UNIVERSITY OF CAPE TOWN

FACULTY OF EDUCATION

AN EXPLORATION OF CHILDREN'S DRAWING, TALKING AND THINK_ING

A dissertation presented in
partialfulfdmentofthe
requirements for the Degree of

MASTERS IN EDUCATION

BY

MARJOLEIN GAMBLE

MARCH 1997

ACKNOWLEDGEMENTS

Writing a minor dissertation requires the help and support of many other people.

I would like to thank, the principal of the school where the study took place, the secretary, teachers and children involved (who for ethical reasons cannot be named), for their co-operation and wholehearted support.

I would like to thank Anita Craig for her enthusiasm and guidance during the bulk of this study and for giving me the study. It has been an interesting exercise. Cathy Hutchins' helpful suggestions and careful reading have made a valuable contribution to the form of the thesis for which I am most grateful.

I would like to thank Wendy Flanagan for her decisive and clear comments, which helped to organise, focus and structure the thesis in its final form.

I thank Heath Nash for his kind contribution of the illustration of the Bar diagram and Cassandra Gamble and my friends for putting up with my "absence" for so long.

Last but not least I would like to thank Norma Elson for her unfailing support with the final presentation and printing of the thesis.

Marjolein Gamble

ABSTRACT

This study explores children's ways of conceptualisation through what children draw and what they say about their drawings. Drawings taken from 40 children between the ages of 5-10 form the main data of the study. Ten basic categories are drawn from a careful analysis of the drawings. The study also includes what children say about their drawings. The talk about their own drawings forms the language component of the study. The talk is organised into eight basic language categories drawn from an analysis of the talking data.

Piaget's theoretical understanding of children's cognitive development is used to frame the data. Lowenfeld's (1975) broad developmental stages of children's art was used to test for correlation with the sample's output. In addition Sinclair's (1992) linking of children's first utterances with the form of children's most fundamental self expressions in language, are annotated.

Piaget's cognitive understanding of children's developmental thinking strategies are used to explain the strategies children use in their drawings. Indications are that the drawings do reflect a developmental process but this needs to be borne out by further research. The study bears out Lowenfeld's (1975) contention that there are unique ways of applying the basic conceptualisations of spatial relations in children's drawings. The presence of first and second language speakers in the sample points to the possibility that second language users may resort to basic and fundamental language structures when they use a second language. This aspect too would need more specific further research.

Finally, the categories found could form a tool to enlarge an understanding of the found trends with a larger sample.

The objective of obtaining some understanding of how children's minds work in the way they solve and approach their drawing and talking tasks was achieved within the constraints of a relatively small sample of children.

List of Illustrations

Illustrations of the drawings are numbered 1 to 40 and can be found between pages 47 and 48.

A Bar diagram of the C categories and a list of the drawing and talking categories can be found between pages 41 and 42.

Tables

TABLE OF CONTENTS

CHAPTER ONE: INTRODUCTION AND BACKGROUND

This study investigates conceptualisations of children between the ages of 5 and 10 years. The children were selected from the same preparatory school which is a relatively poor ex-Model C school situated in a Cape Town suburb. The children were asked to make a spontaneous drawing and then talk about it.

Spontaneous drawings, rather than a set task, are chosen as such drawings can indicate children's own preferred approaches and subject-matter choices and reveal underlying conceptualisations typical of children and age groups.

The study looks at children's conceptualisations mainly from a Piagetian perspective and related relevant research. Lowenfeld's (1975) description of developmental stages in children's art was found to coincide to a large extent with the drawing developmental trends represented in the sample of drawings. The talking data have been interpreted in relation to Piaget's basic thinking strategies of cognitive development. Sinclair's (1995) suggestion of the existence of a relationship between early and later speech utterances of children is used as a means to understand the dominant speech forms of the sample. Where appropriate links are made between the thinking strategies of the talking and drawing data.

A second feature of the study is the actual language spoken by the group of children at the school. The last few years (post apartheid) have introduced a new language situation in the school for two main reasons. Firstly, there is a dwindling Afrikaans speaking population at this predominantly English medium school because of the dwindling Afrikaans population in the vicinity. Afrikaans is at present being phased out as a language medium. At the same time there is an increasing number of children who speak an African mother tongue. The ability to speak and understand English in this group of children ranges from having to learn English at school to a good facility in English. There is a third group of English children who attend Moslem school in the afternoons (where they learn Arabic). The divergent language population has been

represented equally across the sample range.

