A PILOT STUDY OF THE RELATIONSHIP BETWEEN THE ENGLISH
LANGUAGE ABILITIES OF A GROUP OF PRIMARY SCHOOL CHILDREN AND
THEIR TREE-DRAWINGS.

THESIS

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TABLE OF CONTENTS

iv

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v

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ABSTRACT

This pilot study attempts to assess the correlation between language ability and a projective Tree-drawing test. The hypothesis tested is that expounded by Sandra Michel, a psychologist working with Dr. A. A. Tomatis at the Language Centre in Paris. The theory of Language from which her work derives is that put forward by A. A. Tomatis in Vers l'écoute humaine (Towards Human Hearing), (1977) and Education and Dyslexia trans., Louise Guiney, (1972).

This hypothesis states that the Tree-drawing can give a clear indication of the kind of dialogue the testee will be able and willing to use. The claims for projective Tree-drawing 'tests' or techniques have been mainly concerned with personality or psychological assessments and sometimes with intelligence testing since Charles Koch first began his work in this field in the early forties. Sandra Michel in "The Tree Test", translated by T. Brown, (unpublished paper), Tomatis Centre (Scarbrough, Ontario, 1980) discusses a Tree-drawing scale that indicates both the developmental level of the child's language ability and his/her motivation towards dialogue and communication at this level.

To test this hypothesis a sample of 1094 Tree-drawings was used. The drawings were done by Primary School children of both sexes from Sub. A. to Std. 5, collected over four years of research. These drawings were studied to see if the Tree

scale of drawings described by Michel did in fact occur and if they occurred in the sequence she suggests. As a result of these preliminary investigations a developmental scale was devised and proposed as a refinement of Michel's scale. Scores from these two Tree-scales were correlated with English language scores using Pearson Product Moment Correlation Coefficient and the Spearman Rank techniques. The sample for this correlation study was a group of 54 Std. 5 pupils whose English language ability was evaluated by

(i)   a school English Examination mark,

(ii) a Questionnaire scoring receptive and expressive language behaviours and

(iii) Verbal I.Q. scores.

The positive correlation between these language scores and the Tree-drawing projective test scores are discussed and the implications for English language teaching and suggestions for further research mentioned.

INTRODUCTION

I was introduced to the Tree-drawing technique in 1976 by Dr. Alfred Tomatis of the Tomatis Language Centre, Paris, who is primarily involved in language disorders, such as dyslexia, in young children. It was extremely fortunate that those of us involved with the Language Clinic, set up in Bloemfontein at that time, had personal contact with Dr. Tomatis and with the research into the relevance of Tree-drawings as a 'projective test' for language problems.

The Bloemfontein Clinic was run at the Martie du Plessis School for Cerebral Palsy under the auspices of the University of the Orange Free State Student Guidance Department and the Potchefstroom University Psychology Department. At that time I was a remedial teacher working for the School Clinic and I used this technique very successfully. I began to collect tree drawings as a result of this work and since 1981, as an Art teacher in Port Elizabeth, I have had the unique opportunity of studying drawings of trees done by Primary School children. I became fascinated by the interpretation of the Tree-drawing and the idea that there may be a relationship between Tree-drawings and the Primary School child's developing language skills.

My introduction to the Tree-drawing 'test' was practical, and this experience provided valuable insight into the problems children have with communication, and in particular

into the emotional problems of children in the Remedial programmes. To those familiar with Remedial programmes it is often clear that emotional problems are linked in some way with learning problems.

Tomatis's research is of particular interest in the field of projective drawing techniques in that he links the Tree-drawing specifically to language and the desire to communicate. Why the Tree-drawing is an important vehicle for this information is a question discussed in Appendix 2 of this thesis where the Tree as a symbolic image in Myth and religion is considered. Most earlier researchers had used this test as a form of intelligence test or for personality assessment, which is difficult to verify. With other psychologists, Tomatis sees the child's desire and subsequent ability to communicate in his home language as dependent on so many affective experiences in his relationships with family members and other people, that these experiences mould his psychological profile and affect his neurological development. Tomatis believes that this, in turn, affects his actual hearing thresholds and, as a result, determines to a large extent his useful passage through school (our education system) where the medium is to a large extent the spoken word (Tomatis, A. A., 1972).

The attempt in this pilot study was to research a possible way of assessing Tree-drawings in an objective manner which could be repeated by other interested and skilled people.

If it is possible to read important information from a Tree-drawing, the way this information is obtained must be clarified so that what might be an entirely subjective appraisal could be refined into a more scientific and objective tool. It was an important part of this research to clarify the relationship, if any, between language ability and the Tree-drawing projective 'test'. If the Tree-drawing does indicate a level of language facility there should be a degree of correlation between the Tree-drawing assessment and language assessments of various kinds to substantiate this theory.

By means of research based on Sandra Michel's (1980) description of the Tree-drawing, the author studied and analysed over a period of years, the Tree-drawings of children in her Art classes. For the purposes of this thesis a frequency study was used to formulate a measuring tool that would be both easy to refer to and easy to use, as well as accurate in terms of an interval scale linked to developmental trends. The Tree-drawing scale formulated is not tied specifically to chronological age but an attempt has been made to link it satisfactorally to observable developmental trends that are not simply a result of progressive accuracy or skill in drawing ability.

School English language tests, verbal language ratings by teachers and Verbal I.Q. scores were used to assess language competence. (The Verbal I.Q. score was not considered a true

reflection of verbal language ability but was used as a standardised score as a check and to clarify the issue of the Tree-drawing in some way being simply another measure of intelligence.) The ability to utilise formal aspects of language usage such as punctuation, grammar or spelling was tested for in the school examination and broader aspects of expressive verbal communication, such as the ability to listen and to utilise spoken language as communication was obtained from a rating on a Questionnaire (Appendix 7) given to three teachers.

It was also important to include an assessment of receptivity or listening in the language Questionnaire (Appendix 7) as this is an important concept in Tomatis's work. He regards this ability to listen as a basic prerequisite for language development (Tomatis, A. A., 1972).

The level of objectivity possible in language assessment is a strong criticism of the observation of language behaviour and the use of school testing procedures. However, in this study, an attempt is made to avoid this subjectivity by the correlation of Tree-scale scores with more than just one language score.

The lack of statistical evidence for the validity of Tree-drawing tests has been to some extent a result of the difficulty of quantifying personality traits. Much has been

done over the years in an attempt to rectify this situation by both European and American researchers. Some advance in developmental research with children's drawings has occurred but with very little statistical evidence. Most researchers give case-history evidence to support their theories as much of their work is clinical and concerned with personality or psychological assessments (Bolander, K., 1977).

This correlation study hopefully begins to confront some aspects of this problem. By identifying stages in language development and ability by means of the Tree-drawing 'test', and by comparing these stages statistically with other measures of language ability, some of the claims for Tree-drawing as a projective test could be tested. Language ability can be tested more accurately than personality traits, and is tested fairly routinely by the school system.

An attempt at Triangulation (Cohen, L. and L., Manion, 1980, p. 208) was made in this research with six different people making various assessments of the group used for the correlation study. Triangulation was particularly important in the assessment of language ability. The use of two or more different methodologies to assess language ability obviates the problem of subjectivity involved in using only one methodology. The Pearson Product Moment and Spearman Rank statistical techniques were used for this final correlation study.

CHAPTER ONE

TREE-DRAWING - AN EXPLANATION AND LITERATURE REVIEW

In this chapter a brief historical survey of the use of Tree-drawing as a projective test is given. Comment on the most important researchers indicating their basic methodologies is discussed. On current thinking on Tree-drawing testing, reference in made to Karen Bolander (1977), an American, and Sandra Michel (1980) from France. The researchers are discussed in chronological order with, however, some necessary cross references where important concepts in interpretation are similar.

1.1   CHARLES KOCH - 1949: 1952: 1957

The first edition of Karl Koch's <u>Der Baumtest</u> appeared in 1949 and was later published in English in 1952. A third revised edition was printed in 1957. It is interesting to note that Koch does not claim to have devised the 'tree test' himself, but credits Emil Jucker, who was a vocational consultant in Switzerland with this initiative, in 1928 (Bolander, K., 1977, p. 32).

Koch considered the Tree-test as an aid to an analysis of the personality and felt that other means and methods should be used to confirm the overall picture of the personality that emerged from the Tree-drawing. He maintained that a

character analysis could be worked out from the Tree-drawing, but that in some cases it can be used as an "aid to diagnosis" (Koch, C., 1952, p. 5).

Koch, however, points out the value of the Tree-drawing as a comparative test and emphasises the usefulness of a drawing as a projective technique.

> The very fact that in a short time material becomes available which clarifies the position and value of other results obtained in other ways (and furthermore is itself clarified by these results) seems to be of value diagnostically.

(Koch, C., 1952, p. 7)

The instruction in Koch's manual is simply to tell the children or subjects to draw a fruit tree as well as they can and to use the whole sheet. The test is done using a medium soft pencil. He suggests to the tester that a request for further trees can be made. Thus the instruction can be repeated if necessary if the first tree drawing is unsatisfactory (Koch, C., 1952, p. 8). This brings in an element of evaluation even at this stage, but may be the source of later requests for multiple trees by Stora and Michel. (See later sections on these researchers.) As Koch says, other layers or aspects of the personality come to the fore in the second or third drawing which can then be investigated.

The request for a fruit tree was modified by later researchers to a request for any tree except a pine

(Bolander, K., 1977, p. 34). The reason for the exclusion of the pine tree in this test is unclear and one can surmise that the deciduous tree is either easier to fit into the analysis, or is a more universal archetype than the pine. The usual stylisation of the pine tree results in a drawing without obvious branches, so is perhaps difficult to analyse according to Koch's manual.

In this first manual he does not regard the research work on this 'test' to be final and suggests that more work must be done on many aspects of his method, not only in terms of what he calls "developmental statistics" but also in the 'Tables' which list possible meanings of 'signs' or shapes in trees. In this first manual Koch tries to classify and organise his interpretation of Tree-drawings with sketches and lists of meanings for each characteristic tree. (See Appendix 1, for examples of these Tables from his 1952 manual). He is critical of these lists and feels that they might "lead to superficiality" (Koch, C., 1952, p. 32). In fact the tables cover such a wide range of characteristics that they tend, as Bolander (1977) notes, not only to be ambiguous, but often mutually exclusive. This is perhaps a problem of precision of description.

Unfortunately these lists in the manual lead to over simplification. The use of a written text rather than lists may have elucidated his explanations of Tree-drawings. He discusses a deficiency of the Tables expressing the view

that they tend to have more numerous negative meanings than positive ones. From this, one understands Koch to indicate that a character trait may have both a positive aspect and a negative one and that there may be a more pronounced leaning towards one or the other.

This results in difficulties of interpretation and points up Koch's strong tendency to base his work on graphology (Koch, C., 1952, pp. 22-25). He does, however, claim to see developmental trends in his subjects. This allows a more complex assessment of the Tree-drawing that can indicate levels of development and not just a simplistic 'signs' equals 'meaning' interpretation.

According to Bolander (1977), in Koch's revised edition of 1957 (now out of print and unobtainable) statistical tables and figures are given for his developmental theories. Koch based his statistics on a fairly varied sample of 4163 drawings by 255 Kindergarten children, 1193 Primary school children; 622 lower-income, unskilled adults; 422 mental defectives in the age group seven to seventeen; 29 institutionalised imbeciles of varying ages and 22 young blacks from Rhodesia (Bolander, K., 1977, p. 39). He attempts to substantiate the theory that certain features, which might be normal for children at a certain age, would indicate severe regression or retarded development in adults.

Considering the influence that Koch has had on other workers in this field it is interesting to note those concepts that have had lasting usefulness in interpretation. He discusses the "line of development of the tree from bottom to top" and suggests that this can be read as -

(i)   the development from the unconscious to the conscious,

(ii)   the manifestation of "innate endowments" as they emerge, and

(iii) the passage of time, "the history of the person", the bottom of the tree expressing old, strong traces of early experiences and those more recent seen at the top of the tree (Koch, C., 1952, p. 13).

He expresses the concept of a "stance" that is taken by a person.

> It is possible to take a position in relation to the world which surrounds one and in which one lives, if its nature is to some degree known and understood, either by restricting and limiting reality or by coming to terms with it to the fullest possible extent.
>
> (Koch, C., 1952, p. 28)

In terms of this relationship to the world outside, the crown of the tree will symbolise the 'I'-'you' relationship, the person - object relationship and the relationship to present and future.

> The outer parts of the crown, the extre-mities, form the zone of contact with the environment, the zone of relationship and exchange between what is within and what is

> without, the zone of metabolism, of breath-
> ing.
>
> (Koch, C., 1952, p. 15)

This is interestingly similar to later developments in Tree-
drawing interpretation by Stora and Michel. (See later
sections in this chapter.)

Another term that is found in Koch and used again by Michel
is "skin". Koch describes the tree type with "Branches of
Crown framed in a 'Skin' (embryonal (sic) membrane)" (Koch,
C., 1952, p. 59). This type of tree he sees as essentially
uncommunicative and he emphasises that the outline can be
stylised and strong.

Thus in Koch's early work we already find the classification
of the uncommunicative, closed tree and the breathing,
communicative tree. This gives some indication of the strong
influence Koch's early work has had in Europe. One can
criticise Koch's work for its assumption that Graphology is
an acceptable discipline on which to base interpretation of
drawings. He quotes Max Pulver (Koch, C., 1952, p. 22), a
graphologist, as a source and claims that Hermann Rorschach
based his projective test techniques on Pulver's method of
dividing the page up into sections. (The space on the page
denoting certain symbolic meaning so that anything drawn in
these areas would automatically pertain to the meaning
specified (Koch, C., 1952, p. 9)). Bolander suggests that
the Graphology connection in Koch's work is one reason that

he has been ignored by English speaking researchers (Bolander, K., 1977, p. 33). Koch justifies his interest in the Tree as a meaningful projective 'test' by reference to religion and mythology, and later researchers do the same. (See Appendix 2 for a discussion on the Mythology of the Tree Symbol.)

1.2   G. SCHLIEBE - 1934

Schliebe was another early reseacher in Germany, but not as influential as Koch.   Dale B. Harris, who makes a very detailed study of the literature on children's drawings, makes the following observations on Schliebe's methods published in 1934 in German.

> Schliebe ... was interested in determining how children depict states of feeling in their drawings.   Six drawings were secured from each of 478 children between the ages of four and eighteen years.   First they were told to draw a tree.   This was used as a standard with which other drawings were to be compared.   The children were then asked to draw a cold tree, a happy tree, a frightened tree, a sad tree, and a dying tree. Comparisons were made in terms of height and width, the direction in which the branches typically pointed and a number of other features.   Schliebe believed he found characteristic patterns of such emotional expression.

(Harris, D. B., 1963, p. 38)

As a method of presentation this seems to put ideas into the child's head to begin with.   In conducting research for this thesis, it was found advisable to ask the children to draw any tree as well or as beautifully as they could because

asking children to draw an imaginary tree could produce very bizarre results. Strange, bizarre or very imaginative trees could probably be classified , but would simply make the task more difficult. Asking for a beautiful drawing eliminates the judgmental quality of "as well as you can" suggested by Koch (1952, p. 8). Schliebe's work attempted to classify interpretation of emotional expression found in children's drawings, thus his instructions suited his purpose.

1.3   **JOHN BUCK - 1948 and 1966**

John N. Buck, an American psychologist, published his papers on the <u>House-Tree-Person-Test</u> in 1948, before Koch's work was available in English. A revised manual, in book form, was published in 1966. His work was influential in the U.S.A. and England (Bolander, K., 1977).

His test was developed to be a measure of intelligence and to give more indication of aptitudes that may not be readily measured by other I.Q. test procedures. To give some indication of Buck's methodology his own description of his test follows.

> The House-Tree-Person (or H-T-P) is a technique designed to aid the clinician in obtaining information concerning an individual's sensitivity, maturity, flexibility, efficiency, degree of personality integration, and interaction with the environment, specifically and generally.
>
> The H-T-P is a two-phased, four step clinical approach to a meaningful analysis of the

total personality within its milieu.

In phase One, the step in testing is non-
verbal, creative and almost completely
unstructured; the medium of expression is
relatively primitive: the free hand, pencil
drawing of a House, a Tree, and a Person.

The second step is verbal, apperceptive, and
more formally structured: in it the subject
... is given an opportunity to describe,
define, and interpret his drawn objects and
their respective environments, and to asso-
ciate concerning them.

In Phase Two, the first step again involves
the free hand drawing of a House, a Tree and
a Person, but with crayons.

The second step provides the subject with the
opportunity (albeit in more limited fashion
than in step two of Phase One) to describe,
define and interpret his chromatic drawings
of a House, a Tree, and a Person, and to
associate concerning them and their respect-
tive environments.

(Buck, J., 1966, p. 1)

Buck scores his test quantitatively and qualitatively and in

discussing the Tree-drawing he says that the Tree-

...as a living or once-living thing in a
stressful, elemental environment may be presumed
to arouse associations concerning the basic and
elemental environmental relationships which the
subject experiences within his environment.

(Buck, J., 1966, p. 250)

To explain the viewpoint that the Tree-drawing in his test

invariably represents the subject himself he says the Tree-

drawing expresses-

The S's subconscious picture of himself in
relation to his psychological field in general:
It is believed that the tree is well adapted for
such projection since malformation and
distortion of its growth and form, which would
be seen conventionally as crippling in the
drawing of a person and presumably would arouse
defensive reactions in the S., serve to lend

realism to the drawing of the tree.

(Buck, J., 1966 p. 157)

He also maintains that the emotional state of the subject can be analysed from the Tree-drawing, especially with regard to his/her life role and the "ability to derive satisfaction from and in his environment in general" (Buck, J., 1966, p.,91). It is clear that, although Buck uses his test as an intelligence test, he also analyses the drawings for emotional and unconscious tendencies in the manner of a projective test.

Two basic ideas of interpretation emerge in Buck's analysis of the tree section of his test that are seen again in the work of later researchers:

(i)   The tree records the passage of time in the trunk and traumatic events are indicated by scars etc.

(ii)   The two sides of the page represent different aspects of reality, relating to the personality. The left side represents emotional satisfaction and the right side represents intellectual effort (Buck, J., 1966, p. 91). (See Appendix 6 for Bolander's interpretation of zones of the page.)

Buck (1966) quotes case-history studies to substantiate his interpretations. His greatest influence has been in the U.S.A..

1.4   R. STORA - 1963

A French Psychologist, R. Stora has published articles on the Tree test technique in French publications discussing both Koch's and Buck's methods and developing an approach of her own based on The drawings of 2,416 normal children (Bolander, K., 1977).

Bolander's comments on Stora's work are included here. Stora's work is still in French and, as far as can be ascertained, unpublished in English; and thus it is difficult to obtain in the original.

> While nearly all of the European investigators working with tree drawings use the Koch Tree Test as their point of departure, the French psychologist Stora has written about both Buck's and Koch's methods and has developed her own approach to tree-drawing analysis. For the most part, Stora's attitude toward drawing analysis is closer to Koch's than to Buck's, for she works with the tree theme only, and the principal focus of her work is with children. However, she objects to Koch's intuitive, symbolic treatment of his material and also to the vagueness and inclusiveness of the many interpretations he lists for specific signs. Trained in clinical psychology, she prefers the greater precision and orderliness of Buck's method. Her own approach constitutes a kind of bridge between the two systems.
>
> Stora's experiments with the drawings of 2,416 normal children between ages four and fifteen have led to the statistical determination of maturity scale, which includes

ninety items. She has also attempted to
study qualitative indications with statis-
tical methods, defining what signs and groups
of signs are most frequently associated with
certain emotional states - that of fear, for
example. One of her most important findings,
by her own account, is having established the
notion of "sign clusters" as a basis for
qualitative analysis.

In administration, Stora follows more closely
the procedure of Koch than that of Buck,
since she does not include formal questioning
of the subject as part of the protocol.
However, she requests four drawings in the
following manner:

a) One presents a sheet of white paper with
the proportions 21 x 27 [cm], a well
sharpened 2B pencil (eraser, ruler and
compass being forbidden) and one
requests: "Draw a tree, any kind you
wish, except for a pine."
b) After the first drawing has been
completed, one takes away the paper,
replacing it with a similar sheet, and
says: "Draw another tree, any kind you
wish, except for a pine."
c) One removes the second drawing offers
another sheet of paper, always white and
of the same size and requests: "Draw a
dream tree, an imaginary tree, a tree
which does not exist in reality, drawing
it as you please."
d) One removes the third drawing, presents a
fourth piece of paper of the same type
and requests: "Draw a tree, any kind you
wish, but do it with your eyes closed."
It is important to check that the eyes
are completely closed and not to accept
simple staring into space.
(Stora, 1963 b, pp. 261; our translation)

The first drawing is thought to represent the
subject's interactions with his wider envir-
onment and with strangers; the second with
the close environment and intimates. The
dream tree gives insights regarding the
testee's unsatisfied desires and his incli-
nations. The fourth tree, drawn with the
eyes closed, is thought by Stora to reveal
nonintegrated past experiences.

(Bolander, K., 1977, pp. 49 - 50)

Stora (1963 b) describes her method and introduces her discussion with an analysis of the mythology of the tree in terms of both Platonic and Christian symbolism. She sees the tree standing upright as a mediator between the earth and the sky. The roots, belonging to the earth and hidden from sight, are a symbolic representation of the unconscious. The trunk is the intermediary between the deep instinctive life of the roots and the intellectual life that is symbolised by the foliage. She expresses the idea, as Koch and Buck did, that the tree "shows the person who draws, representing his idea of his body and his own life" (Stora, R., 1963 b, p.5).

Stora also quotes graphology as a source for the interpretation of the space that the tree occupies and she refers to the 'stance' that the person takes in relation to the 'other'. Left is seen as oneself, one's past, and the return to oneself; and right is seen as the 'other', the future, and the orientation towards the 'other' one. Her style of analysis of the Tree-drawing seems similar to Koch's method and she goes into great detail when describing aspects of trunk, branches and foliage etc. But what seems to be lacking is an overall concept of what is being expressed in the Tree-drawing and as a result 'lists' of characteristics, which often seem somewhat arbitrary, follow a detail of a drawing.

Stora follows Koch by designating a tree with open, non-circled foliage to indicate a person "sensitive to atmosphere

with little resistance to it" (Stora, R.,1963 b, p. 5), and foliage drawn in an open curve to indicate receptivity open and accessable.   She mentions the height of the foliage as having a "direct connection with intellectual development and an interest in matters of the mind" (Stora, R.,1963 b, p. 14).   If the foliage is clearly bigger in relation to the height than the trunk - then the drawing is of a "superior intellectual 'niveau', of artistic interest and sometimes also a possibility of escaping into an imaginary dream world" (Stora, R.,1963 b, p. 15).

Stora also refers to the 'Tadpole' Tree which she says is a 'round protuberance' drawn on top of the trunk from where branches go in all directions and indicate a search for childish protection. The childish 'Tadpole' Tree - "A circle at the top of the trunk and branches spreading round in a single line" (Stora, R.,1963 b, p.10) - is normal up to seven years and retarded afterwards. (See 1.8 in this chapter for Michel on the Tadpole Tree.) It is difficult without access to sketches, to be certain of her descriptions of Tree-drawings and her statistical analysis is unavailable in English.

1.5   MATTMÜLLER-FRICK - 1968

Mattmüller-Frick, an educational counsellor, used the Tree test to help normal to intelligent students who were basically emotionally stable.

He is of interest to the present study as Bolander (1977) approves of his approach. He is a worker who is using the Tree-drawing to obtain a more intuitive understanding of the individual. Bolander notes that:

> Mattmüller-Frick (1968) lauds Koch's originality and insight, but at the same time he quietly goes about presenting a systematic ordering of Koch's haphazard tables, and makes some excellent interpretive contributions without drawing any particular attention to himself. He is an education counselor who finds the Tree Test highly useful in aiding students. Unlike Stora, Buck, and the later Koch, he is not much interested in statistical norms and is unembarrassed to admit the important role played by intuition in the qualitative interpretation of the drawings. It would seem, from his focus on positive comments, that he may be more accustomed than most other investigators to working with persons of normal or superior intelligence and reasonably stable emotions. In any case, he is clearly oriented to a holistic view of the subject as an individual, and his interpretive comments are notable for their common sense, if not for their adherence to the principles of current scientific methodology in psychological testing.

(Bolander, K., 1966, p. 50)

This approval by Bolander explains her own approach which is similar.

1.6   **KAREN BOLANDER - 1977**

In her book, Bolander (1977) gives a comprehensive and detailed account of the historical development of the projective 'test'. She discusses at some length various psychological assessment procedures and the many controversies that have arisen over the years.

A Hungarian colleague introduced Bolander to the Tree Test. This colleague was taught the method by Father Karoly Abel, a priest of the Piarist Order in the late 1940's. Bolander's connection with the Tree-test was via European researchers.

Bolander uses the Tree test to assess personality and the immediate difference between her approach and Koch's is that she sees the Tree-test as self-sufficient. She claims that the drawing, as a test, stands alone and does not need an interview or other test procedures and that this method avoids interpreter bias. This aspect is particularly important in the initial process of interpretation. She states, however, that "after the fact of examining, analysing, and synthesising the drawing material, congruence with other data should be sought" (Bolander, K., 1977, pp. 60-62).

Her instruction is very simply - "Would you draw a tree for me please?" (Bolander, K., 1977, p. 58). No other standard-isation of materials or procedure is followed except for providing paper in several different sizes, but the same proportion. A pencil is usually used. She does not allow colours. She seems to regard it as a matter of pride in the accuracy of her test that she has dispensed with observation of the drawing procedure. She can thus administer the test in groups to get the drawing and use other individual tests or interviews later.

Her approach to interpretation (as is Koch's) is to assess the "wholeness of the message conveyed by the drawing" (Bolander, K., 1977, p. 64). She begins a detailed examination of specific elements of the Tree-drawing and then synthesises and integrates details into a "holistic picture" (Bolander K., 1977, p. 65).

She claims that there is no absolute meaning for any specific sign drawn, but the main section of her book is a taxonomic key which may be used as a guide similar in approach to Koch's Tables. Her approach is essentially an interpretative skill derived from clinical experience over the years, and she regards standardisation of interpretation or statistical analysis inappropriate to her approach.

Bolander gives extensive interpretive analysis for all tree types, but her general ideas about the symbolic meaning of open, semi-closed, and closed structure of the crown of the tree are similar to both Koch's and Michel's (1980). The roots represent the unconscious or the instincts; the trunk represents the emotional life; the crown represents the mental or spiritual life (Bolander, K., 1977, p. 111). The energy expressed in the tree of a psychologically healthy person moves freely through these parts of the tree. The crown of the tree expresses the nature of the relationship that the person has with the environment.

> In general the open-structured crown indicates an open exchange between self and other, in terms of both self-expressed and receptiveness to influences. The completely

closed crown suggests either natural or
enforced self-containment. The semi-closed
crown represents an intermediate attitude.

(Bolander, K., 1977, p. 111)

Bolander defines the meaning of the space that the tree
occupies and the meaning of the placement of the branches on
the page in much the same way as both Koch (1952, p.8) and
Buck (1966, p.92) do. (See Appendix 6 for Bolander's
analysis of the space the Tree occupies on the page.)

Bolander also uses the concept of 'stance' in that she says
that an assumed or protective stance may be taken in rela-
tionship with the 'other' or the environment. She qualifies
the concept 'other' as being more accurate than environment,
but by which she means the "broad social conditions ... the
physical surrounding, ... everything that is experienced as
outside of the self." (Bolander, K., 1977, p. 111). This
may in fact encompass a wide spectrum of activity but the
underlying assumption is that this exchange does take place,
albeit with great variety of result. Bolander gives a great
deal of detail on how to interpret the Tree-drawing which is
too detailed to repeat here. The only evidence given that
these interpretations are right or wrong is based on case
histories which are so individual as to have only clinical
value and in fact her work is as unsubstantiated
statistically as Koch's.

Bolander is critical of Koch's Tables where 'meanings' given
seem both contradictory and incorrect. As an example

Bolander quotes "critical capacity" and "absence of clarity of thought" cited by Koch as possible meanings for one sign (1977, p. 34). (See Appendix 1 for examples of Koch's Tables.) Those 'meanings' she disagrees with and gives case history evidence to refute are mainly descriptive of Koch's developmental norms. Those 'meanings' she seems to have clinical evidence to support are based on his development of graphology. She seems to support Koch's interpretations that are based on graphology, although she points out that in neither edition does Koch specify his sources and that graphology principles have been considered suspect by other workers in this field.

She also gives some detail on refuting Koch's signs of regression or retardation. She feels that Koch's interpretation could be wrong and that the tree that he claims is a sign of retardation could be seen as creative and controlled if rendered in a sophisticated manner. She supports these claims with case histories (Bolander, K., 1977, p. 39).

Koch's sample consisted of drawings by children and adolescents and Bolander rightly sees this as a problem, as findings from adolescent drawings cannot necessarily be extrapolated onto adult drawings and this assumption by Koch could be the reason for the discrepancy between Bolander and Koch's interpretations.

Bolander criticises Buck on two counts: firstly she maintains that his samples for the standardisation of his seven levels of intelligence were too small - only twenty subjects were used; and secondly, she feels that the underlying assumption that the greater the 'realism' of the drawing, the greater the intelligence, is essentially debatable. Realism is, of course, a highly subjective notion, but Bolander puts forward a good argument that, what she calls 'abstract' trees, may in fact be neither idicative of a lack of intelligence, nor classifiable as genuinely infantile or primitive trees (Bolander, K., 1977, pp. 44-47). She substantiates this with case histories and further maintains that the highly abstract tree is often an indication of superior intelligence, as this rendering is a grasp of essentials rather than a repetitive realistic portrayal. The abstract or unrealistic tree is therefore not a tree that necessarily indicates a developmentally retarded person.

Most of Bolander's and Buck's work has been with adults so that the problem of the developmental stages syncronising in some predictable way with chronological age in children's drawings is not really confronted. Bolander summarizes the principal differences between her technique and Buck's in the following five points:- ('We' indicates her method)

(1)   We use only the single theme "tree", instead
        of the three items: house, tree, and person.

(2)   We do not believe that the tree drawing is a
        proper measure of intelligence or that there
        is a possibility of establishing a scoring

system related to it which would assess the mental ability of an adult subject in a valid manner.

(3)   We do not place emphasis on observation of the drawing process per se and do not employ a highly structured postdrawing interview. What Buck is attempting to accomplish through the P-D-I is to bring the H-T-P closer to the classic projective devices by using the subject's completed drawings as the point of departure for verbal associations and story-telling. In our method, any questions posed to the subject are asked only after the draw-ing itself has been subjected to preliminary analysis. The examiner's insights into the personality of the subject begin with the self-expressive and formal qualities of the drawing itself. Subsequent interviews may center around the rendering, but the ques-tions posed will be completely individual and will have as their purpose to deepen, refine, or correct insights which the examiner has already learned from study of the drawing.

