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The development of English as a second language in Aboriginal and migrant children : A pilot study

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The Development of English
as a Second Language
in Aboriginal and Migrant Children

A Pilot Study

L McGregor

July 1978

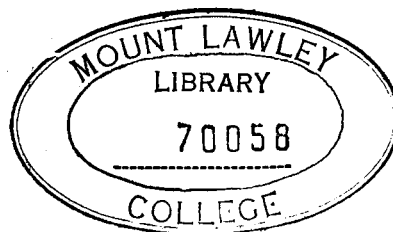
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**THE DEVELOPMENT OF ENGLISH AS A SECOND LANGUAGE
IN ABORIGINAL AND MIGRANT CHILDREN**

A PILOT STUDY



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Report Compiled by: A L McGregor

July 1978

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Dr T Metcalfe, Aboriginal Education Section, WA Education Department

Mr K Dinsdale, Child Migrant Education Section, WA Education Department

Mrs L Strickland, Formerly Headmistress, North Perth Junior Primary School, and the teachers of her school.

Mrs C Renwick, Formerly Acting Headmistress, Lockridge Junior Primary School.

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The Chief Investigator particularly wishes to thank the student research assistants (See Appendix D) and members of the research team to whom all the credit is due for what has been achieved in the pilot study. Any faults and blemishes in the present report are the Chief Investigator's responsibility.

A PILOT STUDY
ON
THE DEVELOPMENT OF ENGLISH AS A SECOND LANGUAGE OR STANDARD ENGLISH AS
A SECOND DIALECT AMONGST ABORIGINAL AND MIGRANT CHILDREN

Background

Research programs developed in Queensland under the Van Leer Foundation Project and the Mount Gravatt Teachers College Language Research Project have yielded practicable approaches for the gathering and analysis of speech data from children of various age groups. On the basis of this research it has been possible to study patterns of language development in first language and to develop appropriate literacy materials for children at various levels of primary education.

To date comparatively little is known about patterns of second language development. The question as to whether structures develop in the same sequence and at the same rates as with first language development has so far received only tentative answers. Some studies have been made with individual children (e.g. Ravem, 1966) but, as far as is known, no large scale analysis of the development of English as a second language has yet been carried out. In view of the world wide commitment to the teaching and learning of English as a second or foreign language it seems scarcely necessary to emphasise the potential value for methods and materials of such data should they become available.

It quickly became obvious to interested members of staff at the Mount Lawley College of Advanced Education that the Mt. Gravatt procedures and computer program would provide a most useful approach to the gathering and analysis of data from those learning English as a second language or as a standard dialect. A proposal was therefore submitted to the Educational Research and Development Committee to collect samples of speech of Aboriginal and migrant children from homes in which normal communication is in a language other than English or a dialect other than standard English, and to analyse differential patterns of language acquisition by such children.

The proposal envisaged that, initially, children would be sampled from the 5½ year level from four populations:

- (1) Migrant children, speakers of Portuguese and/or another migrant language as mother tongue.
- (2) Migrant children, speakers of Greek and/or another migrant language as mother tongue.
- (3) Aboriginal children, speakers of Wunambal or Nyangumarda as mother tongue.
- (4) Aboriginal children speaking English in dialect form.

Depending of the availability of sufficiently large populations, 10-15 children from each population would be recorded, each over one normal day. About two to three hours' language from each child would be transcribed together with data on the pragmatics of the situation and texts would be prepared for computerisation according to guidelines developed at Mt. Gravatt. The computer program would provide a concordance showing each word in context, listed alphabetically. From this information it would be possible to study developmental use of vocabulary and language units and to compare these with the first language data obtained from the Mt Gravatt study. (For a fuller account of the procedure to be used see Hart, Walker and Gray, 1977. At this point the Mt Lawley C.A.E. research team would also wish to record its warm appreciation of the full cooperation extended to it by Drs. Walker, Hart and Gray, and the ready access made available to Mt. Gravatt programs and materials.)

The proposal envisaged the continuation of this research in subsequent years with older samples of children and, if the language development appeared to vary significantly from first language samples, also with earlier stages such as the 2½, 3½ and 4½ age groups.

Plainly such a large-scale project involving a commitment to several years of work required preliminary investigation and trial. The research team (See Appendix A) therefore decided to institute a pilot study to establish the feasibility of the proposed procedures for data gathering and analysis.

THE PILOT STUDY

I AIMS

The pilot study was set up in order to:

1. Establish the practicability of using the equipment purchased or made to record migrant and Aboriginal children in school and home conditions. (See Appendix B for a list of equipment purchased.)
2. Establish links with the Western Australian Education Department in order to gain permission for and assistance with the procedures proposed to study the language of children under the Department's care.
3. Establish the feasibility of gaining permission and cooperation from migrant and Aboriginal families to record their children's language in school and home settings.
4. Establish the practicability of using Diploma of Teaching students under the supervision of members of the research team to record, transcribe and code the language of children to the stage where it would be ready for computer processing.
5. Establish the suitability of the Mt. Gravatt computer program for creating from the language data of migrant and Aboriginal children a meaningful concordance and morpheme count.
6. Establish procedures for analysing the data obtained and comparing them with the first language data obtained through the Mt. Gravatt study.
7. Establish the accuracy of costs estimated for the pilot study with a view to reanalysing the costs estimated for the full study.
8. Provide members of the research team with opportunities to participate in the pilot study and prepare themselves for the procedures to be adopted in the major study.

II DESIGN

The design proposed for the full study was scaled down for the pilot study in the following ways:

- a. The number of children to be studied and recorded would be from 10%-15% of the full sample. This would provide a pilot run of somewhat over 25% of the number of children processed at the same age level in the Mt. Gravatt study.
- b. While the full study requires the recording of a full day's speech from each child only the speech to be transcribed would be recorded

in the pilot study, a period of 3-4 hours for each child.

- c. Geographically no attempt would be made to travel to the north or east of the state to record the language of Aboriginal children.

The pilot study was therefore designed with the following main steps or stages:

1. Obtaining the permission of the W.A. Education Department to carry out the study and the cooperation of the schools involved.
2. Selecting the children to be recorded on the recommendation of the school principals and seeking the cooperation of the parents to allow the study to be carried out.
3. Instructing and preparing Diploma of Teaching third year students to act as research assistants.
4. Familiarising the children with the research equipment, the research students and the procedures to be used.
5. Recording the language of the selected children, some from the beginning of school till midday, some from midday till the end of the school day and some in the hours after school was over.
6. Transcribing the recorded language with notes on the pragmatics of the situations in which it was used, then coding the transcribed language for computer analysis.
7. Study of computer analysis to establish one, two and three word sequences being used and to compare such data with the first language data obtained from the same age-group in the Mt. Gravatt study.
8. Preparation of report.

III TIME SCHEDULE

April, 1977	Interviews with and written permission from the W.A. Education Department to carry out study.
May - June, 1977	Preparation of recording/radio equipment to be used in study.
July, 1977	Visits to schools recommended by the Department to seek the permission of school principals for the study and recommendation on children to be recorded.
August - September, 1977	Introduction, and preparation of students for procedures to be used in the study.

First week of October, 1977	Meeting with parents to explain and seek permission for the study.
First three weeks of October, 1977	Familiarisation of children with the equipment to be used, researchers to be working with them and procedures to be used.
Last week of October, 1977	Recording of language for analysis.
November, 1977	Transcription and coding of language recorded.
December 1977 - January 1978	Computer analysis of language data.
February - April, 1978	Study of data obtained.
May - June, 1978	Preparation of report.

IV PROCEDURES

1. Permission to carry out the study was granted in May, 1977 by Mr Tinsley Beck, Superintendent of Research, on behalf of the W.A. Education Department. (See Appendix C.) The Supervisor of the Child Migrant Education Section of the Department, Mr Kevin Dinsdale, readily granted permission for an approach to be made to classes under his care and helpfully recommended two schools where children of the required age group and background could be found.

2. The research team was most fortunate in gaining the wholehearted cooperation of Mrs Lorraine Strickland, then Principal of North Perth Junior Primary School. Mrs Strickland not only gave her approval for the recording of several of her pupils but personally assisted in every way in setting up the arrangements.

The initial approach to the parents and meeting with them were plainly crucial elements in the pilot study. In addition to normal reluctance to be singled out for research study it was to be expected that migrant parents from a non-English speaking background might well be peculiarly shy of such exposure. The vital elements in avoiding such reluctance were

(a) the good relationship between school principal and teachers and the parents concerned. A situation of genuine trust had obviously been established.

