CHAPTER 3
METHODOLOGY

Before going into the details of the different methods that are in common use with regard to child study and their respective merits and demerits it would be in order to present a total picture of the methodology adopted in the present research work. Three methods that have influenced the study are discussed separately later in the chapter. At the very outset a number of couples were located where the wife was a Khasi and the husband a non-Khasi. In this, the investigator enlisted the aid of friends, relatives and colleagues. After fifty such couples were located in different parts of Shillong, it was found that around twenty-three couples had babies of the pre-school age who had not yet started proper speech. Out of these twenty-three children four left Shillong with their parents, when the fathers were posted out before the present work was started by the latter half of 1975. Six out of the twenty-three children were found unsuitable as they did not fit into the general socio-economic status. Four of these six children came from homes where the mothers did not read or write, and were very reluctant to devote time to the children in a pursuit that did not materially help them. Consequently, the investigation was started with thirteen children with the above mentioned type of parental bilingualism, and an equal number sought out where both parents spoke Khasi. The first group constituted the Bilingual group, and the
second group constituted the Monolingual group. At the time of analysis the investigator compares the findings from the first group - which she refers to as the bilingual group - with the second group - which she refers to as the monolingual group. In both groups one factor was constant. The language spoken by all the mothers was Khasi. Within the first five months of the study three of the bilingual cases and five of the monolingual ones petered out. These were cases whose parents had been apprehensive and suspicious to start with; so their subsequent withdrawal did not really come as a surprise.

Before embarking on any work, however, the purpose and interest of the study, how the investigator intended to proceed, and the nature of work involved was clearly and frankly explained to both parents. There was no attempt to minimize the active role that they would have to play in keeping diary, records, and the actual nature of their involvement. The ultimate source of child subjects is, of course the home. It is necessary to approach the home directly. Contact is to be made with one or both parents of the child. Parents are responsible for their children, and legally they are the only ones who can agree to the use of the child as a subject.

The parents of the cases that eventually petered out seemed to have "too much to do, anyway", and did not really
evince any enthusiasm in the work to be taken up. But each
time the investigator called on these children (with prior
appointment with the parents) it was "not a convenient time
and the child was away". Besides, there was no recording in
the diaries, and the involvement was taken more with an air
of martyrdom than pleasure and interest, and the whole
scheme was taken as an ordeal. The relinquishing of these
cases meant a loss in number, but it was done without any
regret on the part of the investigator.

The cases that have survived the study\(^1\) are all of
uniform socio-economic status, where the parents have all
taken an active interest in the work at hand and have all
eagerly looked forward to any increase in quantum in the
child's vocabulary. Shillong, (where the study was con­
tinued) being a comparatively small place most of the parents
involved, especially in the monolingual cases - were known
to the investigator. This helped in the three-and-half
years of work that followed in the data collection from each
child. The investigator's offer to report back on the ulti­
mate results of the research has been found to be very reward­
ing. In almost all the cases, parents have been found to be
very interested in what the experiment can tell them about
their own child.

\(^1\) Ten bilingual cases, and eight monolingual cases :
Described in Chapter 4:(2).
At the beginning of the recording session, the investigator filled out the data sheet (See Vol. 2: Data) for each child, which listed name, father's and mother's names, address (location during study), their respective occupations, nationality, religion, language spoken by mother and father, sex, age (date of birth) and the telephone number of the residence and the parents' place of work (where applicable). A diary was given to the parents for each child, in which against dates the child's cooing, babbling, speech in play, in a bathing session, an early morning greeting session a phone call session etc.—in general, his total speech heard by the parents was to be recorded. These are useful adjuncts. The investigator arranged to visit each child twice a month for a recording session of two to three hours, where everything that the child uttered was taken note of. During each visit the parent's diary record of the child's vocabulary was collected and entered into the investigator's records in format.