(4)   A more subtle distinction between our test and H-T-P stems from the nature of Buck's original sample population and from his experience with clinically disturbed subjects, heavily weighted toward mental defectives and persons with severe person-ality maladjustments.

(5)   We do not use chromatic drawings because we feel that the colour symbolism has doubtful significance and we are not fully convinced that crayon drawings tend, as now claimed by Buck and his followers, to tap deeper layers of personality than a monochromatic render-ing.

(Bolander, K., 1977, p. 46 - 47)

Bolander's main objection to Buck is that he uses the H-T-P test as an intelligence test which she sees as a suspect technique.

Bolander (1977) touches on the subject of interpretation and examiner skill and probably this "skill" is not only

inevitable but necessary. She claims that the accuracy of the interpretation may depend on a process that is skilled and even subjective rather than entirely objective and standardised. It is interesting to note that the skill of interpreting Tree-drawings has been passed on and taught in a direct line from practitioner to practitioner in the oral tradition like so much good teaching from master to student. This does not necessarily make the 'technique' of interpreting Tree-drawings less valuable as a tool for understanding language development. Skill and experience are very important in assessing criteria, but this skill does not have to be entirely subjective.

Bolander, however, makes the point that interpretation is subjective and intuitive and claims that further investigation of case histories will substantiate first impressions. This skill is developed by clinical practice and she does not believe that it can be assessed by any standardised measuring tool or scales. Bolander's sample of 4 000 drawings was collected from children (117), high school scholars (260), adult males (2083) and adult females (1141). She used case history studies to substantiate her findings (Bolander, K., 1977, p. 337).

One last criticism of her work is that it has been mainly on adults and that developmental process that occurs naturally in children's drawing is not emphasised.

1.7 **ALFRED A.TOMATIS AND SANDRA MICHEL - 1972 AND 1980**

Dr. Alfred Tomatis began to work with the Tree Test when Koch's work was translated into French in 1956 and has worked with it in a modified and refined form since then (personal interview 1988). Tomatis and the clinics involved in Audio-Psycho-Phonology (Hearing therapy - see Appendix 3) use the Tree-drawing as an adjunct to their other extensive testing of each subject or patient. The main aim of these clinics has been to help individuals with their learning problems. Research on the Tree-drawing itself has taken a secondary role in their life's work.

The Tree-drawing for Tomatis, Michel and other psychologists in Tomatis Language Centres is essentially used as an aid to diagnostic testing and is thought to express the patient's stance or attitude to the social environment - his willingness to communicate and to receive messages on a verbal level, using language. The Tree-drawing expresses that developmental stage at which the child is willing to participate and if he has regressed to, or remained at, an 'earlier' stage it becomes clear from the Tree-drawings. This information is used to ascertain and understand what his auditory or language problems are. A description of the battery of diagnostic tests used in A.P.P. clinics is included in Appendix 3.

Sandra Michel (1980), working with Tomatis at the Centre
Tomatis in Paris, presented an interpretation of the Tomatis
Tree Test.   In this work she acknowledges a debt to Koch,
Buck and Stora (Michel, S., 1980, p. 25) and explores three
different levels of interpretation of the Tree-test
developed by Tomatis.   She describes Seven Stages in the
development of the Tree-drawing.

This paper, on the interpretation of the Tree-drawing is
divided into four sections.   A summary of these sections and
an explanation follow.

(i)   The Unconscious - Tomatis's Interpretation.
The white paper is the representation of the "unconscious"
and she quotes graphology as their source for this idea.
Each drawing is an expression of consciousness - "an effort
to master that unconscious" which is done without the
conscious knowledge of the drawer.   Therefore in the
unconscious act of drawing, without knowing it, the drawer
will proceed with an attempt to integrate and solve problems
which he must deal with over and over again until resolved -
that "which has been repeated 1000 times in the subject's
history" (Michel, S., 1980, pp. 23-24).   The unconscious is
that which is "in the consciousness" - not repressed but
unavailable (Michel, S., 1980, p. 1).

(ii)   <u>First Level of Interpretation of the Tree Test</u>:
       <u>Intra-Uterine Life</u>.

As the foetus develops, his listening ability can be affec-
ted by adverse physical or psychological events.   Concern
for the general physical condition of the foetus and its
vulnerability is common knowledge but Tomatis sees the
psychological well-being of the foetus as very much a
function of the developing auditory process even at this
early stage.   The delicate complexity of auditory processing
and its essentially volitional nature means that even slight
or mild problems can cause disturbance of the normal process
of language development.   The Tree-drawing is seen as able
to express these interactions and the nature of and
sensations of intra-uterine life.

Because of the work with rebirthing-therapy (see Appendix
3), the drawings of patients/scholars expressing inter-
uterine life have influenced Michel's work with Tree
drawings.   The stages of embryological development are seen
in the Tree drawings, and thus psychological development and
the development of consciousness are also seen as a dynamic
growth towards more competence and viability rather than a
static assessment of personality as it happens to be
expressed by the drawer at a given moment.

(iii) <u>Second Level of Interpretation of the Tree Test:</u>
    <u>Psychological Development.</u>

This is the longest section in this paper and gives more detail on the drawer's growing sense of identity and his relationship with parental figures. The roots of the Tree represent the archetypal Mother and Life itself. The trunk expresses the real relationship with the mother and is the link to Life. Michel sees the passage of time expressed in the trunk as well, as do most other researchers. (See Appendix 6.) Branching represents reaching towards the outside, the father and language - "listening to the outside world" (Michel, S., 1980, p. 18). The crown indicates the extent of the integration of language.

Michel says that the drawer will express his adjustment to the environment in which he is emotionally involved, and to which he is continually reacting in the Tree-drawing. It will be possible to see these emotional reactions in the way the Tree is drawn. Thus the Tree traces the developmental growth of the child and his/her emotional problems. These problems, according to Tomatis (1972), affect the child's quality of hearing. Actual hearing thresholds are affected and certain ranges in the spectrum of human hearing can often become unavailable to the child. Language ability is affected to a greater or lesser degree by the child's ability to hear and listen. (Appendix 3)

The personality, because it is dependent on physiological development, is understood as both more dynamic (capable of change) but also more determined by past experience. The psychology and personality of the drawer is limited by neurological processes which may or may not have been functioning optimally (Sidlauskas, A., 1974).

Michel identifies seven stages of development represented in the Tree-drawings which indicate at what level the drawer is functioning. (This is given in detail in a separate section - 1.8 .)

(iv)   Third Level of Interpretation of the Tree Test:
        Development of Consciousness.

A quotation follows from Michel's third level of interpretation - in which she explains the meaning of the tree as it develops and 'grows', as a symbol of the growth of consciousness. She tends to see the Tree as a symbolic passage of progress that continues without the conscious awareness of the drawer. This process is apparent in the Tree-drawing.

> The tree represents life, verticality, evolution, body image, notions of time and space as well as many other concepts. And so, the tree test is going to be a privileged tool for understanding the awakening of one's consciousness.
>
> You must look at the construction of the tree as a progressive enlightenment that settles in the leaves. The roots are going to represent that 'conscious unconscious' that we mentioned earlier. Then the trunk and the tadpole crown will manifest a uni-directional awakening that lights more strongly but on

fewer areas, the energy is focused in one
area and does not allow itself to radiate to
all ...

Once the branches appear consciousness begins
to expand its working field but there is
still no true contact or dialogue. The work
is all one way and thus, less deep and less
transforming. The current is still flowing
upwards.

On the other hand, once the crown appears one
can believe that it is language (skin, lis-
tening), in the symbolic sense of the word,
that takes hold of the tree and covers it
with skin. The 'current' now flows both
ways. ... If it is obvious that the subject
is totally unaware of what he is expressing
through his tree, it is equally true that it
is his 'conscious' which he is handing to
you.

(Michel, S., 1980, p. 25)

The trees, thus, are considered sequential and not only

reflect an expected developmental progress from stage to

stage, linked to physical development and chronological age,

but are also linked to a development of consciousness that

is not clearly defined in this paper but which is expressed

in Tomatis book <u>Vers l' écoute humaine</u>, 1977. This last

process is obviously not strictly linked to chronological

age, but <u>is</u> dependent on developmental history.

The Tree-drawing thus expresses a symbolic taking on of

language and communication as an especially humanising

process with the high aim of what Tomatis calls "scientific

language" in view (Kierman, S.A., 1986, pp. 43-44). Scien-

tific language for Tomatis is one which transcends the

everyday subjective level and becomes unpolluted by dogmas,

modes, axioms and ideology. Tomatis and Michel link this

language with 'listening'. Listening, as opposed to mere
hearing, is active, directed and motivated by the desire to
participate in social dialogue.

> It seems clear ... that in the process of
> hearing there are at least three overlapping
> actions to take into account: first, the
> purely sensory act of hearing, unassociated
> with any conscious mechanism; then a second
> stage characterised by listening, which
> implies an underlying effort of will; and,
> finally, integration itself. The three are
> not necessarily concurrent. We can hear
> without listening; we can listen and not
> integrate.
>
> (Tomatis, A.A., 1972, p. 62).

Michel claims that all three levels of interpretation can be
assessed to give a much wider picture of the individual's
emotional and language profile.

1.8   SEVEN STAGES OF THE TREE TEST - S. MICHEL

In her paper, Michel does not attempt to present a
description of each stage in a systematic way, but discusses
these stages a little under each section. For ease of
reference and clarity, these Seven Stages are given with as
clear a description as possible including a copy of her
sketches and a brief summary of the interpretation or meaning
she gives each stage.

Michel identifies Seven Stages of the tree as drawn by
children. She discusses the roots and the trunk as
expressing the early child-mother relationship and then
continues to describe the stages as they appear

developmentally.

roots   trunk
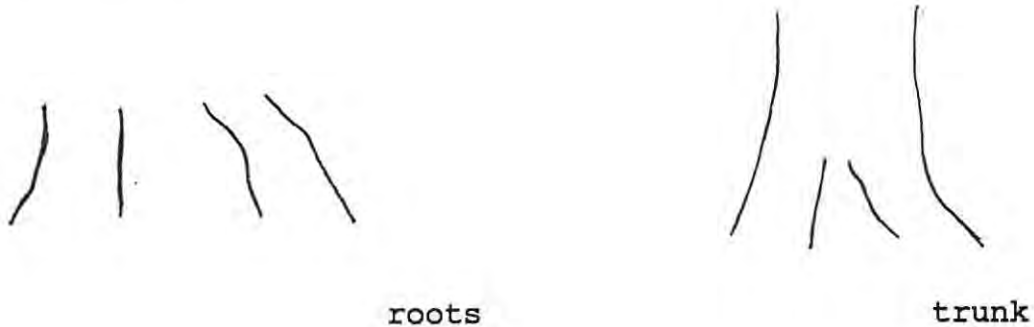
Michel's Seven Stages of the Tree-test
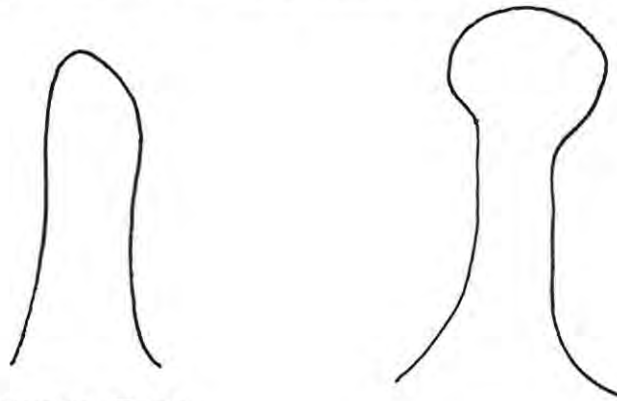
(i)   The Tadpole Tree

       The Tadpole Tree shape is a bulge growing out of the
       trunk with no real development into a tree form. The
       circle is closed, cramped and rigid; empty of leaves
       or fruit.

meaning: first sensation of being; awareness of self;
attachment to mother; first expression of consciousnesss;
narcissistic stage; energy strongly limited to area of self
and mother relationship; egocentric and immature if drawn by
an adult.
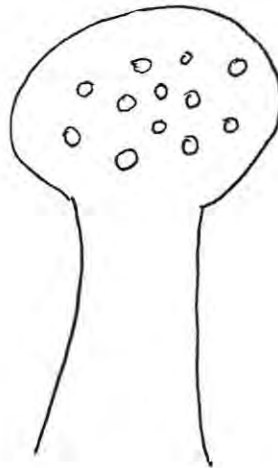
(my sketch)

(ii)   The Apple Tree

This is a fruit tree with a crown similar to that of
the Tadpole Tree. The crown is a protective device in
which the fruit float, rigid in shape, and with no
flexibility.

meaning: fruit is a condensed version of the branch seen
later representing the foetus' sensations;   a link between
the immature sense of the self limited to the maternal
relationship and a later stage where the child is aware of
his own sensations. Michel concedes that the Apple Tree is
more commonly observed but disregards it as a significant
stage (Michel, S., 1980, p. 16).
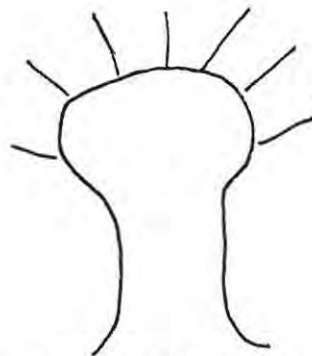
(iii)   The Tadpole Tree with branches or antennae

This is an intermediate stage. "The crown is a continuation of the trunk and is empty inside but around the exterior edge of the crown there now appear the beginnings of branches, 'a stroke'." (Michel, S., 1980, p. 6).

meaning: first attempt at exploring the surrounding world; first step towards the father; a hesitant desire to listen to the world beyond the world of the self and the mother. Mic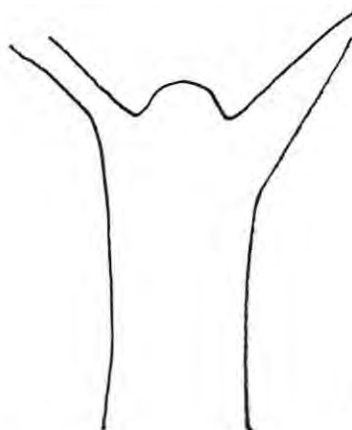hel sees this stage as representative of the desire to reach outwards which fits into her theory that branches express contact and exchange with the environment. She tends to disregard the fact that this tree occurs less often than the Apple Tree.

(my sketch)

(iv)   The Arm Tree

The top of the tree is in a dome or upside down V shape from which two branches grow. The tadpole crown disappears. This is an intermediary stage before the truly Branching tree.

meaning: a desire to leave the earlier stage of (iii) but

unable to solve the problem of moving on and releasing the earlier stage.

(v)   The Branched Tree

The diversity of shape and branching make this the richest stage.

meaning: multifold sensations of foetal experience; contacts with the environment; possible experience of space and thus the beginnings of spatial concepts; direction of branching important: left and bottom relate to relationship with mother and right and top relate to relationship with father.   Listening to others becomes a need.   Michel notes that this is the richest stage and her interpretation is quite extensive.

(vi)   The Branched Tree with a Skin

The branches are so numerous that the tips of the

branches can be linked to make a circle to form the crown.

meaning: symbolic correspondance to the foetal skin which is an organ of enrichment rather than exchange; the child not yet ready to abandon his branching system for the new skin.
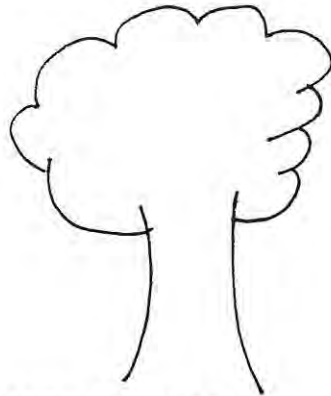
(vii)   The Open Breathing Tree

The crown is "airy, lively and supple". The branches are abandoned and the empty space within is a positive sign (Michel, S., 1980, p. 20).

meaning: birth of the foetus; receives and gives information; communication possible on a higher level; able to use language well by receiving and responding to language in an "adapted manner" (Michel, S., 1980, p. 20).

Michel also gives an account of what the child or drawer is experiencing in terms of his/her parental relationships. She discusses the development of the personality in regard to the ability to relate to other people and to an environment of social interaction which includes language. Michel's seven stages are related to the child's attitude or stance towards

language and the energy that is channelled towards achieving
the optimal level of participation in a dialogue with others.
The level that he achieves, then, is not purely related
either to chronological age or to intelligence (although,
obviously both play an important part in his achievement, as
such, and in his ability to compensate for poor 'reception')
but is mainly dependent on this matrix of social and
neurological conditioning.

This sequence of stages is linked to the child's willingness
to relate to the social environment. Tomatis emphasises the
voluntary aspect of these transactions with other people,
even to the extent of maintaining that the muscles of the
inner ear are striped muscles and thus require the 'stance'
of attention to be voluntarily taken up by the child, to
enable listening to take place. This 'attitude' of the child
is fraught with affective association and is closely related
to the mother-child relationship which is the first
relationship to lay the foundation for further social
experience (Tomatis, A. A., 1972, p. 63).

The Tree-drawing, according to Michel, will indicate clearly
this desire to communicate. The learning of language from
the most basic to the most advanced level is dependent on
this stance or attitude. Tomatis has said quite clearly in
all his work that the child may initiate an avoidance of
communication for affective reasons by blocking his listening
ability at the basic level of hearing thresholds. This can

be easily measured on an audiometer. But having done this (and the more intelligent and sensitive the child, the more likely the reasons for this avoidance will seem slight) the child actually impairs his neurological functioning which results in inevitable deprivation of stimuli or experience. This effect accumulates, so that the less neurological stimulation occurring, the less well the child is able to function. In the school situation this can be tragic and this is the basic theory of Dyslexia that Tomatis propounds in Education and Dyslexia, (1972). Tomatis and Michel claim that the Tree drawing often shows up these affective blocks in language ability and language use and they postulate an ideal or 'good' tree.

This is the open "Breathing tree" seen as an ideal which indicates that the child is sensitive and responsive to other people. Michel expands on what Koch styled the "crown in curly style, the communicative, talkative tree" (Koch, C., 1952, p. 64) by saying it is "...airy, lively, supple. An image of breathing would be spontaneously evoked by this crown" (Michel, S., 1980, p. 20). The person who draws this sort of "breathing" tree would be able to use language, having integrated it sufficiently, and would be capable of receiving information from the outside. He is at the stage of "listening and dialogue" (Michel, S., 1980, p. 20).

Michel's paper on the interpretation of the Tree-drawing unfortunately does not indicate sample, methodology or

statistical evidence. It is essentially an unpublished paper to aid other researchers working in Tomatis clinics. She quotes Koch, Stora and Schliebe (all European researchers) on interpretation. Although critical to a certain extent of their work, she derives many of her ideas directly from their early work. She is clearly aware that more research must be done on various aspects of interpretation. In an attempt to correlate Tree-drawings with language assessments her scale was used as a basis for this research. Hopefully this pilot study may begin to remedy to some extent the lack of statistical or frequency studies on the Tree-drawing in its relation to language.

CHAPTER TWO

HYPOTHESES AND METHODOLOGY

2.1 MAIN HYPOTHESIS

The main hypothesis tested in this thesis is that the Tree-drawing test can give an accurate indication of language ability. Michel's theories concerning the Tree-test, as discussed earlier, state that the Tree-drawing gives an accurate indication of the pupils' motivation towards communication and that this psychological 'stance' actually affects the competence and the ability of the pupil in language oriented activities. To test for a correlation between language ability (in this case English language) and the Tree-drawing: language examination marks, ratings on a Questionnaire (see Appendix 7) and the Verbal I.Q. scores were correlated with Tree-drawing scale scores (See Chapter Four).

2.2 HYPOYHESES CONCERNING THE TREE-DRAWING SCALE

Before the correlation study using a Tree-scale could be done, a number of issues had to be investigated.

(i) It was necessary to ascertain whether the Tree-drawing scale would occur in the same developmental sequence that Michel suggests in her paper. If this were so, then

children would tend to draw increasingly more complex trees from the early Tadpole tree to the Breathing tree as they advanced from Std. 2 to Std. 5 or according to developmental maturity. Thus a developmental study was carried out on a small sample over a period of four years.

(ii)   A key problem in this research was to establish a Tree-scale system so that trees could be recognisable and easily classified, and that all trees could be classified from the samples taken.   Thus a scale had to be formulated that closely followed Michel's Seven Stages but also included all sample drawings used. An attempt had to be made to test for the existence of this scale in the drawings of trees by children in a substantially larger sample and to describe each stage clearly so that future researchers could use this Tree-scale without confusion.

(iii) At the same time it was necessary to attempt to establish norms for each age group and to find out if these norms could be established for the purposes of this pilot study, from a Frequency study of Tree-drawings. In this way the order of the scale system, discussed by Michel in her paper, could be confirmed if it was seen to follow the same Seven Stages of development she suggests.

(iv)   As a result of this last piece of research it was found that the sequence of the Tree-scale had to be investigated in regard to the incidence of Branching Trees

and their degree of three-dimensionality. If older children were drawing Branching Trees this fact might indicate the reversal of the order of Branching Trees to Skin Trees in the scale suggested by Sandra Michel. In order to test if there was any significant difference between these two scales both the Michel sequence scale (S.M. scale) and the Kierman sequence scale (W.K. scale) were correlated with language scores to see if there was a higher correlation between the one or the other Tree-scale with language scores.

2.3   THE SAMPLES - METHODOLOGICAL ISSUES ARISING FROM SAMPLING AND SAMPLE DESCRIPTION.

(i)   Method for obtaining samples.

The method for obtaining drawings, from all samples, is as follows. The children were given A4 white paper and asked to 'Draw the most beautiful tree you can'. They were allowed to use pencil crayons to colour in their work if they wished. Other mediums, were not used. Paint and wax crayons were considered too messy and pencil crayons have the advantage that they allow one to 'read' the strokes and the pressure of lines more accurately. They were asked not to draw Pine Trees or Palms (in line with Koch, Stora and Michel).

(ii)   Sampling

Samples came from the school children taught by the author. This is convenience sampling and, as such, only useful for a pilot study.   Further research should be done using wider more representative sampling.   Children whose drawings were used for the Frequency study came from three different schools (two co-educational and one girls' school).   The socio-economic background of the children varied from lower to upper-middle class.   Classes used were randomly selected from approximately 3000 drawings done by Sub A to Std 5 children. Approximately one third of the drawings were done by boys so that it would be important to use a sample of equal boys and girls to obtain more correct norms. Obviously convenience sampling is not ideal, but having collected drawings from 1982 to 1988, it was possible to make a random selection of classes for a frequency study from approximately 3000 drawings.

The survey of developmental trends and the correlation study used a homogeneous group of girls from one school with similar socio-economic backgrounds which may have excluded extraneous variables (Cohen, L. and L., Manion, 1980, p. 154). This allowed the research to focus on the relationship between the Tree-drawing scales and English language assessments.   The details of samples follow in (iii) and a discussion of research on each separate sample group follows in the next section.

(iii)   <u>Samples - Description</u>

(a)   Developmental study

The first sample was of drawings by a group of girls, aged twelve to thirteen years in Std. 5 from one school. Four drawings by each child done at the beginning of Std. 2, Std. 3, Std. 4, and Std. 5 from 1985 to 1988 were studied. The total number of usable drawings from 54 participants, was 187.

(b)   Frequency study

The second sample was a total of 1094 drawings by girls and boys in classes randomly selected from three schools - two co-educational and one girls' school - from approximately 3000 drawings done from 1982 to 1988. The number of drawings from the co-educational schools were 538 and the number of drawings from the girls' school were 556, resulting in approximately one-third boys to two-thirds girls in this sample.

(c)   Sequence of Tree-scale analysis

From the same sample of 1094 drawings, the 336 Std. 5 Tree-drawings were checked to see if Branching Trees were the norm for this age as seemed to be the case.

(d)   Correlation study

The final sample of 54 drawings selected were the Std. 5 drawings of the group of girls studied for developmental

trends - sample (a). These 54 drawings were graded according to the Tree-scales formulated and used for a study to ascertain the correlation, if any, between Tree-drawing scales and language measurements.

2.4 METHODOLOGY AND ANALYSIS FOR THE ESTABLISHMENT OF THE TREE-SCALE

2.4.1 ANALYSIS OF TREE-DRAWINGS

Developmental Study - sample (a) - 187 drawings by 54 girls over four years, from Std. 2 - Std. 5.

(i) Procedual Issues

Selection of the participants was based on the following conditions. Children had to have drawn at least two drawings over the four year period and one had to be the Std. 5 tree. Since some children had left the school and others had joined the group over these years, this number of drawings was thought to be the minimum required for a series to be studied.

This sample was looked at to ascertain possible developmental trends over this period of time, and to see if a norm existed for Std. 5 level pupils. Of the participants, some children were eliminated for the following reasons. Two children drew Std. 5 trees that were unclassifiable, two drew palm trees and two drew pine trees as final trees. Although both palm and pine trees are classifiable within

the framework that has been worked out to scale trees, these trees have been excluded from the study because they were asked not to draw a pine or a palm. The two trees that were considered unclassifiable were extremely bizarre and one must assume that there will always be some small percentage of drawings that might not fall into a scale system for various reasons. This may be as a result of emotional or psychological factors indicating problems.

In the study using larger numbers (see Frequency study) artistic or elaborated drawings including all kinds of additional details and backgrounds could be classified.

(ii)   Developmental Progression

First of all it must be acknowledged that the child will be developing at his own rate over these years at primary school from the ages of nine to twelve and that some will be moving through the adjustments of the onset of puberty. This must be considered normal and all aspects of their lives and their school work will be subject to the same developmental stress.   The question was whether any developmental trends could actually be traced in the series of Tree-drawings done over this period of years by the same children.

(iii)   Procedure

Each child drew a tree at the beginning of the first term of each year. A period of a year between the tasks meant that

the child would probably not be able to remember the tree drawn the year before. The trees were not displayed and the children never saw them again. If in fact language ability developed and improved so should the type of tree change disregarding the obvious change of competence at drawing that might occur over a period of time.

The drawings of younger children were not used as this would have included more obvious aspects of developmental levels, variables the researcher did not wish to include. Early drawings by young children are closely tied to levels of eye-hand co-ordination, visual-motor control and emerging concepts of space rather than specifically to language competence. By the time the Schematic Stage (seven to nine years) is over the child becomes more actively concerned with group play and communication and co-operation within the group. Lowenfeld calls this the 'Gang Age' (Lowenfeld, V., and W. Lambert Brittain, 1975, p. 227).

Specifically, in the set of four trees per child three changes could be expected; (a) those that could be ascribed to normal development-level changes, (b) those that might indicate a development of skills in drawing technique as a result of improvement in motor or hand-eye co-ordination and (c) those changes portraying the ability the child was developing in the use of language according to Michel's typography of the tree as described earlier. It was not clear at this point of the investigation whether these three

possible changes would coincide in any predictable way. To classify the Tree-drawings Michel's Seven Stages were used to identify the level of each drawing. A breakdown of this classification follows:

(iv)   Classification of 187 Drawings

1.   A final tree that was a Stump - possible
        regression   1

2.   All four trees as Tadpole or three Apple
        Trees and with final tree a Tadpole Tree -
        thus no real progression   (15%)8

3.   Trees with only branches as a final tree:-

(i)   Those with only branches in all four
        trees - some sprouting leaves in two   6

(ii)   Those with Tadpole or Apple Tree and
        followed by trees with branches only   11

(iii)   Those with Tadpole and Apple Trees
        and then a final tree with branches
        and some sprouting leaves   5

4.   Progress to Breathing Tree and then a
        regression to Branching Tree   (9%)5

5.   Progress to the Skin Tree with only Apple
        or Skin Trees earlier   5

6.   Progress to Skin Trees with only branches
        or sprouting branches earlier   2

7.   Progress to Breathing Tree - the progress
        followed the pattern but stages are often
        skipped or a stage repeated   (20%)11

        Total number of participants   54

(v)   Discussion of Results

The trees followed a pattern that could closely fit the
process as defined by Sandra Michel in that the earlier
trees were in the stages of Tadpole or Apple Trees and the
later ones in the stages of Branching or Breathing Trees.
Of the group of 54 girls, 5 drew Branched Trees in Std. 5
having drawn a Breathing Tree at least once in earlier years
(see 4 on Table).   According to Michel, the Branched Tree
stage usually comes between the Apple Tree and the Skin Tree
and not usually after the Breathing Tree.   Thus only five
(9%) did not follow the expected progression in a linear
pattern.   One tree classified as a Stump in Std. 5, did not
fall into a progressive pattern.   Since the child had drawn
palm trees prior to the stump she seemed to be regressing,
for emotional or traumatic reasons that could possibly be
investigated.   Eight (15%) showed no progression beyond
early stages (See 2 on Table).

(vi)   Conclusions

Although a progression does occur in this sample to indicate
that some developmental process is taking place and that
this can be read in the type of Tree-drawing made by the
child, the sample is too small to generalise about all Tree-
drawings.   It is interesting to note that progress is
unsteady in this group and although 74% show an expected
move along the scale over four years, only 20% follow a
progressive path to the Breathing Tree Stage.   It is
possible that the Tree-drawing taken over a period of years

from the same children might bring to light problems related to the whole spectrum of developmental progress and emotional development.

2.4.2 A SCALE FOR TREE-DRAWINGS

Frequency Study - sample (b) - 1094 drawings by girls and boys, Sub. A to Std. 5.

(i) Procedure

The Frequency Table that follows is the result of an attempt to analyse and classify all Tree-drawing in the sample of 1094 drawings.   This scale was based on the Seven Stages suggested by Michel. Some modifications were necessary and the Table was extended to include all the drawings occurring in this sample. Thus it became necessary to include 13 Stages so that classification would be clear and transitional stages could be easily identified. Breathing Trees include four different types that are each classifiable as Breathing Trees; 3b, the Tadpole Tree with antennae (Michel's Stage Three), is omitted because of the very low frequency found in Sub. B to Std. 5.   More classification detail is included by dividing Apple Trees from Floating Branches and by seeing two stages in both Skin and Branching Trees.

