 0 | | 0 | | 0 | |
| 2000-3000 | 0 | | 0 | | 0 | | 0 | |
| 3000-4000 | 0 | | 0 | | 0 | | 0 | |
| 4000-5000 | 2 | | 0 | | 0 | | 0 | |
| 5000-6000 | 3 | | 0 | | 3 | | 2 | |
| 6000 plus | 29 | | 35 | | 20 | | 22 | |

## APPENDIX B

## NURSERY SCHOOL QUESTIONNAIRE

Date _____ Mother's Name _____

Mother's Age _____

Name of Child Attending Nursery School _____

Child's Birthdate Month _____ Day _____ Year _____

Ethnic Group (as English, Negro, French, Italian, Etc.) Mother _____

Father _____

Approximate Family Income per annum

| | |
|---|---|
| Under $2000 | _____ |
| $2000-3000 | _____ |
| $3000-4000 | _____ |
| $4000-5000 | _____ |
| $5000-6000 | _____ |
| $6000 or more | _____ |

Schooling of Parents

| | Father | Mother |
|---|---|---|
| none | | |
| some grade school | | |
| completed grade school | | |
| some hign school | | |
| completed high school | | |
| some university | | |
| completed university | | |

Present Occupation Father _____

Mother _____

## I MOTHER'S HEALTH (LANGNER SCALE)

Now I would like to ask you about your own health.

1. How has your health been on the whole in the past year? (INTERVIEWER: We are interested in the way the person himself feels about it only. Take first spontaneous reply).

   Good .....1
   Fair .....2
   Poor .....3
   Other .....X

2. If "Good" skip to Q 3
   What was the nature of your illness or illnesses?

   Describe: _____

   _____ _____

3. Are you the worrying type?

   No .....0
   Yes .....1
   Other (specify).....X

4. Have you ever been bothered by shortness of breath when you were not exercising or working hard? Would you say

   Often .....1
   Sometimes.....2
   Never.....3
   Other (specify).....X

5. Do you have periods of such great restlessness that you cannot sit still very long?

   No .....0
   Yes .....1
   Other (specify).....X

6. Would you say your appetite is poor, good or too good?

| | |
|---|---|
| Poor | 1 |
| Fair | 2 |
| Good | 3 |
| Too good | 4 |
| Other (specify) | X |

7. Do you once in a while suddenly feel hot all over?

| | |
|---|---|
| No | 0 |
| Yes | 1 |
| Other (specify) | X |

8. Have you ever been bothered by your heart beating hard? Would you say

| | |
|---|---|
| Often | 1 |
| Sometimes | 2 |
| Never | 3 |
| Other (specify) | X |

9. In general, would you say that most of the time you are in very good spirits, good spirits, low spirits or very low spirits?

| | |
|---|---|
| Very good | 1 |
| Good | 2 |
| Low | 3 |
| Very low | 4 |
| Other (specify) | X |

10. Do you feel weak all over much of the time?

| | |
|---|---|
| No | 0 |
| Yes | 1 |
| Other (specify) | X |

11. Do you have periods ot days, weeks or months when you cannot take care of things because you cannot get going?

| | |
|---|---|
| No | 0 |
| Yes | 1 |
| Other (specify) | X |

12. Are you ever bothered by nervousness (irritability, tension)? Would you say

| | |
|---|---|
| Often ..... | 1 |
| Sometimes ..... | 2 |
| Never ..... | 3 |
| Other (specify)..... | X |

13. Have you ever had any fainting spells (lost consciousness)?

| | |
|---|---|
| Never ..... | 0 |
| A few times ..... | 1 |
| More than a few times ... | 2 |
| Other (specify)..... | X |

14. Do you ever have trouble in getting to sleep or staying asleep? Would you say

| | |
|---|---|
| Often ..... | 1 |
| Sometimes ..... | 2 |
| Never ..... | 3 |
| Other (specify) ..... | X |

15. Are you bothered by acid (sour) stomach several times a week?

| | |
|---|---|
| No ..... | 0 |
| Yes ..... | 1 |
| Other ..... | X |

16. Does your memory seem to be all right (good)?

| | |
|---|---|
| No ..... | 0 |
| Yes ..... | 1 |
| Other (specify) ..... | X |

17. Have you ever been bothered by "cold sweats"? Would you say

| | |
|---|---|
| Often ..... | 1 |
| Sometimes ..... | 2 |
| Never ..... | 3 |
| Other (specify) ..... | X |

18. Do your hands ever tremble enough to bother you? Would you say

| | |
|---|---|
| Often ..... | 1 |
| Sometimes ..... | 2 |
| Never ..... | 3 |
| Other (specify)..... | X |

19. Do you seem to have fullness (clogging) in your head or nose much of the time?

| | |
|---|---|
| No ..... | 0 |
| Yes ..... | 1 |
| Other (specify) ..... | X |

20. Do you have worries that get you down physically (make you physically ill)?

| | |
|---|---|
| No ..... | 0 |
| Yes..... ..... | 1 |
| Other (specify)..... | X |