In studying children's vocabulary no method that might be used can nullify the effect of the different variables that are bound to be present in the environment of the child. The two main variables that determine the language development of children are maturation and learning. On the positive side other variables are a relaxed, accepting and emotional atmosphere in the home, and many instances of encouragement towards verbalization. On the negative side there are
variables like working parents, and non-participation of adults in the child's 'play-situation' which is the breeding ground for new vocabulary. In some cases the child is an only child, while in other cases the child is one among many siblings. The opportunity for speech and play in the latter type of home is much better and therefore the child is likely to develop a richer vocabulary. It is fortunate, however, that some of these variables influencing the growth of language skills are within the control of man. Considering such handicaps for objective study, the present research has picked out cases for study which are seemingly uniform in socio-economic, emotional and intellectual aspects. 

There is a special problem in identifying and defining the earliest words of infants, for many of them are mutilations or approximations of the standard words. The adoption of a method, and in turn a judgement of it depends in large measure on the purpose, the experimenter has in mind. The efficiency of a method is determined by the nature of the hypothesis he wishes to test, the degree of precision to be obtained, the nature of information wanted, and the cost of conducting the research. The cost of conducting an experiment is an important factor in its design. There is a vast difference between the expense involved in doing a job with a small centralized group, or with a State or Nation-wide sample. Both may be meticulously controlled,
one with precision instruments, the other with non-instrumental comparative methods. Yet, both methods contribute valuable information.

The present study has been observational and longitudinal. The eighteen children (10 bilingual, 8 monolingual) have been visited at fortnightly intervals during the period of rapid linguistic growth. During the period of cooing and babbling the visits had been less frequent, the sessions shorter and there was more dependence on the parents. For days on end at this stage there would hardly be a new sound uttered. At the earlier stages of the study a tape recorder had been used; but its use had soon to be discontinued, as it did not suit the purpose. There were more tantrums around than could be dealt with during the sessions. During the sessions the investigator recorded all the utterances of the child, enlisting the aid of the mother or older siblings in recording when she was otherwise occupied with the child. The analysis was later done from these records. The parents have become collaborators and in most cases the children have become very good friends of the investigator. Both the investigator and the parents have kept the records of the children's vocabulary till they were 3½ years of age.

Play materials help to put the child at ease because of their familiarity and pleasant associations. It takes the child a few sessions with the investigator to be friendly and
at ease with her, and for the child's responses to become more spontaneous. By focussing attention on toys and showing picture books the child's self-consciousness may be diminished and he may be stimulated to offer spontaneous comments. All the children in the study conversed with the investigator and not with a substitute, unlike as in the Piaget Study and the Smith Study. With the pre-school child, it has been traditional to define the interview as a 'play situation'. With pre-school children the use of props during the interview, such as talking through the medium of dolls, or carrying on a telephone conversation via a toy telephone is often more effective than a straight forward question-answer approach. Giving the child an opportunity to use crayons, or the little child to scribble and "draw" on the interviewer's pad while talking during the interview may also help to decrease self-consciousness.

At a later stage an useful procedure is to let the child recite nursery rhymes which has been newly learnt. The words of the nursery rhymes are imitative and are therefore not included in the vocabulary count. But this procedure places the child in the role of the "expert"; it establishes rapport and stimulates the child to talk.


An investigation stands or falls on the ability of the observer to transcribe sounds accurately. It is extremely essential that the investigator should enlist the aid of the mother, father, siblings, or even mother-surrogate while interviewing the child. The investigator is initially a new face for the child and it takes some time for the child to accept the investigator as one who means no harm, but can at times constitute a good playmate. The child feels his way carefully before a close contact is made. He keeps going back close to the parents at very small intervals of 2 to 3 minutes seeking reassurance. The attitude of the child also depends on the parent's attitude and expression of friendliness towards the investigator. One has to be very casual in his advances towards the child; then only does the child gradually place his trust on the investigator. And in this, it pays to be extra careful. Once the child has lost his trust it is next to impossible to get it back. The position soon changes with the frequency of meetings with the child increasing. The child gradually looks forward to the investigator's visits; very soon the child finds himself on the investigator's lap and going through the contents of her bag.