(ii)   <u>Frequency Table of Tree-drawings : W. Kierman Scale</u>
   (all percentages are rounded off to the nearest whole number)

Std	Stump		tadpole		apple		skin		branch		breathing				Total
	1	2	3a	3b	4	5	6	7	8	9	10	11	12	13	1094
A	0	0	14	7	65	4	0	0	0	0	0	0	0	1	91
			23%		76%								1%		
B	0	2	7	0	52	14	4	2	0	1	0	0	0	0	82
	2%		9%		81%		7%		1%						
1	0	0	10	0	40	39	7	1	0	2	2	0	1	1	103
			10%		77%		8%		2%		2%		2%		
2	1	2	18	0	39	28	13	16	4	15	3	0	2	21	162
	2%		11%		41%		18%		12%		2%		14%		
3	2	4	19	0	34	18	21	17	21	12	0	7	1	10	166
	4%		12%		31%		23%		20%		4%		7%		
4	2	4	14	0	24	23	20	10	21	17	0	7	4	8	154
	4%		9%		31%		19%		25%		5%		8%		
5	9	13	10	1	11	53	30	32	64	37	26	26	15	9	336
	7%		3%		19%		19%		30%		16%		7%		

In the above Frequency Table, the sequence of the scale used places Branching Trees after Skin Trees contrary to Michel's sequence discussed earlier. An explanation of each stage is

given under (iv) on p. 56. Examples of Tree-drawings and detailed descriptions are found in Appendix 4.

(See 2.4.3 for an explanation of the sequence of the Tree-scale used in this Frequency Table). This Tree-scale is identified as the W.K. Tree-scale and Sandra Michel's Tree-scale is identified as the S.M. Tree-scale.

(iii) Discussion of results - W. Kierman Scale

Although this is a relatively small sample, from which it may not be possible to generalise, all groups fall into an acceptable normal distribution curve with Sub. A, B, Stds. 1, 2, 3, & 4 having a highest frequency in Apple Trees (Stages four & five) and Std. 5 having a peak in Branching Trees (Stages eight & nine). This transition from Apple Trees to Branching Trees is seen in Std. 4 where the highest frequencies are in the Apple Tree Stage - 31% and Branching Trees Stage - 25%, while in Std. 5 the curve is smoother with a definite peak of 30% in the Branching Tree Stage.

The chart also confirms the developmental tendencies that were expected from Michel's work - Tadpole Trees diminish from 23% in Sub. A to 3% in Std. 5; Apple Trees diminish from 76% in Sub. A to 19% in Std 5; Branching Trees increase in frequency from 0% in Sub. A to 30% in Std. 5 and Breathing Trees increase from 1% in Sub. A to 23% in Std. 5. Skin Trees also increase in frequency from 7% in Sub B. to peak at 23% in Std. 3 and settle to 19% and 19% in Std. 4 and

Std. 5 respectively, showing a slight decrease in later years.

It is interesting to note that Koch gives the following frequency figures for the Tadpole Tree (he calls this a composite tree). Half his sample of seven year olds and a quarter of his sample of eight year olds drew Tadpole Trees with the percentage diminishing as the children grow older (Koch, C., 1952, pp. 17-23). The trees drawn with fruit in them diminish in percentage in a similar fashion, in his samples of children's drawings.

(iv) <u>Discussion of each category of Tree-scale</u>
The classification in each category is essentially based on the structure of the tree rather than individual marks or signs.
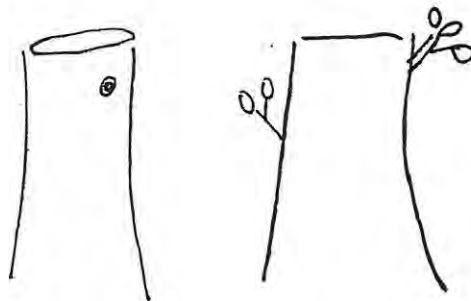
<u>THE STUMP</u> - 1 & 2
Michel discussed the trunk in terms of its being part of the tree, as do the other authors detailed earlier. The Stump, however, occurred sufficiently often to warrant a separate category (1). There is also the Sprouting Stump (2) which shows some sign of life, but has no developed branches and

has, at most, a few new twigs only. This stump that has been chopped down or is the remains of a broken tree usually occurs in the later standards. In my sample no stumps occur in Sub. A, Sub. B, or Std.1. but are found in the following frequencies in Std. 2 - 2%; in Std. 3 - 4%; Std. 4 - 4%; and in Std. 5 - 7% . This shows the frequency of Stumps to increase with age, although found in very small numbers.
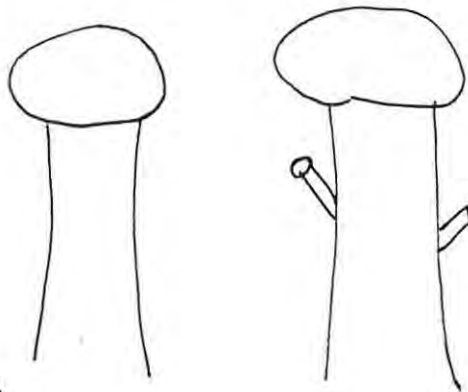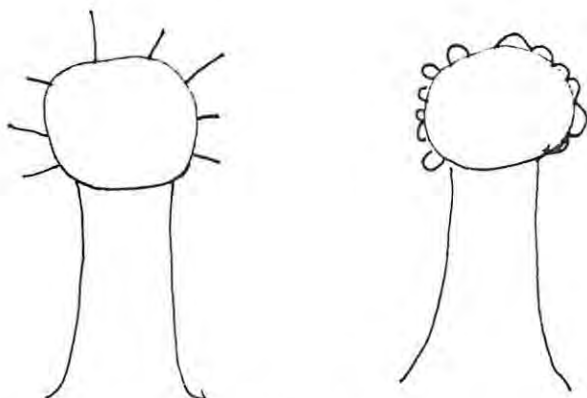

TADPOLE TREE - 3a

This is a very common tree type that has a closed, tightly-drawn crown, often with double lines or a heavy band closing in the tree crown. There are sometimes scratchy lines or marks around the Tadpole crown line which classify it as a definite Tadpole Tree and not an open crowned Breathing Tree. Another characteristic of the Tadpole Tree is that it often has a long trunk which tends to dominate the drawing, so that the trunk is more important than the crown. The Tadpole Tree is also often seen with arm like branches that stick out at each side, often cut off or otherwise connecting up with the closed tight crown. Michel describes the Tadpole Tree as having very little crown, more of a bulge only and refers in passing to the "Arm Tree" (Michel, S.,

1980 p. 17). But it is clear that the Tadpole crown is larger than a bulge but very tight with no marks of fruit or branches inside the crown. The tree crown is often coloured in very heavily making a solid inflexible Tadpole crown with the outline being accentuated in some way.

If this tree is indicative of an unwillingness to communicate with others there is usually an affective or traumatic reason for this especially if the child persists in this kind of drawing beyond the expected developmental level and age for this tree. These problems can be seen in various techniques or marks such as heavy colouring or shading-in of the crown; cut off branches; knots and scars in the trunk and sometimes bizarre extra additions such as tears, knives, bleeding and even messages in words describing the tree and its problems. (These signs are most often seen at Stump, Tadpole and Branching levels. Further research could bring to light other aspects of the emotionally expressive quality of Tree-drawings which is what most clinical psychologists find useful in projective tests.) In classifying Trees into the scale system one must be able to see the basic shape and structure of the Tree-drawing rather than be distracted by dramatic features or even by skill in drawing, as noted in the next section 2.4.3 (v).

THE TADPOLE WITH ANTENNAE (Strokes or bumps sprouting out
of the closed knob of the Tadpole Tree) - 3b

This tree is indicated as 3b and, as has been mentioned, is
omitted as a classification because of its rarity. Stora
(1963b) notes that this tree is normal for a seven year old
but indicates retardation if drawn at a later stage. Only
seven occurred in 91 Sub. A's; one in a group of 154 Std.
4's and one in a group of 336 Std. 5's. These trees were
classified as Tadpole Trees for the final 1-9 scale, as they
were essentially at that level. (See Chapter Three for final
scale)

THE APPLE (FRUIT) TREE - 4
This tree is basically round with a firm outline and
floating fruit or sometimes flowers are found in the crown.
This tree has the highest frequency in Sub. A, Sub. B, Std.

1, Std. 2, Std. 3 and Std. 4 (with the Floating Branch Tree (5), the Tight Skin Tree (6) and the Branching Trees coming in very close in frequency in Std.4). In Std. 5 the frequency is only 3% of the sample so that it dramatically disappears by age eleven, twelve, and thirteen and is probably closely associated with developmental levels. This tree is usually a cheerful tree. Transitional trees occur that look more like Tadpole Trees with long trunks and/or "Arms" (Michel, S., 1980, p. 6) branching, as well as a larger number that include a few floating branches with the fruit.

THE FLOATING BRANCHES TREE - 5

This is definitely closely related in intention to 4, the Apple Tree. Tomatis sees these floating branches as a similar phenomenon to fruit and as the beginning of a process of differentiation that occurs in the crown which can fill up the crown and be very decorative (Michel, S., 1980). There is no structural drawing of the branching and that is why the branches look as if they are floating. The trunk never joins onto branches in any realistic or structural manner and this is the characteristic that

differentiates this tree from the later Skin Trees. Again the outline can be emphasised and lines or colours can accentuate the outline of the crown which <u>contains</u> the branches. As branching is so dominant a feature in Tree-drawing these floating branches must be carefully classified as very similar in intention to the fruit trees.

This lack of structural understanding is possibly linked to developmental level and related to the child's sense of space. This tree is essentially internalised, perhaps preoccupied with ego-centered activities. The branching can become quite complex and look like a network. The concept of branching is being drawn rather than the realistic drawing of branches.

THE TIGHT SKIN-TREE - 6

In this category two main characteristics are noted -

(a)   The branches are structural growing from the trunk in a connected way ie. the branching exits as a network, that can be 'travelled on' with visual ease to the edge of the crown, or one could imagine that water could be absorbed up the trunk and branch system. The trunk is not cut off nor

do branches sprout out in twigs as they may have done in the Floating Branch stage.

(b)   The branching tips touch the closure of the crown to form a "skin". Michel describes this characteristic as the tree covered with a crown line that encircles the ends of the branches.(Michel, S., 1980, p.7).

> ... on the psychological level we now jump to a more structured stage where language is not only apprehended from the surrounding environment but it also begins to be integrated gradually. We really have to see this crown as we did the foetus' skin. Let us imagine that the branches are so numerous that each tip could be linked end to end to make a circle. This multitude of meeting points will allow a crown to be formed just as the multiplicity of foetal sensations was represented by the skin. But despite the birth of a new communication system for contact with the exterior, the subject dares not abandon his former exploration system, the branches.

(Michel, S., 1980, p. 20)

It can be seen from the Frequency Table that the Skin Trees, 6 and 7, increase in frequency from 0% in Sub. A. to 23% in Std. 3 and decrease slightly to 19% in Std. 4 and Std. 5. This tree is easy to recognise and also often displays a rigidity of outline and branching. Fruit sometimes fills up the space between branching and the crown is usually very crowded.

THE SKIN TREE WITH SOME SPACE BETWEEN THE TIPS OF THE BRANCHES AND THE CROWN - 7

A description of this intermediary stage is included so that it is clear that this tree type belongs to this Skin Tree stage, yet it is a less rigid tree. This type of tree is drawn with the same structural branching, but it is still a system that extends almost to the crown. There is, however, a little room between the tips of the branches and the tight line of the outline of the crown and there is sometimes some fruit visible. There begins to be more empty space in this tree than in the previous Stage 6. According to Michel, this stage is found just before the Breathing Tree, however, although the crown outlines may become wavy they are still emphasised or heavily drawn. Although there may be a less rigid outline and more space in this tree it is still not the spacious Breathing Tree. Branching in both Skin Trees can also be at rigid right angles although structural and joined to the trunk.
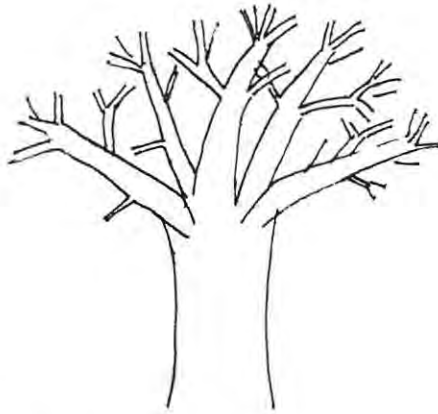
THE BRANCHING TREE - 8

This is the most numerous and the easiest to classify.   All branching trees without any foliage fall into this group. Michel analyses branches both quantitively and quali- tatively; as do most other Tree-drawing analysts.   She explains the psychological meaning of these branches - "The degree of ramification or branching out is also an expres- sion of listening to the outside world, an expression of a finer, more precise quest" (Michel, S., 1980, pp. 18-19). She refers to Koch and Stora on analysis of branching and essentially sees this stage as concerned with a meeting with the father.   The child moves from the mother as the centre of his universe towards the father who represents the larger world beyond the home.

BRANCHING WITH SOME SPROUTING LEAVES - 9

This stage is perhaps a transitional stage between no leaves at all, and many singly drawn leaves all over the ends of branches. (See stage 10.) It is represented by a branched tree with some leaves added. The few leaves that are found do not change the intention of the drawer that much. They are often drawn as Autumn or Spring trees but must be seen as intermediate between Branching Trees and Breathing Trees. Because of the great number of Branching Trees, these Sprouting Trees were classified as a separate stage to fine tune the 30% for Branching Trees. (In the Std. 5 sample 19% are Branching Trees and 11% are Branching Trees with Sprouting leaves.) The leaves often sprout out, off branch sides at right angles, or off ends of branches looking more like an extension of branching than true leaves.

STAGES FOR THE BREATHING TREES - 10, 11, 12 & 13

STAGE TEN

A tree with branches and a crown of many individually drawn leaves creating a openness that can only be classified as a Breathing Tree, in spite of no line for the crown outline. This tree can also be drawn as an Autumn or Spring tree.

STAGE 11

A tree with branches that end in a cloud-like crown at the tips of the branches creating the effect of many small trees within one tree.   This is also an open tree, often drawn with excellent drawing skills and must be classified as a variation on the Breathing Tree.   Only 7% of the sample produced stages 10 and 11.

STAGE 12

This is a tree with some last traces of branching which are either below the crown that is open and spacious or just inside the crown.   Both of these are definitely not the earlier second Skin Tree (7) because they have a three-dimensional quality of drawing that sees the crown as existing in space rather than being an outline or a

container.

STAGE 13

This is the last stage and is immediately recognisable as a Breathing Tree because of the crown being drawn lightly as a soft surface that can be penetrated by air and can exist in space. Only 7% of the sample produced stages 12 and 13. Michel comments on the Breathing Tree as follows:

> The final stage is the one where the crown... is airy, lively, supple. An image of breathing would be spontaneously evoked by this crown. On the psychological level we are now at the stage of listening and dialogue on the one hand, this crown signifies that the subject has sufficiently integrated language to really be able to use it and that, on the other hand, he is capable of receiving information that comes to him from outside himself, sorting it out and responding to it in an adapted manner... The crown now occupies more space than the trunk without squashing it.
>
> We might well wonder if the empty space within the crown is really a positive sign, but if you consider that this blank space grows out of progressive abandonment of the branches that represent an imperfect communication tool, you will no longer see the interior of the crown as empty but, rather as a pocket full of air, a lung that is going to allow the tree to breathe.
>
> (Michel, S., 1980, p. 21)

It is important to distinquish between the primitive Tadpole

Tree and the empty Breathing Tree and this is done by careful assessment of the stroke. The hard-edge line around the crown is replaced with a feathered line or shaded-in with a three-dimensional quality to the whole crown.

(vi)   Conclusions

Clearly Michel's interpretation does not simply refer to early language acquisition, but a utilization of language that enables a child to become socialised on a more sophisticated level. These thirteen Stages are an extension of Michel's Seven Stages to include and clarify the types of Tree-drawings found in this sample. Further research would be necessary to confirm tendencies and norms found in this sample.

2.4.3   ANALYSIS OF BRANCHING TREES

Sequence of Tree Scale - W.K. and S.M. scales - sample (c) - 336 Std. 5 drawings by girls and boys

(i)   Reasons for this analysis

In the samples of Std. 5 drawings analysed in the Developmental study it was interesting to note the high percentage (50%) of Branching Trees. Of 54 participants in the developmental sample, 27 children drew Branching Trees with little or no foliage (See 2.4.1 (iv)). As this was such a high percentage of the total, a further study was undertaken of a larger group of Std. 5 children. Michel places the Branching Tree early in the Tree-scale and it

was, therefore, not expected to occur so frequently at the Std. 5 level.

(ii)   Procedure

The group used to check this sequence consisted of 336 Std. 5 boys and girls of which boys were approximately one third of the sample. These drawings were pulled out of the 1094 sample of drawings used for the Frequency study and were investigated to see if Branching Trees were the norm for this age as seemed to be the case from the Developmental study. This sample was also analysed for three-dimensionality of the drawing and percentage scores for each stage are discussed.

(iii)   Frequency of Branching Trees

Of these 336 children, 38% drew Branching Trees which included drawings of Branching Trees with a few leaves sprouting and Breathing Trees with many leaves sprouting. Of a total of 127 Branching Trees, 64 had no foliage or leaves at all (8), 37 had sprouting leaves (9) and 26 were trees with many leaves on a branched tree with no closed in foliage (10). Although stage 10, with its dominant branchings, is classified as a Breathing Tree for the purposes of this research which tries to identify the tree in terms of the drawer's relationship to the environment, this stage can be seen as transitional between Branching and Breathing Tree stages. Stage 10 is definitely not a tree that should be placed before the Skin Trees Stage.

Considering stage 10 as an example of Branching in the above percentage breakdown, indicates its transitional nature between Branching Trees and Breathing Trees and points out that the tendency to draw Branching Trees occurs at a higher frequency in the older child. With larger population based samples the norm for each age group could be more definitely ascertained.

It was interesting to note that in a breakdown of Std. 5 frequency figures for Branching Trees, the two mixed boys and girls schools produced 36% and 30% Branching Trees and the girls only school produced 41% Branching Trees. Thus, in this sample, both boys and girls at the age of twelve to thirteen produced a high percentage of Branching Trees, confirming the indication that Branching Trees tend to occur later than Michel suggests. It is possible that there may be sex differences in Tree-drawing. Boys may have pulled the percentages down in the co-educational schools as the 41% obtained from the girl's school is 5% and 11% higher than the two co-educational schools. A study to check sex differences, if any, on the Tree-scale would be worthwhile pursuing in further research.

Frequency Table of Tree-drawings

Std	Stump	tadpole	apple	skin	branch	breathing	Total
	1 2	3a 3b	4 5	6 7	8 9	10 11	12 13	1094
					127=38%			
5	9 13	10 1	11 53	30 32	64 37	26 26	15 9	336
	7%	3%	19%	19%	30%	16%	7%	

(iv)   Branching Trees - Three-dimensional effect

The Branching Trees also seemed to be a higher level of tree than the Skin or the Apple Trees for reasons that were not entirely due to a simplistic notion of drawing skill. Analysis of the trees of all stages, showing any branching at all, was done and on the bases of strict three-dimensional rendering, regardless of any obvious skill in realistic representation of a tree. This analysis of the three-dimensional qualities of the Tree-drawings in this sample were based on the following criteria. (See Appendix 5 for samples of Branching Trees).

(a)   Branching that overlapped to create a sense of three-dimensional effect, not just a criss-cross pattern.

b)   Foliage drawn with a sense of space by techniques of shading, overlapping, the crown or foliage drawn to indicate a front or sides of a tree in space.

(c)   Forward projecting branches.

(v)   Table of Three-dimensional effect of Branching - 336
Std. 5 drawings - ascertained by the criteria a, b and c
above for each drawing. The percentage of trees in each
category that showed three-dimensional effects follow in the
Table.

		stump	tadpole	apple	skin	branches	breathing
Scale		1 2	3a 3b	4 5	6 7	8 9	10 11 12 13
3 D%		0%	0%	2%	15%	40%	67%

This progression may be ascribed to normal developmental
skills in drawing, or hand-eye co-ordination. However, this
is a group of the same age and it is interesting that those
who draw the high level of the Breathing (language) Tree
also use a more sophisticated rendering of space in drawing
branching and foliage. This sophistication is evident in
the Branching Tree as a whole, to the extent that the trees
that are classified as Skin Trees by Michel, seem to be an
earlier stage coming before the Branched stage and not after
it, as she suggests. Only 15% of the Skin Trees are
rendered with a three-dimensional effect as against 40% of
the Branching Trees, and 67% of the Breathing Trees.

Michel argues that the Skin Tree, in connecting the branches
together at the tips, forms the beginning of the breathing
crown which will develop from this early covering into the

Breathing Tree proper at the next stage. However, the flat immaturity of the Skin Trees found in this study, leads the author to conclude that the Branched stage comes after the Skin stage. This may also be confirmed by the tendency for the Branched stage to become dominant in Std 5 and replace earlier flatter trees found in Tadpole, Apple and Skin Tree stages.

Michel notes that the Branching stage is the richest because of the diversity of shape that is found. "In developmental psychology the branches are going to represent contacts with the exterior, exchange with the surrounding environment" (Michel, S., 1980, p. 18). She also points out that further research needs to be done on the "taking on" of space that occurs at this stage (Michel, S., 1980, p. 18). Spatial concepts come into play at this stage and manifest in the way the child locates himself in space.

> It is needless to elaborate on the fact that in all problems of dyslexia, dysorthography, stuttering etc. it is necessary to examine how the subject locates himself in space, how he overcomes his own confusion in laterality.

(Michel, S., 1980, p. 18)

The child's ability to render space at all will become evident in a drawing regardless of other artistic skills which may develop at the same time in some children.

(vi)   <u>Artistic criterion in drawing assessment - with regard to three-dimensional rendering.</u>

Goodenough (1926) states that she was unable to find high

artistic merit in children's work under the age of twelve at
the level that one often finds among child musicians. One
assumes that she refers more or less entirely to realistic
representation rather than other, perhaps more important,
factors that identify high artistic level. It is
interesting that in using drawings to test I.Q. she
identifies more specific skills than artistic ability
(which is subject to debate) to couple with unusually high
scores on her test.

> Examination of drawings which make unusually
> high scores on the test leads to the opinion
> that keen powers of analytic observation,
> coupled with good memory for details are more
> potent factors in producing high scores than
> artistic ability in the ordinary sense of the
> term.

(Goodenough, Florence, L., 1926, pp. 53 - 54)

(This raises the question of what skills are in fact
measured by the subtests of an IQ test.)

Drawing skills in the ordinary sense are in fact developing
of their own accord in most children in Std. 4 and Std. 5.
This could be ascribed to improved eye-hand co-ordination,
visual perception, motor skills, as well as observation and
memory skills. However, in the author's experience, if
children are taught to observe and draw realistic objects in
three-dimensional space, they are able to acquire this
skill, at an early age. Lowenfeld points out that
"Schematic" rendering may dominate in drawings of children
from seven to nine years. The importance of personality
impressions and emotional connotations of relationship will
tend to dominate mere realism in this age group's spon-

taneous drawings (Lowenfeld, V., and W. Lambert Brittian, 1975, p. 186). Goodenough quotes a study of direct training in drawing as it influences the test score and mentions that children in the lower primary classes revert to their original way of "normal-for-their-age-drawing" after the training is over (Goodenough, F., 1926, p. 54).

Drawing skills are talents that can be identified separately from the projective aspect of drawings. Rendering in space may be coupled with drawing skill but may also have to do with spatial concepts or even body-image, and as Tomatis thinks, lateralisation (Tomatis, A. A., 1972, p. 121).

It is interesting to note that in this study the drawing of Stumps can be done in a very sophisticated realistic manner in three-dimensional rendering so that it is quite clear that good realism does not automatically occur with the upper scale levels of Tree-drawing. Thus the reasons for drawing a particular type of tree, one can assume, are psychological ones in these or similar cases. (See Appendix 4 for examples of Stumps.) In the case of well drawn stumps, the developmental level and the psychological stance apropos language, part company and the stump is drawn for reasons that may have to be worked out by a psychologist from interviews and other testing. However, if this psychological 'stance' affects the language ability there should still be a correlation between Tree scales and language assessments.

This sort of sophistication is not found in drawings of Stages 3 to 7 (Tadpole Tree, Apple Tree, Apple Tree with floating branches, Skin Tree tight against tips of branches, Skin Tree with tight skin but with more space between ends of branches and skin.) In these Stages developmental level seems to be consistent with psychological 'stance' and drawing sophistication. These trees can be very beautiful and imaginative but have a quality of naïvete that is often seen in young children's drawings and in this study seem to lack the sophistication and diversity of the branched stage.

It may be possible to conclude, then, that the Branching Stage is a later stage developmentally although it may not be placed ahead of Skin Trees in Michel's theory of language development.

(vii)   Distribution of Branching and Skin Trees – Conclusions

The Frequency Distribution Table shows that both the 1-13 W.K. and the S.M. Tree-scales tend to be Normally Distributed. The W.K. 1-13 scale is more erratic in this sample. Michel's placement of Branching Trees before Skin Trees results in a smoother Normal Distribution curve than the placing of Branching Trees after Skin Trees in these scales. This small sample makes it difficult to generalise and the possible difference in the sequence of these scales is more evident from the discussion of three-dimensionality

and sophistication of drawing than from these frequency figures. The sophistication of drawing and the high incidence of Branching Trees in Std. 5 seems to indicate that the Branching Trees are developmentally later than Michel claims.

Frequency table for Sample 2.4.3   Std. 5's - W.K. Scale and S.M. Scale

Distribution of Branching and Skin Trees

(reverse column 4 and 5 for S.M. scale)

1		2	3		4	5	6	7	

Stump		tadpole	apple		skin		branches		breathing				Total
1	2	3	4	5	6	7	8	9	10	11	12	13	
9	13	11	11	53	30	32	64	37	26	26	15	9	336
3%	4%	3%	3%	16%	9%	9%	20%	11%	8%	8%	5%	3%	W.K. SCALE

1	2	3	4	5	8	9	6	7	10	11	12	13	
9	13	11	11	53	64	37	30	32	26	26	15	9	336
3%	4%	3%	3%	16%	20%	11%	9%	9%	8%	8%	5%	3%	S.M. SCALE

Both scales were used for the final correlation study discussed in chapters three and four. The 54 drawings used for the correlation of Tree scales and language assessments were those Std. 5 drawings analysed for developmental trends. This is again not a large representative sample but as a pilot study it may be considered of interest (See sample 2.3 (iii) (d) for sample description.)

CHAPTER THREE

MEASURING INSTRUMENTS - SCALES USED FOR CORRELATION STUDY

3.1 AIMS

The correlation study tried to ascertain the correlation between Tree-drawing scales and language scales as measured by Verbal I.Q. scores, Questionnaire ratings of verbal language ability and English exam marks. Triangulation as a methodological technique in the assessment of language ability was used by correlating four language scales with the two Tree-scales. The scales used to carry out the correlations using the Pearson Product Moment and the Spearman Rank statistical techniques are discussed in some detail in this section prior to the analysis of the data in Chapter Four.

3.2 VERBAL I.Q. SCALES - NSAGT

The New South African Group Test (Huysamen, G.K., 1982, p. 62) Verbal I.Q. score was obtained for all 54 participants of the sample from the test done in August 1987 (Std. 4). The hypothesis was that the Verbal I.Q. score would be more likely to correlate with the Tree-drawing scores, than the total I.Q. score. The Tree-drawing is not a test for intelligence, therefore should not correlate highly with an I.Q. score. There may be some common ground between the

Tree-drawing scale and intelligence.   However, the Verbal
I.Q. score is also not necessarily a good indication of
general or specific language ability.

According to Huysamen (1982) in his comments on the
N.S.A.G.T, the internal consistency coefficients obtained
for the verbal, nonverbal and total I.Q.s by means of the
Kuder-Richardson Formula 2 were very high.   Thus Verbal I.Q.
probably tests cognitive behaviour rather than specific
language skills.   The following are examples of the Verbal
sub-tests, in which it is clear that matching and reasoning
are being tested.

> Test 2 - Classification of word parts: the
> subject has to identify the pair of words
> among five such pairs which does not have
> the same mutual relationship as the other
> word pairs, for example:
>
>   fold, mold, told, west, cold
>   sold, gold, bold, help, hold
>
> Test 4 - Verbal Reasoning: In each item the
> subject must indicate what two objects, such
> as an apple and a guava, have in common.
>
> Test 6 - Word Analogies: From a given set of
> five words the subject has to select the word
> that will complete a given incomplete pair of
> words so that these two words will show the
> same mutual relationship as another pair of
> words.   For example, the question may read:
>
>   cocks: crow
>   dogs :   ?
>
> While the five alternatives may consist of
> words such as:
> quack; mew; bark; neigh; and crackle.
>
> (Huysamen, G.K., 1983, pp. 62 - 63)

The test was standardised to have a mean of 100 and a SD. of

15. Individual I.Q. test scores for Verbal IQ may be more reliable in terms of the extraneous factors affecting a group test situation, but for the study, individual testing was not possible.

Two scales for the I.Q. scores were used, one based on the sample range (90 - 136) and the other based on the classification of I.Q. scores from Spitzen (1984) with a range from mildly retarded (50 - 69) to Very Superior (140 and over). This was a 1-9 rating scale to comply with the other scales used. Thus all scales used were interval scales that could be correlated without distortion of the information.

```
-----------------------------------------------------------------------------
Viq 1 |90 - 94|95 - 99|100 - 104|105 - 109|110 - 114|115 - 119|120 - 124|125 - 129|130 - 136|
      |-------|-------|---------|---------|---------|---------|---------|---------|---------|
      |   1   |   2   |    3    |    4    |    5    |    6    |    7    |    8    |    9    |
      |-------|-------|---------|---------|---------|---------|---------|---------|---------|
Viq 2 |50 - 69|70 - 79| 80 - 89 | 90 -  99|100 - 109|110 - 119|120 - 129|130 - 139|  140 +  |
-----------------------------------------------------------------------------
```

Viq 1: Range 96 - 136 based on Sample used in this study.
Viq 2: Range 50 - 140+ based on Spitzen (1984).

3.3   **QUESTIONNAIRE - ENGLISH VERBAL LANGUAGE RATINGS**

English Verbal language ratings were based on the consensus of three different teachers who had known these pupils for a period of time and who were teaching them in Std. 5. A questionnaire was compiled for this purpose (See Appendix 7) and completed by these teachers in Sept.,1988.

Two scores for each child from this Std. 5 Sample were obtained by the following method:

(i)   an interview with the three teachers involved with
        teaching these pupils in 1988, to discuss the
        Questionnaire.

(ii)   a rating given to each pupil on Expressive Language
        and another on Receptive Language by each teacher.

(iii)   a meeting of the teachers to ascertain if there were
        discrepancies in the scoring and to achieve a
        consensus on each pupil.

The most important consideration was to eliminate as far as
possible gross subjectivity on the part of the teachers who
would score the ratings for each pupil.   To produce a
completely standardised 'test' for these ratings was not
possible so the opinion of these teachers had to be relied
on.   It seemed that if all three teachers could, (a) agree
as to what, exactly, they were rating (hence the lengthy
discussion in the first interview) (b) rate each pupil
separately and (c) agree on the ratings that they had given
each pupil and arrive at a consensus, subjectivity could be
controlled to some degree.

