FAMILY, RESIDENTIAL AND COMMUNITY

INDICATORS OF CULTURAL-FAMILIAL

RETARDED CHILDREN

Prue Densem

Research Paper submitted in partial

fulfilment of the requirements for

the degree of Master of Arts

Department of Education,

University of Canterbury

1979

INTRODUCTION

The possibility of a major reduction in the incidence
of cultural-familial mental retardation is an idea sometimes
sweepingly denied (Jackson, 1977) or unrealistically
endorsed (Rosalynn Carter, cited by Zigler, 1978). There
can be no doubt, however, that cultural-familial retardation
constitutes a major social problem today. In sheer numbers,
this group accounts for 75 per cent of the retarded
population (Zigler, 1978) and affects an estimated 90,000
New Zealanders (Wilton, 1979). Nevertheless, there is a
tendency to gloss over the urgency of the problems
associated with mild retardation (the usual degree of
severity due to cultural-familial factors) and to view them
as confined to school based situations (Baller, Charles and
Miller, 1967). It could be argued that since the school
years constitute a significant proportion of a person's life,
this is sufficient justification to demand support for mental
retardation research. But as Wilton and Cosson (1977)
demonstrated, mildly retarded school leavers show
significantly poorer vocational and social adjustment than
even slow learners (i.e., school leavers who were only
slightly higher ability and who would be expected to
approximate the mildly retarded more closely than would
other non-retarded groups). It would thus appear to be
rather misguided to view mild retardation as a situational
accomplishment of schools. Its detrimental effects may be
apparent throughout a mildly retarded person's life, perhaps

into the next generation, therefore the outcomes of research
into the prevention of mild mental retardation would seem to
have potentially far more outreaching repercussions than the
amelioration of school defined problems.

Cultural-familial retardation is defined as retardation
with no known organic aetiology, the depressed intellectual
and social development being viewed as substantially a
function of the quality of the environmental learning
experiences and opportunities the individual has undergone
during his/her developmental period (Robinson and Robinson,
1976). A corollary to this position is the commitment to
the view that intervention strategies can make a worthwhile
contribution towards a reduction in the prevalence/incidence
of such retardation. This commitment is challenged by
Jackson (1977) who claims that it stems from an unjustifiable
belief that low mental ability is the result of socio-
cultural factors. He concludes that we may have to face the
harsh truth that if cultural-familial retardation has a
strong genetic component then efforts to achieve significant
improvements in the intellectual functioning of the mildly
retarded will prove disappointing. Jackson overlooks the
argument, however, that even if there is a strong genetic
component associated with cultural-familial retardation,
this would not diminish the likelihood that environmental
factors could be marshalled to induce sizeable changes in
cognitive and intellectual development. As Scarr-salapatek
(1975) says, 'Even if the heritability for I.Q. in a
population were 1.0, meaning that present environmental
differences contributed nothing to individual phenotypic

differences, a change in the environments could dramatically
shift the mean of the entire phenotypic distribution (p.51).'
Such a situation can be illustrated by reference to a study
by Wilton and Barbour (1978). Mother-child interactions
with pre-schoolers at 'high risk' for cultural-familial
mental retardation (identified by having an older cultural-
familial retarded sibling in a special class) were compared
with mother-child interactions with pre-schoolers in matched
SES families. It was found that mothers of 'high risk'
children interacted less often with their children and in a
significantly different way from the contrast mothers (using
less 'didactic' or 'facilitative' techniques). They were
also less successful in controlling their children's
activities. In addition, the 'high risk' children, while
with their mothers, spent less time in 'highly intellectual
activities'. This suggests that the behaviour of mothers of
'high risk' pre-schoolers is in some way instrumental in
their children's lower level of intellectual functioning
and that changes in these mothers' behaviours (with their
children) could dramatically facilitate the cognitive and
intellectual development of this population of children.
Indeed such changes have been graphically demonstrated with
children at high-risk for cultural-familial retardation
(Garber and Heber, 1978). Recent reviews of the results of
intervention with high-risk children also lend considerable
support to the efficacy of intervention strategies, and to
the position that socio-cultural factors play a substantial
role in the development of mild retardation (Caldwell,
Bradley and Elardo, 1975; Bronfenbrenner, 1975).

On the other hand, Rosalyn Carter's optimism regarding

the eradication of 50 per cent of the retarded population
through the application of existing knowledge, as well as
presenting a picture woefully ignorant of the social and
political implications of implementing intervention
procedures (Davie, 1979), bypasses a major unresolved
issue in the provision of special pre-school intervention
programmes - determining which children need them (Ramey,
Stedman, Borders-Patterson and Mengel, 1978). Clearly
they are neither necessary, nor desirable for all children
and this poses certain logistic problems since few, if any,
mildly retarded children are identified before they attend
school. It is important, therefore, that some way be found
to locate pre-schoolers who are at 'high risk' for mild
retardation and in need of special help. It was in direct
response to this that the present investigation was under-
taken. If compensatory programmes are to be implemented,
ease of access to reliable and valid predictive information
is prerequisite.

There are a number of studies pertinent to the problem
of predicting later developmental status. Maternal IQ for
example, is well documented (e.g., Heber, Dever and Conry,
1968) and frequently reported as important for predicting
sub-average intellectual functioning. Screening of the home
environment also has predictive worth as the studies by
Bradley and Caldwell (1977) and Ramey, Mills, Campbell and
O'Brien (1975) demonstrate. However, the sheer physical as
well as ethical difficulties of obtaining these data make it
prohibitive for routine inclusion into screening procedures.
Ramey *et al.* (1978) tackled this problem by obtaining readily

available information from birth certificates in order to explore the feasibility of its use as a mechanism to identify children who were likely to need special educational services at the time of entry to school. Although the extent of the prediction overall was not impressive (r = 0.52), the most predictive characteristics of educational and psychological status were race, mother's educational level, birth order (3rd or later born). Birth weight, month pre-natal care began and legitimacy also seemed important for consideration as potential screening devices.

The rationale and approach of the present investigation were similar to Ramey *et al.'s* but broader in scope. Although the main focus of this study was the identification of children for compensatory, educational intervention programmes, it was also directed towards providing an ecological description of 'high risk' families. The selection of variables to be examined in relation to children's developmental status was in direct response to the relatively recent focus in child development literature and research on the importance of considering the ecology of childhood development. This consideration introduces another dimension, beyond the characteristics of the child and his immediate relations with the family, which forces us to acknowledge factors which undoubtedly have, and indeed are rapidly being shown to have, significant influences on the child's behaviour (Bronfenbrenner, 1974; Gump, 1975). As Gump (1975) observes, '.... the ecological environment ..... provides a useful arena for understanding child behaviour; this non-psychological yet still behavioural context provides

variables which significantly condition a child's living (p.77).'

Sameroff and Chandler (1975) suggest that many of the problems concerning prediction of children's later development arise from the adoption of inadequate models of development on the part of the researchers. Constitutional defects caused by pregnancy and delivery complications, for example, have often been assumed to exert a unilateral influence on development and similar conclusions have been made regarding environmental influences. However, research has shown that predictions based on such main effects are grossly inadequate. Sameroff (1975), for example, cites studies which show that birth trauma such as anoxia can only predict later impaired performance if the caretaking environment is discernibly disadvantaged.

The ecological approach goes some way towards meeting the challenge set by Sameroff and Chandler (1975), by requiring more elaborate and comprehensive interaction models, and in its recognition of the necessity to go beyond the caretaking environment to identify the social systems which may affect what can occur within the immediate setting of the child. Proshansky (1976) points out, '... there is no physical setting that is not also a social and cultural setting (p.308)'. The ecological approach, in addition to considering the effects of people in their differing roles and relationships towards the child, also necessarily considers the effects of these physical factors. As Bronfenbrenner (1975) persuasively argues, an enduring one-to-one relationship involving the child in verbal

interaction with an adult around cognitively stimulating

activities may play a critical role in early development.

This might be what one would call an adequate caretaking

environment. But a family may not be in a position to carry

out this childrearing function because of the unavailability

of support systems which enable such a function to occur.

We need, therefore, to identify those ecological barriers

which might make a difference to such families. These may

be often unrecognized, e.g., effects of urban planning,

transportation, location of services, but nevertheless

exert a profound impact on determining when and how a

family spends time with its children. Bronfenbrenner (1974,

1975) points to the need for research evidence demonstrating

the effects of these higher-order variables. Fortunately,

there is a small but growing body of literature which can at

least give some indication of likely barriers to effective

childrearing (e.g., Bronzaft and McCarthy, 1975; Day, 1977;

Garbarino, 1976; Gump, 1975). In addition, the evaluation

of intervention strategies by Caldwell *et al*. (1975) and

Bronfenbrenner (1975) indicate a number of factors which

can either militate against or facilitate intervention

procedures. The following is a brief review of the

literature instrumental in the selection of the ecological

variables for this study.

Social class, as a molar variable, has been linked

to mental development generally and cultural-familial

retardation is a phenomenon almost exclusively associated

with low socio-economic status (Robinson and Robinson, 1976).

Bronfenbrenner's (1975) ecological model of development,

however, suggests where attention may be focused in order to identify specific demographic characteristics which may be critical in the aetiology of mild retardation - factors which indirectly affect the caretaking function.

The effects on children of living in poverty have been well documented (Robinson and Robinson, 1976), although the gross poverty seen in other Western countries may not be applicable in New Zealand. Nevertheless, an inability to make ends meet may result in young children being deprived of essential stimulation obtained through playthings, books, and expeditions outside the home (Chazan, 1979) as well as frequently causing tension and stress in the household (Bronfenbrenner, 1978) which may be communicated to children. In addition, a low income often means substandard housing conditions. A number of factors associated with housing conditions, specifically, overcrowding, buildings in need of repair and general quality are significantly related to health, mental hospital admissions, delinquency and reading age of 7 year olds (Gump, 1975). Poor physical and mental health must surely interfere with child-rearing activities, therefore housing standard seemed an important area for the purposes of this study.

Further dimensions singled out for attention were noise levels and traffic density. Noise from expressways and railways has been found to be associated with poor auditory discrimination and retarded reading ability (Gump, 1975; Bronzaft and McCarthy, 1975). Results reported by Wachs, Uzgiris and Hunt (1971) suggest that psychological development, including the development of speech and language

and the development of attentional control (learning to listen), are all negatively affected by 'high' noise levels in the home. In a further study reported by Mills (1975) noise level in the home emerged as the most significant variable in regard to reading scores over and above educational attainment of the parents, number of children in the family, and grade level. The author speculated that the child fails to learn to discriminate speech relevant cues at a time which may be optimal for such learning. This must surely affect not only the ability to learn to read effectively but also the quality of verbal interaction with the caregiver.