At the outset the investigator is faced with difficulties during the interview as the child does not produce even minimally interpretable utterances. When the child
produces repetitive, uninformative utterances of this sort and there is usually a conversational breakdown, in which event the presence of the parents is a great help. The child and his parents share enough experiences; the adult knows what kind of thing the child is likely to say. Most people experience difficulty in chatting with an unfamiliar two-year old. Sometimes the investigator comes to a dead end when talking to the child, and the child refuses to proceed further with his speech. The investigator has not shared an experience with the child, whereas the mother has. An example of a conversation with Alicia will make this point clear. The mother at the beginning of the conversation is in the Kitchen, the investigator and Alicia are in the sitting room.

Alicia : 'Ring'
Investigator : Where is your 'Ring'?
Alicia : 'Ring'
Investigator : Do you have a 'Ring'?
Alicia : 'Ring'
Investigator : Have you lost your 'Ring'?

At this juncture the mother enters.

Alicia : 'Ring'
Mother : Who gave you the 'Ring'?
Alicia : Daddy.
Mother : Where did he put it?
Alicia : Finger.

It took the mother to bring out the two words DADDY and FINGER from Alicia who already knew the words. It actually needed the appropriate questions, and these had been gone over by mother and daughter in a prior intimate conversation.

Alicia and her mother continued an extensive and complicated conversation about their shared visit to the shop for several turns. It is important to note that Alicia and her mother had shared more than just the visit, they had also shared the experience of discussing the visit, with the result that the mother knew what kinds of questions Alicia could answer and Alicia knew what kinds of questions her mother was likely to ask. This is only one example of the type of problem faced with regard to all cases, and the consequent necessity of at least one-parent to be around during a session with the child.

It was only from the time of the appearance of the first words that the various vocabulary counts, which list the words in the order of their appearance began and continued till the child was 3½ years old. Each child was observed individually in his own home, and on certain occasions in the investigator's home when the child could pay a visit to the investigator. The latter procedure has been successful only with the "friendly types." It had proved disastrous with

5. Albert Tham (Monolingual), Sadhana Sharma (Bilingual), Ravi Baruah (Bilingual), Joseph Marbonlang (Monolingual).
the "shy types". It has been possible and convenient for the investigator at times to take the child out for a walk in the park. Whenever possible during sessions, the child was alone in the room with the investigator, but in making home visits, this condition was often difficult to control. In many cases the mother was present during all or part of the observation, and this circumstance often put the child more at ease. Occasionally other members of the family were present as well which factor usually stimulated the child's conversation rather than hindered it.

The responses were recorded exactly as they sounded to the investigator, even in the cases of the youngest children many of whom gave verbal responses that were incomprehensible. However, these children have many sounds in their vocal repertoires for which we have no adequate written symbols; and hence any attempt to record their utterances in writing is very unsatisfactory. Such responses have been treated separately, and the only accurate result they yield is the number of syllables combined per response. In some cases of peculiar articulation the mother's interpretation

6. Ginettle Clara Sokhlet (Monolingual); Barrilyn Lyngdoh (Monolingual); Karen Shadwell (Monolingual); Desmond Rynjah (Bilingual).

7. It was almost impossible to talk to Peter Ashley without his older brother Michael around, or to talk to Alicia Ingty without her brother Mark in the vicinity.
was considered if it clarified the child's speech, and if it was obvious that she was giving a literal reproduction and was not elaborating on what the child had said. It was surprising, however, in how many of these cases the mother was quite frank in admitting that she understood the child no better than the investigator. The record did not include recitation of nursery rhymes from memory or responses uttered in direct imitation of another person.