- (b) the assistance of interpreters in the session discussing the purpose and procedures for the research. These ladies patiently answered the parents' questions and reassured them in any anxieties they felt.
- (c) the assurance of complete anonymity in the study. Parents were informed that results of the study would be published but were assured that there would be no identification of the specific children or families involved.

Following the meeting with the parents to explain the project and answer any questions they might have, four migrant children between the ages of 5½ and 6½, three girls and one boy, were selected to participate in the study. The only requirement made (apart from age limitation) was that English should not be the language used in the home. While, in accordance with the assurance on anonymity, no names of migrant families can be published, the research team wishes to express its sincere thanks to the parents involved for their kind acceptance of the inconvenience entailed for themselves and their children in agreeing to participate in the study. The national distribution of the selected migrant children was two Macedonians, one Greek and one Italian.

By confining the geographical area for the pilot study to Perth it became virtually impossible to obtain for recording an Aboriginal child from a non English-speaking home. The sample was therefore completed by gaining the permission of Mrs C. Renwick, the Acting Principal of Lockridge Junior Primary School, and of the child's parents to record the language of one Aboriginal girl aged 6½ studying in that school. Once again the ready agreement by the parents and teachers to suffer the inconvenience necessitated by the procedures must be recorded with real gratitude.

It is at this point that the first difficulty in the study emerged. The Aboriginal child selected for recording on the recommendation of the school cannot be considered typical for several reasons. It was the view of the Principal that to select a more typical Aboriginal child might pose problems for the child, the school and the recording. The Principal's recommendation was of course accepted for the pilot study. Should it turn out to have equal validity in other situations it might suggest some difficulty in obtaining a sufficient sample of Aboriginal child language for analysis in the major study.

There is reason, however, to believe that in other situations such difficulties, while not entirely absent, could be overcome (viz. Sharpe, 1977).

3. The group of students trained and used as assistant researchers in the pilot study was composed of ten third year students who had registered for the unit, Language and English Method Research. This could be taken as one unit in a major in English or in Intercultural Studies. The unique structure of the unit was explained to each student prior to registration.

The use of senior students as research assistants presented important advantages both to the study and the students themselves. The execution of the major study with a sample of 40 to 50 children would of course be impossible without research assistants. It was vital, therefore, to try out senior students in this role to ascertain their capabilities in contacts with parents and pupils and in recording and transcribing the data. As far as the students were concerned participation presented advantages in two main areas. As students with a major specialisation in language the study gave a unique opportunity for the close study of a child's language and the factors influencing it. Secondly, as senior students, the opportunity to share in the planning and execution of an important research study presented them with training and experience in research methodology in a far more effective manner than any normal 'research methods' unit could offer. (See Appendix D for list of student research assistants.)

A tentative unit outline was given to all the student research assistants at the beginning of the unit. (See Appendix E.) It was explained that in view of the nature of the project changes in timing and order could be expected and would be arrived at by common agreement. After two explanatory sessions the nature of the class meetings altered and took the form either of practical training sessions in which equipment, transcribing and coding procedures were explained, demonstrated and tried out, or of planning sessions in which procedures were discussed and agreed. (See Appendix F for sample minutes of such a session.) It was evident from the application of these procedures that while the assistants were aware that the broad planning of the research had taken place prior to their participation they considered themselves very much involved in shaping the research as it developed, a responsibility which they gladly accepted in a most mature fashion. Some of their final

comments on future directions and procedures in the study are recorded later in this report.

A final not insignificant note on the student research assistants is that of the ten seven were mature-age students, further explaining the maturity of their approach to all the circumstances of the research situation.

4. Familiarisation procedures were for the purpose of getting the children to a stage where the equipment and the presence of the researchers were accepted as completely normal allowing for normal language activities in the school and home. A second aspect of these procedures was to try out the equipment in the school and home settings to ensure that satisfactory recording and observation could be carried out.

Typically the research students would visit the school and/or home on two or three occasions prior to the actual research recording, getting to know the child and parents. The radio recording equipment would be set up and shown to the child, then he or she was encouraged to proceed with normal activities while wearing the waistcoat and transmitter. This had been designed in such a way as to allow perfect freedom of movement to the child for normal activities. Other children in the playground tended to pay considerable attention to the equipment in early stages but this decreased as time went on. 'Blank spots' as far as recording went in the playground or home were noted by the assistant researchers and better positions, if available, were chosen. The child also had to be accustomed to the presence of a second researcher somewhere within seeing distance i.e. the researcher who was recording comments on the child's activities (the 'pragmatics' of the situation) to assist in the interpretation of the vocabulary and structures being used by the child. (See Appendix G (1) and (2) for equipment requirements and diagram of operation.)

5. For the actual recording to be analysed there were no differences in procedure from the practice of familiarisation sessions. Assistant researchers working in pairs had previously discussed and decided on the allocation of time periods for recording. Of the four pairs working with migrant children one recorded in the morning session of school (including playtime), one recorded from mid-morning till mid-afternoon (including lunchtime), one recorded from lunch time for the complete afternoon session of school while the final pair recorded after school

hours in the home situation. The student researchers working with the Aboriginal child recorded a morning session at school including playtime. (This pair was the only group recording in an open-area school.)

The complexity of the recording situation is well instanced by the so-called home recording carried out by the assistant researchers. Since both parents worked in their local family business the child returned from the school not to the family home but to the shop where she played with another member of the family in the back yard. The research assistants had therefore to find a suitable spot within the relatively narrow confines of this situation to record and observe without obtruding into the child's normal activities.

6. A period of approximately one month was allowed for the transcription from tape to paper of the children's recorded language and for the coding of the transcribed material. Assistant researchers were supervised by the members of the research team as they worked on the difficult task of transcription which turned out to be by far the lengthier part of the procedure. It was an unequal task as far as the pairs of students were concerned in that the amount of language recorded within the specified period varied greatly for the different children, the most 'talkative' recording from five to six times more language than the most 'silent'. The completed coding sheets were checked for format errors by the chief researcher and then passed on for computer processing. The completed print-out was available by mid-January 1979. A sample page of the print-out is attached as Appendix H. The computer count of one, two and three morpheme sequences was then analysed to prepare lists of the most commonly used words and sequences for comparison with first language results. (Please see Tables I-VII) The language of the Aboriginal child was analysed in a separate computer run from the migrant children's language as coming from a separate population.

V RESULTS

The following summary of results is set out in relation to the aims to be found under section I of the PILOT STUDY (see p. 3).

1. The equipment

(a) It proved possible to record sufficient samples of child language with the equipment purchased to make the pilot study and language analysis viable.

(b) The experiments with sashes and waistcoats for the carrying of the radio transmitter by the child resulted in a unanimous conclusion that the waistcoat was more stable and preferable. However, even with the waistcoat it would appear desirable to have some kind of flap that can be buttoned over the pocket carrying the transmitter to allow real freedom of movement without danger of the equipment falling out.

(c) In spite of the general statement in (a) above, considerable difficulty was experienced in making the recordings. There was much interference and loss of signal for a variety of reasons, indicating a need for more experimentation with recording procedures. The transmission/recording process seemed to be very easily interfered with according to the position of the child, walls and doors, other electrical interference (like painters using a drill in the school), the position of the aerial wire (it was found that the wires should not be too long and should hang at the side rather than at the back of the child), and even the recording of the observer's comments seemed to cause interference.

While these difficulties can in part be explained by inexperience in using the new equipment they also demonstrate the need for a considerably longer trial period by the researchers before the actual recording is carried out. In one case the assistant researchers found that only about one third of the spoken material was intelligible enough for transcription due to such transmission and reception difficulties.

2. Links with the W.A. Education Department and schools

This proved most satisfactory, first class cooperation being given at every level from senior administration to pupils in the schools. There can be no doubt that every facility will be given for the major study with considerable departmental interest in the results.

It also became plain that much of the possibility of success or failure in contacts with parents would hang on the relationships between schools and migrant or Aboriginal parents. From the experience of the Pilot Study there is every reason to hope that such relationships will on the whole prove to be both close and fruitful.

3. Permission and cooperation from Migrant and Aboriginal parents

Results in this respect were most satisfactory. In only one case did there appear to be any hesitation about giving full cooperation and even this doubt seemed to relate only to recording in the home.