High traffic density prohibits the use of footpaths and streets as settings for social contacts and children's play (Gump, 1975; Town and Countryside, 1978). Such activities are presumed to contribute to intellectual and social development, therefore residential traffic density may play an important part in children's impaired development. High lead blood levels in children have been shown to be associated with mental retardation (Robinson and Robinson, 1976). Evidence points to the source of high blood levels being lead based paint ingested by children through their activities in contact with areas in which such paint has been used. This is unlikely to be a source of ingested lead in New Zealand as lead based paint is an illegal product. There is increasing evidence, however, that inhalation of airborne lead, produced primarily by oil combustion, is seriously contributing to the elevation of blood lead levels. Day (1977) carried out a survey of lead pollution in

Christchurch and found that in areas of high traffic density, dust-borne lead was far in excess of WHO recommended levels for health safety.

Location of services and access to transport can prevent mothers from utilizing health and other community services such as pre-schools and libraries. Utilization of health services is related to pregnancy and birth complications - a risk factor for normal mental functioning (Bronfenbrenner, 1975). Pre-schools and libraries present opportunities for intellectual activities and their lack of use could represent a further risk. Barney (1975) has documented the less frequent use of pre-schools by low SES compared to high SES families in New Zealand. In addition, lack of transport can prevent social contacts for mothers (Gump, 1975) and Bronfenbrenner (1975) points to the need for such contacts if mothers are to provide an adequately stimulating environment for their children.

The foregoing evidence provided the focus for the present study. However, in addition to these factors of the environment, which may exert an indirect influence on children's development, other variables more directly related to the family's situation were examined. Studies concerned with the prediction of mental handicap invariably report that maternal IQ/or level of education is a potent predictor. Other family factors such as birth trauma, level of income and whether the mother needs to work are also consistently related to poor outcomes for the child (Bronfenbrenner, 1975; Sameroff and Chandler, 1975). Indeed such factors were found to be the only ones of

importance in a study of ecological, school and family

factors in the intellectual performance (Raven Progressive

Matrices) of Warsovian children, being clearly separated

from the external environment of families (Czarkowski,

Firkowska-Mankiewicz, Ostrowska, Sokotowska, *et al.*, 1977).

These authors concluded that the equalization of ecological

advantages had failed to override the forces in families

that determine their intellectual characteristics. (This

does not mean, of course, that they are not salient factors

in cognitive performance, but only that in rebuilt Warsaw

their effects have been removed from the reach of

measurement.) It was suggested alternatively that the

commitment to a socialist regime would lead to a different

ecological structure from those that prevail in capitalist

societies - a point also noted by Robinson (1978) in her

discussion of mild mental retardation in China.

Mental retardation includes not only the notion of

inadequate intellectual or academic functioning but also

the inability to play social roles competently (Zigler

and Trickett, 1978). The potentially mildly retarded may

be seen as a group uniquely positioned to develop such poor

outcomes because of inadequate screening procedures in the

early years. This group's potential for normal development

given the provision of special pre-school intervention, and

family support, has been amply demonstrated (Bronfenbrenner,

1975; Caldwell *et al.*, 1975; Poulton and Poulton, 1979).

The major objective of this study was to develop a way of

identifying children who are in need of but not currently

receiving, special help. The study was designed to determine

which, if any, demographic variables discriminate between children who are 'average' intellectually, academically and socially and those who are developmentally delayed at the age of 6 - 7 years. The intention was to find a group of measures which will facilitate the identification of this group and which subsequently could be used in conjunction with information from home observations (e.g., Caldwell, 1978) to determine target populations.

METHOD

General Design

The present, essentially exploratory investigation
was an attempt to examine the relationship between the
developmental status (intellectual, academic and social)
of six - seven year olds and measures on a large number of
variables relating to the ecological and family environment.
These variables were examined in terms of their predictive
usefulness for identifying children 'at risk' of developing
cultural-familial retardation and who thus might benefit
from pre-school intervention programmes. Subsequently an
attempt was made to provide an ecological description of
the circumstances surrounding children in 'High Risk',
'Moderate Risk' and 'Low Risk' groups vis à vis the
likelihood of subsequent cultural-familial retardation.
(The three groups are defined in the statistical analysis
section below.)

Subjects

The goal of the sampling procedure was to select six
to seven year old children with no apparent CNS or organic
problem who were representative of the Christchurch
population. This particular population of children was
chosen for three reasons. Firstly, the children would have
attended school for at least one year, enabling reasonable
ratings to be made of social and academic development.

A second consideration was the fact that special class
admissions are not made until children reach a minimum
of seven years of age, therefore virtually all potential
special class children should have been attending
regular classes. Finally, children with organic problems
were excluded because the population of interest is the
cultural-familial mentally retarded.

An attempt was made to select a sample which would
be reasonably representative in terms of the geographical
location and socioeconomic background of the subjects.
The contributing schools for all Intermediate schools in
Christchurch were listed, the Intermediate schools almost
fulfilling the requirements of geographical and SES spread.
From this list a random sample of 10 primary schools was
chosen. One large area of Christchurch, New Brighton and
its immediate surrounds, is not served by an intermediate
school, therefore one school was randomly selected from the
full primary schools in this area. In addition to these
11 state primary schools, a proportionate number of Catholic
schools was selected (total school N: state = 71; catholic
= 20.   Sample school N: state = 11; catholic = 3). The
three catholic schools were geographically spread from east
to west across the city. All children from the total of
14 schools, who fell within the age range 5 years 10 months
to 6 years 10 months as at 1st January 1979 and who were
organically unimpaired, were included in the sample. As a
result of this procedure, a total of 870 subjects were
selected for participation in the study.

Subject losses were sustained for a number of reasons.

Twenty subjects moved away from the school district between the completion of the testing programme carried out by the researcher and the distribution of the academic and social rating scales to teachers for them to complete for each child in the testing programme. Complete data for three developmental measures were obtained for 850 children. This was the sample for the standardization procedures (described below) carried out on these measures.

The environmental measures were derived from a questionnaire (Family and Community Questionnaire: FCQ) sent home to parents from the school with the children and returned via the children to school for collection by the researcher. The investigation depended, therefore, on the co-operation of parents in returning the questionnaire. An 84 per cent return rate of usable questionnaires was accomplished. 850 questionnaires were distributed to schools. Seven questionnaires were undelivered to parents because one family was away on holiday, one family had left the country on sabbatical leave, and five children were absent from school due to illness. 713 completed question-naires were returned, from which four were discarded because of incomplete data, and two because code numbers enabling matching with the developmental measures had been torn out. The final sample, then, comprised 707 subjects. The rate of return tended to vary among the schools in the same direction as the general SES, i.e. the higher the SES the higher the return rate level of the school districts. The percentage of usable returns for each school are presented in Table 1.

Insert Table 1 about here

Instruments

Three instruments were used in the study. (i) and (ii)
were employed for the developmental measures and (iii) for
the environmental measures. The three instruments were:

(i)   Raven Coloured Progressive Matrices (RAVEN);

(ii)   Teacher's Rating Scales of Academic and

Social behaviour (TRAS) (Appendix A); and

(iii)   Family and Community Questionnaire (FCQ)

(Appendix B).

Raven Coloured Progressive Matrices. The RAVEN is a well-
known, non-verbal, group intelligence test. It was chosen
as a measure of intellectual performance because of its
ease in administration and its reasonable correlation with
individual intelligence tests (Stanford-Binet $r = 0.66$)*
and because it appeared to be the best available screening
instrument (Allen and Jones, 1967) for 6 year old children
for which New Zealand norms were available. In addition,
because of its non-verbal nature it should be somewhat
independent of (although correlated to some extent with)
measures of academic performance which are dependent to
some degree on verbal skills.

Teachers Rating Scales of Academic and Social Behaviour
(TRAS). The TRAS was devised to estimate the extent to
which children succeeded in academic, school activities
and to assess their social development through a number of

---

* Raven Progressive Coloured Matrices Manual, 1956.

measures relating to various socially approved behaviours.
TRAS is divided into two sections. The first deals with
academic achievement which is assessed through teacher
ratings on three scales including; reading, maths and
general coping ability when set an academic task. The
second section, dealing with social behaviour, comprises
five scales including; ability to mix with other children;
ability to communicate with adults; independence; ability
to participate in group classroom activities; and extent of
disruptive classroom behaviour. Teachers' estimates of such
behaviour may not be very reliable because, as Leiter (1974)
says it is a situated accomplishment and therefore problem-
atic. Nevertheless, their judgement is almost always sought
when special class placements are considered (Smart, Wilton
and Keeling, 1979) and the use of these scales, ...seemed
justified, indeed preferable to alternate measures of
academic and social behaviour.

Family and Community Questionnaire (FCQ). The FCQ was
devised to provide information about the subject's
environment. The questionnaire is divided into six parts,
each part generally relating to a particular area of
information.

Part I: General family information including, for
            example, type of family, i.e. one or two parents;
            number of children in the family; church
            affiliation, etc.

Part II: Educational background of the parents.

Part III: Employment and income of parents.

Part IV: Information on housing, e.g., number of rooms;
            rented or owned, etc.

Part V: Community information regarding noise levels;
            service and cultural facilities; transport.

Part VI: Child Factors including health, pre-school
            attendance, ethnic background, working mother
            etc. Traffic density was included here following
            a question on whether traffic restricted the
            child's play activities. This was felt to be a
            psychologically more appropriate place than in
            the previous section although it obviously
            relates to neighbourhood information.

The FCQ was constructed in such a way as to be as non-
threatening as possible to the parents and also to provide
an apparent flow between questions. These factors seemed
more important in deciding where a particular question would
be placed than did the maintenance of a strict division
between parts. From the questionnaire, the variables were
regrouped into the following categories:

1. Family Factors - Structure, employment, income,
    education and lifestyle.

2. Home and Community Descriptors (objective measures).

3. Perceptions of Home and Community (subjective measures).

4. Child Factors.

The variables derived from the FCQ will be defined in
a subsequent section.

Procedure

The RAVEN (paper and pencil form of the test) was administered to 870 children by the researcher and six assistants; five senior undergraduate students helped when time permitted and one full-time research assistant accompanied the researcher to each school. All the assistants were given detailed instructions and practice before testing the children.