Even children who can be readily understood most of the time, frequently use words and phrases that are entirely unintelligible to the hearer. It was necessary, therefore, to divide the data of this experiment into: (1) **Comprehensible responses**, which included all responses that can be understood by the investigator inspite of poor articulation, letter substitution, or faulty or incomplete construction; (2) **Incomprehensible vocalization**, which included all responses which were made sounds forming no recognizable words, and which were entirely devoid of meaning to the hearer.

Recording sessions were usually held in the home of the child with the mother present. The intention was to disturb the household routines as little as possible. The mother was informed about the purposes of the recording and was instructed not to prompt the child since our primary interest was in utterances produced by the child in the
absence of any immediately preceding model. Since the theory concerns attempts by the child to say something (as opposed to babbling), the co-operation and attention of the mother were essential, since she was more likely than anyone else to be able to identify vocal productions as attempts to say something. In case the investigator could not target the utterance, the mother was asked to say what the child's utterances meant. In some cases it was found that utterances were slow in appearing at first. Then the investigator had to elicit them by asking "what's that?" and pointing to things visible in the room. Good results were frequently obtained by allowing the child to go through the contents of the investigator's handbag, naming the items as they appeared. Little girls seldom lost a chance to go through the investigator's handbag and linger over the lipstick and the comb, while boys would summarily go through the contents to find out if there was anything there for them by way of candy and would quickly pass on to the working of the investigator's watch and would manifest a desire to take it apart. Before long children tended to find themselves sitting on the investigator's lap, "reading" one of their own books to her. She evidently ignorant of the names of the animals and people to be found in children's books, had to be told their names. Some children who had toy telephones were induced to put in an imaginary call to a friend; slightly older children who had telephones in their homes were induced to put in a call
to a friend, playmate or relative. In the first type of calls the monologues were splendid, lengthy stretches of spontaneous speech. The very young child tended to relapse towards babbling on occasion, possibly since the imaginary phone call set up a situation in which there were no punishments for unintelligibility. Very often it produced a flow of vocalization with appropriate changes in pitch and stress levels. The result was often regarded by the mother as an acute parody of her telephone calls to friends.

Corpus length varied somewhat with the date of the recording session. As the investigator became more skilled, she eliminated many stratagems which gave poor results and developed some that seemed to work. For example, she learned that usually more time and emotion are spent trying to ban older Siblings from the recording session than are lost by allowing them to participate under controlled conditions. The investigator gradually came to have an excellent idea of what kinds of topic were productive at various ages and what kinds not. The result of the increased skill of the investigator was smoother handling of the children and more corpus per session.

The following pages of this chapter deal with the three techniques mentioned before, viz, the longitudinal

8. Peter Ashley's brother Michael.
3.1. THE LONGITUDINAL VERSUS THE CROSS-SECTIONAL STUDY.

From the conservative point of view there are two standard methods of gathering observations on the development of children. In one of these the investigator makes repeated observations on the same group of subjects. This is the longitudinal technique. In the other the investigator makes a limited number of observations on different groups of subjects. This is the cross-sectional technique. In the cross-sectional method different groups of subjects at different stages of development can be studied simultaneously. The present investigation is NOT one that comes under this category. In many problems in the study of development, either of the two methods may be used - for example, in the present study the growth of vocabulary may have been observed by following 18 children from preverbal age to adolescence, or a specified age, with annual examination of their language skills, or, alternately groups of 18 children of different ages may be studied at more or less the same time with no overlap in the membership of groups. The longitudinal pro-

9. On the 18 cases in the present study.
gramme will extend over a longer period of time, than the cross-sectional. In the present study it may have taken a dozen years, as compared with as many weeks. For this reason the longitudinal technique appears to be inefficient and cumbersome, and there is no doubt that the literature contains relatively few reports of repeated measurements over long periods of time.  

Usually the longitudinal studies are committed to a research design that involves the careful periodic description of a relatively unselected group of children from birth onward. In the longitudinal study a major problem is to pick out enough samples of the same kind and age at the appointed period. Another important problem in this kind of study is to obtain geographical stability. It is apparent that a longitudinal study of the effects of one or two variables of childhood experience is a big investment for a relatively small return—quantitatively speaking.