It is to be noted, however, that one population (Aboriginal children from non English-speaking homes) was not sampled at all. One of the major difficulties was that recording in the north or east of the state would have required one set of equipment to be away at the time when it would be most needed, as only two full sets of equipment were available. With the completion of a third set of equipment there seems little reason to doubt that such samples can be obtained, probably most easily when third year students are on Assistant Teacher Program in such areas. This would allow the necessary period for gaining the confidence of the children concerned.

4. The use of third year Diploma of Teaching students as Assistant Researchers.

Once again this trial proved an almost unqualified success. The students concerned found the unit absorbing in its uniqueness and entered enthusiastically into every aspect of preparing, planning and recording. Their comments on procedures and timing proved invaluable. They proved adept at quickly achieving very relaxed relationships with parents and children; their relationship with school principals and staff will have to be a little more closely monitored though again this proved largely satisfactory.

Perhaps the most obvious point regarding student participation which emerged from the study was the length of time required to complete the work. Credit for one unit of work was given for satisfactory participation in the project. Even allowing for normal expectations regarding time required for home study in addition to the 45 class hours allocated to a unit at Mt. Lawley College of Advanced Education it became obvious that considerably more time was spent on the project than on a normal unit of work. (It is to the credit of the students concerned that not one of them indicated any resentment or lodged any complaint.) This, together with the rush experienced in certain segments of the project, suggests the desirability of spreading the work of this unit over two semesters rather than completing it in one as in the case of the Pilot Study. This would allow more time particularly for the following three important aspects of the work: getting acquainted with the children and families; researchers and children being completely familiar with the equipment; and the transcription of the recorded data.

A major consideration will be the obtaining of sufficient student researchers for the larger numbers envisaged in the full study. It is to be hoped that the success enjoyed by the students in the pilot study will encourage many students in future years to elect for this project.

5. The use of the Mt. Gravatt computer program.

The program proved completely adequate to deal with the language samples coded for it and no difficulties whatsoever were experienced in obtaining the print-out, word count, and count of one to five word sequences. It would thus appear to be clearly established that the program will be highly suitable for analysing the language samples gained from the major project, at least in the operational sense of the word 'suitable'.

6. Analysis of language data obtained.

The size of the sample naturally precludes any firm conclusions on the language of the children studied or any serious comparison with the first language sample studied in the Mt. Gravatt project. The purpose of carrying out the following analysis was therefore to establish the feasibility of carrying out such analyses and comparisons. The results obtained in themselves can be taken as no more than pointers towards possible outcomes of the major project.

A second purpose was to discover any problems associated with the proposal procedures. For example unlike the earlier study on first language development there had been no exclusion of children who could be said to deviate greatly from the norm. There were two reasons for accepting without further selection all children recommended by the schools for the sample. Firstly it was considered not improbable that in the proposed major study the numbers suggested for each sample would make the exclusion of any available children almost impossible. Secondly it was in any case considered that even should there be a desire to exclude the extremes there was as yet no reliable and valid test established for this population comparable to the Illinois Test of Psycholinguistic Abilities used with first language children. Naturally the effect of including children with a wide range of language abilities would be of considerable interest as an outcome of the pilot study. (See Hart, Walker and Gray, 1977, p. 2)

Following the Mt. Gravatt procedures - as would of course be necessary if any meaningful comparison were to be carried out - the single word and word sequence lists in this report were compiled according to an index of frequency of use. With both single words and word sequences raw frequency of use was, in the first place, multiplied by the percentage of the total sample of children who used the word or sequence. This gave an adjusted index of use which was called the communication index. The purpose of the adjustment was to reflect generality of usage rather than the degree of repetition that might be peculiar to one or two children.

Further, in the first language analysis it had been noted that the most frequently used single words were what might be described as signalling words such as 'my red hat' or 'on the roof'. Weighting of such words, leading to meaningful sequences, was achieved in word sequences by multiplying the index for the first word by an index for each subsequent word. The frequency of the first word in the sequence was always taken as that of the single word index, while the index for the second and third words used in the calculation was the actual frequency of occurrence in the particular sequence. The sequence index was again adjusted for generality of use across the whole sample (as with single words) and was further adjusted for comparison with other age group samples. (See Appendix I for a fuller explanation of the calculation of the communication indices.)

For the purpose of the pilot study it seemed unnecessary to list all the occurrences of single words or two-word and three-word sequences. The tables which follow therefore list the 30 most frequent occurrences in each analysis calculated by means of the communication indices described above and in Appendix I.

TABLE I

FREQUENCY OF OCCURRENCE OF SINGLE WORDS IN THE
LANGUAGE OF UPPER FIVE YEAR OLD W.A. MIGRANT CHILDREN

WORD	FREQUENCY	NO. OF SPEAKERS (Total = 4)	INDEX	ORDER
YOU	295	4	454	1
I	293	4	451	2
THE	213	4	328	3
ONE(S) *	203	4	313	4
A	150	4	231	5
NO	145	4	223	6
TO	144	4	222	7
AND	191	3	220	8
IT	132	4	203	9
IS/'S	126	4	193	10
THREE(S) *	101	4	155	11
GOT	99	4	152	12
OH	130	3	150	13
TWO*	127	3	147	14
GO	80	4	123	15=
DONT	80	4	123	15=
YES	80	4	123	15=
THAT	97	3	112	18
MY	71	4	109	19
WHAT	66	4	102	20
ME	65	4	100	21
HAVE/-VE	63	4	97	22
IF	80	3	92	23
JUST	74	3	86	24
DO	53	4	82	25=
CAN	71	3	82	25=
-M/AM	50	4	77	27
HERE	49	4	75	28
BECAUSE	47	4	72	29
NOT	46	4	71	30

* Indicates a disproportionately high percentage of occurrences coming from one speaker alone

TABLE II

TWO WORD SEQUENCES IN ORDER OF FREQUENCY OF OCCURRENCE
IN THE LANGUAGE OF UPPER FIVE YEAR OLD W.A. MIGRANT CHILDREN

SEQUENCE	FREQUENCY	NO. OF SPEAKERS (Total = 4)	FIRST WORD INDEX	SECOND WORD INDEX	SEQUENCE INDEX	ORDER
I GOT*	46	2	451	35	158	1
TWO THREE*	67	3	147	77	113	2
ONE TWO*	84	3	113	97	110	3
NO NO*	33	3	223	38	85	4
I KNOW	12	4	451	18	81	5
I CAN	13	3	451	15	68	6
YOU DO	9	4	454	14	64	7=
YOU CAN	12	3	454	14	64	7=
I AM	12	3	451	14	63	9
I-LL	17	3	451	13	59	10=
THREE FOUR*	51	3	155	38	59	10=
I-M	38	3	451	12	54	12
YOU DONT	14	2	454	11	50	13
AND I*	25	2	220	20	44	14
IF YOU*	40	3	92	46	42	15
YOU GOT	12	2	454	9	41	16=
I DONT	12	2	451	9	41	16=
THE MAN	11	3	328	12	39	18=
THE OTHER	11	3	328	12	39	18=
IT-S	24	2	203	18	37	20
I CANT	10	2	451	8	36	21=
I COME	10	2	451	8	36	21=
I HAVE	11	3	451	8	36	21=
GO TO	23	3	123	26	32	24
FOUR FIVE*	33	3	82	38	31	25
GOT THE*	25	2	152	20	30	26
-S THE/IS THE	12	3	199	14	28	27
I DIDNT	7	2	451	6	27	28=
YOU JUST*	16	1	454	6	27	28=
THAT-S	19	3	112	22	25	30

* Indicates a disproportionately high percentage of occurrences coming from one speaker alone.