Children were tested in groups of five. Before the testing programme began, trial runs of administering the test to varying numbers of children were undertaken to determine the optimum number of children one administrator could adequately supervise. Because of the age of the children being tested, the accepted procedure of frequent checking was required during administration to ensure that the child was filling in the correct box and not turning two pages at a time. On some occasions, also, the child was unable to write figures legibly and in such cases the administrator filled in the child's choice. In order to eliminate errors due to the above reasons, following the trial runs of administering the test to groups of 3, 5, 8 and 10 children, it was decided that five children was a reasonable group number.

Testing was always carried out during the morning while the children were fresh. Every school provided a room so that the children could be withdrawn from their classroom. The test took, on average, 25 mins to administer. The maximum number of test administrators working at any one

time was four so that up to twenty children could be withdrawn at one time. Usually no more than 10 children were absent from one class at the same time. The testing programme ran from April till early August, 1979.

The format of TRAS was usually discussed by the researcher with the teacher directly concerned with each child to be rated, to ensure that teachers fully understood their task. Where this was not possible the Supervisor of Junior Classes or the Principal was instructed in the use of TRAS, and they in turn instructed the teachers concerned. TRAS forms were completed following the end of the testing programme in August, 1979.

The RAVEN raw scores, birth date of the child, date of testing and TRAS scores were recorded on file cards and a code letter and number assigned to each child so that anonymity could be maintained. The letter code identified the school the child attended.

The FCQ was coded and put in an envelope which had printed instructions for the return of the questionnaire (Appendix C). These were given to the children at school to take home to their parents. For ease of return of the FCQ when completed, the envelope was to be reused, sealed and returned to school for collection by the researcher. The child's name was written on a slip of paper stapled to the envelope to ensure that the coded FCQ reached the correct destination. This was to be removed by parents before returning the questionnaire. Once this had been done anonymity was preserved.

Questionnaires were delivered to all schools within two

days in mid August, and were ready for distribution to all

parents on the same day. A contact phone number was made

available to enable parents to discuss any difficulty or

query they had concerning the questionnaire. A number of

calls were received and the author is confident that the

high return rate of questionnaires was largely attributable

to her availability to answer questions. Completed

questionnaires were all collected by the end of the second

school term, late August 1979.

Scoring Procedures

Raven Coloured Progressive Matrices. Christchurch is a city

which has a relatively stable population and small groups of

Maoris and Pacific Islanders in comparison with North Island

cities. In consideration of the above, and because the

study comprised a large sample size, it was decided to use

locally standardized scores, i.e., standardized scores

derived from the study sample. Following previous Raven

standardization procedures (Raven, 1956; Rodgers, 1964), the

sample was divided into six monthly age groups; 6.0 - 6.5

years, 6.6 - 6.11 years and 7.0 - 7.5 years. Frequencies of

children within these age groups, together with Means,

Medians and Standard Deviations, are presented in Table 2

for the normative sample of 850 subjects in half year age

groups, 6, 6½ and 7 years. Subjects were assigned a

percentile ranking derived from the standardization of the

raw scores.

_____

Insert Table 2 here
_____

Teachers' Rating Scales of Academic and Social Behaviour.
The subject's scores on the three academic 5 point scales
(1 = well above average; 5 = well below average) were
summed to give a total Academic score (the best possible
score in terms of academic achievement = 3; the worst
possible score = 15). Each child had been rated initially
in comparison with his age group therefore the child's
Academic score was incorporated directly into the analyses.
The total sample of scores was standardized for subsequent
use in the selection of contrast groups (to be discussed
later). See Table 3 for Mean and Standard Deviation for
the sample of 850 subjects.

Insert Table 3 here

The subject's scores on the five Social 5 point
scales (1 = well above average; 5 = well below average)
were summed to give a total Social score, and as in the
treatment of Academic scores, this was incorporated directly
into the analyses. There was some doubt, initially, as to
whether this was sound procedure therefore a factor analysis
was performed to determine if one or two social factors were
being measured by the scales. There was, however, only one
factor (see Table IV) and it was felt that the summing of
the scale scores was justified. As for the Academic scores,
the sample of Social scores was standardized for subsequent
use in the selection of contrast groups.

Insert Table 4 here

Family and Community Questionnaire. Information from the FCQ was frequently able to be incorporated directly into the analyses. Where this was not possible, responses were coded in a form which could be subjected to statistical analysis.

Definitions of Variables used in the Study

Developmental Variables. The developmental variables were measured by the Raven Coloured Progressive Matrices (RAVEN) and Teacher's Ratings of Social and Academic Behaviour (TRAS).

1. Raven - Percentile ranking subject attained.
2. Academic - Subject's total academic score.
3. Social - Subject's total social score.

Environmental Variables. The environmental variables were derived from information supplied in the FCQ and from community sources (Christchurch City Council, City Engineer's Office, Waimairi, Paparua and Riccarton County Councils, Canterbury Education Dept., and schools).

A. *FAMILY FACTORS - Structure, employment, income, education and lifestyle.*

4. Number of parents in the home - (2 or 1), including de facto, and step-parents.
5. Step-parent in the home - (1 = yes; 0 = no)
6. Single widow/widower - (1 = yes; 0 = no)
7. Other single - if the respondent was separated, divorced or unmarried, was classed as a single parent. (1 = yes; 0 = no)

8. <u>SES of the Family</u> - this was based on Elley and Irving's (1976) socio-economic index. Whichever score was highest of parents employed was recorded for the family (1 high - 6 low).

9. <u>Parents employed</u> - this refers to whether both parents are employed or if a single parent whether she/he is employed. (1 = both or 1 of 1; 0 = not 1)

10. <u>Secondary employment of father</u> - (1 = yes; 0 = no)

11. <u>Secondary employment of family</u> - (1 = both or 1 of 1; 0 = not 1)

12. <u>Independent income of family</u> - this refers to whether either parent has an income over and above salary, wages, or social security benefit, e.g., investments, shares etc. (1 = yes; 0 = no)

13. <u>Level of income of family</u> - this refers to total income from any source and was a 6 point scale; 1 = no income; 2 = under $4,000; 3 = $4,000 - $9,999; 4 = $10,000 - $12,999; 5 = $13,000 - $16,999; 6 = $17,000 and over.

14. <u>Mother's Secondary schooling</u> - number of years; 2, 3, 4 or 5.

15. <u>Father's Secondary schooling</u> - number of years; 2, 3, 4 or 5.

16. <u>Mother's level of tertiary education</u> - refers to highest of; 3 = University; 2 = Technical Institute, nursing, training college, prof. society; 1 = non-tech. apprentice; 0 = nil

17. <u>Father's level of tertiary education</u> - as for mother.

18. <u>Mother's qualifications</u> - refers to highest of;

   3 = University degree or equivalent, 2 = qualified

   nurse, teacher or member of professional society;

   1 = trade certificate; 0 = nil

19. <u>Father's qualifications</u> - (as for mother)

20. <u>Special class</u> - refers to special class attendance

   (for slow learners) by any member of the immediate

   family, e.g. mother, father or older siblings of

   subject. (1 = yes, 0 = no)

21. <u>Special Education</u> - refers to special ed. of other

   sort, e.g. for blind, deaf, physically disabled.

   (1 = yes; 0 = no)

22. <u>Facilities</u> - refers to usage of six facilities:

   doctor, Plunket, library, playground/park, creche/day-

   care centre, preschool. For each facility

   1 = regularly or as often as needed; 0 = less than

   would like or never. A total score was recorded

   (0 - 6).

23. <u>Additional Facilities</u> - refers to the total number

   of respondent-generated listed facilities used or

   would use if available, e.g. hobby classes, sports

   facilities etc., plus whether child belonged to a

   library (Score 0 - n)

24. <u>Family church attendance</u> - 2 = frequently,

   1 = occasionally, 0 = rarely or never.

25. <u>Mobility</u> - refers to the number of times the family

   had moved house over the last 7 years. (0 = not moved;

   1 = once or twice; 2 = three times; 3 = more than three

   times)

26. <u>Family car</u> - 1 = yes; 0 = no

27. <u>Child's play</u> - a 5 point scale, 5 = always - 0
= never, rated how often the child played at home,
at the playground, at a friend's place or around the
neighbourhood. An average rating of the three away
from home ratings was computed and this was divided
into the rating of time spent at home thus deriving
a home/away ratio. The higher the score the more
the child played at home.

B. *HOME AND COMMUNITY DESCRIPTORS*

28. <u>Housing Density</u> - (# of rooms/# of people)

29. <u>Home Ownership</u> - (1 = yes; 0 = no)

30. <u>Others in home</u> - refers to the number of people
outside the immediate family living in the home,
e.g., grandparents, foster children, boarders etc.
(1 = yes; 0 = no)

31. <u>Traffic Density</u> - derived from ratings of residential
street. 1 = main arterial road; 2 = secondary road;
3 = average suburban street; 4 = quiet suburban street;
5 = no exit road. These categories were based on
discussions with the City Traffic Engineer, whose
office uses such categories based mainly on traffic
counts. To ensure a reasonably objective measure it
was considered necessary to check these ratings against
those of the City Engineer's office. For a random
sample of 20 such ratings, there was a correlation of
$r = 0.9$. This variable was an attempt at an indirect
measure of airborne lead level, significant differences
in such levels between classes of roads such as those

above having been found by Day (1977).

C. PERCEPTIONS OF HOME AND COMMUNITY

32. Fair rent - (1 = too low or O.K.; 0 = too high)

33. Quality of accommodation - (5 = very good; 4 = good;

3 = adequate; 2 = barely adequate; 1 = poor)

34. Noise level - refers to the situation in the

neighbourhood. 1 = very noisy; 2 = fairly noisy;

3 = generally quiet.

35. Access to facilities - refers to the ease with which

the family can reach the six facilities, as in

facilities above. Each facility rated on 5 point

scale, 1 = very difficult - 5 = very easy. Score is

the average rating for the six facilities. (If only

five facilities have been rated, e.g., then the

average based on 5 ratings.

36. Adequacy of transport - based on 5 point scale;

5 = very good - 1 = poor.

37. Traffic Restriction - refers to whether traffic is

felt to restrict their child's play (5 point scale:

5 = never - 1 = very much)

D. CHILD FACTORS

38. Birth order - (1 = first born; 0 = later born)

39. Number of Siblings - as stated

40. Ethnic status - (1 = European; 0 = other)

41. Age of mother - age of mother at the time of birth

of the child in the study.