In the longitudinal approach data are obtained by studying the same children over a period of years in their different stages of development. The present investigation comes under this category. The investigator of the present


11. pp 27. ibid.
study has had to wait several years for the developmental spans of infancy to elapse; in the process a few of the cases have left the place and a few have petered out for various reasons while the research had been conducted.

An important characteristic of the cross-sectional method is that a different sample of subjects is used at each of several age levels. In contrast the longitudinal approach uses the same sample of subjects at several age levels. A great advantage of the cross-sectional method is the relative economy in securing data. For instance, the investigator who wishes to study the vocabulary development of children from 6 months to 3½ years of age can secure children at each of the age levels. The study can thus be completed in shorter time than if the children were followed month by month through the years until they were 3½ years of age. On the other hand, something may be lost because of the lack of continuity of the subjects. Extraneous factors such as variation from family to family, different ways of upbringing, and different neighbourhood may effect the results of the study, which might better be controlled by following through with the sample of children and parents. However, individual trends cannot be followed with the cross-sectional methods. This, on the other hand, is the great advantage of the longitudinal approach, but the time factor is a practical difficulty in its use. The time needed to
complete a longitudinal study is almost prohibitive.

The cross-sectional method is also illustrated in the classical work of Smith (1926), a study of the vocabulary and sentence structure of children, 8 months to 6 years old. Her main interest was in the growth of these two language skills with increasing age. She did not use the International Phonetic Alphabet, but devised a short hand of her own. The cross-sectional method was also employed by Wellman, Case, Mengert and Bradbury (1931) in a study of phonetic development of children 2 to 6 years old. These workers transcribed the data live in the International Phonetic Alphabet. The children's vocalizations were elicited by the presentation of toys and pictures and by questions.

The longitudinal study is a long term programme. One major problem here is the real inability to control the environment of a child over any reasonably long period. In longitudinal studies we must be content with very inadequate controls over the events in the child's life. Another major problem in a longitudinal study is that the investigator


cannot expect that enough of the right kind of cases will turn up in an unselected longitudinal sample. Also, in a longitudinal study it is wise to select cases whose lives are less likely to be subjected to violent upheavals. Geographical stability is highly desirable - for practical as well as theoretical reasons. It is desirable to limit such longitudinal studies to cooperative middle class families because of the relative stability of middle class family life.

The relationship between a longitudinal researcher and his subjects is not simply an exchange between a source of data and a data-recording system; it is a social interaction that can become, in long term studies, fairly intimate, and complicated. In a longitudinal study where 'behaviour' of children is studied, as the investigator gets to know the child and his parents, and as they get to know him, there arises the possibility that they will change the "normal" behaviour or their reports to conform to his position, however mildly expressed. If this kind of distortion occurs at a high rate, then the validity of long term longitudinal studies of development is in jeopardy. In this kind of study the investigator must realize, however, that he is not seeing his subjects in a perfectly natural state, and that they will certainly be influenced occasionally in their

behaviour as a result of interactions with him. But as long as he is tuned to the possibility of distortion and discrete in the social exchange that is part of research on human behaviour, it is unlikely that he will seriously reduce the validity of his findings by making his subjects too responsive to his own preconceptions. This kind of danger is more likely in the longitudinal studies of behaviour involving parents' rearing practices perhaps, and is not likely in the present study of vocabulary growth.