TABLE III

THREE WORD SEQUENCES IN ORDER OF FREQUENCY OF OCCURRENCE
IN THE LANGUAGE OF UPPER FIVE YEAR OLD W.A. MIGRANT CHILDREN

SEQUENCE	FREQUENCY	NO. OF SPEAKERS (Total = 4)	SECOND WORD INDEX	THIRD WORD INDEX	SEQUENCE INDEX	ORDER
ONE TWO THREE*	61	3	110	71	7810	1
TWO THREE FOUR*	51	3	113	59	6667	2
THREE FOUR FIVE*	33	3	59	38	2242	3
I GOT THE*	23	1	158	9	1422	4
NO NO NO	12	2	85	9	765	5
FOUR FIVE SIX*	20	3	31	23	713	6
I-M GOING	10	3	54	12	648	7
IF YOU HAVE*	14	2	42	11	462	8
I WANT TO	6	4	50	9	450	9
YOU WANT TO	7	3	41	8	328	10
I-M A	13	1	54	5	270	11
GO TO THE	9	2	32	8	256	12
GOING TO WIN.	27	3	12	20	240	13
IF YOU DONT	5	2	42	5	210	14
I DONT KNOW	6	2	41	4.6	189	15
THE OTHER ONE	6	2	39	4.6	179	16
TO DO IT	5	3	24	5.8	139	17
I-LL DO	6	1	59	2.3	136	18
I KNOW WHAT	2	2	81	1.53	125	19
YOU PUT THE	4	2	41	3	123	20
I GOT TO	2	1	158	.77	122	21=
I GOT SIX	2	1	158	.77	122	21=
I GOT ANOTHER	2	1	158	.77	122	21=
I GOT HERE	2	1	158	.77	122	21=
I AM SAM	5	1	63	1.9	120	25
I COME TO	8	1	36	3	108	26
YOU DO IT	4	1	64	1.53	99	27
I-LL TELL	2	2	59	1.53	91	28
THE MAN CAN	6	1	39	2.3	90	29=
GOT THE WHIRLY	8	1	30	3	90	29=
I-M NOT	2	2	54	1.53	83	31

* Indicates a disproportionately high percentage of occurrences coming from one speaker alone.

For purposes of comparison Tables IV, V and VI which follow list the twenty most frequently used single words, two and three word sequences side by side for the Mt. Gravatt (first language) and Mt Lawley (second language) samples of children approximately 5½ years of age.

TABLE IV

A COMPARISON OF THE TWENTY SINGLE WORDS MOST FREQUENTLY USED BY (A) THE MT GRAVATT AGE 5½ SAMPLE AND (B) THE MT LAWLEY AGE 5½ MIGRANT SAMPLE.

ORDER	A		B	
	WORD	INDEX	WORD	INDEX
1	I	449	you	454
2	it	310	I	451
3	you	293	the	328
4	is/'s	243	one(s)*	313
5	the	214	a	231
6	to	189	no	223
7	a	184	to	222
8	that	180	and	220
9	and	170	it	203
10	yes	140	is/'s	193
11	no	123	three(s)*	155
12	one(s)	110	got	152
13	on	101	oh	150
14	what	98	two*	147
15	oh	96	go	123
16	in	95	don't	123
17	have('ve)	94	yes	123
18	got	93	that	112
19	this	90	my	109
20	my	86	what	102

* Indicates a disproportionately high percentage of occurrences coming from one speaker alone.

TABLE V

A COMPARISON OF THE TWENTY TWO-WORD SEQUENCES MOST FREQUENTLY USED BY (A) THE MT GRAVATT AGE 5½ SAMPLE AND (B) THE MT LAWLEY AGE 5½ MIGRANT SAMPLE.

ORDER	A		B	
	SEQUENCE	INDEX	SEQUENCE	INDEX
1	I'm	350	I got*	158
2	I'll	210	two three*	113
3	it's (it is)	157	one two*	110
4	I don't	144	no no*	85
5	I got	126	I know	81
6	I know	101	I can	68
7	I can	90	you do	64
8	I've	76	you can	64
9	you're	74	I am	63
10	got a	72	I'll	59
11	that's(is)	65	three four*	59
12	I can't	61	I'm	54
13	I want	54	you don't	50
14	I think	41	and I*	44
15	I didn't	38	if you*	42
16	's a	36	you got	41
17	you know	31	I don't	41
18	I was	30	the man	39
19	I have	29	the other	39
20	I did	29	it's(is)	37

*Indicates a disproportionately high percentage of occurrences coming from one speaker alone.

TABLE VI

A COMPARISON OF THE TWENTY THREE-WORD SEQUENCES MOST FREQUENTLY USED BY (A) THE MT GRAVATT AGE 5½ SAMPLE AND (B) THE MT LAWLEY AGE 5½ MIGRANT SAMPLE.

ORDER	A		B	
	SEQUENCE	INDEX	SEQUENCE	INDEX
1	I'm going	6126	one two three*	7810
2	I'm not	2960	two three four*	6667
3	I don't know	1903	three four five*	2242
4	I'll get	531	I got the*	1422
5	I'll have	509	no no no	765
6	I got a	456	four five six*	713
7	You're not	454	I'm going	648
8	I've got	453	if you have	462
9	don't want	375	I want to	450
10	I'm doing	366	you want to	328
11	I want to	333	I'm a	270
12	I'll go	309	go to the	256
13	I'll put	274	going to win	241
14	I'm a	260	if you don't	210
15	I'm the	252	I don't know	189
16	I got to	207	the other one	179
17	I got one	205	to do it	139
18	I'll show	168	I'll do	134
19	I'll tell	154	I know what	125
20	I'll be	154	you put the	123

*Indicates a disproportionately high percentage of occurrences coming from one speaker alone.

As far as the primary aim in carrying out the analysis is concerned, it is plain that it is indeed feasible to carry out such procedures with the data to be obtained in Western Australia. No major difficulties were experienced in compiling word or sequence lists or in calculating frequency or communication indices for them or in setting them out for comparison with the first language samples.

To the second question the answer is not as yet so obvious. In the circumstances of this small pilot study the inclusion of unselected children (apart from the basic requirements of language background and age) has provided an almost 'text book' example of the dangers of small samples. On the one hand there is the 'talkative' child using almost double the number of words of even the child closest to her while at the other end is the almost silent child with about one-sixth of the production of the first child. The effects of such extremes in a small sample are evident throughout. In the first language sample, for example, one reaches about the 60th word in the frequency list before any less than 17 out of the sample of 18 use the word. In the migrant sample even such words as 'and' and 'that' are not used at all by the least 'talkative' child, resulting of course, in a substantial effect on the position of the word on the index. On the other hand with one child talking so much more than the others both the two and three-word sequence lists show many examples that had to be starred as being used almost exclusively by this one child. For example, on the day of recording this child played games that involved much counting. In the three-word sequence list therefore "one, two, three", "two, three, four", and "three, four, five" are the top sequences. A close examination shows that while three of the four children used these sequences (again the 'silent' child used none of them) the respective figures for the frequency of use of the three sequences by the 'talkative' child were fifty six out of sixty one, forty six out of fifty one, and twenty nine out of thirty three!

While these results might be taken to point immediately to the conclusion that such extremes should be 'selected out' from the sample two considerations give pause. In the first place with the much larger samples proposed for the full study the effect of such 'extremes' would be considerably modified. Perhaps more important, however, is the question as to whether a true picture of the possible range in second language development can be gained if such extremes are to be cut out of the

samples. The research team has yet to reach a firm conclusion on the most desirable procedure in relation to this matter and will seek advice from interested experts before coming to such a conclusion.

As far as the results themselves are concerned, if the effect of these extremes is excluded (i.e. the starred items are disregarded) several most interesting pointers and possibilities begin to emerge:

- (a) The most obvious observation on the single-word lists is the close correspondence between the two samples. While the shortness of the 'pilot' lists precludes the carrying out of a full calculation of correspondence correlation (Hart, Walker and Gray, 1977, pp. 128, 129) visual inspection shows that not only the words themselves but also the orders are very similar.
- (b) When two and three-word sequences are considered however, the situation changes considerably. Even in the two word sequence less than half the sequences in the first twenty are common to both samples, while in the three word sequences only two or three are common. By excluding the starred items in each case a few more common items are brought in, nevertheless one obvious conclusion is that there are indications that structures differ considerably in the two samples.
- (c) The nature of these differences would require the study of a larger sample than that presently available. It is tempting, if facetious, to suggest that migrant children are somewhat less self-centred than first language children - 'I' is the first word in 10 out of 20 three-word sequences for the latter but only 7 out of 20 for the migrants!

More serious is the consideration of structures that seem peculiar to the migrant sample such as "I come" or the frequent use of "I am" and the complete absence from the first thirty migrant three-word sequences of about six of the first ten most frequently used sequences from the first language sample.

- (d) A look at the indices also reveals some interesting contrasts. Once again in single words the top of the scale is not dissimilar. Between the tenth and twentieth positions, however, it is beginning to emerge that the single words in the migrant sample are more frequently used than in the first language group. In two-word sequences the position again alters: once more excluding the starred items, the frequency index range for the migrant sample is in the region of only 50 points whereas the range for the first language sample is over 300. Similarly for the three-word sequences the migrant range is about 140 while for the first language children

it is nearly 6000!