Initially it was hypothesized that the diversified language and cultural situations of the children should be reflected in the groupings of the sample in every age related group of four. However after the sampling had occurred it was found that in reality such groups contained no neat boundaries. For instance there were children from a Xhosa speaking home whose best language was nevertheless Afrikaans (having attended Afrikaans schools) and there were Moslem children in the English medium classes whose mothertongue was Afrikaans.

While the sampling has been directed by the four main populations as they characterised the school population at the time, it was subsequently found that this aspect of the study was too complex to be considered in any meaningful way. As a result contextual factors have been largely ignored. They would entail a logical next step of investigation. As it is, the qualitive analysis of the thinking strategies exemplified in the drawing and talking data from the focus of this study.

My main objective in the undertaking of this study was to have some understanding of children's drawing between the ages of 5-10 from a developmental perspective. Hence children's own interpretations as accompanied in their talking about the drawing was hoped to give an added insight into how children's minds work. It is the qualitative analysis of drawing and talking manifestations that is expected to, at the very least, broaden my own insight into those forms of self expression of children and their worlds.

The study uses the data as an empirical starting point from which patterns or similar groupings are inferred froin the talking and drawing data. Drawing and talking groupings with similar characteristics are separated into drawing and talking categories and these categories are operationalised in chapter four.

The dominant drawing category is the Two dimensional rendering of space category which divides reality in a clearly separated above and below plane which is typical of

the 6 and 9 year old age group. It manifests throughout the sample's age range. The most frequent manner of speech is characterised as the Enumerating elements category, which ranges throughout the sample.

It appears that within these categories there are age related trends in children's drawing and talking data. This means that a slightly younger or older sample group would be expected to have a different dominant drawing and talking category and groupings of occurring speech and drawing forms.

The discussion and interpretation of available data focuses on the illustration of how children's conceptualisations manifest in their language usages and the ways and means of representation discernable in their drawings. Salient features of egocentric thought are explored in relation to the way children structure space in their drawings. This can manifest in the way children represent objects one after another rather than in relation to each other.

It is only when children learn to separate themselves from that which they perceive that they begin to learn to focus on relational aspects between objects and phenomena. This attainment can be seen in several aspects of thought, such as syncretic organisation of space in the Two dimensional rendering of space category and the Description of actions talking category and the eventual mastering of the representation of the three dimensional plane on a flat surface. The latter is the result of the growing ability to see the logic of relations as exemplified by Piaget's concept of the irreversibility of thought which can be seen as a development from purely personal associations, which are usually driven by affective interest rather than logical implications.

There is no attempt in the study to arrive at any proven conclusions. The sample of 40 children when divided over a range of 5 years is simply too small to deliver significant statistics. A larger group would have made the drawing and talking data rather unmanageable given the constraints of a minor dissertation. The aim, therefore, is a characterisation of children's drawing and talking data and to relate these to evident

thinking trends and strategies.

The study deals first with relevant literature in the field (Chapter Two). The chapter is fairly detailed because the chapter is at once both a review of the literature and a basis for placing the theoretical insights which inform the study.

Chapter Three sets out the methodology adopted in the study. The empirical work is described. Analytical and interpretive categories are named together with explanations of how these categories were derived. Categories for drawing (10) and categories for talking (8) are included.

Chapter Four outlines the results. The language issue is briefly annotated. The drawing and talking categories of the sample are listed and defined in relation to examples in the data. The co-occurrence drawing and talking categories are abstracted and presented in terms of gender, age and language.

Chapter Five discusses the drawing and talking data as they are represented in the categories from a conceptualisation perspective. There is a brief reference to the co-occurrence categories of talking and drawing.

Chapter Six summarises the findings and concludes how the general characterisation of children's conceptualisation strategies fits in with developmental trends of related research.