It was a seriously considered rating for each pupil and in
using three teachers who had known them well over a period
of years and who had taught them for various subjects over a
period from January to September 1988, a degree of
objectivity could be obtained on the Questionnaire.

Points discussed in the preliminary interview:

It was necessary to emphasise the idea of 'good' or
exceptional verbal ability as spoken language. It was
thought that the pupils' known ability in written language
should not influence the verbal ratings given.   Verbal
ability was defined as necessarily functional in the sense
of being communication with others.   It was considered that

the pupil should be able to use language to inform or to relate events, feelings, or ideas in a competent and recognisably able way for his/her age group.

In the discussion, criteria for an able language-user were formulated. It was thought that the child should have a control over the structures of grammar and a wide vocabulary. This 'ideal' or good language-user was not only related to the present group, as the best in the present classes, but was clearly related to an abstract ideal that had accumulated over years of teaching. The teachers referred to other groups or individuals who were good examples of pupils with exceptional verbal language ability. Grammar was not considered a prerequisite that would exclude a creative usage of spoken language but ungrammatical language in general was not acceptable.

A further discussion centred upon the idea of a 'talkative' person who may be obtrusive and possibly use language defensively or as a manipulation of social situations. The introvert or the extrovert type of person would possibly use language differently. It was thought that personality factors might affect the style of the speaker but teachers felt they were aware of this and would not confuse personality factors with language used as a tool for communication. Body language was discussed, and also seen as an inevitable part of language. As with personality factors, it could affect the speaker's presentation but, at best, body language should facilitate language communication and contribute to the message expressed.

It was also realised that intelligence was inevitably part of the development of language skills, and that even the I.Q. test depended on language or verbal skills for part of its assessment of this score. However, this study was not looking for the intelligent child per se, but the one who

expressed himself/herself in an articulate and creative manner.

It seemed reasonable to expect intelligence to be an important factor in this rating for verbal proficiency and an aspect of intelligence may very well be expressed in both the Tree-drawing and the verbal behaviour. The idea of the 'shy genius' was also discussed. It was considered unlikely that this type of child would be so non-verbal as to be undiscovered, as quality rather than quantity was being investigated.

Given the above discussion and that the school concerned is not one that overemphasises competitive marks (often found in schools) the teachers had a good idea of the verbal proficiency they were attempting to isolate. This was a proficiency that was encouraged anyway in all the pupils under their tuition, by an emphasis on self-esteem and verbal practice. Pupils are encouraged from an early age to take charge of verbal situations at every possible opportunity. This is done by the presentation of work and ideas to fellow pupils and teachers, problem solving, discussions and speaking at semi-public and public occasions such as assemblies and celebrations at school.

Finally the idea was discussed that children may actually be better at receptive language skills, mainly identified as "listening", than at expressive language skills, mainly identified as "speaking". In theory, according to Tomatis (1972), it is only possible for speaking skills to mature to a higher level of proficiency if the necessary listening skills already exist. This theory he had identified largely from neurological and clinical evidence in his research on audition, discussed earlier and in Appendix 3.

Considering the emphasis on teaching listening skills in the school curriculum, the idea that children may be better at

one or the other was definitely considered an important differentiation that could be identified by observant teachers.

It was interesting to note that these teachers thought that this particular group might well be very poor listeners and that many could be rated at a lower score on listening than on speaking. Obviously it is very difficult to eliminate the subjective quality of value judgements and a further difficulty with language assessment is that the judge must also be an initiate. It may be possible to describe 'good' language ability and the description of the behaviour of this type of user may be taught to an observer, but if the observer is not merely to observe the overt behaviour of the user with little or no understanding, he must also be a highly proficient user himself. Observation of language behaviour must "imply both normative and interpretive" methodologies, the researcher being himself a language user (Cohen, L., and L. Manion, 1982, p. 28).

George Steiner (1975) claims that language can be so personal that translation is required between speakers even of the same language, and of course, language is not nessecarily always in the service of straight-forward communication. He expands this theory and suggests that secret languages substantiate this rather more complex idea of the functions of a language. The simplistic idea that language is always in the service of communication of information denies the complexities of human contact, where the preservation of silence on important matters is an important survival technique (Steiner, G., 1975, pp. 46 - 48).

Tomatis's notion of ideal listening ability was adapted to identify a description of language that could be considered exceptional or ideal (the kind of language that one would perhaps be aiming for in teaching children). He further

expresses it as a language ideal that the child can eventually arrive at, if all goes smoothly (Tomatis, A. A., 1972, p. 68). If this ideal could be seen as a clear standard and rated as 9, the ratings could be on a scale down from 9 to 1. Thus the scale of 1 - 9 was suggested with the average being 5.

Second Interview

Teachers met again after ratings were given to pupils. A consensus was achieved after further discussion of the individual pupils, and thus scores were finalised. Three teachers had participated rather than only one, reducing the subjectivity of the ratings.

(See Appendix 7 for the instructions handed to each teacher prior to the second interview.)

3.4   **ENGLISH LANGUAGE EXAM MARKS**

The English language examination was considered worthy of use as another language assessment with Verbal I.Q. and Questionnaire ratings. These marks were from the December 1987 English exams assessed by the Std. 4 English teacher.

A total mark was derived from marks on tests as follows:
      Oral - 30; Reading - 30; Spelling - 10;
      Written Composition - 60; Language Study - 30;
      Comprehension - 20; Total 180.

Marks obtained in the exam were rated as follows in the Table to comply with the requirements for similar interval scales as measuring instruments (Cohen, L., and L. Manion, 1982).

1	2	3	4	5	6	7	8	9
81 - 89	90 - 98	99 - 107	108 - 116	117 - 125	126 - 134	135 - 143	144 - 152	153 +

3.5 THE TREE-DRAWING SCALES

The following Scales are derived from Michel who places the Skin Trees after the Branching Trees (S.M.) and from the Tree-drawing scale according to this research which places Skin Trees before the Branching-Trees (W.K.). Hereafter referred to as S.M. (Michel) and W.K. (Kierman).

	Stump	Tadpole	Apple	Branches	Branches with leaves	Skin 1	Skin 2	Breathing
S.M.	1	2	3	4	5	6	7	8 9
W.K.	1	2	3	6	7	4	5	8 9

These two scales were derived from the 13 categories discussed earlier. (Samples of trees and description in Appendix 4.) The rationale for compressing the scale from 13 to 9 as above was to bring all scores into a more manageable 1 - 9 scale. Explanation of this scale follows.

(i) Stumps

The intention of the drawing was considered as an important classification criterion. A Stump with very few leaves was more a Stump than a Sprouting Tree. The total lack of branches classified this type as a Stump. Stumps and Sprouting Stumps were considered to be essentially of the same type with a very similar expression of frustration or avoidance, in spite of the small sign of life or participation in the Sprouting Stump: and are thus both classified as 1.

(ii) The Tadpole Tree

Tadpole Trees are seen as one category because of their occurrence at an early stage of life and in Sub. A and B. They are psychologically separate from the later Apple Tree which begins to indicate internal differentiation with fruit or branches. The early Tadpole-with-arms was also included in this category, 2.

(iii) The Apple Tree

The Apple Tree and the Apple Tree with free floating branches are of the same order according to Michel and they are classified together as 3 (Michel, S., 1980, p. 20).

(iv) The Tight Skin Tree

This tree is very distinctive with its rigid crown and as a result was regarded as a category of its own as S.M. 6 and W.K. 4.

(v) The Skin Tree with some space in the crown

This tree is definitely a transitional tree that requires its own category. This is a tree that Michel does not include in her Seven Stages but occurs often enough in the samples studied to be a recognisable stage similar in rigidity to the Tight Skin Tree. This tree is also un-related to the Breathing Tree as it is much less sophisticated than these later trees. This category is S.M. 7 and W.K. 5.

(vi) The Branching Tree

The Branching Trees are those that are without foliage. As this is such a dominant category in Std. 5, as previously noted, a finer classification seemed possible and these stand alone as S.M. 4 and W.K. 6.

(vii) <u>The Branching Tree with sprouting leaves</u>
Branching Trees with sprouting leaves are a separate cate-
gory as S.M. 5 and W.K. 7.

(viii) <u>The Breathing Trees</u>
Breathing Trees were grouped together in pairs, category 8
including 10 and 11 of the original scale and category 9
including 12 and 13 of the original scale. At this level
the drawings were very close in intention and it seemed
unnecessary to have such fine discrimination of the various
forms of the Breathing Tree. As the frequency of these
trees is not very high, two categories expressing a
graduated progress towards Michel's ideal Breathing Tree
were adequate for the final scale.

These nine stages were the most obvious stages that could be
organised into a parametric scale based on frequency of
occurrence and the blending of less important transitional
stages into more dominant categories. Some sensitivity may
be lost by this reduction of the 13 categories to 9
categories but as sensitivity is retained around the norm or
centre of the scale the argument for the 1-9 scale remains
strong.

Both the W.K. and S.M. scales were correlated with language
scales but a larger sample would be necessary to ascertain
which sequence more readily follows language development.

3.6   <u>METHODOLOGICAL ISSUES WITH REGARD TO SCALES USED</u>

(i)   The techniques of Triangulation was employed to
assess the Language ability of pupils - the examination, the
Language-ratings Questionnaire, and the Verbal I.Q. from the
N.S.A.G.T. scores. "Triangulation may be defined as two or
more methods of data collection in the study of some aspect
of human behaviour" (Cohen L., and L. Manion, 1980, pp.
208-209). Data was collected over a period of time from two

months to four years, and assessed by six different people. The Std. 4 English teacher assessed the exam; three Std. 5 teachers rated Language Expression and Receptivity; a Psychologist tested the N.S.A.G.T.; and the author rated the Tree-scales. In this way an attempt at limiting gross subjectivity in assessments of language ability was made.

(ii) The time lapse between the tests given may be a valid criticism of the experimental design. However, the time between the Tree-test and the Questionnaire rating allowed the Std. 5 teachers to get to know their pupils. This pushed the Questionnaire rating forward into the year (Sept.) which was not ideal. The Tree-drawing test and the English examination are very close together with little more than one month between them (Dec. and Jan.). The Verbal I.Q. should be a score of some duration and therefore, that it was taken by the group in Aug. 1987, should not affect the results in this study.

(iii) It is possible to claim that other tests for Verbal or Language ability could have been used. However, this was a pilot study with limited resources and further research might well include both individual I.Q. test scores and Language tests of a more individual and/or extensive nature.

(iv) The ranking of marks from the English examination and the Verbal I.Q. scores may reduce the sensitivity of these scales but allows for an interval scale based around a mean for all scales used.

CHAPTER FOUR

ANALYSIS OF DATA FOR CORRELATION STUDY AND
CONCLUSIONS AND RECOMMENDATIONS

4.1   DESCRIPTION OF STATISTICS USED

(i)   The aim of this study was to correlate scores on four
Language assessments with scores on two Tree-drawing
'tests'.   This is essentially a pilot study to check for
correlation between variables.   The Pearson Product Moment
Correlation Coefficient (r) and the Spearman Rank (rho) were
selected as a means of assessing the significance of these
relationships.   Since the Pearson Product Moment   technique
produced significant relationships, the Spearman technique
was not strictly necessary.   (The participants used for the
correlation study were the Std. 5 girls whose drawings were
studied for developmental trends, see 2.4.1).

(ii)   The levels employed to interpret the magnitude of the
relationship between variables were as follows:

$r =$ less than 0.20
         slight, almost negligible relationship
$r =$ 0.2 to   0.4
         low correlation, definite but small
         relationship
$r =$ 0.4 to   0.7
         moderate correlation, substantial
         relationship
$r =$ 0.7 to   0.9
         high correlation, marked relationship
$r =$ 0.9 to   1.0
         Very high correlation, very dependable
         relationship

(Guilford, J.P., 1946, pp. 427 - 8)

Note: Cohen and Manion (1980) classify correlations ranging from 0.35 to 0.65 to be statistically significant beyond the 1% level. " When correlations are around 0.40 crude group predictions may be possible." Correlations from 0.65 to 0.85 "enable group prediction to be accurate for most purposes". Over 0,85 correlation "indicates a close relationship between variables correlated" (Cohen, L., and L. Manion, 1980, pp. 138-139).

(iii) The code for variables and date of testing are as follows:

Engex	English exam rating, Std. 4, Dec, 1987
Exp	Expressive Language rating, Sept. 1988
Recp	Receptive Language rating, Sept. 1988
Viq 1	Verbal I.Q. N.S.A.G.T. (Diagnostic Statistics Manual, Aug. 1987).
Viq 2	Verbal I.Q. N.S.A.G.T. (Sample) Aug.,1987
Tree S.M.	Tree-drawing scale based on Michel 1980, Jan., 1988
Tree W.K.	Tree-drawing scale based on this study, Jan., 1988

4.2   RESULTS OF STATISTICAL ANALYSIS

Table 1:   Descriptive Data of all Scales

Variable	Mean	SD	Coefficient of Variation	Min.	Max.
Engex	5.555	1.829	0.32925	2	9
Exp	6.130	1.229	0.20055	4	8
Recp	5.500	1.539	0.27978	2	8
Viq 1	5.685	2.213	0.38932	2	9
Viq 2	6.074	1.195	0.19676	4	8
Tree S.M.	4.796	2.326	0.48497	1	9
Tree W.K.	5.611	2.318	0.41315	1	9

Table 2   Pearson r Correlation-Matrix

Variables	Engex	Exp	Recp	Viq 1	Viq 2	Trees S.M.	Tree W.K.
Engex	1.0000						
Exp	0.7225	1.0000					
Recp	0.3620	0.4838	1.0000				
Viq 1	0.5893	0.5354	0.1191	1.0000			
Viq 2	0.5504	0.5070	0.0718	0.9790	1.0000		
Tree S.M.	0.5770	0.5043	0.4085	0.2365	0.2159	1.0000	
Tree W.K	0.5147	0.4550	0.4099	0.2882	0.2898	0.8528	1.0000

Correlation between Viq 1 (sample) and Viq 2 (D.S.M.) = 0.9790 shows a high positive significant correlation, (r^2 = 0.9584; they share 95.8% common variance). Thus they measure the same thing more or less - the difference of a few points in the means; and the range difference does not distort the scales. Correlation between Trees S.M. and Tree W.K. = 0.8528, also shows a high positive, significant correlation (r^2 = 0.7273; they share a 72.7% common variance) which is to be expected in spite of internal differences.

Table 3   Correlation on Pearson r and Spearman rho for variables correlated with Tree-Scale S.M.

	Pearson r					Spearman rho		
Variables	r	r^2	P	S/NS		rho	P	S/NS
Engex	0.5770	0.3329	0.0000	S		0.5544	< 0.05	S
Exp	0.5043	0.2543	0.0001	S		0.4963	< 0.05	S
Recp	0.4085	0.1669	0.0022	S		0.4106	< 0.05	S
Viq 1	0.2365	0.0559	0.0851	NS		0.2682	> 0.05	NS
Viq 2	0.2159	0.0466	0.1168	NS		0.2535	> 0.05	NS

S - Significant correlation
NS - Non Significant correlation

Table 4   Correlation on Pearson r and Spearman rho for
                 variables correlated with Tree-scale W.K.

	Pearson r					Spearman rho		
Variables	r	r^2	P	S/NS		rho	P	S/NS
Engex	0.5147	0.2649	0.0001	S		0.4539	< 0.05	S
Exp	0.4550	0.2070	0.0005	S		0.4264	< 0.05	S
Recp	0.4099	0.1680	0.0021	S		0.4170	< 0.05	S
Viq 1	0.2882	0.0831	0.0345	S		0.2434	> 0.05	NS
Viq 2	0.2898	0.0840	0.0335	S		0.2557	> 0.05	NS

4.3   CORRELATIONS OF TREE-DRAWING SCORES WITH ENGLISH EXAM MARKS AND QUESTIONNAIRE RATINGS

The statistics show that there is a significant, moderate positive correlation between the Tree-drawing scales and the Language scales. This correlation of "around +0.50 or less" is what can be expected in the social sciences and is seen as an indication of the predictability of one variable given the other (Cohen, L. and L. Manion, 1980, pp. 129 - 139).

4.3.1 Correlations between Tree-drawing Scales and English Examination (Engex)

One can conclude that the language characteristics measured in the English examination can also be measured in the Tree-

drawing 'test', according to either the Michel scale or the scale suggested by this pilot study of drawings. The English examination was written in December of one year and the Tree-drawing done in January of the next with approximately six weeks between the testing, showing a consistency over the short term between the 'tests'. Although school marks may be a subjective appraisal of one teacher and therefore somewhat unreliable this correlation indicates that the Tree-drawing is consistent with those language behaviours or characteristics tested for in the English examination. Approximately one third of the examination marks are verbal, thus the examination concentrates on written expressive language rather than verbal or receptive language, which is consistent with the higher correlation between the Tree-drawing scales and Expressive language ratings on the Questionnaire.

4.3.2 Correlation between the Tree-drawing Scales and the Language Ratings (Exp. Recp.)

The correlations are higher for the Expressive Language rating than for the Receptive Language rating, but they are both significant moderate positive correlations, which indicate that the Tree-drawing is measuring the same aspect of language that the ratings do, to the extent that chance is ruled out. The time lapse between these two 'tests' from January to September of the same year, was approximately eight months. The predictive value of the Tree-drawings is seen in the consistency between the drawing scales and the language ratings. It was perhaps more difficult to assess receptive or listening ability from simple observation, and it would be interesting to see if an audiogram correlated positively with the Tree-drawing test in any way.

4.3.3 Comments on two Tree-scales

The Tree-drawing scale according to Michel (with the

Branching Trees before the Skin Trees) correlated slightly better with the English examination and the Expressive Language scale, than the W.K. Tree-scale (with Skin Trees before the Branching Trees); and both Tree-drawing scales correlated at much the same level for Receptive language. This better correlation between Michel's Tree-scale and Engex and Exp means that her scale is more closely in alignment with what is being tested by the English examination and Expressive rating - a genuine competence at language and communication - than intelligence, maturity, or visual perception which, it may be argued, are the aspects tested by the W.K. Tree scale as discussed earlier. In the next section it was noted that W.K. Tree scale correlated significantly with the V.I.Q. scales confirming the above interpretation of the differences between Tree S.M. and Tree W.K.. However, larger more representative samples are needed to research the differences between the S.M. and the W.K.scales.

4.4   CORRELATION BETWEEN TREE-DRAWING SCORES AND VERBAL I.Q. SCORES

A preliminary correlation between the two V.I.Q. scales showed a high positive correlation of 0.9790; a 95.8% common variance ($r^2 = 0.9584$).

Thus both scales measured the same thing closely enough for either scale system to be used with language scores or Tree-drawing scores, in spite of the mean being slightly higher for viq 1.

There is a low positive correlation between Viq scores and the Tree-drawing scales with a significant correlation between Viq and Tree W.K. Scores, and non-significant between Viq and Trees S.M. scores.

Viq 1 and Tree S.M. r = 0.2365 (p = 0.0851) NS
Viq 1 and Tree W.K. r = 0.2882 (p = 0.0345) S
Viq 2 and Tree S.M. r = 0.2195 (p = 0.1168) NS
Viq 2 and Tree W.K. r = 0.2898 (p = 0.0335) S

The p scores show the Tree W.K. correlation to both Viq 1 and Viq 2 to be <0.05, therefore a significant relationship exists indicating a subtle difference between the two Tree-scales that this study has explored. A scale that has built into it the assessment of the three-dimensionality of the Tree-drawing may relate more closely to intelligence than a scale that disregards this property of the Tree-drawing and thus the Tree W.K. correlated with a Verbal I.Q. more significantly than Tree S.M. did. The method of diagnosing three-dimensionality in the Tree-drawing in this study is more closely associated with conceptual behaviour such as, "analytical observation and a good memory for details" (Goodenough, 1946, p. 53) than with the 'signs', described by Buck or Defayolle and Mathieu as indicating intelligence. For example a tree without leaves is considered a 'sign' of low level of intelligence, and black colouration of the trunk outline is considered a 'sign' of high intelligence (Bolander, K., 1979, p. 51). It is perhaps more useful to look for the kinds of cognitive behaviour causing the 'signs' in the drawing than at the 'signs' in isolation. There is a common ground between the Tree-drawing scale and Verbal I.Q. scores which is to be expected perhaps, but that the correlation is low indicates that the Tree-drawing is not <u>merely</u> another measure of intelligence.

4.5   CORRELATION BETWEEN VERBAL I.Q. SCORES AND LANGUAGE ASSESSMENTS

It was interesting to note that V.I.Q. scores had a significant moderately positive correlation with both English examination scores and English Expressive rating

scores. These correlations meant that these two language tests were reliable enough to correlate with a population standardised V.I.Q. test and, that it may be said, that the skills that go to make a success of examinations in English at school will also be tested by Verbal I.Q. subsets. This correlation between I.Q. scores and performance in school examinations is generally accepted by psychologists (Block, N.J. & G., Dworkin, 1976, pp. 441-443).

Viq 1 and Engex $r = 0.5893$		S
Viq 1 and Exp $r = 0.5354$		S
Viq 1 and Recp $r = 0.1191$		NS
Viq 2 and Engex $r = 0.5504$		S
Viq 2 and Expr $r = 0.5070$		S
Viq 2 and Recp $r = 0.0718$		NS

The fact that there was no significant correlation between receptive language ratings and V.I.Q. scores could perhaps be ascribed to two factors.

(i) The motivational factor in the test situation: the child might be motivated to show receptive behaviour, attempt to listen and understand during an I.Q. test, but be disinclined or even unable to listen in the classroom situation.

(ii) An assessment of 'receptivity to language' is not often asked for in the normal process of language testing at school level. Teachers were perhaps unused to identifying behaviour that could be called receptive, although all three teachers in this study were quick to discuss the child who "never listens" or who "cannot listen". Tomatis uses the audiogram for hearing assessment and a correlation of a rating devised from his diagnostic reading of the audiogram and a receptive language score would yield interesting information (Tomatis, A. A., 1973). (See Appendix 3.)

4.6 CONCLUSIONS AND RECOMMENDATIONS

The research on language undertaken by Tomatis and Michel emphasises an aspect of language that is perhaps foreign to the school teacher or curriculum planner who must work out what and how to teach children. Tomatis's theory that language is essentially dependent on the body and the ear, and is therefore also tied to the emotions with an all too human involvement in relationships implies a fragility and difficulty in the process of language learning at school. His contention that 'listening' is essentially and fundamentally affective, and that the resulting auditory curves or hearing thresholds must determine other expressive functions of verbal communication and language ability has brought the psychology and physiology of the child closer together in the field of language acquisition and language learning.

In his work with children, Tomatis has emphasised that language acquistion occurs in a socio-affective as well as in a developmental context which is dependent on the processes of hearing and 'listening'. It is well documented that the mother is the formative experience of meaningful relationships. Tomatis claims that this relationship conditions the later relationships to the father, to other people and finally to the text - the written word.

Listening occurs in the human neurological system of muscles and nerves which, if not utilised properly, malfunction and deteriorate. Focusing on the sound by 'listening' is voluntary and thus different from hearing in the same way that looking and seeing suggests a difference both of motivation and intensity.

Tomatis's contention that the Tree-drawing presents the consciousness of the drawer to the tester or teacher in

terms of his relationship with the parents, the past and his emotional life can be substantiated with case studies. That the Tree-drawing 'test', devised at Centre Tomatis in France and refined to some extent by this study, correlates positively with language assessments detailed in this study is very encouraging.

The usefulness of the Tree-drawing as a diagnostic tool for Remedial Teachers and School Psychologists is very probable and, with further research, may be an additional tool for understanding and identifying language problems in the Primary School where these problems must be confronted and remedial action taken, while the child is still young enough for remediation to be effective. Research is being conducted in South Africa at Potchefstroom and Port Elizabeth Universities on various aspects of Audio-Psycho-Phonology (Hearing Therapy) and to some degree on the Tree-drawing test, but not much is known of this test procedure elsewhere.

Importantly, for the English Language teacher, some knowledge of the interpretation of a test, as simple as this to administer, would enable him to acquire insight into the reasons for a certain kind or level of performance in the Language lesson. The English teacher, above all other teachers in the school, is the most aware of the role he has to play as a 'psychologist' in the classroom. English lessons are often, and should often be, lessons about 'life', in all its many aspects. English lessons aim at motivating the child to communicate on all levels, both functionally and more wholly as a young human being with emotional responses to his world.

The Tree-drawing may very well highlight certain facets of a child's inability to communicate, and enable the teacher to encourage all children to communicate at their own level.

It may help the teacher to see that some children are not able to communicate at any optimum level because they may be 'unable' to do so.

Much has been written on the meanings of certain 'signs' in the Tree-drawing; the quantity and quality of strokes, lines and curves etc.; the relative importance of size and the position of the tree on the page. A great deal of this sort of assessment lacked a firm basis either in statistical analysis or in conceptual framework. The creation of a statistically significant Tree-scale based on a conceptual approach which sees the drawer attempting to express his whole attitude to communication through a recognisable structuring of the tree, could be a worthwhile project and a standpoint from which further investigation could be carried out.

This is a small pilot study from which it is not really possible to generalise findings. Further studies should be undertaken with a larger, more representative group of both girls and boys. From a more random and a more representative sample the Tree-drawing scale could be verified and refined; developmental tendencies could be studied further and, perhaps linked to or correlated with, other developmental studies in English language and Art. If one had access to audiograms from an A.P.P. Clinic, a correlation of language tests, Invididual I.Q. tests, Tree-drawing tests and audiograms would be of interest. Erik Erikson's ideas on developmental stages might usefully be parralled with developmental ideas related to language development from birth to adolescence, as seen in the Tree-drawing (Erikson, E., in Gerdes, L., C., 1981, pp. 58-62). Sex differences in Tree-drawings would be of interest as research identifies boys as more vulnerable to Dyslexia or learning problems than girls.

The problem of the sequence of the Tree-scale identified in this study also needs further research. To achieve clarity with regard to norms for each age group, a much larger and more representative sample needs to be investigated. The fact that Michel's Seven Stages in the Tree-scale were regonisable was encouraging. All Seven Stages she discusses in her paper were found in this small group of 1094 drawings. The postulate that the Tree-drawing scale relates more closely to language development, as defined in this study, rather than simply to chronological age, indicates that a large number of drawings should be studied to find norms. The strongest correlation found between the Tree-drawing scales and the English Exam mark point out that the Tree-drawing may be picking up an accurate picture of the Language strengths and weaknessess of the individual pupil, and, in particular, allowing some insight into the causes of any difficulties or failures. In conclusion it should be noted that the value of the Tree-drawing test as a diagnostic tool for teachers and psychologists lies in this ability it has to elucidate the language problems a pupil might be struggling with in the classroom situation.

LIST OF REFERENCES

Block, N.J. and G. Dworkin, eds., <u>The I.Q. Controversy</u>, Pantheon Books, Random House (New York, 1976).

Bolander, K., <u>Assessing Personality Through Tree Drawings</u>, Basic Books, (New York, 1977).

Buck, J.N., <u>The House-Tree-Person Technique : Revised Manual</u>, Western Psychological Services, (Beverley-Hills, California, 1966).

Cohen, L. and L. Manion, <u>Research Methods in Education</u>, Croom Helm (London, 1980).

Defayolle, M., Mathieu, M., and P. Fustier, Essai d'une approche psychometrique du test de l'arbre. Psycho Fr. 7 (3), (1966), 223-229, in K. Bolander, <u>Assessing Personality Through Tree-Drawings,</u> Basic Books, (New York, 1977).

Gaskell, G.A., <u>Dictionary of all Scriptures and Myths</u>, The Julian Press, (New York, 1979).

Gerdes, L.C., R. Ochse, C. Stander, D. Van Ede, in collaboration with W.F. Meyer, <u>The Developing Adult</u>, Butterworth, (Durban, South Africa, 1981).

Goodenough, F.L., <u>Measurement of Intelligence by Drawings</u>, World Book, (Chicago, 1926).

Guilford, J.P., New Standards for test evaluation, Educational Psychological Measurement, 10, (1946), 427 - 428.

Harris, D.B., Children's Drawings as Measures of Intellectual Maturity, Harcourt Brace Jovanovich, (New York, 1963).

Huysamen, G.K., Psychological Measurement - An Introduction with South African Examples, Academica, (Pretoria, 1983).

Jung, C.G., trans. by B.M. Hinkle, M.D., Psychology of the Unconscious - A Study of the Transformations and Symbolism of the Libido, Dodd and Mead, (New York, 1965a).

Jung, C.G., trans. by R.F.C. Hill, M.D., Four Archetypes - Mother, Rebirth, Spirit, Trickster, Routledge and Kegan Paul, (1972).

Jung, C.G., M.C. Von Franz, J.C. Henderson, J. Jacobi, A. Jaffé , Man and His Symbols, Aldus Books, (London, 1972).

Koch, C., Der Baumtest, (1949), in Bolander, K., Assessing Personality through Tree Drawings, Basic Books, (New York, 1977).

Koch, . C., The Tree-drawing Test as an Aid in Psychodiagnosis, English trans., Han Huber, (Berne, 1952).

Koch, C., The Tree-drawing Test as an Aid to Psychodoagnosis, 2nd Edition, Han Huber, (Berne, 1957), in Bolander, K., Assessing Personality Through Tree Drawings, Basic Books, (New York, 1977).

Kierman, S.A., Vers l' écoute humaine : Tomatis's Theories on Audio-Psycho-Phonology, unpublished M.A. thesis, University of Port Elizabeth, (1986).

King James Version of, <u>The Holy Bible containing the Old and New Testaments,</u> Oxford University Press.

Kongtrul, J., <u>The Torch of Certainty</u>, Trans. J. Hanson, Shambhala Publications, (Boston, United States of America, 1977).

Lowenfeld, V. and W.L. Brittain, <u>Creative and Mental Growth</u>, 6th Edition, Macmillian, (New York, 1975).

Michel, S., <u>The Tree Test</u>, trans. by T. Brown, unpublished paper, Tomatis Centre, (Scarbrough, Ontario, 1980a).

Schliebe, G. Erlebnismotorik und zeichnericher (physiognomisher) Ausdruck bei Kindern und Jugendlichen, Z. Kinderforsh., 43, (1934), 49-76., in D.B. Harris, <u>Children's Drawings as measures of Intellectual Maturity,</u> Harcourt Brace Jonanovich, (New York, 1963).

Sidlauskas, A.E., Language - The Ideas of Alfred Tomatis, in <u>Revue Internationale d' Audio-psycho-phonologie</u>, No. 5., April - May, 1974.