Furthermore while in the two-word index the migrant sample is using the last quarter of words (15-20) more frequently than the first language sample, in the three-word list the frequency index remains lower throughout the twenty most frequently used sequences for the migrant sample, though a levelling up to the first language sample can be noted towards the bottom of the list.

The conclusion is thus forced upon us from the pilot study that the kind of data which could only be supplied by a full scale study is urgently needed. There seems little point in carrying out with such a small sample a detailed analysis from which, in any case, it would be quite impossible to draw firm conclusions, but enough has been outlined above to raise many interesting possibilities, some of which could be posed in the following questions:

1. Is the use of single words by migrant children very similar to their use by first language children, or do the higher indices indicate a small vocabulary used more frequently by migrant children?
2. Do migrant children have a much smaller range of two and three word sequences available for use?
3. Do these sequences differ significantly in structure for the two samples? If so what is the nature of these differences? Do the sequences being used by the second language children correspond to earlier stages of development for first language children or are completely different structures being used in the process of arriving at competence in the second language?
4. Does an analysis of the rejected and (for purpose of computer processing) corrected words or expressions give any further evidence on the process of arriving at second language competence? Does the number of such corrections differ significantly in the two samples?

Should it prove possible to extend the study into other areas there seem almost limitless possibilities of raising questions in such areas as phonology (including stress and intonation), interaction patterns, first language influence, the social area of language etc.

Results For The Aboriginal Child.

With a single atypical child's language from this population detailed analysis in the form of indices and comparisons plainly carries little meaning. Perhaps the most obvious observation is that this proved to be a child at the top end of the 'talkative' scale. In a morning session of school, for the most part in an open classroom but including the interval, this child's word count came to 5424 as against 9537 for the sum of all four children in the migrant sample.

The following table sets out the twenty most commonly used single words and two and three word sequences in this Aboriginal child's language sample calculated according to the communication index. (See Appendix I.) In this case since there is only one child the single word order of course corresponds to the raw frequency merely adjusted by the K factor to allow comparison with other samples:

TABLE VII

FREQUENCY INDEX TABLE FOR THE LANGUAGE OF AN UPPER FIVE-YEAR-OLD

W.A. ABORIGINAL CHILD

SINGLE WORDS			TWO-WORD SEQUENCES			THREE-WORD SEQUENCES		
WORD	FRE- QUENCY	INDEX	SEQUENCES	FRE- QUENCY	INDEX	SEQUENCES	FRE- QUENCY	INDEX
1 I	224	528	I'M	37	479	ONE TWO THREE	28	12998
2 YOU	132	317	I GOT	19	247	I'M GOING	9	10538
3 TO	114	274	I CAN'T	15	194	I'M UP	8	9101
4 ONE	100	240	ONE TWO	30	173	YOU HAVE TO	17	6232
5 THAT	95	228	YOU HAVE	20	152	TWO THREE FOUR	25	4740
6 THE	95	228	TO DO	22	145	I CAN'T DO	9	4268
7 IT	94	226	I KNOW	11	140	THREE FOUR FIVE	23	3080
8 'S	83	199	I DONE	10	129	FOUR FIVE SIX	19	2852
9 A	81	194	YOU'RE	15	114	I DONE IT	5	1548
10 DO	78	187	THAT'S	21	114	HAVE TO DO	8	1406
11 WHAT	65	156	I NEED	8	102	FIVE SIX SEVEN	13	1147
12 TWO	49	118	I'VE	8	102	THAT'S HOW	4	1140
13 GOT	48	115	I DO	7	91	WHAT'S THAT	7	1139
14 FOUR	47	113	IT'S	15	81	DO THAT ONE	7	1088
15 IS	43	103	TWO THREE	29	79	SIX SEVEN EIGHT	9	660
16 GO	42	101	THAT ONE	14	78	GOING TO DO	5	456
17 SIX	41	98	HAVE TO	29	74	DO YOU WRITE	6	280
18 GET	40	96	WHAT'S	18	67	UP TO THE	5	264
19 THREE	38	91	DO THAT	14	64	IN THE POND	6	196
20 OH	37	89	FOUR FIVE	23	62	MISS A TURN	6	112

The distortion of results from the single child sampled is obvious in many respects, the two clearest being the artificially high indices in such areas as the three-word sequences due to the fact that in every instance the total sample (!) used the sequence and, secondly, the effect of the recording being done at school pushing such sequences as counting to the very top of the indices. It is noticeable, however, that this is the position of such number sequences in both this list and in the migrant sample. The question is thus raised as to whether this indicates that second language learners are most comfortable with these well learned sequences or whether it merely indicates that a disproportionate amount of recording was carried out at school. It seems on the whole unlikely to be for the latter reason as such a conclusion would also imply that a disproportionately large period of time and language production was used on counting as against other school activities.

In each comparison the Aboriginal child has slightly more in common with the migrant children's language than with the first language sample (16 v 13 in single words, 7 v 5 in two-word sequences, and 5 v 1 in three-word sequences) but there is enough disparity to point to the possibility that, probably apart from single words, the language of each sample is significantly different.

Noticeable in the Aboriginal sample are quite a number of distinctive dialect markers such as dere (there), frough (through), eleben (eleven), fanks (thanks), seben (seven) and such structures as "I done it" in 10th position on the index table. Once again there is just the possibility that there may be a much more limited number of two and three-word sequences than with the first language sample.

7. Costs.

On the whole costs seemed to follow the expected pattern. The amount estimated for computer processing and printing proved to be almost exactly correct. There was no opportunity to check costs estimated for travel to record Aboriginal samples therefore as yet these figures cannot be supported from this study.

A few minor items were omitted from original estimates such as the requirement for interpreters at initial meetings with parents. Such services can sometimes be provided by schools themselves but if interpreting services are required for half the children the total commitment should not exceed two hundred dollars per year of operation of the

research project.

7. Experience for the research team.

The pilot study was only partially successful in this respect. Due to the small number of assistant reserachers involved it was felt wise to restrict the number of researchers acting as supervisors. This was to avoid over-awing already shy parents, over-crowding school and home facilities and over-supervising students. Thus while all members of the team were able to have demonstrations of the equipment and recording procedures only half the team had the opportunity to participate in recording, transcribing and encoding the language data.

VI CONCLUSIONS

The pilot study described briefly in the previous pages has proved a thoroughly worthwhile exercise. The basic aims of testing the equipment and procedures, giving experience to the research team, demonstrating the feasibility of using Diploma of Teaching students as research assistants and of using the Mt Gravatt computer program to analyse the language data obtained have all been carried out and, broadly speaking, have proved highly satisfactory.

Particularly encouraging have been the performances of the research assistants, the co-operation of the Western Australian Education Department both at administrative and school levels and the trouble-free computer analysis of the language data. In view of the small sample no major attempt has been made to draw conclusions from the analyses of single words and word sequences carried out. If these results can be taken as possibly indicating trends they seem to point towards the probability that the second language samples will prove, in sequences at least, to be considerably different from first language samples and thus worthy of serious analysis in a separate study such as the research project proposes.

Perhaps the most pleasing of all the results has been the ready co-operation gained from parents and children. This might understandably have proved a point of real difficulty in working with migrant and Aboriginal parents but, while it is clear that approaches will have to be slowly and carefully made, every indication from the pilot study suggests that co-operation will be willingly given.

Several matters have been brought to light by the study as requiring further attention and, in some cases, replanning. The two most important are, first, the need for a careful re-appraisal of the recording equipment and procedures due to the considerable amount of recorded language which proved distorted and inaudible; and secondly, the need for a longer period to be spent on the research. For the sake of getting student researchers and children thoroughly acquainted with each other and the procedures as well as giving more time for transcription and coding it would plainly be desirable if the work could be spread over a year rather than over a semester as in the pilot study.

The main limitation of the pilot study was in the absence of a sample from Aboriginal children from non English-speaking homes. The evidence of other studies (Kaldor & Malcolm, in press) and the presence of Mount Lawley College of Advanced Education students in the vicinity of such communities for Assistant Teacher Programs suggest that it will certainly not be impossible to obtain such a sample. Should time and finance allow the running of a second preparatory study it would plainly be desirable to attempt to gain such a language sample and to give experience to members of the research team who had to be omitted from much of the pilot study here reported.