42. Birth trauma - difficulties at birth were specified

by respondents and included; forceps delivery,

caesarian section, breech birth, anoxia. (1 = yes;

0 = no).

43. <u>Childhood illness</u> - refers to any serious illness.
    (1 = yes; 0 = no)

44. <u>Plunket</u> - refers to attendance at plunket.
    (1 = yes; 0 = no)

45. <u>Pre-school attendance</u> - at kindergarten or playcentre.
    (1 = yes; 0 = no)

46. <u>Mother/single father working during pre-school years</u> -
    (1 = yes; 0 = no)

47. <u>Time employed during pre-school years</u> - refers to
    employment of mother/single father; score 0 - 5 years.

48. <u>Type of care</u> - if mother/single father worked during
    child's pre-school years then refers to care other than
    playcentre or kindergarten. (Daycare = 1; informal,
    e.g., relative, neighbour = 0).

D. *VARIABLES FROM COMMUNITY SOURCES*

49. <u>House value</u> - derived from City and County Council
    records of Govt. valuation of residential address.
    Actual house value expressed as hundreds, e.g.
    $24,000 = 240

50. <u>Percentage of referrals to special class</u> - this
    figure is a constant for each school and is assigned
    to each child in that school. It is a measure of the
    number of children referred to special classes in
    Christchurch from each of the schools in the sample.
    Information was obtained from schools with special
    classes as to which schools their special class
    children had been referred from. (School roll numbers
    were obtained from the Canterbury Education Dept.)

51. Riskys in school - refers to the percentage of children who scored 1 s.d. or more below the mean on all three dependent variable measures, plus those who scored -1 s.d. on two measures, and below average on the third.

52. Okays in school - refers to the percentage of children in each school sample who scored at the mean or above on all three dependent variable measures.

53. State or catholic school - (1 = state; 0 = catholic)

Statistical Analyses

(1) Predicting developmental status. A set of three step-wise multiple regression analyses were performed between the environmental variables (set out in the definitions section) as predictors, and each of the three measures of developmental status - Raven, Academic and Social. These analyses were undertaken to explore the relationship between these variables and in order to assess whether the variance of each criterion variable was accounted for by similar sets of predictors, thus justifying the use of scores on all three developmental measures in order to select groups for analysis by MANOVA. In addition, variables to be used in the MANOVA were selected partially on the basis of their contribution to the variance in each of the regression analyses.

(2) Characteristics distinguishing 'high risk', 'moderate risk' and 'low risk' children in terms of cultural-familial retardation. Mental retardation is defined in terms of inadequate intellectual and academic

performance, accompanied by unadaptive social behaviour.
In order to be considered a potential candidate for
cultural-familial retardation, therefore, it seems clearly
requisite that the 'high risk' child should score very low
on all three measures. The 'high risk' group, then,
comprised those children from the sample who scored one SD
or more below the mean on all three measures. A child who
scored an SD of -1 on two of the measures with the third
measure between the mean and -1 SD was considered to be
having difficulties in school and was perhaps in need of
special assistance but was not considered to be a candidate
at risk for mild mental retardation. This was the 'moderate
risk' group. 'High risk' and 'moderate risk' are meant only
to describe the relative number of low scores a child
achieved, not the degree of any disability that may be
present. The 'low risk' group was comprised of those
children who scored at the mean or higher on all three
measures. The numbers obtained in the groups were as
follows: High risk, N = 36; Moderate risk, N = 48; Low
risk, N = 221; Total sample from which the groups were
drawn, N = 707.

The analyses undertaken on these groups were two-way
(sex by risk-status) multivariate analyses of variance
(MANOVA) with 40 environmental, dependent variables. These
were, as defined in the definitions section, nos. 4-9,
12-20, 22, 24-31, 33-40, 42, 43, 45, 47, 49-51, 52. MANOVA
substitutes zeros for missing data. For this reason,
average values were substituted on those variables relating
to absent spouses. Fifteen of the 'low risk' group were

single parent families and the average value for the total

sample was substituted in these cases. Six of the 'high

risk' group were single-parent families and the average for

the 'low' and 'moderate' risk groups combined was substituted

in these cases. No cases were involved in the 'moderate

risk' group. Average house values for the total sample were

substituted in eight cases where this information was absent.

Variables no. 10, 32 and 48 were excluded because the

information was gathered from only a small, relevant

proportion of the sample. Variable 53 was excluded on the

grounds that the catholic schools were included mainly as a

sampling measure. Variable 21 was excluded because it did

not apply to any case in the three groups and variables 11,

23, 41, 44 and 46 were excluded on the basis that they

contributed little in the regression analyses. Variable 46,

in addition, was redundant with variable 47. The Newman-

Keuls procedure (Winer, 1971) was used to undertake specific

comparisons of means.

RESULTS AND DISCUSSION

Descriptive Statistics for Predictor Variables

Table 5 presents the means and standard deviations for
each of the predictor variables derived from information
provided by the Family and Community Questionnaire (FCQ)
and from community sources.

Descriptive Statistics for Measures of Developmental Status

The means and standard deviations (raw scores) of the
developmental variables that were to be predicted from the
environmental measures are presented in Tables 2 (Raven)
and 3 (Academic and Social).

Predicting Intellectual, Academic and Social Status

Table 6 summarizes the results from the multiple
regression analysis in which performance on the Raven was
predicted from environmental measures. It can be seen from
this table that the best single predictor of Raven scores
was SES followed by the level of mother's tertiary education.
The multiple R for these two variables taken together is
0.28 which is comparable with Czarkowski *et al.*'s (1977)
findings of 0.29 for correlations between parental
occupational and educational status and the Raven. Although
the majority of environmental variables measures contributed
significantly in the prediction of Raven scores, the
Multiple R for these variables together was only 0.43 thus

accounting for only a small proportion (18 per cent) of the variance.

Tables 7 and 8 summarize the multiple regression results for Academic and Social scores. The results are similar to those of the Raven; SES and Mother's schooling being the main contributors to these predictions, with the proportion of average children in the school being the next best predictor (although this variable is somewhat spurious having been derived from the data on developmental status). The main difference between the results of Raven and those of Academic and Social, is that some of the community variables (adequacy of transport, noise levels, and perceptions of restriction of children's play because of residential traffic levels) entered more importantly into the Academic and Social predictions. Howevever, like the Raven analysis, the total variance accounted for by all the variables significantly contributing to the predictions of Academic and Social scores was only 17 and 13 per cent respectively. There is always the possibility, of course, that the predictor and/or criterion variables were lamentably imprecise and inadequate measures. Nevertheless, given that environmental process measures (such as the HOME scale, Bradley and Caldwell, 1978) can account for between 40 and 70 per cent of the variance of developmental status, and that the HOME scale has a predictive success rate of 62 per cent which Bradley and Caldwell (1978) suggest could be significantly improved by taking into account environmental context measures, it would appear that the variance accounted for in the present study could be more important than its

relatively small magnitude might indicate.

Characteristics distinguishing Low, Moderate and
High Risk Children

Three risk-status contrast groups were selected as explained in the Method section. A two way (Sex x Risk-status) multivariate analysis of variance (MANOVA) was carried out on the descriptive data in order to distinguish statistically among children who were performing at or above the mean on all three dependent, developmental measures (low risk group), those whose performance was relatively poor (-1 SD on two measures, and between the mean and -SD on the third - moderate risk group) and very poor (-1 SD on all three measures - high risk group).

A significant multivariate groups main effect (Risk-status) was obtained (F(2,299) = 2.49, p < 0.001). There were no significant Sex effects (p < 0.399) and no significant interaction (p < 0.062). It can be seen from Table 9 that family factors account for most of the significant differences between Risk-status groups. Characteristics of the parents, described by the traditional indicators of developmental status - education, occupation and income - showed the usual pattern of results. As expected (Bradley and Caldwell, 1978), the children who scored low on the developmental variables tended to be from families of lower SES who had no independent income and a lower level of total income (under $10,000); their parents were less well educated, having spent less time at school than average, completing little or no tertiary education, and usually having no qualifications. Comparisons of means

using the Newman-Keuls test (see Table 10 for means and SDs) indicate no significant difference between the High and Moderate Risk groups but a significant difference (p < 0.05) was established between both these groups and the Low Risk group (on the above mentioned variables).

Other family factors which differentiated the groups significantly were the presence of persons other than immediate family living in the home, birth order of the target child, use of a family car for occasions other than work, adequacy of transport, whether traffic is viewed as restricting children's play, and quality of accommodation. The last three variables were included as family factors because they reflect attitudes of the parents rather than being purely objective measures of transport facilities, play activities, or quality of accommodation.

Newman-Keuls comparisons on the group means for all these variables, except on birth order, significantly distinguished the Low Risk group from the Moderate and High Risk groups. In the case of birth order, Low and High risk children were clearly defined from those of Moderate risk. However, the High and Moderate risk groups generally present very similar pictures. These families are more likely to have outsiders living in the home, have less use of a family car, view their transport situation as inadequate and the quality of their accommodation as less desirable. They are also less concerned regarding the restrictions traffic may put on their children's play. In addition, the Moderate risk children in contrast to Low and High risk are more often later born while the High risk children are as

often first borns as later borns.

The suggestions raised by Bronfenbrenner (1975) and Gump (1975) regarding the importance of adequate transport for mother's of young children have been interestingly borne out in this study. It does seem to be an important correlate of High and Moderate risk groups. A further point of interest is that parents who have less regard for traffic as a restricting influence on their children's play activities could be interpreted as being less controlling of their children's activities - a factor found to distinguish mothers of High risk infants from comparable SES mothers of Low risk infants (Wilton and Barbour, 1978). Ramey *et al.*'s findings regarding the potency of birth order as a distinguishing variable for Low and High risk children was also supported in part. High risk children in their study were more often found to be third or later born children. The Moderate risk group in the present study were more often later borns. It could be the case that for those children suspected of cultural-familial retardation (i.e., the High risk group) any beneficial effects first borns usually enjoy may be overridden by other handicapping conditions. This point seems particularly important if birth order is to be considered as a screening device for selecting children for compensatory education. According to Ramey *et al.*'s (1978) results, confining selection of High risk children to later born, low SES children should reduce the number of false positives - always a consideration economically in terms of money and manpower. It seems from the results of the present study, however, that an important group of children in need

of compensatory education would be missed.