Lastly, the investigator in a longitudinal study faces one difficult problem - the analysis of his data. In certain cases he cannot solve his problems of data analysis by reference to "agreed-on" principles. In certain cases the longitudinal study is beset with the problem of too much information and the problem of contamination. As the investigator works over a period of years to collect observations he invariably finds himself in possession of a staggering array of data. This is further complicated by the fact that the investigator cannot turn to the analysis of the data he has already collected because he is still spending all his time in collecting new materials on his subject. In a study that extends over decades there is always the risk of being overwhelmed by the weight of data. In a predicament of this type the investigator is liable to postpone his report indefinitely. The present study does not come
under this category because of the lesser span of years involved. In many longitudinal studies involving a bigger span of years the study is divided into a "two-team" organization for the research. One group of workers collect data and maintains contact with the subject; the other group occupies itself with coding, summarizing and analyzing observations. With a division of this kind some balance will be established between the collection of data and their analysis.

The second problem that the investigator in a longitudinal study is faced with is contamination. If an investigator has observed the development of a child from birth to 6 years, and at the end of this period sets about his analysis and conclusion, he cannot examine his information about the child as an infant free of influence from his knowledge of the child's behaviour at 6. In all the years of contact with the child the investigator builds a portrait of him and this portrait is bound to influence the work of analysis and conclusion. The "two-team" approach to longitudinal study, which permits the analysis of data as they are collected can help in reducing contamination of this sort. Considered from all angles, however, the longitudinal observation is an important part of child-development research, and it permits the presentation of an integrated sensible picture of the developing child. In the present
research on child vocabulary, however, the longitudinal method of study stands to be the best possible method under the circumstances.

3.2. OBSERVATIONAL TECHNIQUE.

A frequently used method of studying children's vocabulary development is the direct observation procedure. Direct observation includes observing and associated recording and analysis of naturally occurring events. Observational child study is a collective name for all such methods in psychological research with children. It is the study of spontaneous and ongoing, child behaviour in the settings of everyday life.

One of the most important requirements of all observational studies of behaviour is continuum coverage. The behaviour of a person is a lifelong continuum. It is like a continuous stream that cannot be seen in its entirety from one point of the stream alone. If the whole stream is to be observed and described, it has to be divided into observable lengths. Continuum coverage refers to the lengths or parts into which the stream of behaviour is divided for purposes of observation.

The question of contamination does not make itself felt in the present study, as the span of years under observation is relatively small.
The behaviour stream is enormously complex. Observing all of its many currents and ripples for the shortest time is so difficult that limits are usually set again. One can look during the hour a day only for such grand current phenomena as taking first steps or saying first words. One can look during the minute once an hour for little ripple phenomena on the order of restless actions in a classroom; or during the greetings for degrees along such a behaviour dimension as emotional warmth; or during the day, as precedent truly stands, for everything in sight in the behaviour and situation of the person. Material coverage refers to what and how much at a time the observer tries to see in the stream of behaviour.\(^{16}\)

The diary method that has been used in the present study is one of the most important and oft used ones in the direct observational study and the most relevant. The direct method of observation as such has been used a good deal more than other methods in child psychology with subjects under 6 years of age. It is believed that the younger the child more natural his behaviour in the presence of an observer. Children in a freeplay experience tell us many things about themselves. As we observe them, we see the expansiveness and restriction in different children. We

notice that the child's way of meeting new situations is as varied as the personality of the children. Watch a child move from home to school to a park to a corner drug store and so on through a day. His behaviour will be seen to change with remarkable speed as he goes from setting to setting. One discovers, then, that behaviour settings contain certain forces that coerce individual behaviour; and one easily believe that these forces must be of critical importance in the process of socialization and personality growth.

It is clear, in any case, that methods of observational child study have been shaped most by research on behaviour in early childhood. It is the least round about way to get data on the natural habitats and behaviour of children. And the problem of instrumenting observational child study in a material way has been met chiefly with paper and pencil, a timepiece and a writing board.

How naturally or unnaturally a child behaves in the presence of an observer is a question that has often been asked. What can one do to minimize the influence of the observer upon the behaviour that he records? Very often the observation is done from behind a one-way-vision screen so that the child does not see the observer. But this is not always a practical solution. So, instead of trying to hide, the observer can first get acquainted with his subjects
and others who are likely to be on the scene and then play
his part as a non-evaluating, impartial, non-participating,
non-directive and friendly person with interest in children. 17
Much observed children get habituated to the presence of an
outsider very quickly. The child cannot entirely stop being
himself for long because he is being watched - and time has
"a tranquilizing effect."