It would therefore be the strong recommendation of the research team, both for the theoretical reasons advanced in the preamble to the proposal and as a result of the practical and encouraging experience gained in this pilot study, that a major study of the development of English as a second language amongst Aboriginal and migrant children be now carried out.

REFERENCES

1. Hart, N.M.W., Walker, R.F. and Gray, B. The Language of Children, Addison-Wesley Publishing Co., Reading Massachusetts (1977)
2. Kaldor, S. and Malcolm, I., "The Language of the School and the Language of the West Australian Aboriginal School Child - Implications for Education" in Berndt, R.M. (ed.) (Probable title) West Australian Aboriginal Studies, to be published by the Government of Western Australia in the Sesquicentennial Series.
3. Ravem, Roar, "Language Acquisition in a Second Language Environment", in International Review of Applied Linguistics, Vol. 6 No. 2, 1968, pp. 175-185.
4. Sharpe, Margaret, The English of Alice Springs Aboriginal Children, Cyclostyled Reports (1966 and 1977)

APPENDIX A

MEMBERS OF RESEARCH TEAM DURING THE PERIOD OF THE PILOT STUDY

Chief Investigator	Dr A L McGregor, Senior Lecturer, Dept of English, Speech and Drama
Co-Investigators:	Mr I G Malcolm, Head, Dept of English, Speech and Drama Mr J L Sherwood, Head, Intercultural Studies Program
Research Team Members:	Mr E Brumby, Productions Officer Mr N Green, Lecturer, Intercultural Studies Program Mr B Hird, Lecturer, Dept of English, Speech and Drama Miss K Jones, Lecturer, Dept of Education and Psychology Mr S Jongeling, Senior Lecturer, Dept of Education and Psychology Mr J Rainford, Lecturer, Dept of Education and Psychology Dr E Vaszolyi, Lecturer, Intercultural Studies Program Dr R Williams, Lecturer, Dept of English, Speech and Drama
Technical Adviser:	Mr J McQuillan
Clerical Assistance:	Miss Paula Stavrianos Ms Helen Bilessuris.

APPENDIX B

LIST OF EQUIPMENT PURCHASED BY MOUNT LAWLEY C.A.E. FOR RESEARCH PROJECT

6 x E.C.M. 16 Microphones	@ \$14.91 ea	89.46
6 x Beyer N.E. 84/3 Receiver Units	@ \$470.40 "	2822.40
6 x Beyer T.S. 83 Transmitter Units	@ \$322.40 "	1994.40
12 x Tuckwell Plugs Part No. 91-T-3400-1	@ \$5.30 "	63.60
		<u>\$4969.86</u>

Other equipment supplied by the College for use during the Pilot Study.

36 x C90 low noise/high density cassette tapes.
6 x sets of Tokim T.E. 1025 headphones.
6 x stereo cassette recorders Loewa Optn.
3 x waistcoats for child microphone and transmitter.
1 x sash for child microphone and transmitter.

APPENDIX C

LETTER OF APPROVAL FROM W.A. EDUCATION DEPARTMENT FOR RESEARCH STUDY

Your Ref.

Our Ref. 286/77 TB:MH

Enquiries Mr:

EDUCATION DEPARTMENT



Parliament Place, West Perth, Western Australia 6005

Telephone 23 0221

Telegrams: "EDWA" Perth

Telex "EDUWA" AA 93153

Dr A.L. McGregor
Senior Lecturer
Department of English, Speech and
Drama
Mount Lawley College of Advanced Education
2 Bradford Street
MOUNT LAWLEY WA 6050

13th May 1977

Dear Dr McGregor,

I refer to your letter of the 11th May regarding research on the development of English as a second language.

The Department is happy to support the study and will encourage school staff to co-operate insofar as their local circumstances permit.

Please feel free to make direct contact with principals in the areas where you wish to carry out the pilot study.

Yours sincerely,

T. BECK
R/SUPERINTENDENT OF RESEARCH

APPENDIX D

LIST OF STUDENT RESEARCH ASSISTANTS

Mr Glenn Adams

Ms Doreen Ashman

Mr Murray Bailey

Mr Jeffrey Bell

Mr Roderick Campbell

Ms Heather Christian

Ms Gail Godfrey

Mr Philip Kerr

Ms Irene Reeves

Ms Zia Throssell

APPENDIX E

RESEARCH UNIT OUTLINE

MOUNT LAWLEY COLLEGE OF ADVANCED EDUCATION

DEPARTMENT OF ENGLISH SPEECH AND DRAMA

LANGUAGE AND ENGLISH METHOD RESEARCH LA 340

4 hours per week
2nd Semester, 1977
Dr A McGregor

Tuesday 2.00-3.50
and Wednesday 2.00-3.50

Course Objectives: On completion of the relevant sections of the unit students will be able to:

1. State the main elements in designing research in the areas of language development and language teaching
2. Record and comment on the language of a specific child within stated conditions
3. Transcribe the language which has been recorded and code it for analysis
4. Draw tentative conclusions for teaching strategies and the development of materials from the results of research carried out or examined.

COURSE OUTLINE *

Week	Dates	Topic	Assignment Due
1.	Sep. 13	Introduction and elements of educational research into language development and language teaching	
	Sep. 14	Objectives and procedures in the Mount Gravatt Language Development research project in relation to the Mount Lawley project	
2.	Sep. 20 Sep. 21	Procedures: Recording language; introduction to hardware Procedures: Recording language; practice and commentaries	
3.	Sep. 27 Sep. 28	Meeting with children in school situation. Meeting with parents for explanation of procedures.	
4.	Oct. 4	Procedures: Transcription of data Procedures: Coding of data	Assignment 1
5.	Oct. 11	Procedures: Practice on coding of data	
5 & 6	Oct. 12 - Oct. 19	Practicum: Recording of child's language with pragmatics commentary	

APPENDIX E (contd)

COURSE OUTLINE *

Week	Dates	Topic	Assignment Due
7 & 8	Oct. 25 - Oct. 19	Transcription of data	Assignment 2
9 & 10	Nov. 8 - Nov. 16	Coding of data	Assignment 3
11	Nov. 22 Nov. 23	Discussion of material and implications for teaching strategies and materials development	Assignment 4

Texts: There is no set text for this unit. Students will find the following periodicals useful:

Research in the Teaching of English: National Council of Teachers of English.

English Language Teaching: Oxford University Press

Forum: U.S.I.S.

Assignments:*

1. A report of an interview with the child (and parents of the child) selected to be recorded and studied. The report will be completed according to an interview schedule to be discussed with the class. 20%
2. Practical: recording on audio tape of a specified period of language use by the selected subject together with a commentary on the pragmatics of the situation on the second track of the tape. 25%
3. Notes on the pragmatics of the situation (to be handed in with the recorded material.) 15%
4. Transcribed and coded versions of recorded speech materials prepared for analysis according to detailed instructions to be issued. 40%

* In view of the fact that this unit will be concerned with a pilot study of a major research project the above course outline and assignments are liable to change after discussion with the class, though any changes will be kept to a minimum to avoid inconvenience to students.

APPENDIX F

SAMPLE MINUTES OF CLASS PLANNING SESSIONS

MOUNT LAWLEY COLLEGE OF ADVANCED EDUCATION

LANGUAGE RESEARCH PROJECT (L.A. 340)

A D M I N I S T R A T I V E A R R A N G E M E N T S

A discussion was held on September 27, 1977 by the student researchers, with Dr McGregor and Miss K Jones present, on administrative arrangements for the project. The following points were covered:

1. Background information

Some helpful comments had been received from Mr Sherwood on the decisions minuted on 20 September. The following points were agreed:

- (a) In item 3 substitute 'first language' for 'native language'.
- (b) In item 7 substitute 'relatives' for 'relations'.
- (c) In item 5 it was agreed to apply a roughly 4-point scale:
 - (i) Presystematic: random words or phrases known, but no systematic knowledge of generalizations, structures.
 - (ii) Systematic: Some knowledge of structures and generalizations learned.
 - (iii) Fluent-one: Good grasp of the structures of English but limited vocabulary. Still at concrete level.
 - (iv) Fluent-two: Freer use of language and approaching first language competence.
- (d) In item 10 it was agreed that answers would be impressionistic. Some pointers towards parents' desire (or otherwise) for integration would be gained from participation by parents or children in ethnic or integrated clubs/activities, ethnic language learning, attendance at English classes, etc., and the interrelationship of these. Some impression could also be gained of the amount of travelling done by the family over the previous few months or during school holidays.