Spitzen, R.L., M.D., ed., Manual Compiled by Task Force on Nomenclature and Statistics, <u>Diagnostic and Statistical Manual of Mental Disorders</u>, 3rd Edition, (Washington, 1984).

Steiner, G., <u>After Babel</u>, Oxford University Press, (London, 1975).

Stora, R., Le test de dessin de L' arbre, principales methodes, from Bull. Psychol, 17 (2 - 7/225), (France, 1963a),253-264, in K. Bolander, <u>Assessing Personality through Tree Drawings,</u> Basic Books, (New York, 1977).

Stora, R., Le consigne de Stora, (1963b), unpublished paper, Tomatis Centre, Paris, trans. by J.E.K. De Vynck (1989), personal interview.

Tomatis, A. A., Education and Dyslexia, trans. by L. Guiney, Les Editions France-Quebec/Asociation Internationale d'Audio-Psychio-Phonology (Fribourg, Switzerland, 1972).

Trungpa Chogyam, Cutting Through Spiritual Materialism, Shambhala Publications, (Boston, 1973).

OTHER WORKS CONSULTED

Arnheim, R., Art and Visual Perception, University of California Press, (California, 1954).

Erikson, E.H., Childhood and Society, 2nd edition, Norton, (New York, 1963).

Jung, C.G., Memories, Dreams, Reflections, trans. by R.C. Winston, ed. A. Jaffé , Vintage Books (New York, 1965b).

Jung, C.G., The Spirit in Man, Art and Literature, trans. by R.E.C. Hull, Ark Paperbacks, (London, 1984).

Kimura, D., The Asymmetry of the Human Brain, Scientific American Offprints 554, 70 - 78, W.H. Freeman, (California, 1973).

Kimura, D., Neuromotor Mechanisms in the Evolution of Human Communication, in Neurobiology of Social Communication in Primates, ed. H.D., Steklis and M.J. Raleigh, Academic Press, (New York, 1979).

Lord, F.M. and M.R. Norick, <u>Statistical Theories of Mental Test Scores</u>, Addison - Wesley Pub., (Mass., United States of America, 1968).

Madge, M.A., <u>The Senior South African Individual Scale (SSAIS), As A Clinical and Diagnostic Aid</u>, S.A. Institute for Psychological and Psychometric Research, (Pretoria, 1980).

Michel, S., <u>A Study of Drawings Done While on Electronic Ear Training</u>, translated by T. Brown, unpublished paper, Tomatis Centre, (Scarbrough, Ontario, 1980b).

Moray, N., <u>Listening and Attention</u>, Penquin Books, (Harmondsworth, Middlesex, England, 1969).

Read, H. <u>Education Through Art</u>, Pantheon Books, (New York, 1958).

Rosenthal, R, and L. Jacobson, <u>Pygmalion in the Classroom</u>, Holt, Reinhart and Winston, (New York, 1968).

Starr, D.B. and H. S. Goldstein, Human Development and Behaviour, in <u>Psychology in Nursing</u>, Springer, (New York, 1975).

Steiner, G., <u>Language and Silence</u>, Penguin Books (Harmondsworth, Middlesex, England 1969).

Tomatis, A. A., <u>Dyslexia</u>, trans. by A. Sidlauskas, University of Ottawa Press (Ottawa, Ontario, 1969).

Tomatis, A. A., <u>Introduction to the Listening Test</u>, "Observations made during the Third International Congress of Audio-Psycho-Phonology (Anvers 1973) in a Question-and-Answer session with Dr. A.A. Tomatis"

trans. by J.T. Williams, Child Study Centre,
University of Ottawa (Ottawa, 1973).

Tomatis, A. A., <u>Vers l' écoute humaine</u> (1977), in Vers l'
écoute humaine: Tomatis's Theories on Audi-Psycho-
Phonology, Sean A. Kierman, unpublished M. A. thesis,
University of Port Elizabeth, (1986).

EXAMPLE OF 'TABLES' FROM KOCH'S MANUAL (1952, pp. 64 – 65)
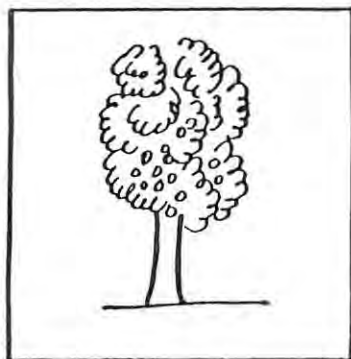
Fig. 40

Industry, zeal
Movement drive
Unrest

Valuing externals
Presentation
Decorative
Urge to dramatise

Prolixity
Joy in expression
Juggling
Confused
Circumstantial
Love of display
Drive towards adornment,
  self-adornment
Extravagance
Gaiety

Crown in Confusion of Lines
(dissolution of form)

Productivity
Fullness of experience
Overstrong capacity
  for experience
Very great psychic motility
Liveliness
Very great driving power
  (according to R. Heiss)

Sureness of instinct
Sureness of drive

Setting oneself above convention
Superiority over the conventional
  and unimportant

Crown in curly Style

Activity
Movement
Capacity for dramatisation
Decorative gifts

Communicativeness
Talkativeness
Improvisation

Capacity for enthusiasm
Humour
Sociability
Companionableness

Lack of endurance
Lack of persistence
Windbag
Gambler
Idler
Spoilt
Lack of patience
Empty

Frivolity
Gourmet

Caprice
Extravagant enthusiasm
Lack of realism
Disordered inclinations
" Hairdressing "

Lability
Lack of stability
Weakness of will
Weakness of concentration
Unsteadiness
Undisciplined
Lack of orientation
Divided being
Torn apart
Violent
Active
Restless
Inhibitions and inhibitionlessness
Excitement
Animation
Impulsivity
Incalculability

Aimlessness
Confusion
Lack of plans
Inconsequence
Running wild

Inconstancy
Need for change
Gift for
  improvisation

Lack of clarity in conduct of one's life
Lack of clarity of thought
Unmethodical way of working
Disordered inclinations, possibly
  innate endowment not fully used
Losing oneself
Not acquiring a full grasp of anything
Sudden decisions

Fig. 41

Discontinuities in the Branches

Impulsive
Distracted
Improvising
Playful
Trifling, inconstant
Guessing
Lacking persistence
Dogmatic
Wilful
Inconsequent
Incalculable
Hasty
Suggesting rather than doing
Half doing a great deal
Nervous
Impulsive
Disturbances in thinking
Disturbances in attention
Possibly, a craving (nervous anaesthesia)

Branch Forms

Stroke Branch :

From school age on, a sign of retardation,
usually slight, both in intellect and in
character. Often a sign of regression in
cases of neurosis.

Double stroke Branch :

Normal branch formation. Individual
characteristics appear as :
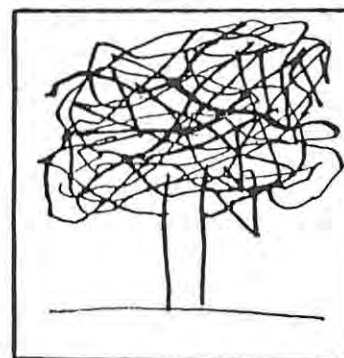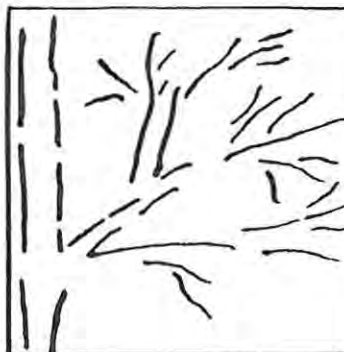
Fig. 42

Very rarely :

Spirit of research   Intuition
Reactiveness   Ability to sense things
Open   Restless spirit
Interested   Nervous eagerness
Momentary bursts of energy
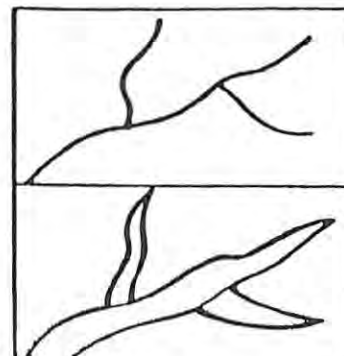
Fig. 43

APPENDIX 2

WHY THE TREE? - MYTHOLOGY AND SYMBOLISM

Although psychologists have used the Tree-drawing as a means to measure various factors such as intellectual maturity, intelligence and other personality traits there still remains the question of why a Tree-drawing has been used so widely in this regard. Researchers, working with the Tree as a projective drawing, have in the past justified the use of the tree as an important symbol by referring to myths, and religous sources. This appendix includes a discussion of the tree as a mythological image and elaborates briefly on why the tree itself seems to be a compelling image. The tree was researched as a mythological image found in religious stories and folk tales and this appendix refers mainly to Jung's work on this subject. Cross references are made to the work of researchers discussed in the historical review in Chapter One.

The tree is very much part of literary and religious imagery and seems to have considerable power as a projective symbol in our unconscious world. This symbolism of the Tree is found in cultural mythologies, religions and folk or fairy tales. The mythical Tree of Life is associated with Heaven, Paradise, Goodness, and the Knowledge to which man aspires. It is associated with the process towards the ideals of - the growing and evolving of man himself, the Mother-image for which man still longs, the rebirth through the Mother and with the hoped for transformation through death - symbolic or otherwise. The strength of this symbolism is evident in the continual occurrence of the Tree Myth in so many cultures all over the world.

The Tree as a symbol of Heaven

The symbol of the Tree of Life is closely associated with Paradise in both Eastern and Western religions. Besides the well known image of the Tree of Good and Evil in the Garden of Eden, a tree is also compared to the Kingdom of Heaven in the Gospels.

> The Kingdom of God is like a grain of mustard seed, which a man took, and cast into his garden; and it grew and waxed a great tree, and the fowls of the air lodged in the branches of it.
>
> (Luke XIII, 18-19, King James Version, The Holy Bible)

In A Dictionary of All Scriptures and Myths, J.N. Philpot is quoted in explanation of the entry "Tree of Life" as follows.

> As in Eastern legend, the universe-tree was venerated as something more than a mere material supporter of the world, being sometimes the giver of wisdom, and sometimes the conveyor of immortality, so in European myths it is found linked with similar beneficence. In the legends of the Finns its branches are represented as conferring 'eternal welfare' and the 'delight that never ceases'.
>
> (Gaskell, G.A., 1979, p. 766)

An important part of the Buddhist Mandala is the grove of Wish fulfilling Trees; "from which everything desired falls like rain" (Kongtrul, J., 1977, p. 100).

The Tree as a symbol of Growth

That the tree holds this expressive meaning associated with heaven is not astonishing, according to Jung, even in the scientific world of today. He sees the tree as a symbol of man expressing the continual balancing of the energies of spirit and matter, male and female, as he grows up towards "heaven". The tree is used as a symbol of growth, a

projection of the psyche outward into the various realities of experience.

> ... therefore it is not surprising that the unconscious of the present day man, who no longer feels at home in his world and can base his existence neither on the past that is no more nor on the future that is yet to be, should hark back to the symbol of the cosmic tree rooted in this world and growing up to heaven - the tree that is also man. In the history of symbols this tree is described as the way of life itself, a growing into that which eternally is and does not change; which springs from the union of opposites and by its eternal presence, also makes that union possible.

> (Jung, C.G., 1972, pp. 43 - 44)

Karen Bolander quotes Jung from The Philosophical Tree, as follows -

> If a mandala may be described as a symbol of the self in cross section, then the tree would represent a profile view of it: the self depicted as a process of growth.

> (Bolander, K., 1977, p. 23)

Koch, in his introduction to The Tree Test, quotes a Hermann Hilbrunner as saying, "the plant is an open system, everything pertaining to it strives outward; everything happens at the periphery, is formed under the bark and at the ends of the axes of the shoots." He sees it simply as an "outward movement of life". Animal life by contrast is a "turning of the physical life inwards", while "a plant on the other hand is, basically, never full-grown; it is, as it were, young to the end; up to its natural death it forms buds which may come to fruition ..." (Koch, C., 1952, p. 9). Koch cautions the reader to read several times his introductory passage on the meaning of the tree so that one might understand what can be expressed in a Tree-drawing.

The Tree as a Mother symbol

It would be impossible to quote all the myths that Jung
discusses in the chapter on "Symbolism of the Mother and
Rebirth", in The Psychology of the Unconscious, but there is
no doubt as to the significance of the Tree as a Mother
symbol and a symbol for growing out into something new and
very important psychologically. Researchers who have worked
with the Tree-drawing have found it a fascinating insight
into the relationship the child has evolved with his mother
and father and the male and female psychic energies within
himself (Tomatis, A.,A., 1972). Bolander, Stora and Michel
base much of their interpretation of the Tree-drawing on the
idea of growth that allows a process from the dominance of
the mother towards a balance that includes the father.

In discussing the space in which the tree is drawn, Bolander
(1977 p.72) places the parts of the tree which are
"feminine" (acceptance of that which is the mother,
feminine development, female relatives and friends) on the
left and those that are "male" ("interests in male
endevours, acceptance of that which is the father, male
relatives and friends") on the right hand side of the tree.
A. A. Tomatis (1972, p. 66) also sees the left as the
'Mother' and the right as the 'Father' and that the child
must come to terms with the 'Mother', symbolic or otherwise,
before the attributes of the 'Father' (most obviously,
language) can be attained. (See Appendix 6 for Bolander's
zones of the page.)

Jung discusses the passage from The Revelation of St. John -
which, he says, expresses the tree as a "Mother-image".

> 'In the midst of the street of it, and on
> either side of the river, was there the tree
> of life, which bare twelve manner of fruits,
> and yielded her fruit every month, and the
> leaves of the tree were for the healing of
> the nations.' ...

> The tree of life is probably, first of all, a
> fruit-bearing genealogical tree, that is, a
> Mother-image. Countless myths prove the
> derivation of man from trees; many myths show
> how the hero is enclosed in the maternal tree
> ... Numerous female divinities were worship-
> ed as trees, from which resulted the cult of
> the holy groves and trees.'

> (Jung, C., 1965a, p. 246)

He continues to analyse the Tree symbol in detail and points
out that the tree also has an element of phallic symbolism
and that "...the double significance of the tree is readily
explained by the fact that such symbols are not to be
understood 'anatomically' but psychologically as libido
symbols ...". He cautions against taking mythological
symbols much too concretely as, in the realm of fantasy,
"feeling is all" (Jung, C.G., 1965a, p. 249). This Tree
contains the energies of both male and female life forces
and especially the idea of rebirth, striving to become a
child again, or being born of the spirit. He continues...

> The symbolism of water and trees, which are
> met with as further attributes in the symbol
> of the City, also refer to that amount of
> libido which unconsciously is fastened to the
> Mother-image. In certain parts of Revela-
> tions (sic) the unconscious psychology of
> religious longing is revealed, namely, the
> longing for the mother.

> (Jung, C.G., 1965a, p. 250)

The Mother image symbolises a time of perfection, a time of
happiness and a time of unconsciousness - a paradise before
the 'fall', a time of "no more fear of death and no pain of
separation more!" (Jung, C. G., 1965a, p. 280). As we have
seen earlier, the Tree image is often associated with heaven
or paradise. In view of these ideas it is interesting to
quote Jung again on Tree symbolism.

> It is well known that trees have played a
> large part in the cult myth from the remotest
> times. The typical myth tree is the tree of
> paradise or of life which we discover abun-
> dantly used in Babylonian and also in Jewish
> lore; and in pre-christian times, the pine

tree of Attis, the tree or trees of Mithra;
in Germanic mythology, Ygdrasil and so on.
The hanging of the Attis image on the pine
tree; the hanging of Marsyas, which became a
celebrated artistic motif; the hanging of
Odin; the Germanic hanging sacrifices -
indeed, the whole series of hanged gods-
teaches us that the hanging of Christ on the
cross is not a unique occurrence in religious
mythology, but belongs to the same circle of
ideas as others. In this world of imagery
the cross of Christ is the tree of life, and
equally the wood of death. This contrast is
not astounding. Just as the origin of man
from trees was a legendary idea, so there
were also burial customs in which people were
buried in hollow trees ...

Keeping in mind the fact that the tree is
predominantly a mother symbol, then the
mystic significance of this manner of burial
can be in no way incomprehensible to us.

(Jung, C.G., 1965a, p. 264)

The Tree as a symbol of Rebirth

Jung reminds us that the tree is closely connected to the
myths of rebirth or mystical birth. Osiris who is reborn as
Horus of the Egyptian myth lies in the branches of the tree,
surrounded by them, "as in the mother's womb". Sleeping
Beauty is the legend of a girl who is enclosed between the
bark and the trunk, but who is freed by a youth with his
horn (Jung, C.G., 1965a, p. 272).

An exotic legend tells of the sun-hero, how he must be free
from the plant entwining him. An African legend tells how
the hero must be untangled from seaweed. At the birth of
Buddha, Queen Maya gives birth beneath the tree in the grove
of Lumbini and lotus flowers spring up form the earth. Jung
quotes Sir Edwin Arnold's poem, The Light of Asia.

The conscious tree bent down its boughs
to make
A bower about Queen Maya's majesty:
And earth put forth a thousand sudden
flowers
To spread a couch: while ready for the bath
The rock hard by gave out a limpid stream

Of crystal flow. So brought she forth the
child.

(Jung, C.G., 1965a, p. 273)

In his discussion on the Etymology of the Indo-Germanic root
velu-, vel-, which has the meaning of "encircling,
surrounding, turning", Jung points out that the root velu-
means "Cover, corium, womb" and that the root vel has the
meaning of "to sound, to will, to wish" which is clearly the
"Libido", the energy towards life, towards individual con-
sciousness (Jung, C.G., 1965a, p. 276). The vel is also the
skin which Koch and Tomatis liken to the crown of the tree,
which encircles the branches (Michel, S., 1980, p. 7).

It is clear from all this that the Tree symbolises a wealth
of material associated with the Mother, growth of
consciousness and rebirth. Jung makes it clear that the
"incestuous wish does not aim at co-habitation", but means
the

> ...special thought of becoming a child again,
> of turning back to the parents protection,
> of coming into the mother once more in
> order to be born again
> ...Thus the libido becomes spiritualised in
> an imperceptible manner through mythical
> fantasies.

(Jung, C. G., 1965a, p. 251)

Jung continues to explain that it is the power of the "incest
prohibition which created the selfconscious individual, who
had formally been thoughtlessly one with the tribe, and in
this way alone did the idea of the individual and final death
become possible" (Jung, C.G., 1965a, p. 304).

In view of the above it is not surprising to find that
Tomatis says that the Tree-drawing shows us the need to deal
with the intricasies of the relationship with the mother, as
a prior necessity, before the child can reach out into the
conscious and articulate world of the father (Tomatis, A. A.,
1972, p.66). For, as Jung puts it,"the entire libido is

demanded for the battle of life, and there can be no remaining behind" (Jung C.G., 1965a, p. 340).

The Tree as a symbol of Transformation

Buddha, himself, finds enlightenment beneath the mystical Bodhi Tree which is at the heart of our planet, of all places holiest, according to Buddhist scriptures. The Linage Tree is a dominant symbolic Buddhist image of the power of the Teaching passed down through the Lamas (Kongtrul, Jamgon, 1986, p. 54). Jung points out that the Tree also symbolises a transformation.

> Likewise it is not astonishing that the
> Christian legend transformed the tree of
> death, the cross, into the tree of life,
> so that Christ was often represented on a
> living and fruit bearing tree.

(Jung, C.G., 1965a, p. 278)

Included in this section on the significance of the unconscious imagery of the Tree, is Jung's explanation of the folk tale or fairy tale of a young swineherd, who climbs up into the upper branches of a "World Tree" to reach a princess – a higher consciousness.

> The young swineherd who climbs from the
> animal level up to the top of the giant
> World-Tree and there, in the upper world of
> light discovers has captive anima, the high
> born princess, symbolises the ascent of
> consciousness, rising from almost bestial
> regions to a lofty perch with a broad
> outlook, which is a significantly appropriate
> image for the enlargement of the conscious
> horizon. Once the masculine consciousness
> has attained this height, it comes face to
> face with its feminine counterpart, the
> anima.

(Jung, C.G., 1972, p. 117)

Stora (1963) sees the Platonic symbolism of the tree in the upward movement of the soul and its efforts towards knowledge – from sense perceptions to ideas. She discusses both the Tree in the Garden of Eden where innocence is forfeited for

knowledge, and the Tree of Christ where the crucifixion of God Incarnate is a passage from the lowest to the highest.

Although ,as Bolander (1977) points out, Jung and his followers have treated this subject extensively, as have scholars in other fields, it was considered necessary to briefly discuss the significance of the Tree as a mythological theme in this Appendix.

The symbol of the Tree, seems to be a vital part of our cultural heritage, an essential symbol in most religions and, according to Jung, an important symbol of transformation. The Tree has apparently lent itself to express a transformational process, whether it be the spiritual sacrificial process (seen in religious imagery), the individuation of the personality by a process of a balancing of the energies in the psyche (seen in many mythological images) or the development of the child's image of himself in relation to the outer world (as discussed by psychologists using projective tests).

From this investigation into the unconscious meanings of the Tree, it becomes less improbable than it might first have seemed, to think that language facility in the child can be seen in the way the child draws a tree or that this drawing might express for him his desire to communicate with others, especially those others with whom a vital relationship of psychological importance exists.

Symbolism, as expressed in literature, art and even dreams has lost credibility in our overly scientific world and it might be worthwhile to quote from Jung again.

> These fields (art and literature) all have
> their own laws of activity, like all really
> creative achievements, they cannot ultimately
> be rationally explained. But within their
> areas of action one can recognise the arch-
> typal patterns as a dynamic background acti-

vity. And one can often decipher in them (as in dreams) the meassage of some seemingly purposive, evolutionary tendency of the unconscious.

(Jung, C.G., M.C. Von Franz, J.C. Henderson, J. Jacobi and A. Jaffé, 1964, p. 306)

APPENDIX 3

A. A. TOMATIS:- AUDIO-PSYCHO-PHONOLOGY DIAGNOSTIC
TEST PROCEDURES AND THERAPHY

This is a very brief account of the diagnostic tests that are
the basis for Tomatis's research and his theories of language
acquistion which are based on what he calls, "adaptive
evolution of the listening aptitude" (Tomatis, A. A., 1972,
p. 131).

(i)   Threshold evaluation:
       Using the audiometer, the subject's ability to hear is
       studied. Both air conduction and bone conduction in
       the normal sound scale range from 125 to 8 000 hz.
       are measured. A normal subject will have both curves
       parallel. With those who live in a 'disturbed sonic
       universe', the curves are sawtoothed and left and
       right ears may be very different. It may be useful
       to point out that the no-hearing loss line is purely
       theoretical as no person has a straight hearing curve.
       The important range for language is the middle range
       from 800 hz. to 2 000 hz.

(ii)   Selectivity evaluation:
       At a pre-determined intensity of about 40 - 50 db. the
       subject is required to discriminate between gross
       tonal differences. This is not a test to see if the
       subject can differentiate pitch differences between
       closely related sound but rather to ascertain his
       ability to recognize dynamic tonal differences between
       high and low tones. Tomatis points out that Dyslexics
       are in fact 'deaf' to tonal differences in certain
       ranges (All children tested by the author in a
       remedial program were consistently unable to
       discriminate tonal values of sound).

(iii)   Spatialization evaluation (directionality):
        This is the test to ascertain from what direction or
        side the sound emanates. A tone is moved from one ear
        phone to the other and the subject must identify where
        it is coming from. For the child with language
        problems, these tones are rarely located correctly and
        this spatial confusion affects his body image and
        ball-sense adversely right away.

(iv)   Laterality test:
        This is a test to ascertain the dominance of left or
        right ear which is related to the subject's self-
        monitoring process while he is listening to sound.
        This can be an extensive observational assessment and
        the specific test with the audio-laterometer for
        hearing dominance is only part of the total profile.
        Right-eared dominance of speech favours smooth
        articulate speech with an easy flow, intonation is
        rich and voice production from the front of the mouth.
        Motor movements of the hands, eyes, face and posture
        are well synchronised with vocal emphasis and the
        whole face is alive with expression. Left-eared
        lateralisation means that the right hemisphere is
        processing language as the actual nerve pathway (Vagus
        nerve) is a longer and more devious path to the brain
        (Tomatis, A. A., 1972, pp. 63 - 64, 122 - 132).

The Dyslexic child presents a picture of the disturbance of
lateralisation which may be complexly mixed and result in
observable neurological problems.

Audio-Psycho - Phonology Therapy - Rebirthing

The method uses advanced technology and includes an
"Electronic Ear" (also called the Aurelle Apparatus) which
allows only certain frequencies to be listened to. (Tech-
nical details can be obtained from the University of

Potchefstroom, A.P.P. Clinic and Electronics Department) The method used to re-train a child to use his hearing more efficiently and to eliminate some of these problems is to take the child or adult back to a pre-traumatic time, the prenatal hearing experience. The child then listens to the sounds he would have heard in utero. The child is not presented with random sound, but a carefully-made recording of his/her mother reading aloud a pleasing and favourite story of childhood, filtered to the frequencies heard via fluid as the child would have heard her voice as a foetus.

Undergoing therapy, the child will slowly emerge from hearing in a simulated aquatic environment (i.e. through fluid) to hearing in the postnatal air environment. Air conduction is only returned to when the individual is ready to be rebirthed. This is not an uncommon strategy in psychological therapy, but in this unique approach the medium of passage is audition. The child then must be helped to graduate towards 'listening', 'self-listening', articulated speech and independence (Tomatis, A. A., 1972, p. 147).

APPENDIX 4

TREE DESCRIPTION FOR CLASSIFICATION AND EXAMPLES - SCALE 1-13

(Example of trees drawn by Std. 5 Pupils - English Speaking Boys and Girls, eleven - twelve years old - two drawings given for each stage identified by this study and based on Sandra Michel's Stages.)

1.   THE STUMP

A lifeless cut-off tree, no leaves at all, sometimes twigs.

2.   THE STUMP WITH SPROUTING

A stump with some sprouting leaves and twigs, still cut off or amorphous trunk which has no resemblance to a grown tree in structure.

3.   TADPOLE TREE

A tight rounded crown with emphasis on the outline of the crown by shading, coloured edges or double lines. Usually a long trunk in proportion to the small crown. Crown coloured in heavily. No fruit or branches inside crown. Occasionally seen in the drawings of young children with antennae sprouting out of crown or scalloped around outside edge of crown. Sometimes seen with two or more small stiff branches, 'like arms', sticking out on each side or sticking up into crown.

4.   APPLE TREE

Crown is filled with round fruit. Outline of crown is still tight and heavily drawn. Two or more arm branches are

sometimes seen but decorative fruit in crown dominate this
stage. Flowers are often seen and it relates to the Tadpole
Tree in the shape of the crown.

5.   FLOATING BRANCHES IN CROWN

Branches float freely inside a tight crown which is still
often heavily outlined or decorated on inside edge. Fruit is
still seen, sometimes leaves and heavy colouring-in of crown,
but there is no structural relationship with the trunk. The
thick trunk ends and the thin branches begin with no solution
to the structural problems at the junction. Trunk ends with
strong line or colour change. Branches are random as fruit;
stick branches; odd shapes attached to edge of trunk or from
points at end edges of trunk or poke out of trunk. Double
line branches can be open-ended or drawn straight across.

6.   SKIN TREE WITH BRANCHES TO EDGE OF CROWN

Main identifying feature is the structural connection between
trunk and branches. Branches drawn to edge of Crown -
'skin'. Edge of crown is still tight and heavy, sometimes
emphasised with decorative colouring-in or lines. Crown can
be filled up with fruit to outline edge of crown. Branches
can criss-cross but structure is a flow-through-system of
branches from trunk.

7.   SKIN-TREE WITH SOME SPACE BETWEEN BRANCHES AND EDGE OF
      CROWN

Structural connection between branches and trunk continues,
trunk flows through well into branches. Possible fruit, but
only a few - the desire to fill up the 'skin' crown is less
compelling. Crown less rigid but still tight and heavily
drawn. No sense of breathing spaciousness yet in crown. A
sense of space begins with a three-dimensional quality to
branching in some trees.

8.   <u>BRANCHED TREES</u>

Structural trees with no leaves at all and many branches. Sense of space and three-dimensional rendering of branching. (See Appendix 5.)

9.   <u>BRANCHING TREES WITH SPROUTING LEAVES</u>

Structural, grown, trees with only a few leaves sprouting from sides of branches or from top tips of branches. Definitely not a fully leafed tree yet, leaves stiffly drawn as if an extension on branches.

10.   <u>BRANCHING TREE-FULLY LEAFED BREATHING TREE</u>

Structural Tree with full crown of individually drawn leaves. Sense of space and three-dimensionality.   (Classified as a Breathing Tree).

11.   <u>BREATHING TREE- DIVIDED CROWN</u>

This type of breathing tree has a series of branching units with small individual crowns that make up the whole tree. Although branches are strongly featured the emphasis is on the crowns which do not have branches inside. Overall effect of spaciousness and three-dimensionallity of tree.

12.   <u>BREATHING TREE WITH SOME VESTIGES OF BRANCH SYSTEM</u>

The crown is full and lightly drawn with no heavy lines around crown edge, colouring is lightly done with a sense of spaciousness inside the tree's foliage.   Two or three branches may occur supporting the crown beneath or just inside the base of the crown.   This tree is not to be confused with the second skin Tree (no. 7 W.K.).   At this stage the branches are less important and suggest support for the crown rather than fill it up.

13.   BREATHING TREE - NO BRANCHES

Full and open crown with lightly drawn outlined edge,
sometimes shaded-in crown and no line drawn at all at 'edge'.
Sense of spaciousness, three-dimensionality, crown is lightly
coloured-in and not solid. Crown empty of branches, fruit
and flowers but an impres- sion of foliage sometimes given by
a few lines inside crown.

NOTE: From this description it can be seen that the inter-
pretation relies to some extent on the lightness or heaviness
of the lines, - this is true of most interpretations, but it
means that the drawing medium must be pencil crayons to
enable this feature to be assessed accurately.