21. Do you feel somewhat apart even among friends (isolated, alone)?

| | |
|---|---|
| No ..... | 0 |
| Yes ..... | 1 |
| Other (specify)..... | X |

22. Do you have the feeling that things always turn out wrong for you?

| | |
|---|---|
| No ..... ..... | 0 |
| Yes ..... ..... | 1 |
| Other (specify)..... | X |

23. Are you ever troubled with pains in the head or headaches? Would you say

| | |
|---|---|
| Often ..... | 1 |
| Sometimes..... | 2 |
| Never ..... | 3 |
| Other (specify) ..... | X |

24. Do you sometimes feel that nothing is worthwhile any more?

| | |
|---|---|
| No ..... | 0 |
| Yes ..... | 1 |
| Other (specify)..... | X |

APPENDIX C

III CHILD SYMPTOM CHECKLIST
(GLIDEWELL SCALE)

Now I would like to ask you a few questions about the health and behaviour of your child (the one entering nursery school).

Does your child have any trouble with the following:

| | Often | Some-times | Never |
|---|---|---|---|
| 1. Eating | | | |
| Remarks _____ | | | |
| 2. Sleeping (getting to sleep, staying asleep, nightmares, etc.) | | | |
| Remarks _____ | | | |
| 3. Stomach trouble (excessive vomiting, unusual pains, etc.) | | | |
| Remarks _____ | | | |
| 4. Aggressiveness towards CHILDREN (fighting, jealousy, etc.) | | | |
| Remarks _____ | | | |
| 5. Aggressiveness towards ADULTS (rude, forward, hostile, etc.) | | | |
| Remarks _____ | | | |
| 6. Withdrawn tendencies (from other CHILDREN) | | | |
| Remarks _____ | | | |
| 7. Withdrawn tendencies (from ADULTS) | | | |
| Remarks _____ | | | |
| 8. Unusual fears (darkness, animals, being alone, etc.) | | | |
| Remarks _____ | | | |
| 9. Nervous reactions (nail-biting, twitching, etc.) | | | |
| Remarks _____ | | | |

| | Often | Some-times | Never |
|---|---|---|---|

10. Thumb sucking
    Remarks_____

11. Day dreaming
    Remarks_____

12. Temper tantrums
    Remarks_____

13. Sex (masturbation, etc.)
    Remarks_____

14. Crying
    Remarks_____

15. Lying
    Remarks_____

16. Stealing
    Remarks_____

17. Destructiveness
    Remarks_____

18. Bed wetting
    Remarks_____

19. Speech
    Remarks_____

20. Over-activity
    Remarks_____

## APPENDIX D

### PARENT - ATTITUDE SURVEY
(Hereford Scale)

### INSTRUCTIONS

On the following pages are a number of statements regarding parents and children. Please indicate your agreement or disagreement with each statement in the following manner:

| | |
|---|---|
| Strongly Agree | _____cross out letter "A" on answer sheet |
| Agree | _____cross out letter "a" on answer sheet |
| Undecided | _____cross out letter "u" on answer sheet |
| Disagree | _____cross out letter "d" on answer sheet |
| Strongly Disagree | _____cross out letter "D" on answer sheet |

For example: if you strongly agree with the following statement, you would mark it in this way:

Boys are more active than girls. A a u d D

This survey is concerned only with the attitudes and opinions that parents have; there are no "right" or "wrong" answers. Work just as rapidly as you can - it is your first impression that we are interested in. There is no time limit. Please do not write on this page or on the statements.

REMEMBER .....A = Strongly Agree
a = Agree
u = Undecided
d = Disagree
D - Strongly Disagree

Please turn the page and go ahead . . . . . .

| | |
|---|---|
| 1. I feel I am faced with more problems that most parents. | A a u d D |
| 2. Some children are just naturally bad. | A a u d D |
| 3. The earlier a child is weaned from its emotional ties to its parents the better it will handle its own problems. | A a u d D |
| 4. Family life would be happier if parents made children feel they were free to say what they think about anything. | A a u d D |
| 5. Children who are not watched will get in trouble. | A a u d D |
| 6. Children must be told exactly what to do and how to do it or they will make mistakes. | A a u d D |
| 7. Talking with a child about his fears most often makes the fear look more important than it is. | A a u d D |
| 8. A child who misbehaves should be made to feel guilty and ashamed of himself. | A a u d D |
| 9. Some children are so naturally headstrong that a parent can't really do much about them. | A a u d D |
| 10. Few parents have to face the problems I find with my children. | A a u d D |
| 11. It's hard to know what to do when a child is afraid of something that won't hurt him. | A a u d D |
| 12. If a child is born bad there's not much you can do about it. | A a u d D |
| 13. There is no reason why a child should not learn to keep his clothes clean very early in life. | A a u d D |
| 14. A child's ideas should be seriously considered in making family decisions. | A a u d D |
| 15. Children have no right to keep anything from their parents. | A a u d D |
| 16. Children should have a share in making family decisions just as the grown-ups do. | A a u d D |