2. Meeting with children

It was agreed that, unless arrangements were changed by Mrs Strickland all researchers would meet at the North Perth Junior Primary School on Tuesday 4 October at 1 pm. Assuming two sets of equipment to be available it would probably be least threatening to take the whole class, divide it into two groups, (with two of the experimental subjects in each group) and get the whole group acquainted with the equipment. It would probably be possible to meet with the individual subjects by the end of the time spent at the school.

3. Meeting with parents

It could take place on 5th or 6th, probably in the early evening, exact time and date to be announced by Mrs Strickland who is making the necessary arrangements. It was agreed that Dr A McGregor would explain the project to the parents with translation as necessary. It would be wise for pairs of students to get in touch with parents right away (assuming approval is given) and make at least preliminary arrangements

for the next contact. All students should feel free to participate in the discussion with parents.

4. Timetabling practice and recording sessions

Since it appears that a third set of equipment is now available this should take some of the strain off arrangements. Basically a full try-out session would be necessary both to test the equipment and to get the subjects used to acting naturally while wearing the equipment. In the second case it would not always be necessary to carry all the receiving equipment. Three students intimated they could use their own two track cassette players when transcribing. This means that it should be possible to pass on the recording equipment very quickly from pair to pair. Each pair would be responsible for returning the equipment right away to the college unless previously booked for transcription purposes also.

A diary for bookings will be kept in A McGregor's room (G54). Please check this before making any final arrangement with a child or parents.

5. Allocation of researchers to children

It was agreed to try to keep in mind all relevant details like sex of subjects when making allocations particularly if recording is to be done in the home, early morning or late at night etc.

6. Waistcoat and/or sash for subjects

Of those available, the sash appeared to be a more suitable size though the waistcoat a preferable design. Doreen Ashman offered to run up another waistcoat as required. This will have to be done pretty quickly. A third would be desirable if anyone is able to oblige.

7. Class meeting

As coding has not yet been dealt with it was agreed to meet as a class on 11.10.77 regardless of other recording/practice arrangements.

8. Allocations of staff research team members

It was agreed that A. McGregor would make arrangements for any staff member wishing to work with a student research team.

9. Recording of Aboriginal Child

It has proved impracticable to have the recording equipment taken up-country to record an Aboriginal child in tribal surroundings, mainly because of the lengthy period the equipment would not be available to the rest of the research team. It was agreed to record an Aboriginal child in the metropolitan area and A McGregor agreed to try to make a suitable contact through Lockridge Junior Primary School. This child would be allocated to Zia Throssel and Rod Campbell.

There is a possibility, in addition, that some Wiluna S.A. junior primary children could be available for recording when on a visit to Perth in the first week of November.

APPENDIX G (i)

EQUIPMENT REQUIREMENTS

Mic. + Transmitter/Receiver for channel one
(child), antennae.

Mic. + Transmitter/Receiver for channel two
(observer), antennae.

Stereo Recorder (used as Dual Mono Recorder).

C 60 Cassettes (as required).

Headphones (Stereo) for observer and operator,
+ "Y" extension.

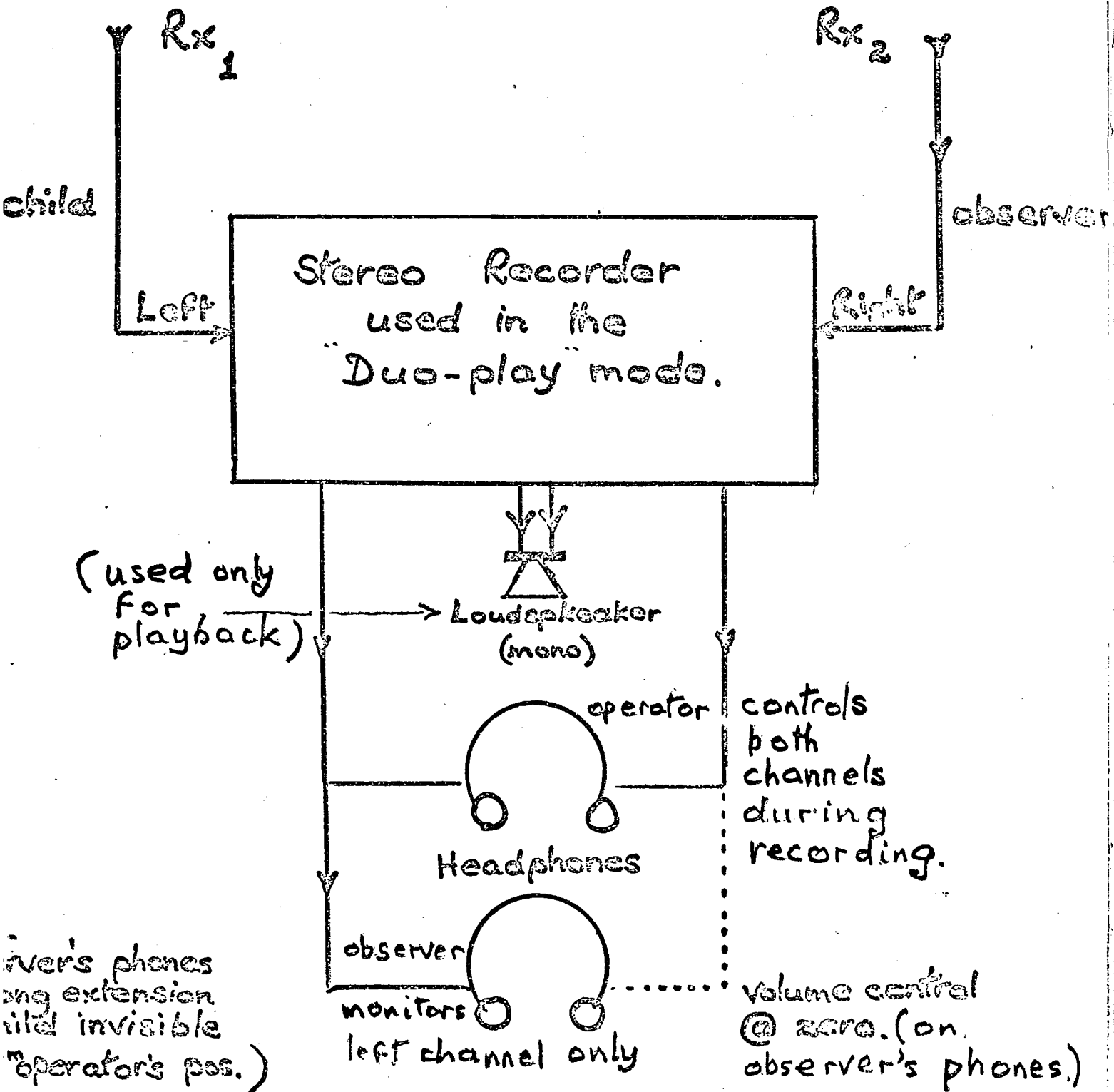
Recorder connecting leads, mains leads and
extension cord.

Spare Batteries (9 volt) for Microphone Signal
Transmitter.

Waistcoat for child with pocket for Transmitter.