12 YEARS FEMALE

b

12 YEARS   FEMALE

STUMP WITH SPROUTING 2
LEAVES
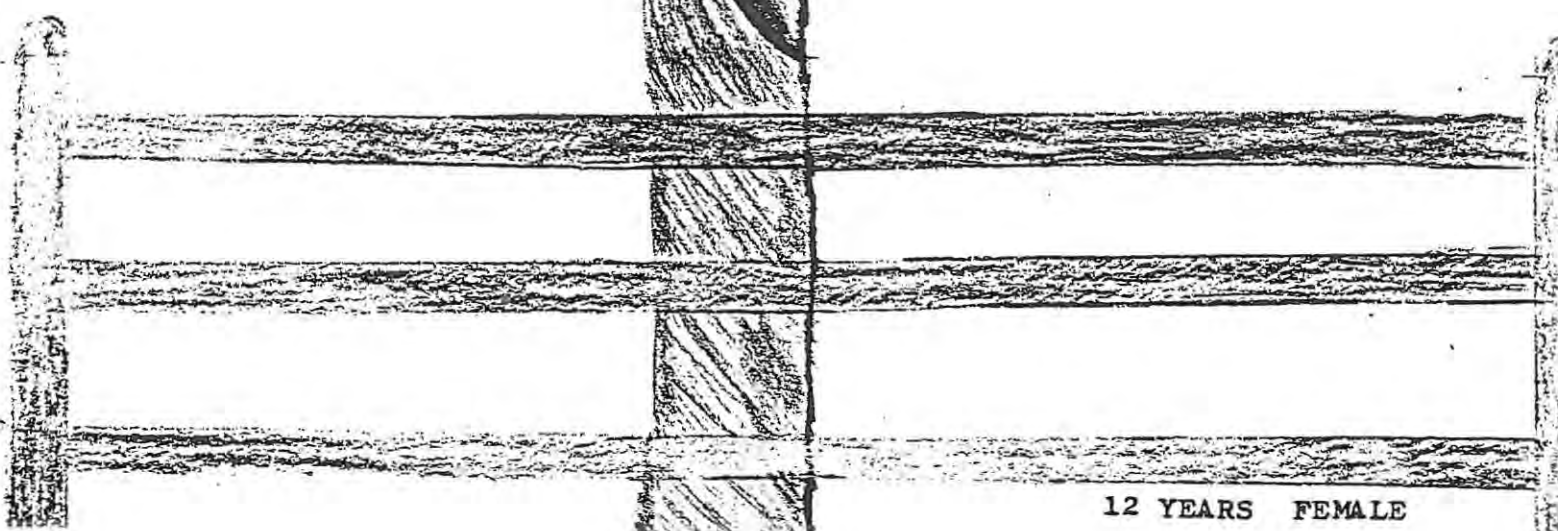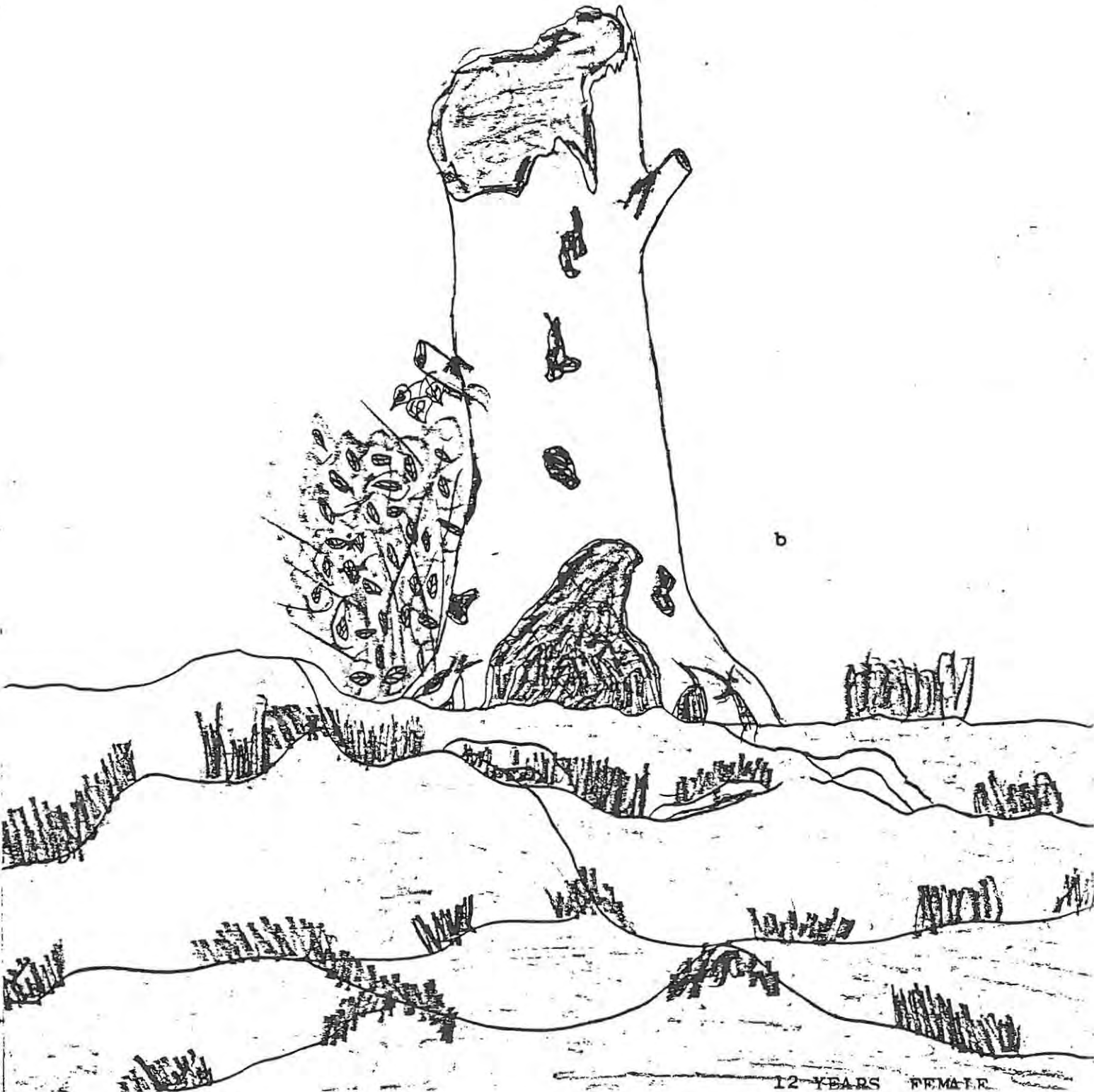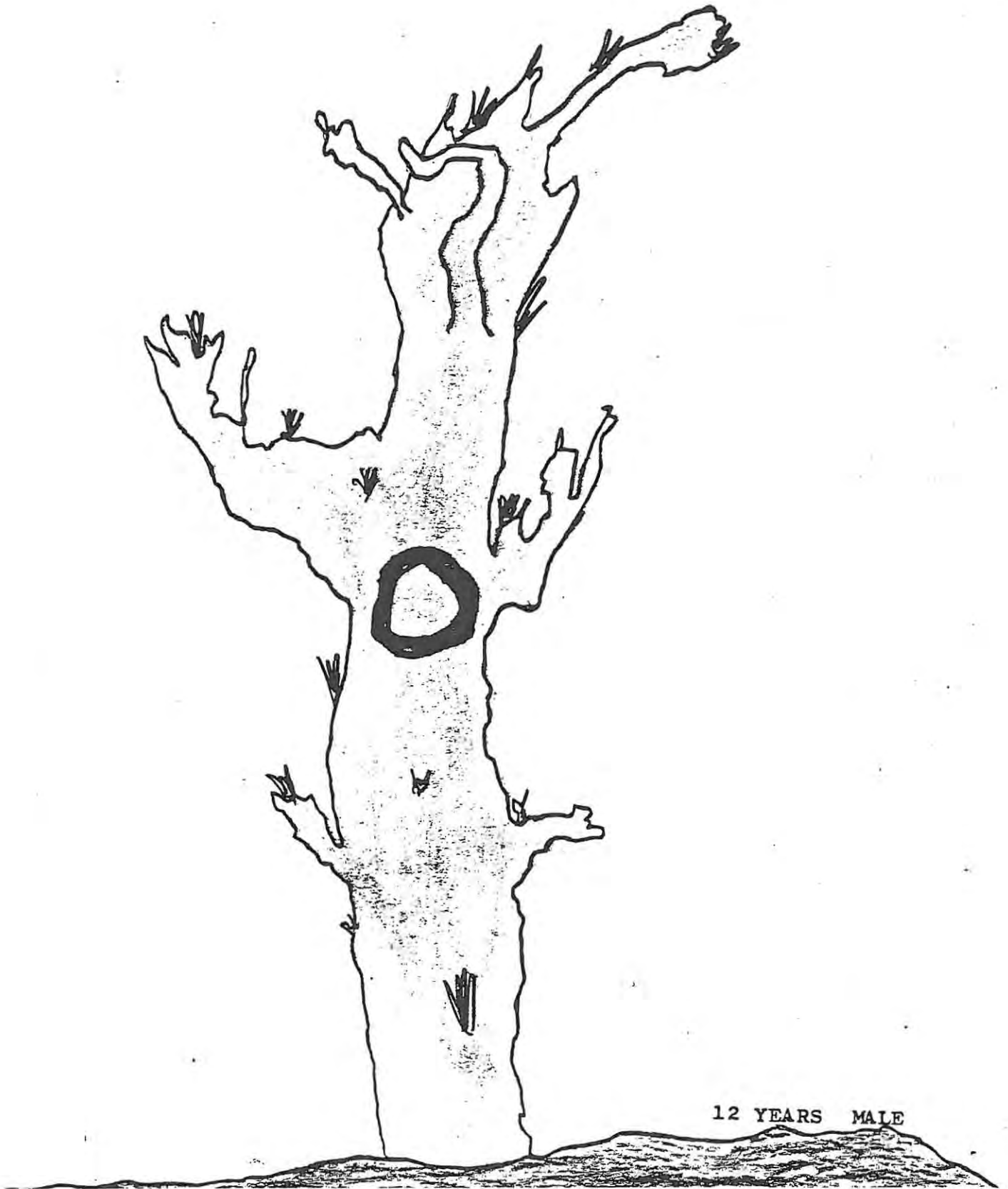
12 YEARS   MALE

12 YEARS MALE

12 YEARS MALE

13 YEARS MALE

12 YEARS FEMALE

APPLE TREE   4
(APPLES DOMINATE IN CROWN)

11 YEARS   FEMALE
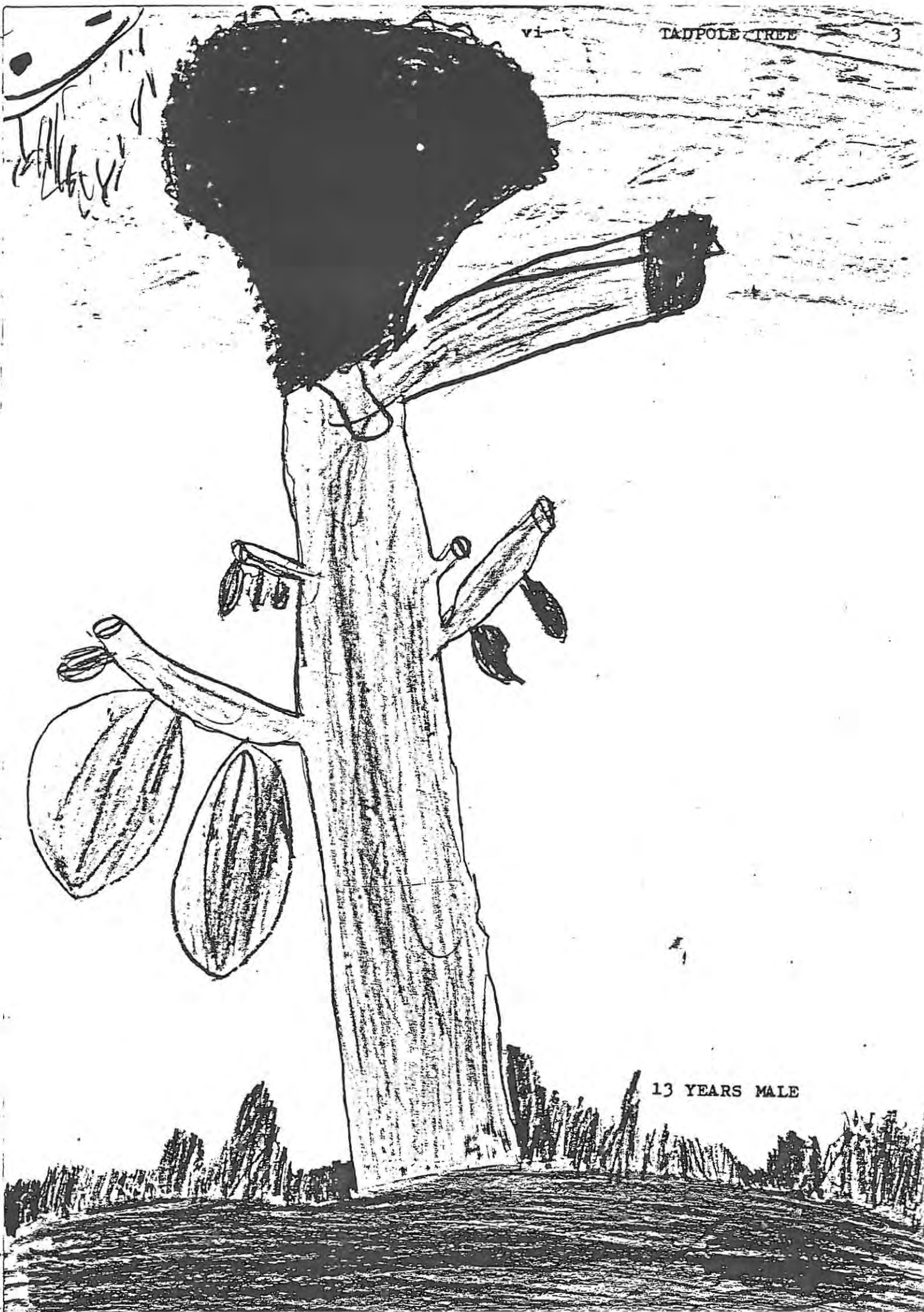
APPLE TREE 5
(WITH FLOATING BRANCHES)
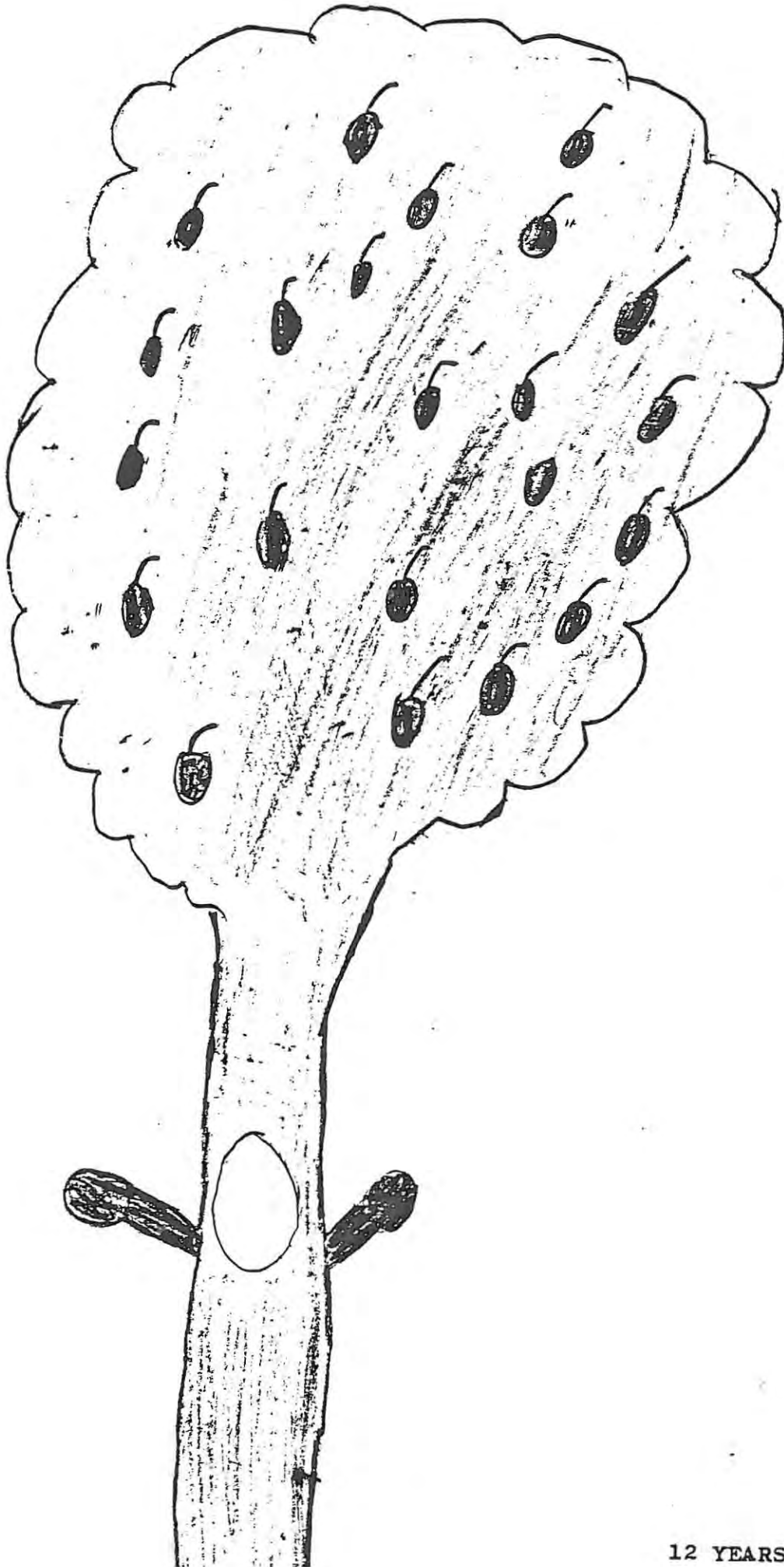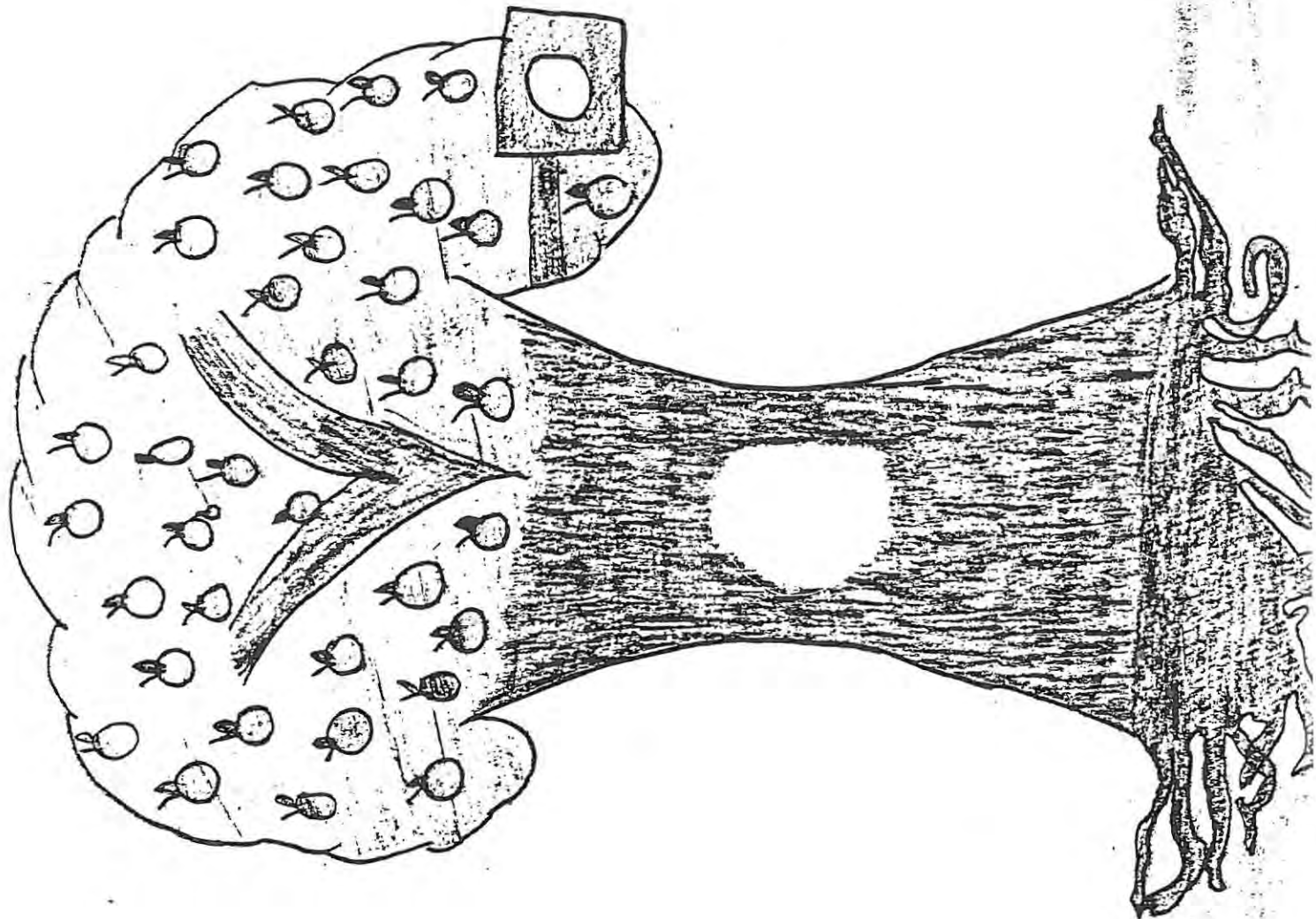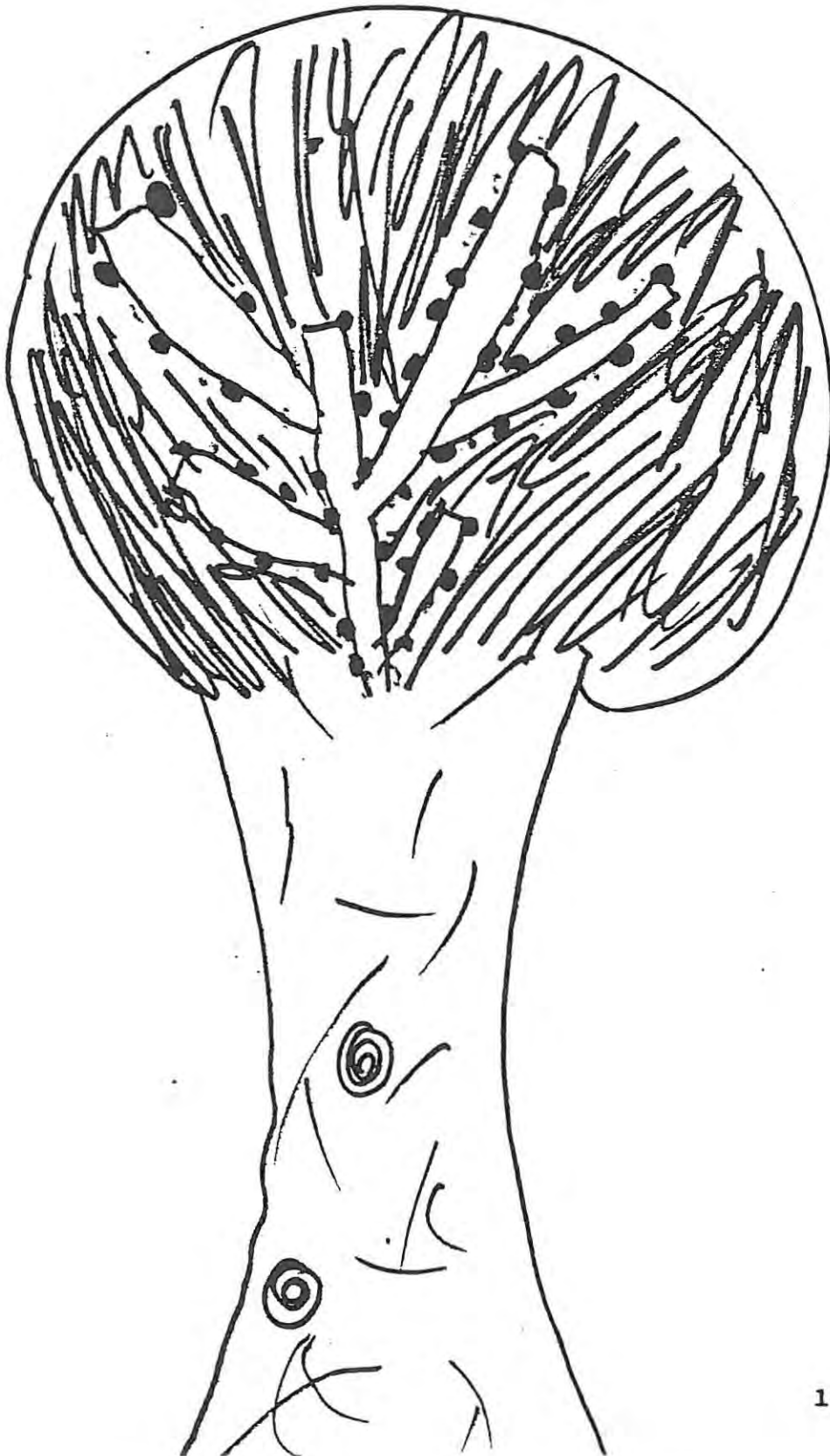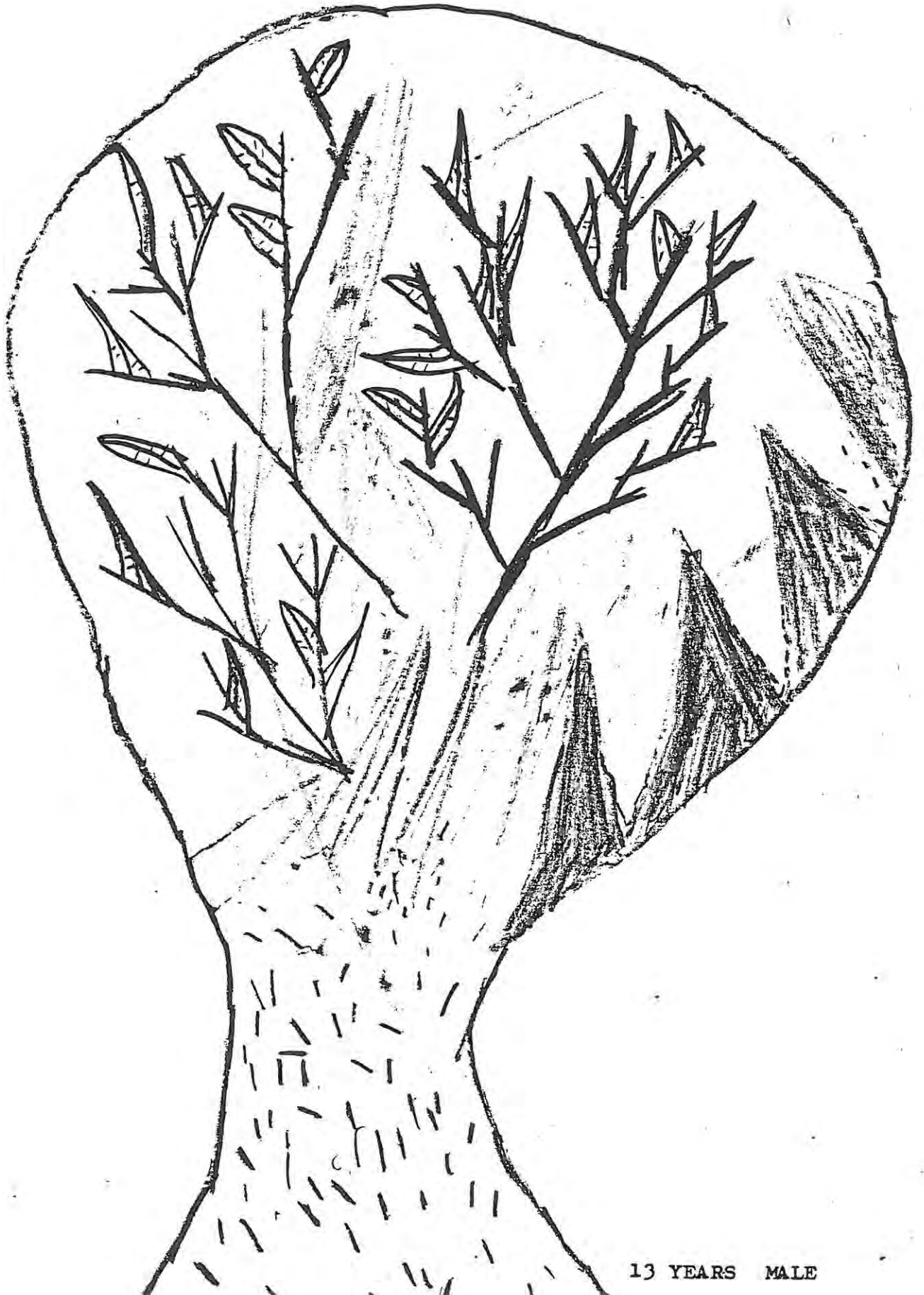
12 YEARS FEMALE

13 YEARS   MALE

xi
APPLE TREE
(WITH FLOATING BRANCHES)   5
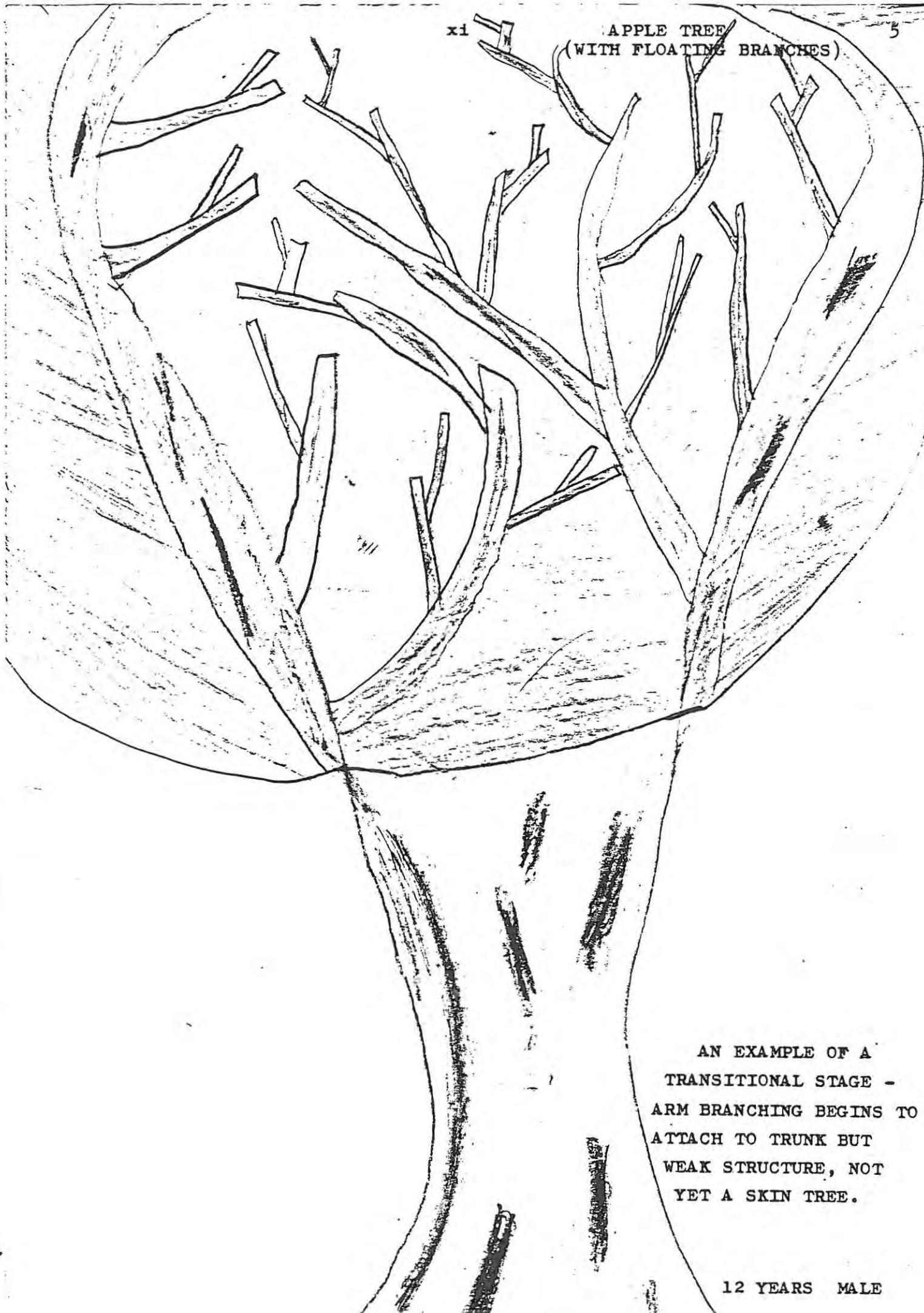
AN EXAMPLE OF A
TRANSITIONAL STAGE -
ARM BRANCHING BEGINS TO
ATTACH TO TRUNK BUT
WEAK STRUCTURE, NOT
YET A SKIN TREE.