CHAPTER TWO: LITERATURE REVIEW

This chapter reviews the literature on ways in which children's conceptualisations of their realities. Conceptualisation can be defined as cognitive style, ie the way children think about and approach a specific task. In this study this is exemplified by the way children solve and relate to the problems posed by the tasks of (i) spontaneous drawing and (ii) talking about what they have drawn to me. The study assumes that there are developmental stages in children's thinking and approaches to their tasks and to the way they will solve the problems posed by the tasks, eg representation, spatial organisation and structuring.

"Drawing" is taken to mean "the act and technique of making a picture with pencils or brush; the picture so made" (Odhams Dictionary, 1955, p 345). Talking can be defined "as expressing in words" as the process of disclosing information and communicating. (Odham's Dictionary, 1955, p 1057). It refers to what is of relevance to the child (in this case stimulated by the drawing). Talking is defined with reference to the intentions of what the child is trying to say, to everyday ordinary speech as well as what the oral expression reveals about children's relation to their drawings. One thing this study tries to establish is if there are common cognitive approaches underlying the two tasks of drawing and talking and to what extent and how these cognitive approaches-manifest in different children and across age groups.

It is anticipated that there will be individual problem solving methods manifest in the data as well as examples of general age and developmentally linked conceptualisation approaches to tasks in the children of the sample. It is this polarity or tension of individual versus universal trends in thinking and the ways that children characterise their realities, that forms the basis of inquiry of this study.

The review falls into two sections: 1 **CHILDREN'S MINDS** and 2 **CHILDREN'S** EXPRESSIONS. The latter will consist of a review of literature on (i) children's drawings and (ii) children's talking.

The former considers Piaget's stages of children's cognitive development as relevant to the drawing and talking data of this study. These two sections do not indicate neatly separable domains of research, because the way children think will manifest in everything they do and a certain amount of overlap can be expected. In the same way core structures in children's thinking abilities as theorised in Piaget's developmental cognitive stages of children, can be expected to extend over several behaviour domains such as talking and drawing. The concept "structure" refers to a hypothesised conceptual frame or inferred cognitive part and refers to the form this would take. In this review the actual manifestation of the hypothesised cognitive structures receive the emphasis, not the neuropsychologist's concern of how and where in the brain such hypothesised structures are situated. The fact that children demonstrate the same thinking strategies will suffice for the assumption that a common cognitive structure may be hypothesised to exist as a causal link.

1. CHILDREN'S MINDS

Piaget was concerned in his research with cognitive development from infancy to adulthood and he discerned typical **developmental cognitive stages** in children, which he claimed to be invariate. These can be differentiated qualitatively from each other; that is to say, although built on the capacity of a previous stage, each developmental cognitive stage is essentially new.

Piaget (1970) distinguishes different forms of representation, which he combines under the general concept of the **semiotic function** or the symbolic function. "This function is the ability to represent something by a sign or a symbol or another object" (1970, p 45). The semiotic function includes language and deferred imitation, which he defines as imitation that takes place when the model is no longer there. The semiotic function includes drawing, modelling and painting and mental imagery, which he again characterises as deferred imitation. All these means of symbolising illustrate how children move "from intelligence that is acted out to an intelligence that is thought". (Piaget, 1970, p 45).

This study starts at the level of development when intelligence is already internalised and I am merely indicating what precedes this development. Intelligence that is acted out, external intelligence, refers to Piaget's Sensorimotor Stage, which spans from birth to the age of two. Motor activities like grasping, manipulating of objects and the co-ordination of sensory impressions and motor activities constitute external intelligence. External intelligence is understood to be a result of the child's active adaptation to his physical surroundings (Clarke-Stewart & Friedman, 1987, p 19).

Internal intelligence begins to manifest in Piaget's next **Pre-operational Stage,** which occurs between the ages of 2 and 7 and is characterised by "the ability to think in images and symbols and the formation of mental representations of objects and events" (Clarke-Stewart & Friedman, 1987, p 19).