APPENDIX G (ii)

EQUIPMENT - OPERATIONAL DIAGRAM



		FREQ. 2 % FREQ. .02		SAMPLE PAGE OF COMPUTER PRINT-OUT	
1	ERY . YOU WANT TO SPEAK COME ON SPEAK . +WANNA . GOOD-	151	7	BYE . DUM-DI-DI-DADA DA DA-DA DADA DA ZIPPITY DOODAH ZIP	50074 15
2	2	FREQ. 1 % FREQ. .01		CALL HER NARDA . WELL WHO-S FIRST . WHO-S SECOND . WHO-S	20279 12
3	3	FREQ. 1 % FREQ. .01			
4	4	FREQ. 2 % FREQ. .02		CALO . THE MAN . CALO . ? PARDON . +UH . NO . NO . YES .	40017 19
5	5	FREQ. 2 % FREQ. .02		CALO . ? PARDON . +UH . NO . NO . YES . YES . ? PARDON .	40017 36
6	6	FREQ. 2 % FREQ. .02		CAME AND . IT-SHA ER NUMBERS TO A HUNDRED IF YOU IF A GIRL	20131 63
7	7	FREQ. 2 % FREQ. .02		CAME AND QUERY GO HOME AND THEN THE OTHER GIRL	20230 70
8	8	FREQ. 2 % FREQ. .02		CAME AND QUERY . QUERY MADDY CAT CAN I SPEAK NOW DO JUST	50066 18
9	9	FREQ. 2 % FREQ. .02		CAME AND . AH WAH SUNDAY PATSY A GIRL CAME SHE-S MY . YE	20233 12
10	10	FREQ. 2 % FREQ. .02		CAME BACK WITH THAT . YES . +YA . YES LIKE THAT . +YEAH	20085 36
11	11	FREQ. 2 % FREQ. .02		CAME QUERY . I LIKE IT TOO . OH . NOT NOT ALL OF IT . BU	20010 37
12	12	FREQ. 2 % FREQ. .02		CAME SH-S MY . YES SHE-S MY BEST FRIEND AND THERE W	20233 50
13	13	FREQ. 2 % FREQ. .02		CAME TO OUR HOUSE QUERY . OH THERE-S MY WHITE QPURSE . ?	20088 46
14	14	FREQ. 2 % FREQ. .02			
15	15	FREQ. 2 % FREQ. .02			
16	16	FREQ. 2 % FREQ. .02			
17	17	FREQ. 2 % FREQ. .02			
18	18	FREQ. 2 % FREQ. .02		SIT DOWN . +JUS . OKAY OH . OOPS . OH WHEN WE WAS AT	20097 50
19	19	FREQ. 2 % FREQ. .02		OKAY . OF THE THAT FOR THE CAMP IF WE WILL GO TO THE	50035 47
20	20	FREQ. 2 % FREQ. .02		OF THE THAT FOR THE CAMP IF WE WILL GO TO THE CAMP	50035 52
21	21	FREQ. 2 % FREQ. .02		THE THAT FOR THE CAMP IF WE WILL GO TO THE CAMP CAMP	50035 57
22	22	FREQ. 2 % FREQ. .02		ERY QUERY AWAY . +TEACHS . OKAY . OF THE THAT FOR THE	50035 21
23	23	FREQ. 2 % FREQ. .02		HOW DO YOU DO IT . ? HOW DO YOU QUERY WHEN WE WAS AT	20085 16
24	24	FREQ. 2 % FREQ. .02		THAT FOR THE CAMP IF WE WILL GO TO THE CAMP CAMP CAMP	50035 62
25	25	FREQ. 2 % FREQ. .02			
26	26	FREQ. 2 % FREQ. .02			
27	27	FREQ. 2 % FREQ. .02			
28	28	FREQ. 2 % FREQ. .02		GET A COLOUR AND THEN IF YOU GOING TO BE FIRST AND HE	20278 26
29	29	FREQ. 2 % FREQ. .02		K . ? YOU KNOW THAT MAN . +DAT . HE CAN HE CAN SEE HE	30040 49
30	30	FREQ. 2 % FREQ. .02		ID AH WE ARE GOING TO PLAY QATODS AND SOME-TIMES SHE	20259 52
31	31	FREQ. 2 % FREQ. .02		TO EAT . NO YOU PUT REALLY FOOL IN HER MOUTH AND SHE	20241 38
32	32	FREQ. 2 % FREQ. .02		THE MAN CAN HEAR YOU . LETS LETS GO OUT . LETS GO . I	30049 57
33	33	FREQ. 2 % FREQ. .02		HAT ON THERE . IT-S A BROWN THING IT ROUND WHERE THEY	50118 65
34	34	FREQ. 2 % FREQ. .02		EP HER LOOSE LIKE THAT AND IF YOU HOLD HER UP AND SHE	20238 32
35	35	FREQ. 2 % FREQ. .02		S . ? EH . AND IT-SHA GOT POINT TEN . IF YOU LIKE YOU	20135 5
36	36	FREQ. 2 % FREQ. .02		QUERY . THEY SAID BECAUSE IF YOU WANT TO GO HOME YOU	20096 5
37	37	FREQ. 2 % FREQ. .02		MARY . MARY . LOOK . ? YOU KNOW THAT MAN . +DAT . HE	30040 31
38	38	FREQ. 2 % FREQ. .02		AT . UM THEN THEM CANT TO HEAR FROM HERE . +TA . THEY	30054 24
39	39	FREQ. 2 % FREQ. .02		RING . I FORGET . NO . DONT . WE CAN . SHH . HE . HE	30036 59
40	40	FREQ. 2 % FREQ. .02		HEAR YOU . THAT MAN . +DAT . DONT . DONT DONT THE MAN	30041 35
41	41	FREQ. 2 % FREQ. .02		. +DAT . NO NO YOU NOT I MARY NOT MY FRIEND . THE MAN	30037 55
42	42	FREQ. 2 % FREQ. .02		O . +WANTA . DONT JOUANNE . VESSIA IF YOU TALK THE MAN	30043 69
43	43	FREQ. 2 % FREQ. .02		A NAME ON IT . +GOLIA . +NAM . DONT FRANCIS . THE MAN	30048 55
44	44	FREQ. 2 % FREQ. .02		ONT FRANCIS . THE MAN CAN HEAR YOU . HE CAN . THE MAN	30049 11
45	45	FREQ. 2 % FREQ. .02		OU TALK THE MAN CAN HEAR YOU . DONT FRANCIS . THE MAN	30044 35
46	46	FREQ. 2 % FREQ. .02		? YOU KNOW THAT MAN . +DAT . HE CAN HE CAN SEE HE CAN	30040 53
47	47	FREQ. 2 % FREQ. .02		DONT . DONT DONT THE MAN CAN HEAR YOU . BUT THE LADY	30041 63
48	48	FREQ. 2 % FREQ. .02			
49	49	FREQ. 2 % FREQ. .02			
50	50	FREQ. 2 % FREQ. .02			
51	51	FREQ. 2 % FREQ. .02			
52	52	FREQ. 2 % FREQ. .02			
53	53	FREQ. 2 % FREQ. .02			
54	54	FREQ. 2 % FREQ. .02			
55	55	FREQ. 2 % FREQ. .02			
56	56	FREQ. 2 % FREQ. .02			
57	57	FREQ. 2 % FREQ. .02			
58	58	FREQ. 2 % FREQ. .02			
59	59	FREQ. 2 % FREQ. .02			
60	60	FREQ. 2 % FREQ. .02			

APPENDIX I

EDITH COWAN UNIVERSITY



AA0403903B

THE CALCULATION OF THE COMMUNICATION INDICES

Calculation of single word indices

Indices were calculated by weighting the frequency of occurrence of a particular word according to the number of children using it, e.g.

Word	=	and
Actual Frequency	=	191
Number of speakers	=	3
Total number of available speakers	=	4
Weighted frequency	=	$191 \times \frac{3}{4} = 143$

To make possible the comparison of index values between age levels and with the Mount Gravatt sample it was necessary to adjust the index to take into consideration the differing amounts of language used at each level. The amount of language (in morphemes) recorded from four-and-a-half year-old children was taken as a base and a constant (K) was calculated by expressing the total number of morphemes used by the Mount Lawley sample as an inverse fraction of the total number of morphemes contained in the four-and-a-half year-old sample thus:

Total number of morphemes of Mount Lawley 5½ sample = 8,357

Total number of morphemes at 4½ = 12,866

$$K = \frac{1}{8,357} = \frac{12,866}{8,357} = 1.53954$$

The weighted frequency of 143 calculated above was then multiplied by K to give the final communication index:

Word	=	and
Weighted frequency	=	143
K for present sample	=	1.53954
Frequency index for the word	=	220

Calculation of index for two- or three-word sequences

Indices for the two-word sequences were obtained by multiplying the index for the total occurrence of the first word by the index for occurrences of the second word following in sequence with the first.

For example, the single word index for all occurrences of "I" is 451. The index for "m" calculated on the number of times it follows "I" is 12. Thus the sequence index for "I'm" is

$$451 \times 12 = 5412$$

This is arbitrarily divided by 100 and rounded off to make comprehension of the relationship easier, giving an index of 54 for the sequence.

Similarly, for the three-word sequence "I'm going" the index for the number of times "going" follows "I'm" is calculated first (index = 12). This is then multiplied by the sequence index for "I'm" i.e.

$$54 \times 12 = 648$$