The observer can do much to dampen his influence upon
the child. His part is to fade into the background as much
as possible. This obviously requires the set of a neutral
bystander, yet, it does not call for wooden unresponsiveness.
An observer is sure to stand out at times as a stationary
figure against a moving ground if he tries to be only a lis-
tening post. He had better answer questions, for example,
or certainly become a centre of uneasy attention.

Such effects of the observer as there may be need not
go entirely unmeasured. Teachers, parents, or other adults
may be asked to rate deviations in the child's behaviour
during periods of observation. Behaviour of the child in
relation with the observer and with other adults can be com-
pared.

17. pp 117 ibid.
The problem of the reliability of the individual who observes and records the speech of infants is of paramount importance, because, an investigation stands or falls on the ability of the observer to transcribe sounds accurately. Establishing the reliability of the human recorder is analogous to the calibration of an instrument. Frequently the transcription must be recorded live, that is, with paper and pencil, depending on where the subjects are found, and their ages. Frequently the presence of a tape recorder or any mechanical apparatus inhibits speech production in young children. In any case, the reliability is measured by the percentage of agreement between two or more trained listeners, each of whom records the child's vocalization simultaneously and independently.

Some investigators have used the all-day conversation method (Gales, Nice, and Brandengurg) of recording children's speech. From such a record, of course, more than a vocabulary count can be obtained, since it could yield valuable material on sentence length and structure. Few of the writers who have recorded their data in such form have evinced an interest in sentence formation. Many other writers, especially Bateman have recorded their material in the

form of conversation, but have not taken the conversation for any one day.  

The writers who are interested chiefly in vocabulary counts, however, record simply the different words used. Some record them in the order of their acquisition. Some have engaged the child in conversation in order to elicit all the words that the child was able to use, even though they did not occur in his spontaneous conversation. Beyer, included words used spontaneously and apparently understood by the child.  

3.3. DIARIES.

The 'Diary Records' are a product of direct observation. The diary description is one of the oldest methods in the study of child development. It is also the most simple. This method employs the recording technique of the lay diary in order to keep a sequential account of the life history of the child. Note is taken of what changes occur when development proceeds from day to day, and episodes that are startling and novel are narratively described. The child's growth is an endless procession of events. The notations and descriptions recorded are necessarily selective in the face of    

20. As in the present study.  
the numerous events that pass in this endless procession. Yet it is not as though these selections are not subject to some form of rule and without reason. The observer sets down whatever is only arresting to his mind. In diary recordings there is usually a stable and objective principle of limitation, namely that of recording in sequence only behavioural events that are relevant in the behaviour continuum of the subject under study. Most often this subject is an infant, or a child of pre-school age. In the present study it is a child from the cooing and babbling stage to the time that he is 3½ years old. A special feature in this method is the close and essentially continuous contact between the subject and the observer, who have invariably lived together as child and parent, or other guardian. In case where the investigator is an outside person, the diary record is kept by one or both parents of the child, and constitutes a supplement to the investigator's own records collected during observation. There are two kinds of diary records normally in use: the comprehensive diary which the recorder takes down in order as much as possible of every thing new as it can, and the topical diary which concentrates on phenomena in one or a few developmental channels, to the exclusion of everything else.

22. Procedure followed by the investigator of the present Study. It is a 'comprehensive' diary record.
Many of the diary descriptions are reports of casual interview procedures, improved psychological tests, growth indices that are spontaneous, and behaviour episodes; they are not all products of direct observation alone. This composite data make up the bulk of most of the child diaries.