17. Children should be toilet-trained at the earliest possible time. A a u d D

18. When you come right down to it, a child is either good or bad and there's not much you can do about it. A a u d D

19. Most parents aren't sure what is the best way to bring up children. A a u [illegible] D

20. Children don't realize that it mainly takes suffering to be a good parent. A a u d D

21. Why children behave the way they do is too much for anyone to figure out. A a u d D

22. A child who wants too much affection may become a "softie" if it is given to him. A a u d D

23. If you let children talk about their troubles they end up complaining even more. A a u d D

24. Children have a right to activities which do not include their parents. A a u d D

25. Children shouldn't be asked to do all the compromising without a chance to express their side of things. A a u d D

26. One thing I cannot stand is a child's constantly wanting to be held. A a u d D

27. A child is destined to be a certain kind of person no matter what the parents do. A a u d D

28. Parents sacrifice most of their fun for their children. A a u d D

29. A child should be allowed to try out what it can do at times without the parents watching. A a u d D

30. Raising children isn't as hard as most parents let on. A a u d D

31. A child should be weaned away from the bottle or breast as soon as possible. A a u d D

32. More parents should make it their job to know everything their child is doing. A a u d D

33. There's a lot of truth in the saying, "Children should be seen and not heard." A a u d D

34. It's a parent's right to refuse to put up with a child's annoyances. A a u d D

35. A child that comes from bad stock doesn't have much chance of amounting to anything. A a u d D

36. It's hard to know when to make a rule and stick by it. A a u d D

37. If you put too many restrictions on a child, you will stunt his personality. A a u d D

38. If rules are not closely enforced children will misbehave and get into trouble. A a u d D

39. It is hard to let children go and visit people because they might misbehave when parents aren't around. A a u d D

40. Raising children is a nerve-wracking job. A a u d D

41. It is hard to know when to let boys and girls play together when they can't be seen. A a u d D

42. Family conferences which include the children don't usually accomplish much. A a u d D

43. When a boy is cowardly, he should be forced to try things he is afraid of. A a u d D

44. Most of the bad traits children have (like nervousness or bad temper) are inherited. A a u d D

45. It's hard to know what healthy sex ideas are. A a u d D

46. With all a child hears at school and from friends, there's little a parent can do to influence him. A a u d D

47. Playing with a baby too much should be avoided since it excites them and they won't sleep. A a u d D

48. Most children's fears are so unreasonable it only makes things worse to let the child talk about them. A a u d D

| | |
|---|---|
| 49. A child should never keep a secret from his parents. | A a u d D |
| 50. Parents should help children feel they belong and are needed. | A a u d D |
| 51. A parent has to suffer much and say little. | A a u d D |
| 52. Parents should make it their business to know everything their children are thinking. | A a u d D |
| 53. The trouble with trying to understand children's problems is they usually just make up a lot of stories to keep you interested. | A a u d D |
| 54. A child should be taught to avoid fighting no matter what happens. | A a u d D |
| 55. Psychologists now know that what a child is born with determines the kind of person he becomes. | A a u d D |
| 56. It's hard to know whether to be playful rather than dignified with children. | A a u d D |
| 57. An alert parent should try to learn all his child's thoughts. | A a u d D |
| 58. A child should always accept the decision of his parents. | A a u d D |
| 59. One reason that it is sad to see children grow up is because they need you more when they are babies. | A a u d D |
| 60. Most all children are just the same at birth; it's what happens to them afterwards that is important. | A a u d D |
| 61. It's a rare parent who can be even-tempered with the children all day. | A a u d D |
| 62. A mother has a right to know everything going on in her child's life because her child is a part of her. | A a u d D |
| 63. If a parent sees that a child is right and the parent is wrong, they should admit it and try to do something about it. | A a u d D |

64. If a little girl is a tomboy, her mother should try to get her interested in dolls and playing house. A a u d D

65. A child may learn to be a juvenile delinquent from playing games like cops and robbers and war too much. A a u d D

66. Fewer people are doing a good job of child-rearing now than 30 years ago. A a u d D

67. There are many things that influence a young child that parents don't understand and can't do anything about. A a u d D

68. Children don't try to understand their parents. A a u d D

69. If children are quiet for a while you should immediately find out why. A a u d D

70. A child has a right to his own point of view and ought to be allowed to express it, just as parents express theirs. A a u d D

71. Many times parents are punished for their own sins through the bad behavior of their children. A a u d D

72. Taking care of a small baby is something that no woman should be expected to do all by herself. A a u d D

73. It's a parent's duty to make sure he knows a child's innermost thoughts. A a u d D

74. Most of the time giving advice to children is a waste of time because they either don't take it or don't need it. A a u d D

75. There's no acceptable excuse for a child hitting another child. A a u d D

76. Parents have to sacrifice everything for their children. A a u d D

77. Not even psychologists understand exactly why children act the way they do. A a u d D

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REPORTS FROM THE

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Prince, R. H. (1966) An Ecological Study of Social Pathology in Montreal, mimeographed, 38 pp. (price $1.50).

Roberts, J., Prince, R. H., Gold, B. and Shiner, E. V. (1966) Social and Mental Health Survey, mimeographed, 95 pp. (price $2.50).

Prince, R. H. and Roberts, J. (1967) The Investigation and Treatment of Survey-Identified Psychiatric Cases, mimeographed, 89 pp. (price $2.50).

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