12 YEARS   MALE

SKIN TREE 6
(BRANCHES TO EDGE OF CROWN)

12 YEARS FEMALE

SKIN TREE 6
(BRANCHES TO EDGE)
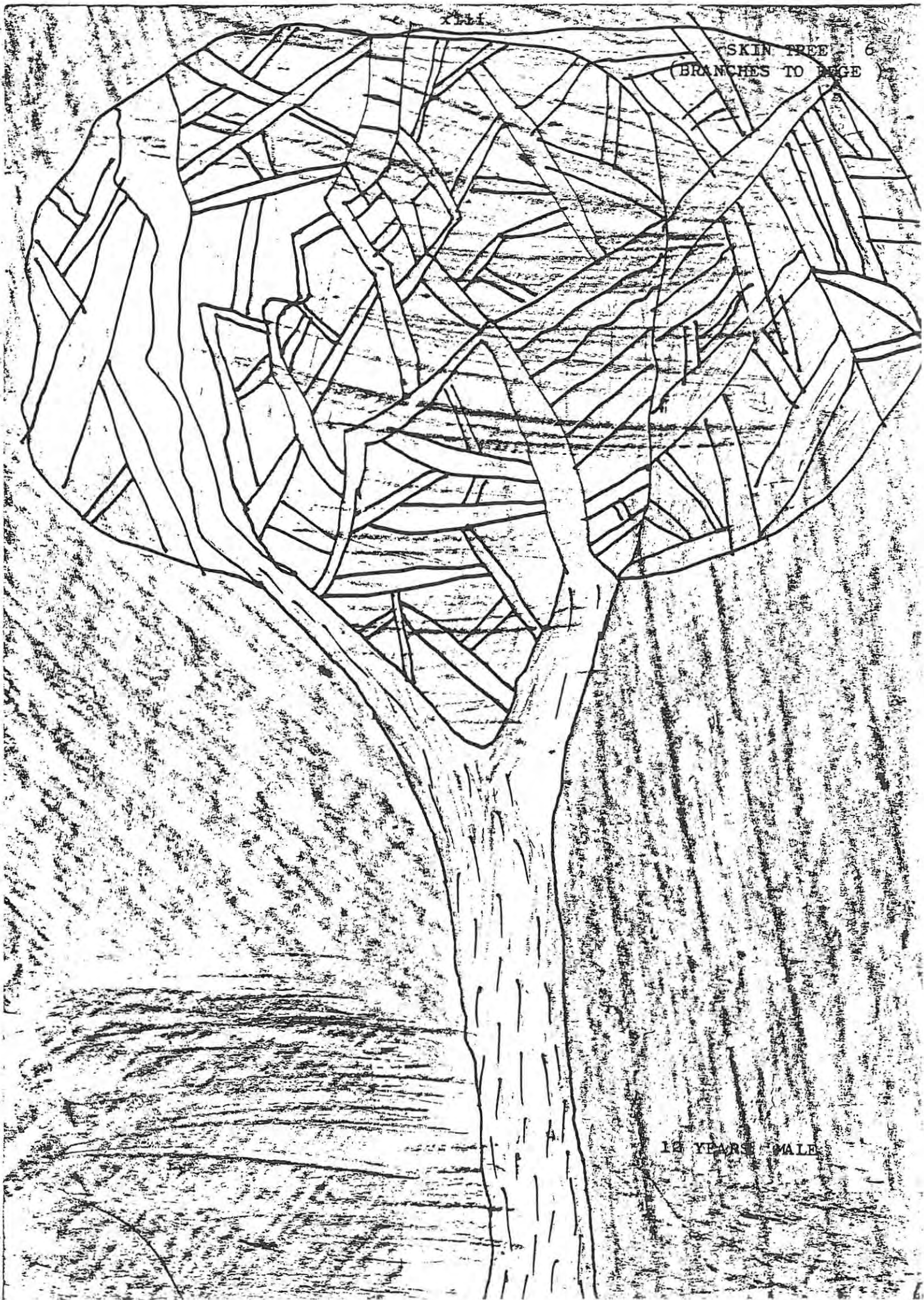
12 YEARS MALE

(WITH SOME SPACE BETWEEN TIPS OF
BRANCHES AND EDGE OF CROWN, OFTEN
FILLED WITH FRUIT)
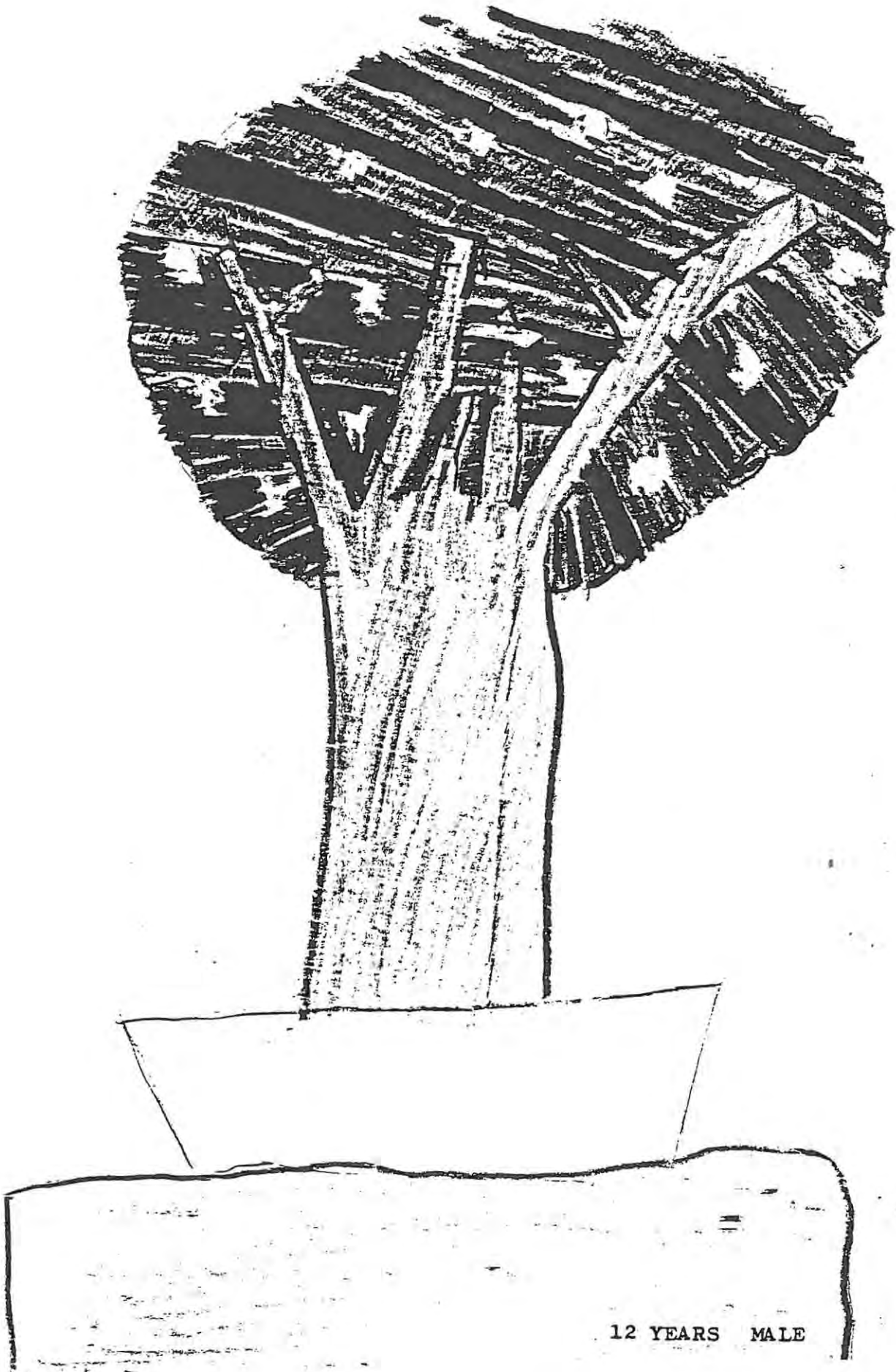
12 YEARS   MALE

(WITH SOME SPACE BETWEEN TIPS
OF BRANCHES AND EDGE OF CROWN)
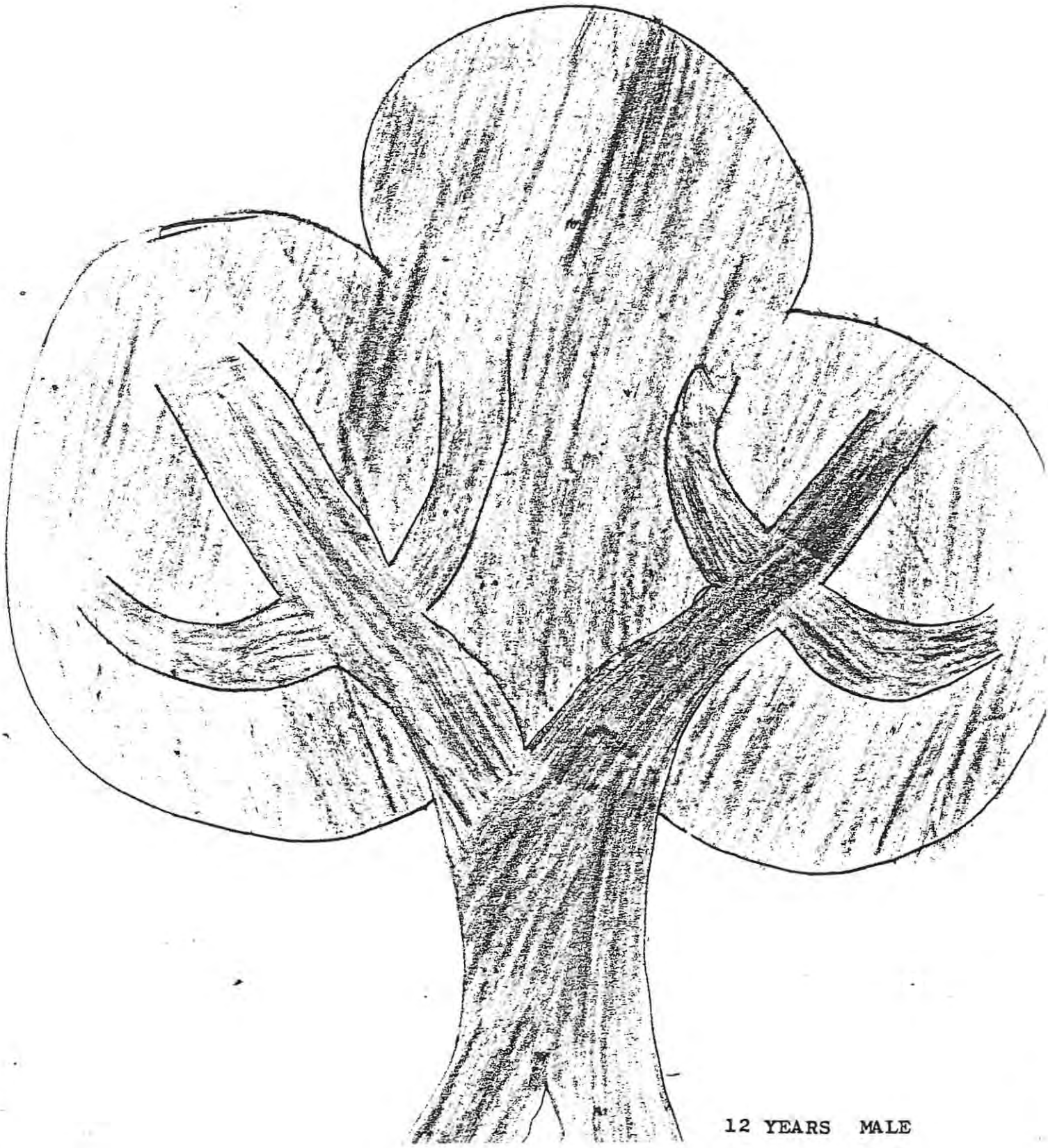
12 YEARS   MALE

(SEE APPENDIX 5)

12 YEARS - FEMALE

(SEE APPENDIX 5)

11 YEARS   MALE
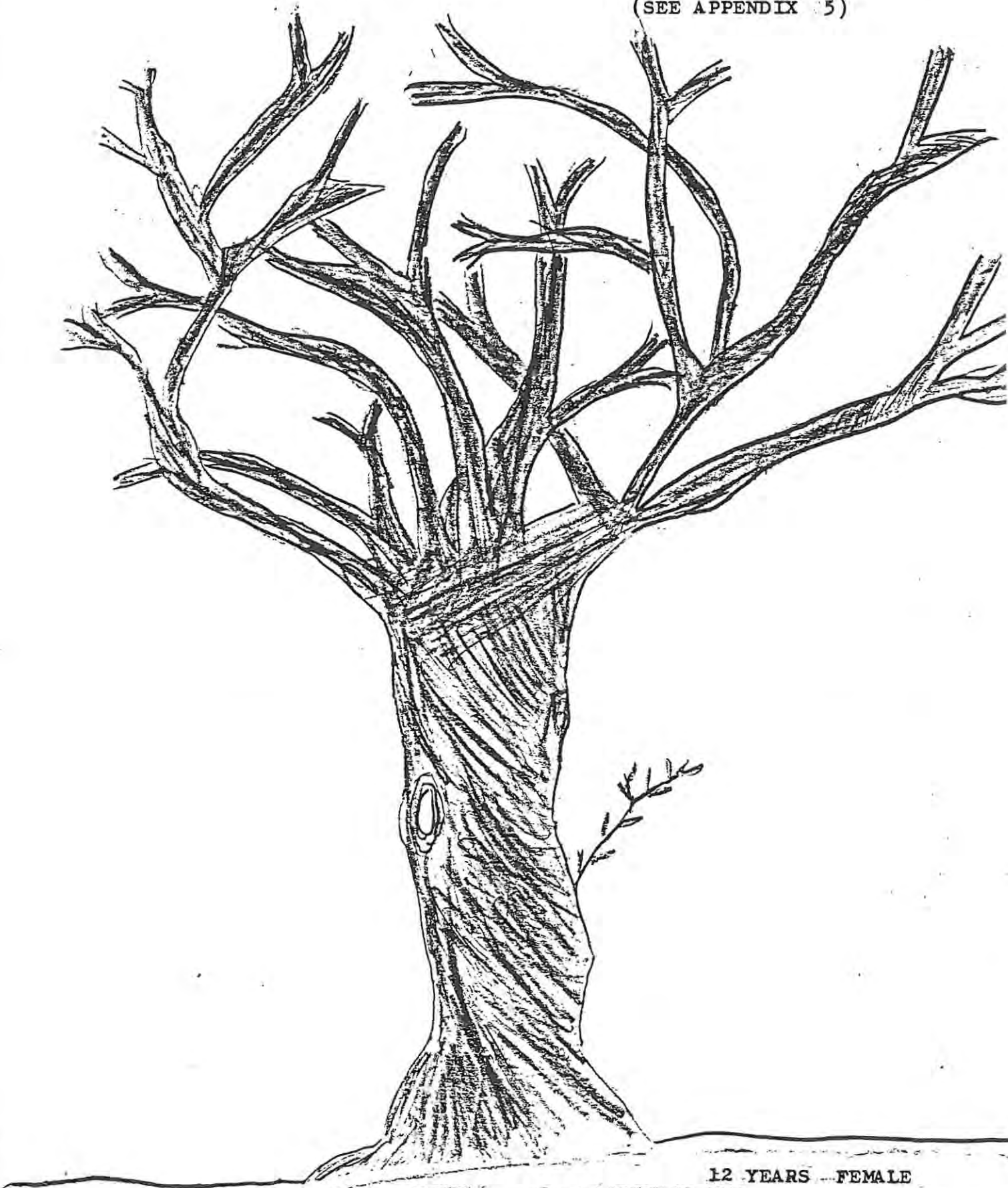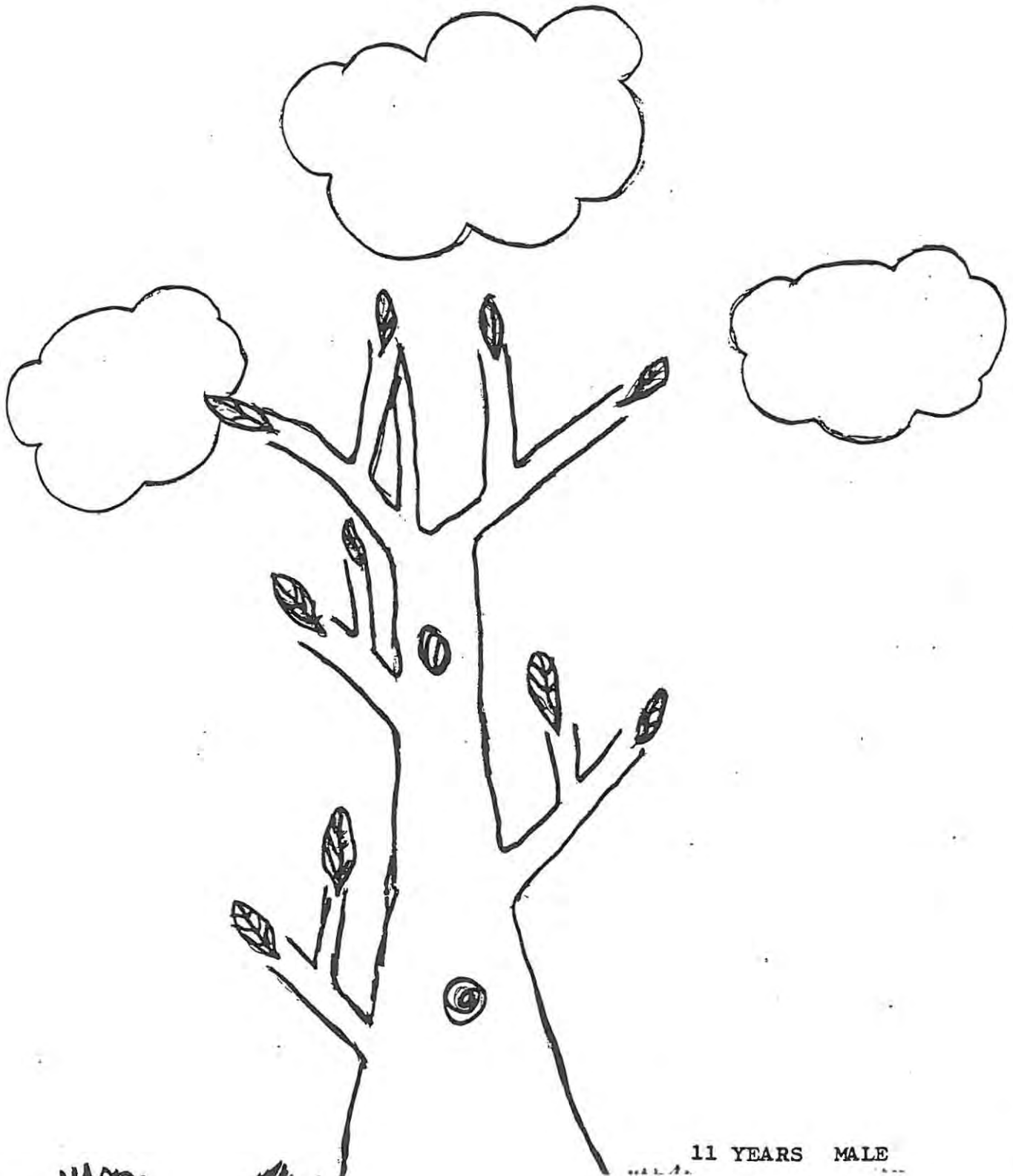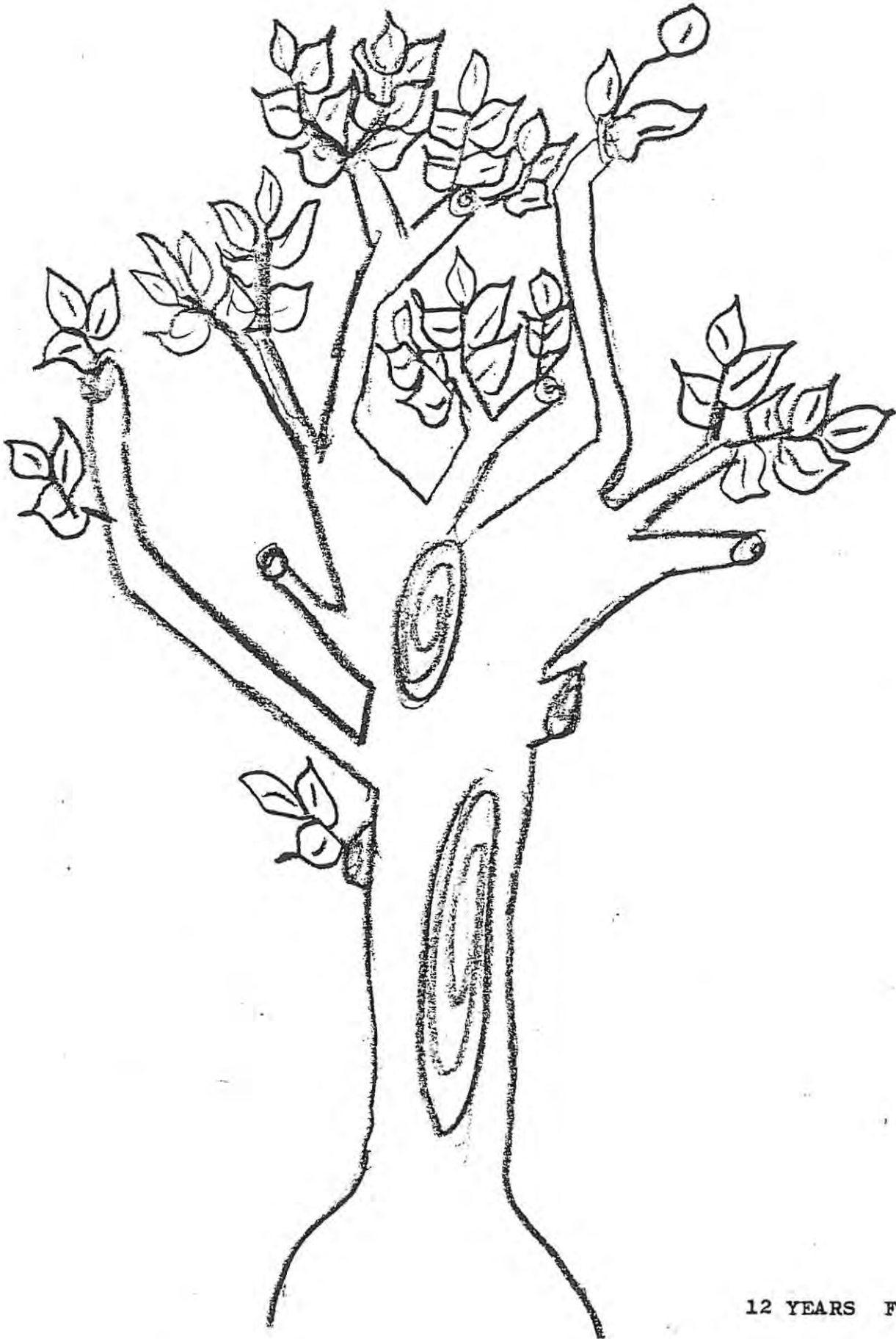
12 YEARS   FEMALE