Very often diary records have been maligned on the grounds that they included biased selection, unreliable recording, inefficient gathering and processing of data, and unwarranted interpretation. With a subjective method such as this there is bound to be criticisms; on many scores. But the criticisms are not always necessarily justified and there is no reason why some of the shortcomings, if not all of them, could be remedied. Whatever may be the faults of the diary description method in practice, the basic method has untold advantages in principles. "It commands the breadth, richness, subtlety, and permanency of the written word compared with which the best of check lists and rating scales are limited instruments. It gives a multidimensional picture of simultaneous and successive factors in the behaviour and circumstances of an individual child."\(^{23}\)

Due to the nature of the diary records it is not always possible to make detailed descriptions of situations in single life episodes. The nature of diary record calls

for extended coverage. As such it is not possible to include
unselective and continuous moment-to-moment recording of
situation and behaviour. Yet, one point has to be acceeded
to the critics: the method does permit sketchy treatment in
developmental changes. But diary description takes into
account the continuity of behaviour, as this can be done
only by observation of children one by one, over extended
periods of time. The diary description and the longitudinal
mode of child study are thus methods ideally suited to each
other and manifest great compatibility when used together.

Most students of child development have given sanc-
tion to the longitudinal principle; and it is perhaps true
that no method stands to implement the principle better than
diary reporting. Some of the longitudinal methods that do
not take the aid of diary reporting have generally used large
groups of subjects, who have been visited, observed, inter-
viewed and tested at rather widely separated intervals of
time. Because they lack the feature of continuous contact
between investigator and subject, these methods inevitably
miss much that a diary kept at home stands to reveal "the
actual unfolding of one stage after another" in the life of
a child.

The aim of the child diaries is not only one of per-
sonal accounting or recording, and at the same time under-
standing the special behaviour of each child subject. It has
the normative aim of discovering the general and overall traits of children at different ages and periods of growth.

The method of keeping diary records may be changed for the better by introducing new techniques by trained students of child behaviour. Each person in such a study may have insight into a new problem or error, and as such stumble on a new approach. They may take up a new method with new and different safeguards against bias and error.

In order to be certain regarding controversial points, colleagues or specialists in the field could also be brought in and new and more efficient methods may be used in giving quantitative representation of qualitative data.

Diary description is in many ways similar to literary biography. It is very well adapted to problems of continuity and interdependency, well enough to suit the needs of the longitudinal methods of child observation and study. The diary description reports observe behaviour narratively and relies on qualitative study.

As far as vocabulary recordings in child study is concerned one of the problems of the diary method is the question whether all words uttered by the child are justifiably included as part of his vocabulary. The sound combination that the child produces to mean a certain concept may be understood entirely differently by different people.
around him; they may be interpreted correctly only by a very few people around him - often only by his mother. As for example, the child having seen a dog that the parents call "PUCHHKA" may use the sound combination "PUCHHKA" to mean the concept "dog". He may refer to all dogs as Puchhka. The investigator of the present study has had past experience of this kind, which brings out the problem clearly. The investigator's child used the sound combination "BONJUP" to mean "bed". This could only be interpreted for its concept by the child's father and mother and by no one else. (Age 18 months).

It is for these complexities of word-concept relationships that it is so difficult to gauge a child's true vocabulary. As such, what to include in the diary is often a baffling question. It is for these complexities of word-concept relationships that it is so difficult to gauge a child's true vocabulary.

But even with these problems the diary description is the best method in longitudinal studies of child development. According to Bussel if the science of psychology is to be advanced "there is need for vast masses of facts, which for their multitude can only be collected by an army of investigators working in many quarters, under various conditions,"

24. This sound combination has no meaning in any language heard by the child.
and through a long period of time." This calls for the diary.

Summary.

The present study is a longitudinal study made with the joint aid of the Observational technique and comprehensive diary records. The two main problems that one may find in a longitudinal study, viz. (i) a staggering quantity of data and (ii) contamination have not arisen here, as the span of years under observation is relatively small. So, for the present research, this method is the best possible one under the circumstances.