The three objective, residential measures of housing density, value and ownership all discriminated significantly ($p < 0.05$) between the Low risk group and both the Moderate and High risk groups. Again, there were no significant differences between these two~latter~groups (Newman-Keuls comparisons). Poor housing conditions, usually a reflection of low income, have frequently been reported as being associated with children's poor development (Bronfenbrenner, 1975; Chazan, 1979; Gump, 1975; Robinson and Robinson, 1976). As alluded to earlier, poverty and substandard housing conditions in New Zealand are unlikely to mirror the poor, insanitary conditions frequently encountered in the slum areas of other Western countries. Nevertheless, the relative poverty some New Zealanders endure has been shown in the results of this study, to be reflected in their children's depressed behavioural development.

An index of the general ability level of the schools involved in the study was derived from the proportion of moderate/high risk children, and the proportion of low risk children in the sample of 6 - 7 year olds at each school. The proportion of low-risk children in schools varied from 15 - 54 per cent, while that of moderate/high-risk children ranged from 0 - 38 per cent. The general belief that some schools are 'better' than others seems to have been supported by the significant differences between the means of the low and high/moderate risk groups (Newman-Keuls procedure, $p < 0.05$). At the same time, as mentioned earlier, these measures provide a somewhat spurious index of the

quality of the schools since they were derived from the developmental data.

The structure of families (i.e., whether there are two parents or one, undergone separation through death or divorce, etc.) is often found to bear significantly on children's development as does the employment of the mother, birth trauma and serious childhood illness, and the child's attendance or non-attendance at pre-school (Robinson and Robinson, 1976). The results of the present study are interesting in that none of these variables differentiated the high, moderate and low risk groups. It may be the case that the prevalence of non-traditional family groups and working mothers has increased to such an extent that such arrangements, per se, no longer seem deleterious to children's development (if indeed they ever were). As Bronfenbrenner (1974, 1975) has repeatedly argued, what seems to be important is the quality of children's interaction with parents and caregivers rather than simply the sheer amount of time spent in such interaction. It could be, however, that the increased prevalence of non-traditional lifestyles tends to mask any detrimental effects there may be.

Although Sameroff (1975) suggests that pregnancy and birth complications, and serious child-illhealth, bears on poor prognosis for the child's developmental outcomes only when associated with disadvantaged homes, such was not the case in the present study. These factors did not discriminate the risk groups even though the majority of moderate and high risk children were from low SES homes

which showed disadvantage in other terms (housing conditions,
for example). This may be a reflection of the health care
services New Zealanders enjoy, particularly the virtually
free maternity care.

Pre-school attendance is generally held to be beneficial
for the child and could be expected to offset to some degree
the cultural-familial retarded child's handicap. However,
as Wilton (1979) remarks, the point of providing special
educational programmes for these children is precisely
because they are unlikely to benefit from regular pre-
schools, the programmes of which presume certain home
experience on the part of the children attending. The
result that high risk children are attending pre-schools
as often as low risk children would appear to emphasize the
necessity to provide special pre-school services if the
reduction in cultural-familial retardation is a goal to be
seriously entertained.

Summary and Conclusions

The prevalence of cultural-familial retardation can
be dramatically reduced. The Milawaukee Project (Garber
and Heber, 1978), combining family support and compensatory
education for children at high risk for developing cultural-
familial retardation, could be considered a watershed in
the long debate concerning the worth of special intervention
strategies. The results of this study, and of several
others (Wilton, 1979), suggest that early special educational
intervention is critical for high risk children, as regular
pre-school services seem clearly unable to provide what is

needed.

The problems associated with identifying high risk children are possibly more marked in New Zealand than in other Western countries; large slum tracts, comparable to those seen in large North American or European cities, are rare, if not absent, in New Zealand therefore can provide no definite target districts. Even if such districts could be discerned, however, large scale projects involving all children in such districts are clearly beyond the resources of this country, and would be inappropriate for many families resident in such areas. The present study attempted to provide some indicators which could facilitate the identification of potential cultural-familial retarded children while attempting to minimise the economic/manpower outlay and maximising predictive success for locating the children and their families with special needs.

Like the Warsaw study (Czarkowski *et al.*, 1977), however, family factors, which are often difficult to obtain during routine screening procedures, provided the majority of indicators. This could be a reflection of our welfare state - socialist to some degree although clearly within a capitalist economic system. Even the housing factors are likely to reflect only relatively less comfortable conditions rather than rank sub-standard accommodation. It was noteworthy, however, that these factors did distinguish between low risk children and those in other groups.

It is interesting to note that noise levels contributed importantly to the Academic and Social score variances.

This result is at least consistent with the findings of
Mills (1975), Wachs *et al.* (1971) and Bronzaft and McCarthy
(1975) who showed that elevated noise levels tend to
suppress auditory discrimination ability in children (and
adults). The fact that noise level did not contribute
significantly to the prediction of Raven scores suggests
that it may be only an indicator of school difficulties (it
being easily understandable that being unable to attend
appropriately is potentially detrimental to academic and
social behaviour), rather than a direct contributor to the
production of cultural-familial retardation per se. This
seems to be borne out by the fact that in the MANOVA results
noise level did not differentiate the groups.

The worth of environmental context variables as a
useful first phase in the selection of children for special
pre-school intervention is emphasised by Bradley and
Caldwell (1978). Selection of children and families for
special programmes introduces labelling and differential
expectation from others in the community (Davie, 1979)
which could well work against the families concerned,
especially those in which the child selected was falsely
identified as positively at risk. Any increase in
predictive validity is thus surely welcome. The author is
currently re-analyzing the data using variables which
successfully distinguished risk groups in order to ascertain
if a reasonable degree of 'hits' and minimal 'misses' in the
selection of high risk children can be obtained. It appears
so far that most incorrect 'hits' will be from the moderate
risk group. Although these children are not viewed as

potentially cultural-familial retarded, their inclusion in compensatory programmes would certainly not be amiss - they are, after all, having considerable difficulty in school.

The imprecise nature of the measuring instruments was undoubtedly a major limitation of the present study. Despite this drawback, a variety of ecclogical factors were identified which, when used in conjunction with home observations, should facilitate the identification of cultural-familial retarded children in the New Zealand context (often found to produce contrary results regarding socio-economic variables compared with other Western countries - Wilton, 1979). It is to be hoped that this information will encourage the development of special programmes for high risk children in New Zealand and that the problem of identification will be viewed as less daunting than previously believed.

REFERENCES

Allen, R.M. and Jones, R.W. 'Perceptual, conceptual, and psycholinguistic evaluation of the mentally retarded child', in A.A. Baumeister (ed.) Mental Retardation: Appraisal, education and rehabilitation. Chicago, Aldine, 1967, p.39-65.

Baller, W.R., Charles, D.C. and Miller, E.L. 'Mid-life attainment of the mentally retarded: a longitudinal study. Genetic Psychology Monographs, 1967, 75, 235-329.

Barney, W.D. Who gets to preschool? Wellington: NZCER, 1975.

Bradley, R.H. and Caldwell, B.M. 'Home observation for measurement of the environment: a validation study of screening efficiency', American J. of Mental Deficiency, 1977, V. 81, N.5, p.415-420.

Bradley, R.H. and Caldwell, B.M. 'Screening the environment'. American J. Orthopsychiatry, 1978, 48(1), p.114-120.

Bronfenbrenner, Urie. 'Developmental research, public policy, and the ecology of childhood'. Child Development, 1974, 45, 1-5.

——————————— 'Is early intervention effective?' in M. Guttentag and F. Struening (eds) Handbook of Evaluation Research (vol. 2). Beverly Hills: Sage Publications, 1975.

——————————— 'Toward an experimental ecology of human development' in American Psychologist, V. 32, p.513-531, 1975.

——————————— 'Analysis of Family Stresses and Supports'. Working paper No. 3, June 1978.

Bronzaft, A.L. and McCarthy, D.P. 'The effect of elevated train noise on reading ability' in Environment and Behaviour, V. 7, No. 4, Dec. 1975.

Caldwell, B.M. Home Observation for Measurement of the Environment. Little Rock, Arkansas, 1978.

Caldwell, B.M., Bradley, R.H. and Elardo, R. 'Early stimulation' in J. Wortis (ed.) Mental Retardation and Developmental Disabilities: an Annual Review. N.Y., Brunner/Mazel, 1975 (Vol. 9).

Chazan, M. 'Towards a comprehensive strategy for disadvantaged pre-school children?' in Early Child Development and Care, Vol. 6, N.1, 1979, p.37-48.

Czarkowski, M., Firkowska-Mankiewicz, A., Ostrowska, A., Sokotowska, M., Stein, Z., Susser, M. and Wald, I. 'Some ecological, school and family factors in the intellectual performance of children. The Warsaw study - preliminary results' in Research to Practice Mental Retardation, Vol. 1, Peter Mittler and Jean M. de Jong (eds), 1977, p.89-98.

Davie, Ronald. 'Children and families at risk: current problems and current policies' in Early Child Development and Care, Vol. 6, N.1, 1979.

Day, J.P. 'Lead pollution in Christchurch'. N.Z. J. Science, 1977, 20, p.395-406.

Elley, W.B. and Irving, J.C. 'Revised socio-economic index for New Zealand'. N.Z. J. Educational Studies, 1976, 11, 25-36.

Falender, C.A. and Mehrabian, A. 'Environmental effects on parent-infant interaction'. Genetic Psychology Monographs, 1978, 97, 3-41.

Garbarino, J. 'A preliminary study of some ecological correlates of child abuse: the impact of socioeconomic stress on mothers' in Child Development, 1976, 47, 178-185.

Garber, H. and Heber, F.R. 'The Milwaukee project:
    indications of the effectiveness of early intervention
    in preventing mental retardation' in Peter Mittler
    (ed) Research to Practice in Mental Retardation: Care
    and Intervention, Vol. 1, 1978.

Girardeau, F.L. 'Cultural-familial retardation' in
    Norman Ellis (ed.) Review of Research in Mental
    Retardation. Academic Press, N.Y., 1971, Vol. 5,
    p.303-348.

Gump, Paul V. 'Ecological psychology and children'.
    Review of Child Development Research, Vol. 5,
    1975, p.75-126.

Heber, F.R., Dever, R. and Conry, J. 'The influence of
    environmental and genetic variables on intellectual
    development' in Prehm, Hamerlynck and Crosson (eds)
    Behavioural Research in Mental Retardation.
    Univ. of Oregon, 1968.