(INDIVIDUAL LEAVES BEGIN TO FORM
OPEN CROWN)
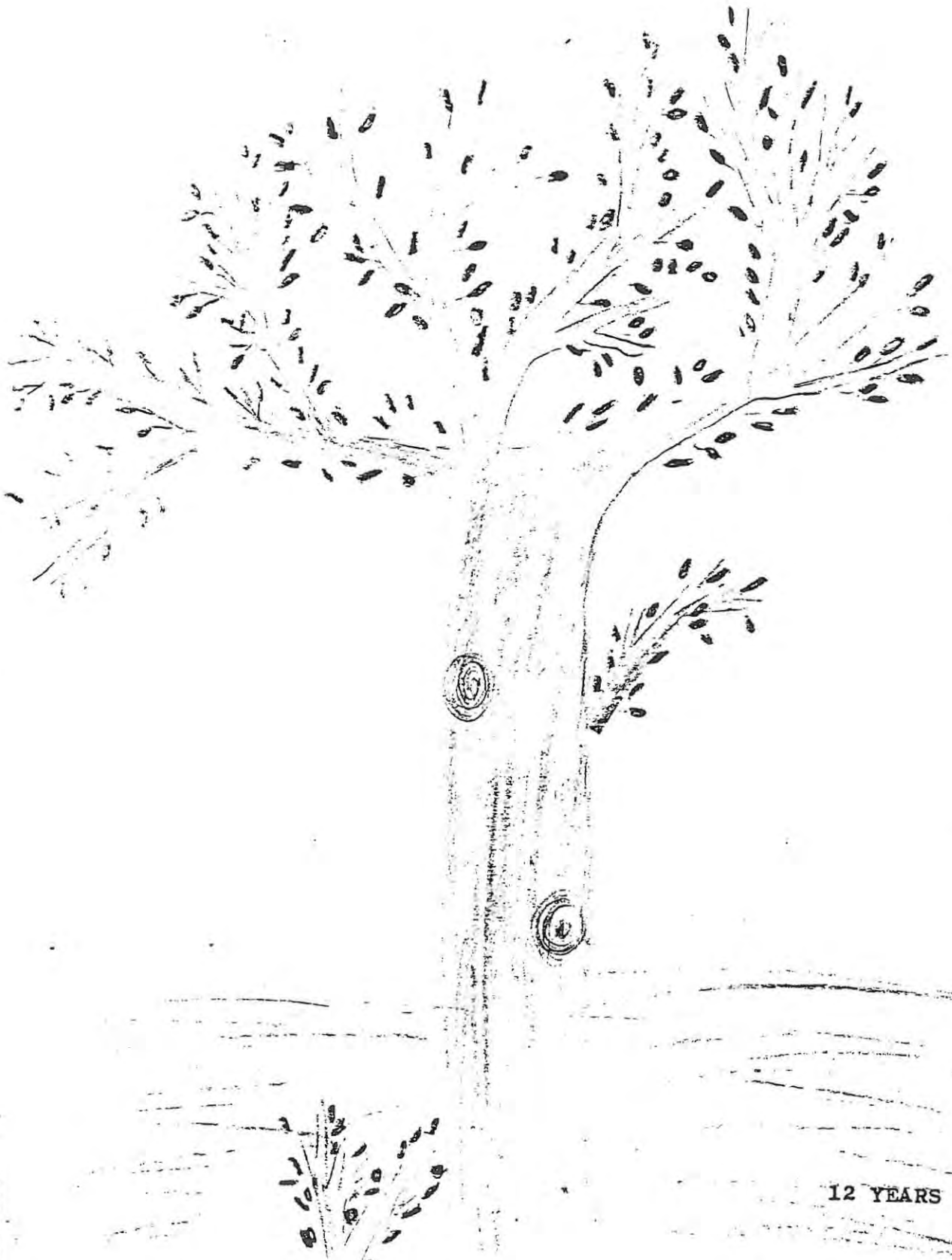
12 YEARS FEMALE

12 YEARS FEMALE

(MANY SMALL CROWNS)
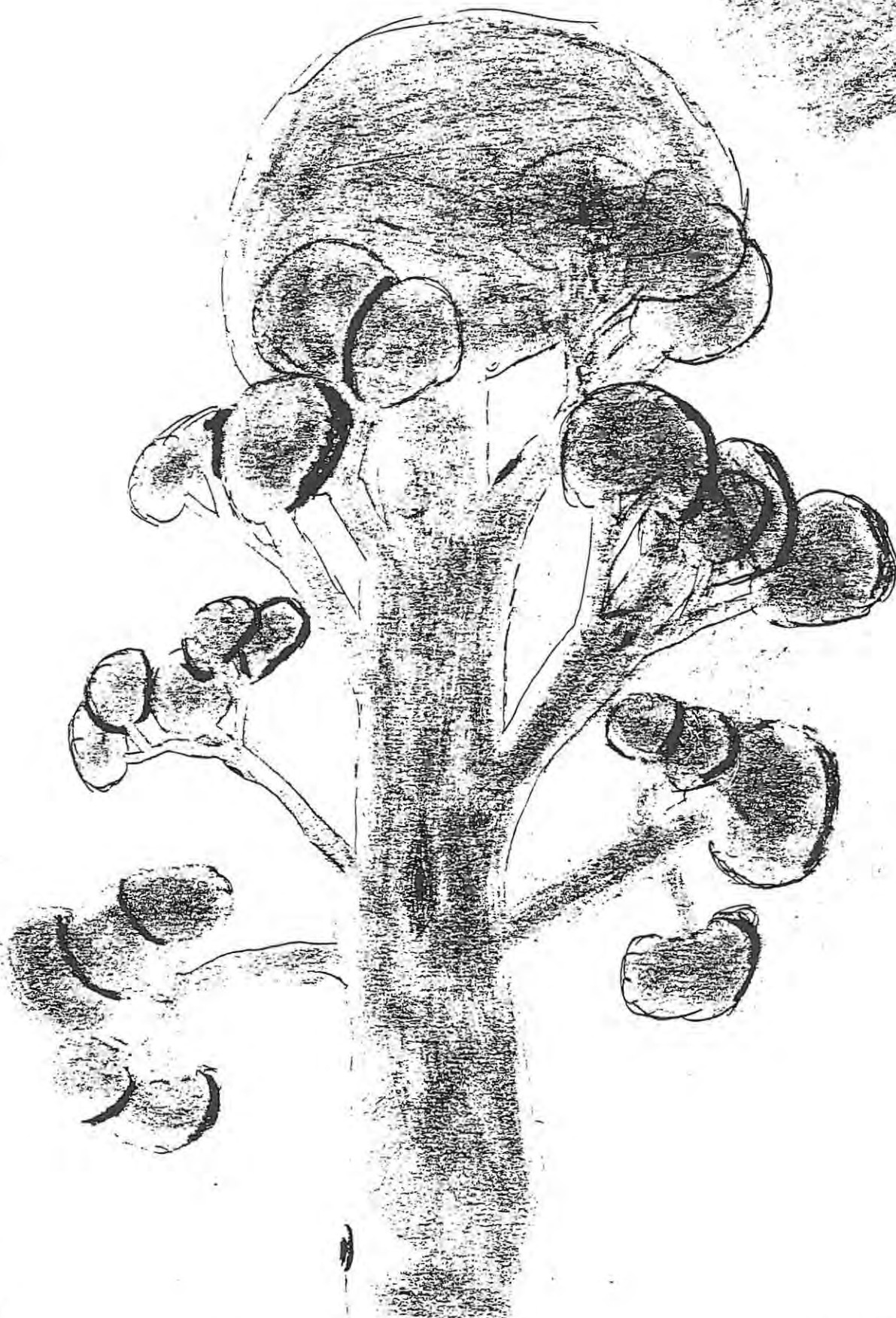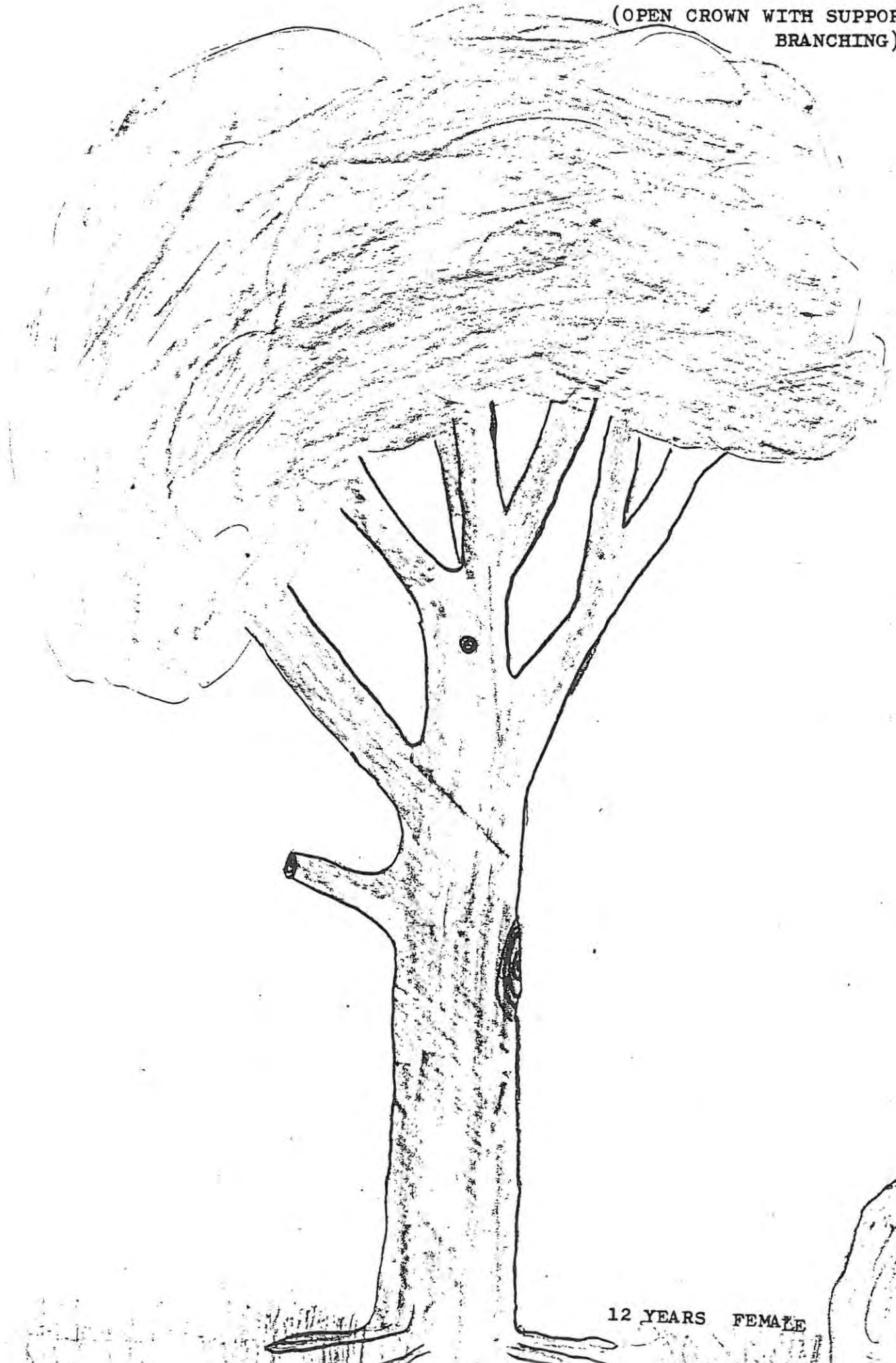

12 YEARS   FEMALE

BREATHING TREE 11
(MANY SMALL CROWNS)
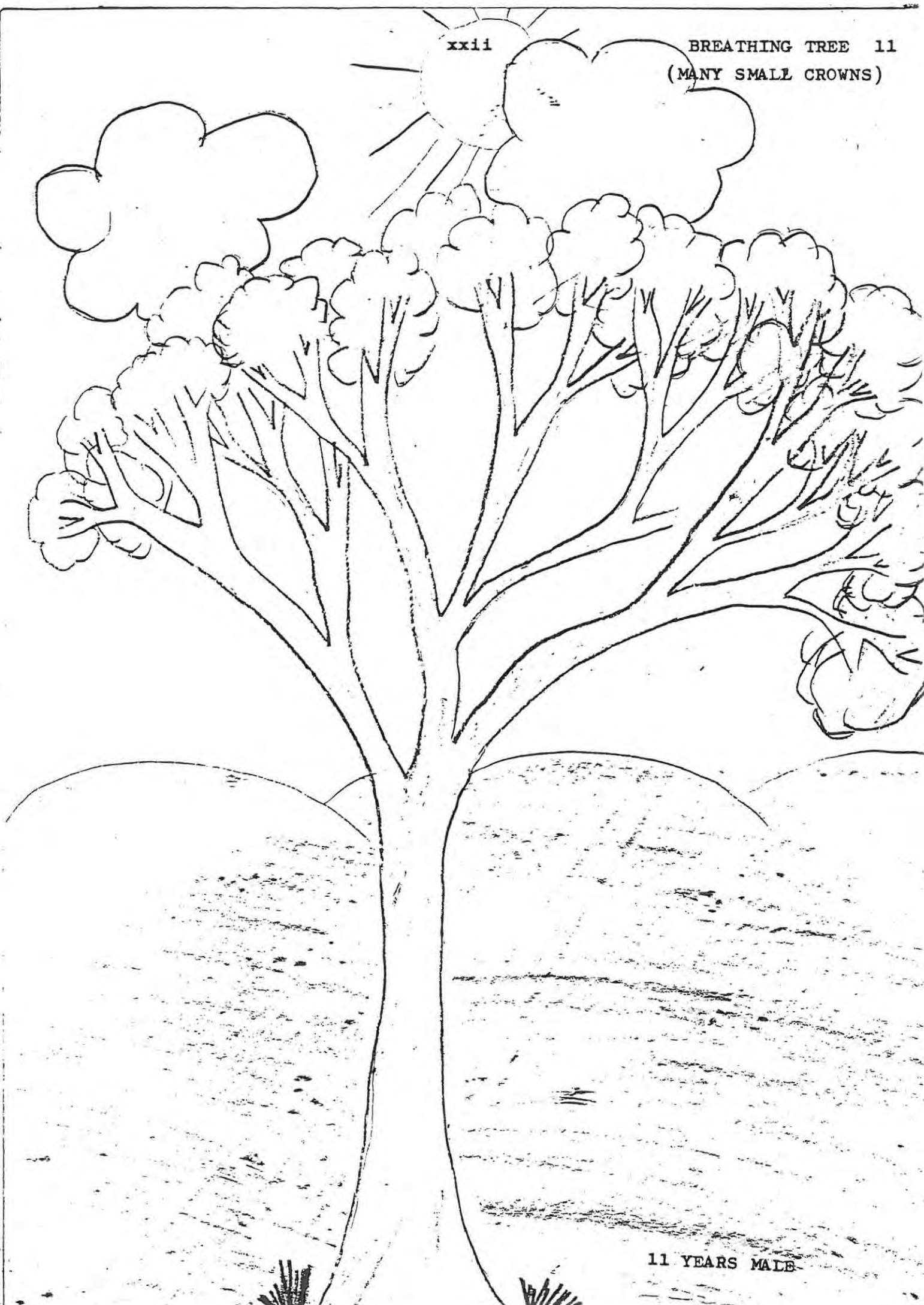
11 YEARS MALE

xxiii

BREATHING TREE 12
(OPEN CROWN WITH SUPPORTING
BRANCHING)
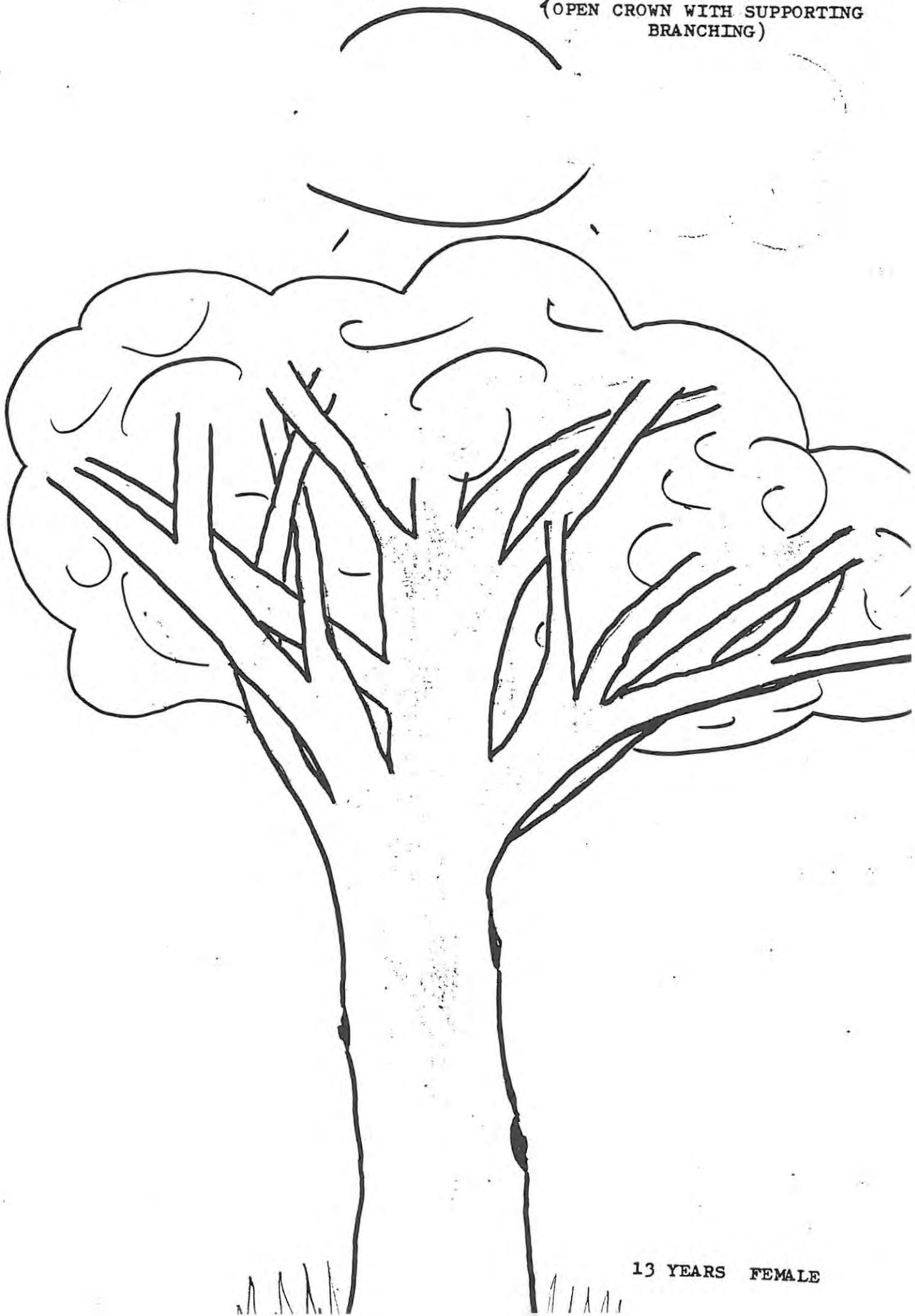
13 YEARS FEMALE

(OPEN CROWN WITH SUPPORTING
BRANCHING)

12 YEARS   FEMALE

12 YEARS FEMALE

11 YEARS FEMALE

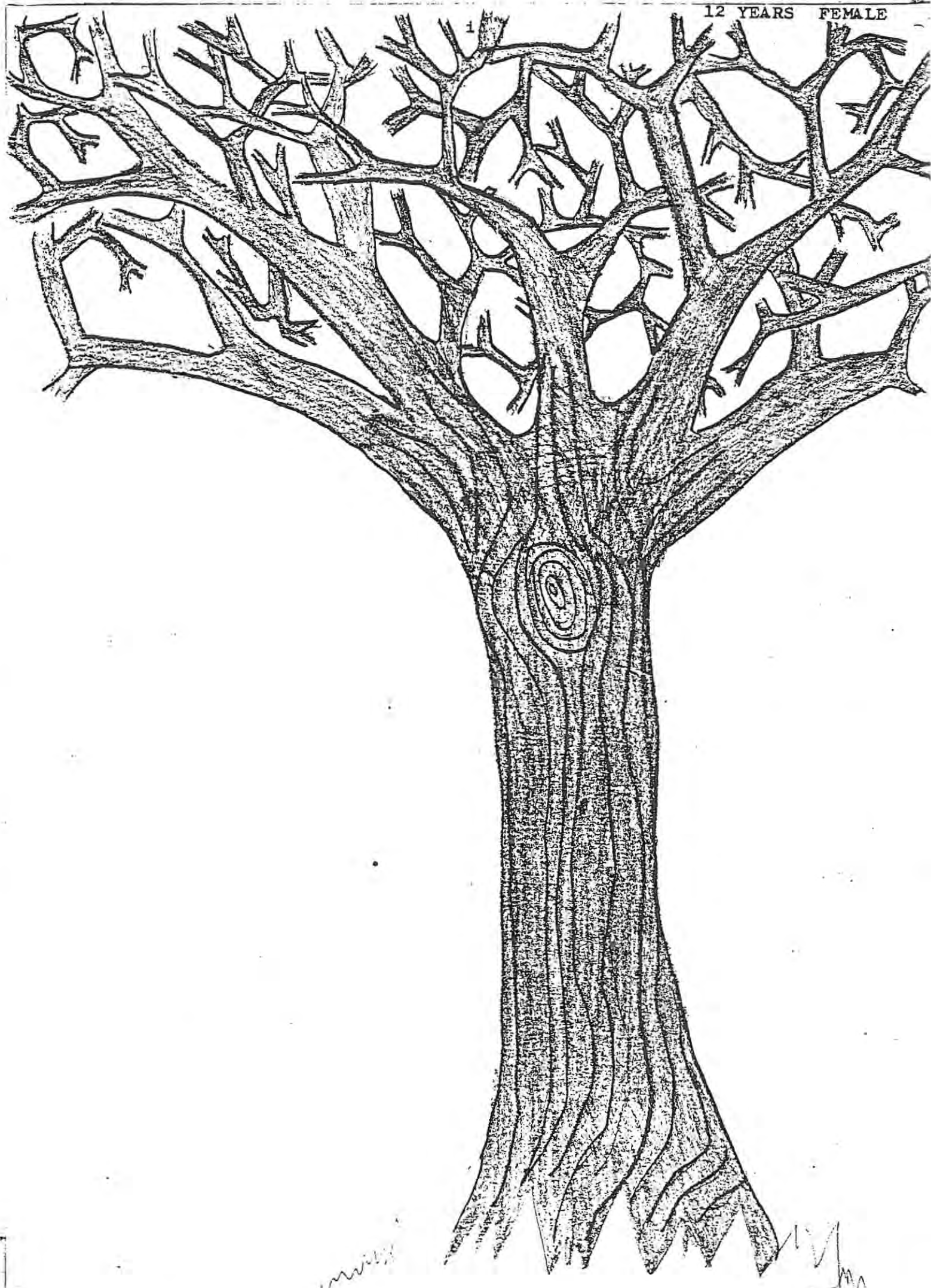## APPENDIX 5

EXAMPLES OF BRANCHING TREES
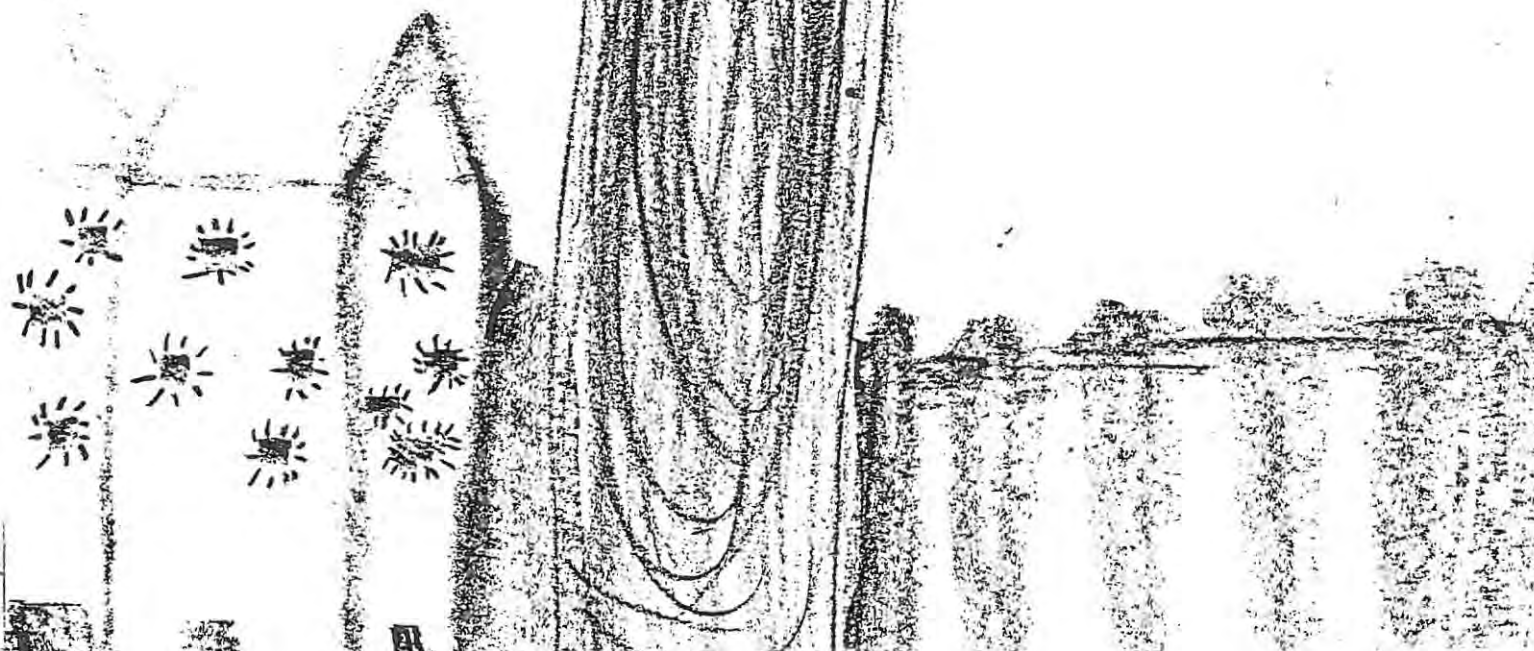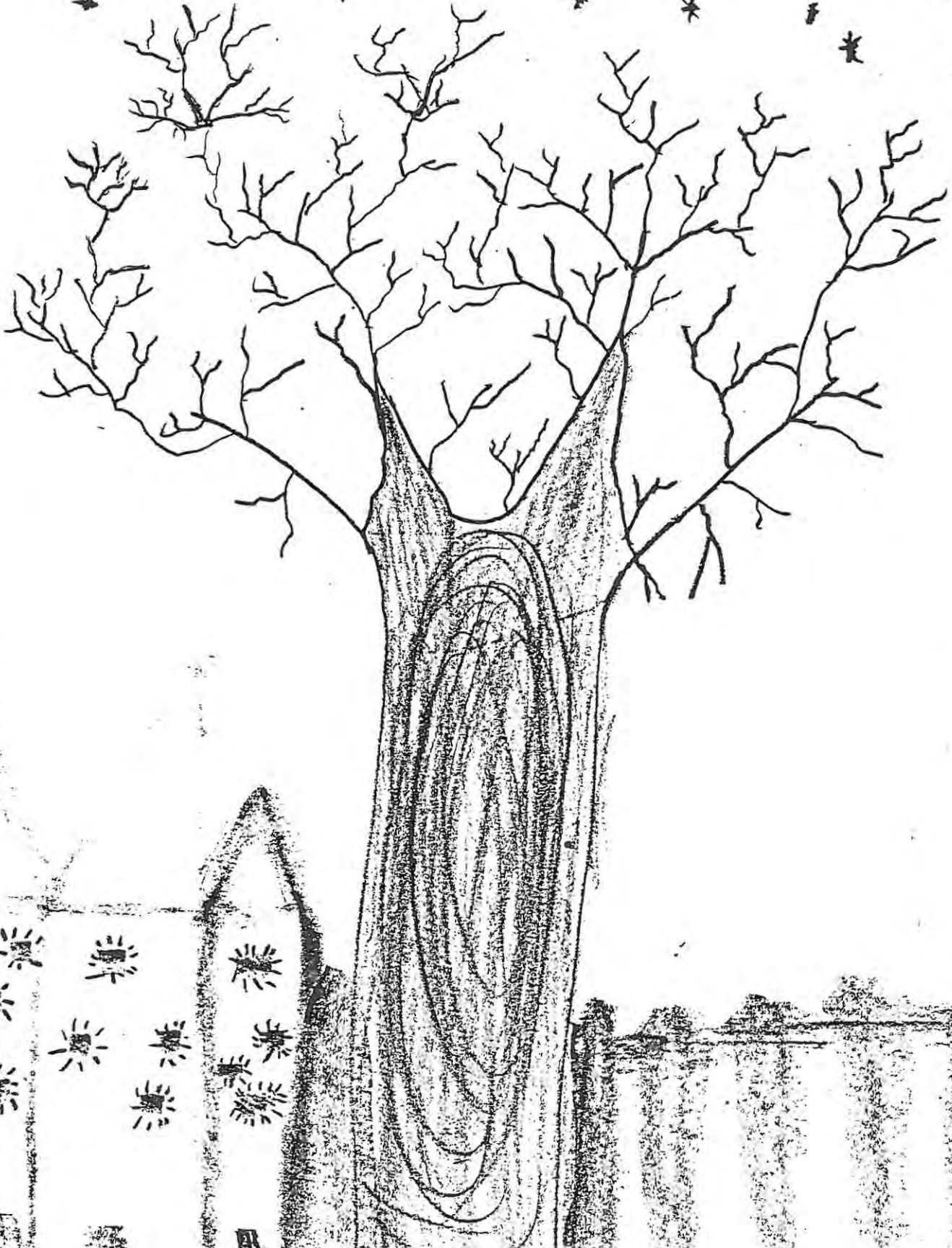
(Examples taken from Std. 5, English speaking pupils,
eleven to twelve years old, both boys and girls.)

APPENDIX 6

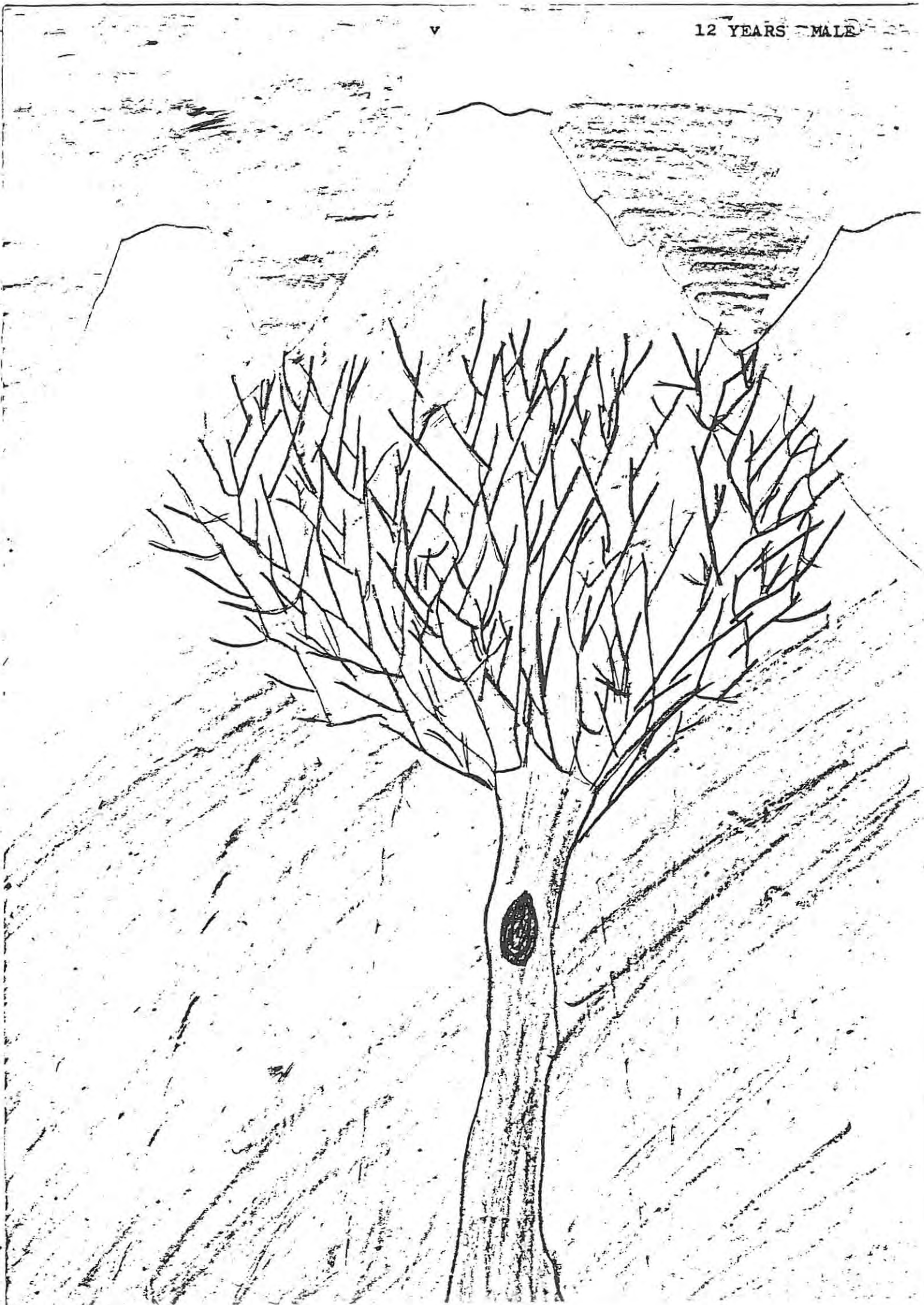## BOLANDER'S SCHEMA 2 & 3 – THE ZONES OF THE PAGE AND THE TREE IN THIS SPACE (1977, pp. 71-73)

male relatives and friends

acceptance of that which is the "father"

interest in male endeavors

projects

interest in the sciences and the concrete

critical abilities

"faith"

expectations

literary abilities

romance "gain"
romance "loss"
romance "gain"
romance "loss"

heterosexual experiences of both sexes
free emotional flow
homosexual experiences of both sexes

early sexual influences
instincts
sexuality
unconscious
reality
immediate

musical talent and art appreciation

mystical inclinations

fantasies

acceptance of that which is the "mother"

feminine development

female relatives and friends

FUTURE

ACTIVE - CONTROL ZONE

ALL THAT BELONGS TO THE MASCULINE WORLD

FUTURE

PRESENT

PAST

THE FATHER PRINCIPLE

PASSIVE - RECEPTIVE ZONE

ALL THAT BELONGS TO THE FEMININE WORLD

PAST

THE MOTHER PRINCIPLE

APPENDIX 7

QUESTIONNAIRE – VERBAL LANGUAGE ABILITY

SCALE SYSTEM: 1 – 9

EXPRESSIVE RATING

The exceptional or ideal would be a child who used language in a way that could be regarded as highly functional, to communicate ideas or feelings to others. This child has control of the structures of grammar and a wide vocabulary. Language is an extension of body language but in this case flows through freely to articulate ideas. It is important to differentiate the talkative person, who may be using language as a defense and a social manipulation, from the person who uses language as a tool for communication and expression. This person would probably be creative and innovative in speaking. One would hope not to confuse introversion and extroversion of personality with language ability. Although intelligence will also inevitably play a part in language development the attempt is to isolate language skills in communication regardless of possible I.Q. scores.

RECEPTIVE RATING

The exceptional child would also be receptive and able to listen easily. One can describe this ability as being "open to language". In this case we refer essentially to the neurological requirements associated with hearing and to the child's willingness to hear what others are saying. This child would listen to instructions without difficulties and be able to use new language quickly.
Could you please rate each child in the class on a scale from 1 – 9 with an average ability in language-use at 5, and a very poor ability at 1, for both Expressive and Receptive language skill.

You may feel that the two, Receptive and Expressive, go to-
gether, but in case they don't please rate them separately
for each child.   Also indicate any other problems such as
inclusion in a remedial teaching programme (current or in the
past).