Horowitz, F.D. and Paden, L.Y. 'The effectiveness of
    environmental intervention programmes' in
    Review of Child Development, Vol. 3, 1973, p.331-402.

Jackson, R. 'Mild mental retardation: myth and reality'.
    British J. Mental Subnormality, Vol. 23, 1977, 76-82.

Leiter, K.C.W. 'Ad hocing in the schools: a study of
    placement practices in the kindergartens of two
    schools' in Language Use and School Performance.
    Academic Press, Inc., 1974, p.17-75.

Mills, J.H. 'Noise and children: a review of literature'.
    J. Acoustic Soc. Am., 1975, 58(4), p.767-779.

Poulton, Lin and Geoff. 'Neighbourhood support for young
    families' in Early Child Development and Care, 1979,
    6(1), 73-82.

Proshansky, H.M. 'Environmental psychology and the real
    world'. American Psychologist, 1976, p.303-310.

Ramey, C.T., Mills, F.A., Campbell, F.A. and O'Brien, C.
    'Infants' home environments: a comparison of high-risk
    families and families from the general population'.
    American J. Mental Deficiency, 1975, 80(1), p.40-42.

Ramey, C.T., Stedman, D.J., Borders-Patterson, A. and
    Mengel, W. 'Predicting school failure from information
    available at birth'. American J. Mental Deficiency,
    1978, 82(6), p.525-534.

Raven, J.C. Guide to Using the Coloured Progressive
    Matrices. H.K. Lewis and Co. Ltd, London, 1956.

Robinson, H.B. and Robinson, N.M. The Mentally Retarded
    Child, 2nd Edition, McGraw-Hill Book Co., N.Y., 1976.

Robinson, N.M. 'Mild mental retardation: does it exist in
    the People's Republic of China?' Mental Retardation,
    August 1978, p.295-298.

Sameroff, A.J. 'Early influences on development: fact or
    fancy?' in Merrill-Palmer Quarterly, 1975, 21(4),
    p.267-294.

Sameroff, A.J. and Chandler, M.J. 'Reproductive risk and
    the continuum of caretaking casualty. Review of Child
    Development Research, Vol. 4, 1975, p.187-244.

Scarr-Salapatek, S. 'Genetics and the development of
    intelligence' in Review of Child Development Research,
    Vol. 4, 1975, p.1-58.

Schaefer, E.S. 'Scope and focus of research relevant to
    intervention: a socioecological perspective' in
    T.D. Tjossem (ed.) Intervention Strategies for High
    Risk Infants and Young Children. University Park
    Press, 1976, p.273-250.

Smart, R., Wilton, K.W. and Keeling, B. 'Teacher factors
    and special class placement'. Journal of Special
    Education, 1979 (in press).

Town and Countryside. 'Slow speed roads'. J. N.Z. Urban
     Development Association, 1978, 6(1), p.18-21.

Tzuen-Jen Lei. 'Family socio-cultural background and
     the behavioural retardation of children'. J. Health
     and Social Behaviour, Vol. 13, 1972, p.318-326.

Wachs, T.D., Uzgiris, I.C. and Hunt, J. McV. 'Cognitive
     development in infants of different age levels and from
     different environmental backgrounds in Q. Merill-Palmer
     (ed.) Behavioural Development, Vol. 17, 1971, p.288-317.

Wilton, K.W. 'Early intervention: social and emotional
     adjustment'. Keynote address to Australian Group for
     the Scientific Study of Mental Deficiency - Australian
     Assn. on Mental Retardation Conference, Sydney, October
     1979.

Wilton, K. and Barbour, A. 'Mother-child interaction
     in high-risk and contrast preschoolers of low socio-
     economic status'. Child Development, Vol. 49, 1978
     (in press).

Wilton, K.W. and Cosson, L.D. 'Employment and adjustment
     of special class graduates in a New Zealand city'.
     Australian Journal of Mental Retardation, Vol. 4,
     1977, p.3-7.

Winer, B.J. Statistical Principles in Experimental Design
     (2nd ed.). N.Y., McGraw-Hill, 1971.

Zigler, E. 'National crisis in mental retardation
     research'. American Journal of Mental Deficiency,
     1978, 83(1), p.1-8.

Zigler, E. and Trickett, P.K. 'IQ, social competence, and
     evaluation of early childhood intervention programmes'.
     American Psychologist, 1978, p.789-798.

Table 1. Rate of Return of Usable FCQ per N Delivered to Parents

School	N of FCQ Distributed to School	N of FCQ undelivered to parents	N of FCQ Returned	N of FCQ Usable	% Return (Usable FCQ to Delivered)
1	108	1	88	87	81.3
2	20		17	16	80.0
3	66	2	59	59	92.2
4	48		44	44	91.7
5	79		66	66	83.5
6	30		28	28	93.5
7	129		104	101	78.3
8	35		34	34	97.1
9	77	1	62	61	80.3
10	80	1	63	62	78.5
11	43		35	35	81.4
12	10		7	7	70.0
13	79	2	66	66	85.7
14	46		40	40	87.0
Total	850	7	713	707	84.0

Table 2. Means, Medians and Standard Deviations of RCPM Raven Scores of
850 Christchurch Children (Possible Score = 36)

		Age	
	6	6½	7
N	183	386	281
Mean	16.97	18.56	20.25
Median	16.35	18.30	20.52
Standard Deviation	5.81	5.79	5.60

Table 3. Means and Standard Deviations for Academic and Social Scores
of 850 Christchurch Children

	Academic		Social	
N	850	N		850
Possible Range	3 - 15	Possible Range		5 - 25
Mean	8.86	Mean		13.60
Standard Deviation	2.70	Standard Deviation		3.72

Table 4. Principal Components Analysis of Social Items[†] (one factor)
of TRAS[*]

TRAS Items	Factor I
D	768
E	819
F	798
G	823
H	656
Eigenvalue	3.393
Percentage of Variance	67.9

[†]decimals omitted
[*]Appendix A

Table 5. Means and Standard Deviations (SDs) of Variables Used
to Predict RAVEN Percentiles, Academic and Social Scores
(N = 707).

Variable	Mean	SD
Number of parents in home	1.87	0.34
Step-parent in home	0.06	0.24
Single widow/widower	0.03	0.18
Other single	0.10	0.30
SES of the Family	3.67	1.52
Parents employed	0.59	0.49
Secondary employment of father	0.06	0.23
Secondary employment of family	0.02	0.14
Independent income of family	0.17	0.37
Level of income of family	4.14	1.24
Mother's Secondary schooling	2.91	1.08
Father's Secondary schooling	2.78	1.39
Mother's level of tertiary education	0.69	1.00
Father's level of tertiary education	0.98	1.03
Mother's qualifications	0.36	0.79
Father's qualifications	0.57	0.83
Special class	0.02	0.13
Special education	0.01	0.09
Facilities	4.22	1.24
Additional facilities	2.21	1.93
Family church attendance	0.73	0.87
Mobility	2.18	1.50
Family car	0.90	0.44
Child's play	198.32	90.63
Housing density	126.60	43.53
House value	243.15	130.52
Home ownership	0.78	0.41
Others in home	0.06	0.24
Traffic density	3.23	1.23
State or catholic school	0.89	0.31
Percentage of Referrals to Special Class	4.42	3.43
Riskys in School	12.82	9.10
Fair rent	0.13	0.34
Quality of accommodation	4.11	1.06
Noise level	2.76	0.53
Access to facilities	392.66	81.89
Adequacy of transport	4.07	1.09
Traffic restriction	3.74	1.21
Okays in school	32.77	11.16
Birth order	0.37	0.49
Number of siblings	1.86	1.24
Ethnic status	0.88	0.33
Age of mother	24.96	6.54
Birth trauma	0.11	0.31
Childhood illness	0.07	0.26
Plunket	0.83	0.38
Pre-school attendance	1.66	0.72
Mother/single father working during pre-school years	0.35	0.48
Time employed during pre-school years	0.75	1.25
Type of care	0.05	0.22

Table 6. Summary of Multiple Regression of Predictor Variables for
          RAVEN Coloured Progressive Matrices.

Variable	Multiple R	R^2	R^2 change
SES of the family	0.24	0.06	0.057
Mother's tertiary educ	0.28	0.08	0.021
Others in home	0.31	0.10	0.018
Okays in school	0.33	0.11	0.016
Father's qualifications	0.34	0.119	0.007
Fair rent	0.35	0.12	0.005
State or catholic school	0.36	0.13	0.004
Income of family	0.36	0.13	0.004
Other single	0.37	0.14	0.007
Family car	0.38	0.14	0.004
Independent income of family	0.38	0.15	0.003
Mother's Secondary schooling	0.39	0.15	0.003
Facilities	0.39	0.15	0.003
% Referrals to special class	0.40	0.16	0.003
Age of mother	0.40	0.16	0.003
Quality of accommodation	0.40	0.16	0.002
Special education	0.40	0.16	0.002
Access to facilities	0.41	0.17	0.002
Step-parent in the home	0.41	0.17	0.002
No. parents in home	0.41	0.17	0.002
Father's tertiary education	0.41	0.17	0.001
Traffic restriction	0.41	0.17	0.001
Number of Siblings	0.41	0.17	0.001
Housing density	0.42	0.17	0.002

Table 7. Summary of Multiple Regression of Predictor Variables for
Academic Scores.

Variable	Multiple R	R^2	R^2 change
SES of the family	0.27	0.07	0.074
Mother's Secondary schooling	0.32	0.10	0.027
Okays in school	0.35	0.12	0.19
Noise level	0.36	0.13	0.008
Other single	0.36	0.13	0.005
Father's Secondary schooling	0.37	0.14	0.007
Adequacy of transport	0.38	0.15	0.006
Special class	0.39	0.15	0.005
Birth order	0.39	0.15	0.003
Fair rent	0.40	0.16	0.003
Mobility	0.40	0.16	0.003
Others in home	0.40	0.16	0.002
Step-parent in the home	0.40	0.16	0.002
Birth trauma	0.41	0.16	0.001
Childhood illness	0.41	0.17	0.001
Riskys in school	0.41	0.17	0.001
Father's qualifications	0.41	0.17	0.001
Father's level of tertiary education	0.41	0.17	0.001
Ethnic status	0.41	0.17	0.001
Independent income of family	0.41	0.17	0.001

Table 8. Summary of Multiple Regression of Predictor Variables
for Social Scores.

Variable	Multiple R	R^2	R^2 change
SES of the family	0.23	0.05	0.052
Okays in school	0.26	0.07	0.014
Adequacy of transport	0.28	0.08	0.010
Traffic restriction	0.29	0.08	0.008
Mother's Secondary schooling	0.30	0.09	0.006
Special class	0.31	0.09	0.004
Noise level	0.31	0.10	0.004
Secondary employment of father	0.32	0.10	0.003
% Referrals to special class	0.32	0.10	0.003
Pre-school attendance	0.33	0.11	0.003
Age of mother	0.33	0.11	0.002
Mobility	0.33	0.11	0.002
Time employed during pre-school years	0.34	0.11	0.002
Mother/single father working during pre-school years	0.34	0.11	0.002
Fair rent	0.34	0.12	0.002
Father's Secondary schooling	0.34	0.12	0.001
Other single	0.35	0.12	0.001
Housing density	0.35	0.12	0.001
Birth order	0.35	0.12	0.001
Parents employed	0.35	0.12	0.001

Table 9.   Summary of Multivariate Analysis of Variance of Scores for
          High vs Moderate vs Low Risk Subjects on the Environmental
          Variables: Risk Status Main Effects.

Test of Roots	F	df(hyp)	df(error)	p less than	R
1 through 2	2.492	80.0	520	0.001	0.625
2 through 2	1.118	39.0	260	0.300	0.379

UNIVARIATE F TESTS

Variable	F(2,299)	Mean Square	p less than	Standardized Discriminant Function Coefficients 1
Parents	0.11	0.01	0.893	-0.44
Step-parents	0.79	0.04	0.454	0.29
Solo Widow	1.88	0.06	0.155	0.03
Other Solo	0.09	0.01	0.916	0.04
SES Family	25.69	55.79	0.001	-0.38
Both Employed	0.17	0.04	0.840	0.05
Independent Income	3.57	0.59	0.029	0.02
Family Income	15.30	22.83	0.001	0.33
Mother Schooling	16.26	18.70	0.001	0.26
Father Schooling	11.07	15.20	0.001	-0.00
Mother Tertiary	7.81	8.74	0.001	-0.03
Father Tertiary	7.47	7.84	0.001	0.13
Mother's Qualifications	5.94	4.78	0.003	-0.15
Father's Qualifications	11.77	9.77	0.001	0.03
Special Class	5.63	0.11	0.004	-0.15
Facilities	2.51	3.89	0.083	-0.16
Church Affiliation	1.42	1.06	0.244	0.15
Family Mobility	0.29	0.33	0.751	-0.01
Family Car	7.72	0.72	0.001	0.20
Child Play	1.83	14 192.50	0.162	-0.03
Housing Density	4.82	7 684.15	0.009	-0.16
House Value	2.98	47 110.12	0.053	-0.05
Home Ownership	7.69	1.21	0.001	0.18
Others in Home	3.14	0.14	0.045	-0.29
Traffic Density	1.07	1.67	0.346	0.12
Referrals to School	0.44	4.77	0.647	0.25
Riskys in School	27.05	2 030.55	0.001	-0.22
Quality of Accommodation	5.26	5.70	0.006	0.02
Noise	0.52	0.14	0.593	0.01
Access to Facilities	1.53	9 010.80	0.218	0.20
Transport	4.89	7.42	0.001	0.04
Traffic Restriction	4.89	7.41	0.008	0.26
Okays in School	17.56	2 185.95	0.001	0.33
Birth Order	3.59	0.84	0.029	0.24
Siblings	1.44	2.07	0.238	-0.12
Race	0.85	0.07	0.430	-0.10
Birth Trauma	0.27	0.03	0.764	-0.02
Childhood Illness	0.13	0.01	0.883	00.04
Preschool	1.15	0.53	0.317	0.06
Time employed Preschool Years	1.29	1.95	0.277	-0.19

Table 10. Summary of Means and Standard Deviations for Risk Status and Sex.

Groups				Variable									
Sex	Risk Status	N		No. of parents	Step-parent	Widow/ widower	Other single	SES of family	Both empl.	Indep. income	Family income	Mother Schling	Father Schling
Male	Low	99	M	1.919	0.071	0.020	0.071	2.939	0.657	0.242	4.626	3.364	3.384
			SD	0.274	0.258	0.141	0.258	1.463	0.477	0.431	1.242	1.092	1.345
	Med.	29	M	1.828	0.000	0.069	0.103	4.690	0.552	0.103	3.621	2.414	2.724
			SD	0.384	0.000	0.258	0.310	1.198	0.506	0.310	1.015	1.053	0.841
	High	20	M	1.900	0.000	0.050	0.150	4.700	0.650	0.100	3.700	2.350	1.950
			SD	0.308	0.000	0.224	0.366	1.342	0.489	0.308	1.081	0.813	0.999
Female	Low	122	M	1.852	0.049	0.025	0.131	3.311	0.541	0.254	4.443	3.148	3.107
			SD	0.356	0.217	0.156	0.339	1.575	0.500	0.437	1.280	1.081	1.112
	Med.	19	M	1.947	0.053	0.000	0.053	4.316	0.579	0.105	3.526	2.368	2.316
			SD	0.229	0.229	0.000	0.229	1.250	0.507	0.315	0.905	0.955	1.108
	High	16	M	1.813	0.063	0.125	0.063	4.063	0.500	0.125	3.938	2.875	3.188
			SD	0.403	0.250	0.342	0.250	1.569	0.516	0.342	1.436	1.310	1.223

Table 10. Summary of Means and Standard Deviations for Risk Status and Sex (Cont.).

Sex	Risk Status	N		Trans-port	Traffic Restrn.	Okays in Schl.	Birth order	No. of siblings	Ethnic status	Birth trauma	Child illness	Attend P/Sch.	Time Mth. empl. P/S.
Male	Low	99	M	4.283	3.960	35.980	0.374	2.000	0.889	0.111	0.101	1.687	0.879
			SD	0.990	1.177	11.235	0.486	1.270	0.316	0.316	0.303	0.680	1.264
	Med.	29	M	4.069	3.759	25.586	0.138	2.034	1.000	0.103	0.103	1.655	0.621
			SD	1.132	0.988	8.135	0.351	1.117	0.000	0.310	0.310	0.614	1.237
	High	20	M	3.300	3.450	24.800	0.250	2.050	0.800	0.050	0.050	1.700	1.400
			SD	1.261	1.146	10.536	0.444	1.356	0.410	0.224	0.224	0.733	1.569
Female	Low	122	M	4.352	3.836	37.115	0.434	1.639	0.943	0.115	0.057	1.746	0.549
			SD	0.908	1.275	11.533	0.498	1.061	0.234	0.320	0.234	0.637	1.129
	Med.	19	M	3.842	3.053	28.947	0.263	2.316	0.842	0.053	0.000	1.421	0.737
			SD	0.834	1.353	10.491	0.452	1.701	0.375	0.229	0.000	0.838	1.327
	High	16	M	4.125	3.250	34.250	0.438	1.938	0.938	0.125	0.125	1.563	0.625
			SD	0.885	1.528	13.704	0.629	0.929	0.250	0.342	0.342	0.814	1.147

Table 10. Summary of Means and Standard Deviations for Risk Status and Sex (Cont.).

	Groups				Mother tertiary	Father tertiary	Mother quals.	Father quals.	Spec. class	Facil- ities	Church affil.	Family mobility	Family Car	Child play
Sex	Risk Status	N												
Male	Low	99	M		1.020	1.242	0.636	0.828	0.000	4.323	0.737	2.111	0.960	199.455
			SD		1.116	1.196	1.025	1.088	0.000	1.194	0.840	1.491	0.198	95.017
	Med.	29	M		0.414	0.690	0.172	0.345	0.069	3.931	0.448	1.828	0.828	156.552
			SD		0.867	0.604	0.539	0.484	0.258	1.486	0.827	1.037	0.384	86.683
	High	20	M		0.550	0.650	0.000	0.150	0.100	3.750	0.500	2.200	0.700	187.700
			SD		0.887	0.745	0.000	0.366	0.308	1.552	0.761	1.361	0.470	109.380
Female	Low	122	M		0.943	1.270	0.549	0.918	0.008	4.287	0.910	2.189	0.910	189.934
			SD		1.123	1.029	0.963	0.950	0.091	1.146	0.891	1.301	0.288	77.117
	Med.	19	M		0.368	0.789	0.263	0.316	0.000	3.895	0.789	2.263	0.789	192.474
			SD		0.761	0.855	0.562	0.478	0.000	1.197	0.855	1.195	0.419	74.635
	High	16	M		0.500	0.875	0.375	0.375	0.063	4.250	0.875	2.250	0.813	227.625
			SD		0.966	0.885	0.885	0.806	0.250	1.438	1.025	1.612	0.403	108.290

The column header spanning the variables is labelled "Variable".

FAMILY AND COMMUNITY STUDY

University of Canterbury Christchurch 1 New Zealand

TEACHER'S RATINGS OF ACADEMIC AND SOCIAL BEHAVIOUR

Child's Name: _____

Would you please decide where the child would stand on the continuum for each behaviour specified below by extremes of behaviour.

PLEASE CIRCLE the appropriate number.

ACADEMIC BEHAVIOUR

Reading ability is well above the average for his/her age.	1 2 3 4 5	Reading ability is well below the average for his/her age.
Maths ability is well above the average for his/her age.	1 2 3 4 5	Maths ability is well below the average for his/her age.
Copes very well when set an academic task.	1 2 3 4 5	Needs a lot of extra help to complete an academic task.

SOCIAL BEHAVIOUR

Mixes very well with other children and is often a leader.	1 2 3 4 5	Seldom mixes with other children, often rejects or is rejected by other children.
Communicates very well with adults.	1 2 3 4 5	Very uncommunicative with adults.
Very independent and able to cope easily with own needs.	1 2 3 4 5	Very dependent.
During classroom activities is very outgoing, actively and constructively participating.	1 2 3 4 5	During classroom activities is very withdrawn and has difficulty participating.
During classroom activities is very co-operative, gets on with what is required.	1 2 3 4 5	During classroom activities is very disruptive and often a nuisance.

UNIVERSITY OF CANTERBURY
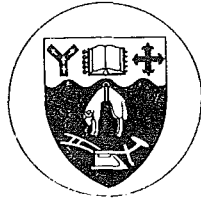
FAMILY AND COMMUNITY

STUDY

1979

This questionnaire is about children in families and the communities

in which they live.   It is part of a study we are doing at the

University of Canterbury.   PLEASE TAKE PART

WHY YOU

> You have a 6-7 year old child.   All
> families of 6-7 year olds from a large
> number of Christchurch schools are being
> invited to participate in this study.

HOW IMPORTANT IS IT

> We believe that the information from
> this study will be of great practical
> value to all who care about children
> and their future well-being.

WILL YOU SEE THE RESULTS

> On completion of the study a copy of the
> findings will be sent to your school.
> This report will be available to all
> interested parents.   In addition, copies
> may be obtained from P. A. Densem,
> Education Department, University of
> Canterbury.

CONFIDENTIALITY

> Please be assured that your answers will
> be kept in the strictest confidence.   To
> safeguard confidentiality DO NOT PUT YOUR
> NAME ON THIS PAPER and remove your child's
> name slip from the envelope.

Only the researcher, Mrs Prue Densem, has access to the information you give.
None of the information will be released to anyone else.   If you wish to
enquire further about this or if you have any difficulty with the questionnaire
please do not hesitate to contact me at the University, Phone 482-009, Ext.
8648 or at home, Phone 489-919.

Prue Densem

Education Department,
University of Canterbury.

> IT IS VERY IMPORTANT THAT YOU COMPLETE AND RETURN THIS QUESTIONNAIRE.
> PLEASE ANSWER AS HONESTLY AS YOU CAN.

Thank you for your cooperation.

THE QUESTIONNAIRE

PART I

(1)   How many people are living permanently in your household? _____

(2)   If this number includes persons outside the immediate family please

      check (√) below who they are.

                        Grandparent/s

                        Other relative/s

                        Boarder/s

                        Others (please specify)

      _____

(3)   How many children are there in the family?   _____

(4)   Which of the following statements best describes the present
      family situation?   Please tick one
                                                           box

          There are two natural or adoptive parents.

          There are two parents but one is a step-parent.

          There is one natural or adoptive parent (widow/widower)

          There is one natural or adoptive parent (NOT widow/widower)

          If the above statements do not describe your situation
          please state below the particular circumstances of your
          household (e.g., grandparents, foster home, etc.)

      _____

(5)   Does your family have connections with a church or religious group?

                                                  Yes

                                                  No

      If you answered 'yes' how often do you attend church or
      religious meetings?
                              Frequently

                              Occasionally

                              Rarely

PART II

Please complete for both mother and father ONLY if both parents are living with the family. In any other circumstances complete only the section applicable to you.

(1)   Number of years attended high school.   Mother Father

                          2 years or less

                          3 years

                          4 years

                          5 years or more

(2)   Did you ever attend a special class or special school
      for: Mother Father

                          gifted children

                          slow learners

                          other special groups (deaf,
                          blind, etc.) (please specify)

                          _____

(3)   If any of the following statements apply to you please put a tick
      in the appropriate column.   Mother Father

              Attended University

              Attended Training College

              Attended Technical Institute

              Trained as a nurse

              Undertook apprenticeship

              Undertook other professional training

(4)   Please state ANY qualifications you have gained since leaving school.

          Mother   Father

PART III

Please complete for both mother and father ONLY if both parents are living with the family.   In any other circumstances complete only the section applicable to you.

Section 1:   To be answered by the MOTHER of the family.

What is your occupation?   _____

Are you in paid employment at the present time?   YES / NO

What is the approximate number of hours per week
spent in secondary employment?   _____

Do you receive any maintenance payments?   YES / NO

Do you receive any income from other sources,
e.g., Tertiary Bursary, shares, property, etc.   YES / NO

What is your TOTAL income per year (approx.)?   Please tick one box

No income	
Under $4,000	
$4,000 - $9,999	
$10,000 - $12,999	
$13,000 - $16,999	
$17,000 and over	

PART III

Section 2:   To be answered by the FATHER of the family.

What is your occupation?   _____

Are you in paid employment at the present time?   YES / NO

What is the approximate number of hours per week
spent in secondary employment?   _____

Do you receive any maintenance payments?   YES / NO

Do you receive any income from other sources,
e.g., Tertiary Bursary, shares, property, etc.   YES / NO

What is your TOTAL income per year (approx.)?   Please tick one box

No income	☐
Under $4,000	☐
$4,000 - $9,999	☐
$10,000 - $12,999	☐
$13,000 - $16,999	☐
$17,000 and over	☐

PART IV

(1)   How many times in the last <u>seven</u> years have you moved house?

Have not moved

Once or twice

Three times

More than three

(Please specify)

(2)   Is your home: Rented

(Tick one)

Owned

(3)   If your home is rented:

Weekly rent is $_____

Rent is paid to:
(Tick one)   Housing Corporation

Private Landlord

Local Body Council

Private Company

Armed Forces

Other (Please specify)

_____

In your opinion, the rent you pay is: (Please tick one box)

Too low

About right

Too high

(4)   How many rooms does your home have?   (Please do <u>NOT</u> include toilet/
bathroom/laundry.   _____

(5)   What do you think of the quality of your present accommodation?

Very good

Good

Adequate

Barely adequate

Poor

PART V

1.　Please tick in the box below ONE statement that best describes the situation in your neighbourhood.

This neighbourhood is very noisy

This neighbourhood is fairly noisy

This neighbourhood is generally quiet

2.　Where you live, how much does noise disturb you? Please tick the appropriate column for EACH item below

	Often a Nuisance	Sometimes a nuisance	Rarely a nuisance
Traffic noise			
Factory noise			
Railway noise			
Householders' noise			

Other (please specify)

3.　How easy is it for you to reach the following community facilities? Please check (✓) each item even if you do not use them.

	Very easy	Easy	Within reach	Diffi-cult	Very Diffi-cult	Not sure where facility is
Shops						
Library						
Playground/park						
Doctor						
Plunket Nurse						
Creche/Daycare Centre						
Pre-School (Kindergarten or Playcentre)						

4. Apart from going to work, how often do you use the following means of transport?   Place a tick in the appropriate column alongside each item.

	Always	More than ½ the time	About ½ the time	Sometimes	Rarely or never
Private car					
Motorcycle					
Bicycle		✓			
Public Transport				✓	
Walk				✓	

5. How adequate is your transport?   (Please tick one box below)

Very good

Good ✓

Adequate

Barely adequate

Poor

6. If you are dissatisfied with your transport situation, please state in the space provided how you think it could be improved.

Okay when like, buses perhaps too infrequent tho', could be more frequent

7. Over the past 7 years, to what extent have you and your family made use of the facilities listed below?   Place a tick in the appropriate column alongside each item.

	Regularly	As often as needed	Less than would like	Never
Doctor		✓		
Plunket				
Library	✓			
Playground/Park	✓			
Creche or Day-care centre				
Preschool (Kindergarten or Playcentre)				

8. If you have answered "less than would like" or "Never" for any of
the items listed in the previous question (Q.7), please state your
reasons in the appropriate spaces below.

Doctor _____

Plunket _____

Library _____

Playground or park _____

Creche or day-care centre _____

Pre-school (Kindergarten or Playcentre _____

_____

9. Please list in the space provided below any facilities (e.g., clubs,
food co-operatives, hobby classes, support groups etc.) in your
neighbourhood which you use. _____

_____

_____

_____

10. List below any facilities (as for Q.9) which you would like to use but
you are not sure whether they are available in your area. _____

_____

_____

_____

11. List below any facilities (as for Qs. 9 & 10) which you know exist
locally and which you would like to use but cannot for various reasons.

        Facilities   Reasons for non-use

_____   _____

_____   _____

_____   _____

_____   _____

_____   _____

_____   _____

PART VI

```
┌─────────────────────────────┐
│   YOUR SIX - SEVEN YEAR OLD  │
└─────────────────────────────┘
```

The following questions apply ONLY to your 6-7 year old child.

1.   Child's date of birth _____

2.   Sex of child   M / F

3.   Place of child in the family, (e.g., first of 4 children) _____

4.   Child's ethnic background (European, Maori, Other, Polynesian, Asian, etc.)

      _____

5.   Mother's age at the time the child was born   _____ years

6.   Was his/her birth a normal delivery?   YES / NO

      If the birth was not normal please give further details. _____

      _____

7.   Has he/she had any serious illnesses?   YES / NO

      If "yes" please specify. _____

8.   Did he/she attend Plunket? (Please tick one box)

                                  Regularly   ┌────┐
                                                  ├────┤
                                  Occasionally   ├────┤
                                                  ├────┤
                                  Rarely or Never └────┘

9.   Did he/she attend any of the following preschools?   (Please check
      each item)

	Regularly	Occasionally	Never
Play-centre			
Kindergarten			
Creche or day-care centre			

10.   Did the mother work at any time while the child was a
      preschooler?
      (If you were a single father during   YES / NO
       this time please answer)

11. If you were a <u>working mother</u> or <u>single father</u> during your child's preschool years, please complete this question. If you did not work during this time please turn to next page.

(a) How long (approx.) were you employed during your child's preschool years?

	Full time	Part Time
Less than one year		
One - two years		
Two - three years		
More than three years		

(b) If you feel that the above categories do not describe your work arrangements, please comment further.

_____

_____

(c) While you worked, what child-care arrangements were used? Please tick <u>ANY</u> of the items listed below which apply.

Playcentre		Relative	
Kindergarten		Help in the home	
Day-care Centre		Child with you at work	
Neighbour		Other (please specify)	

_____

(d) How did you feel about these child-care arrangements? (Tick <u>ONE</u> box)

They were very acceptable

They were quite adequate

Was unhappy with these arrangements

(e) Would you have preferred other child-care arrangements? YES / NO

(f) If "yes" please state your preference. _____

(g) What prevented you having the arrangements of your choice?

_____

12.   Does your child belong to a public library?   YES / NO

13.   Where does your child like to play?   Please check each item.

	Always	Frequently	Often	Occasionally	Never
At home					
Around the neighbourhood					
At the playground/park					
At a friend's place					

14.   Does traffic in your area restrict your child's play opportunities?
      Tick ONE box.

      Very much   ☐

      Quite a lot   ☐

      Sometimes   ☐

      Not much   ☐

      Rarely or never   ☐

15.   How heavy is the traffic in your street?   Please tick the statement
      which best describes your street.

      It is a main road with lots of traffic.   ☐

      It is a busy street.   ☐

      It is an average suburban street.   ☐

      It is a quiet suburban street.   ☐

      It is a 'no exit' road with little traffic. ☐

THANK YOU VERY MUCH FOR YOUR CO-OPERATION.