During the **Concrete Operational Stage,** between the ages of 7 and 11 children "can understand logical principles that apply to concrete, external objects" (Clarke-Stewart & Friedman, 1987, p 19). These are the stages that form a conceptual background for this study. **However the children in the sample** fall **into the 5 to 10 year age group.**

As this study is limited to a 5 to 10 year old age group (the Pre-operational and Concrete Operations Stages), I would like to start with the consideration of the thinking tendencies of the 5 to 7 year old child (the Pre-operational), which in this country would refer to what is now termed the "reception" year or Grade O and, depending on the age of intake, children in Grade 1. The pre-primary child's thinking tendencies provide the basis for the discussion of the thinking characteristics of the slightly older child. In the review on children's minds of the Pre-operational Stage I will refer to egocentric thought which includes juxtapositioning, syncretic thought and irreversibility of thought.

One major claim of Piaget's theory is that children under the age of 6 or 7 are **egocentric,** which Reber defines as meaning that children's speech and thought are dominated by the child's own internal cognitions (Reber, 1985, p 45). Piaget speaks

of "intellectual egocentrism" which he describes as a spontaneous attitude, which is incapable of forming a comprehensive view of the universe and subsequently unable to co-ordinate different points of view (1959, p271). By universe I understand him to mean reality as it faces the child. One positive result, according to Piaget, of this attitude is that the child's ego is absorbed in things and in the social group without necessarily being aware of this. Children may attribute some of their own characteristics to things and people and think that they know people and things as they are. Children are not aware of the fact that beside knowing the objective characteristics of things and people, they imbue them with aspects of their own ego and awareness (Piaget, 1959).

In drawing this would manifest in an immediate realism orientation, a term Piaget uses to express the absence of any interrelational aspects in the child's awareness of the universe. Children would, as a result be expected to focus on objects within themselves, rather than co-ordinate them from a common point of view. It is only a release from egocentrism that enables children to decenter and begin to dissociate themselves and their own characteristics from what they actually perceive. It is the becoming aware of what is objective within themselves that allows children over the age of 7 to find their true place within a system of common and reciprocal relationships (Piaget, 1959 p 271). As such Piaget defines egocentrism as the opposite of objectivity in so far as objectivity signifies relativity on the physical plane and reciprocity on the social plane.

Piaget's use of the word egocentrism is not the equivalent of self-occupation, but an intellectual attitude where children are not able to completely dissociate their ego from others which results in identification and a lack of differentiation and reciprocity. "The child can therefore be described as simultaneously being egocentric and completely absorbed in others" (Piaget, 1959, p 274). For adults an idea or a word is in the mind and the thing it represents is in the world of sense perception, for the child thoughts, images and words, though distinguished to a certain degree from things, are none the less situated in the things (Piaget, 1973).

Piaget attributes this attitude of mind to the child's "intuition", which is characterised by children's confusion of themselves with the universe and the fact that they are unconscious of this self. Because the consciousness of self arises from the dissociation of reality as conceived by the child's mind rather than from an association of particular contents. "Egocentricity entails a confusion of the child's self with the universe or an unconsciousness of self" (Piaget, 1973, p 151). The egocentric oriented child begins by viewing his/her point of view as absolute and becomes only gradually aware of the essential subjectivity of his/her own point of view and its relative insignificance in the scheme of the totality of things. It is this absolute or fixedness of the child's own point of view which I have earlier referred to as immediate realism that is perhaps a most typical characteristic of an egocentric orientation. Egocentrism refers to the fact, that the distinction between thought and the external world is not innate in the child, it is gradually evolved by means of a slow process. The child slowly overcomes "the intermediate position between the autistic and symbolic thought of reverie and dreaming and logical thought" (Piaget, 197 , p 401). Aspects of egocentricity will linger on in the concrete operational phase of the child of over 7 in different ways. As such there should be apparent in the children's drawing and talking data. Piaget ascribes a number of salient characteristics to egocentric thought, such as "juxtapositioning", "syncretic thought" and "preoperational" or "non-reversal" thought.

Juxtapositioning is the cognitive tendency to tie elements to each other in a kind of primitive ▪and then▪ manner rather than to see causal or logical links between them (Reber, 1985, p 381). Piaget refers to an example of the phenomenon of juxtapositioning in drawing, given by Luquet (Piaget, 1928, p 3). Piaget describes the most universal characteristic of these children's drawings as their "synthetic incapacity" that is an inability to portray the existing relations between the different parts of an object. An object, in this case a bicycle, is made up of details, which are placed alongside each other. The bicycle shows two wheels, a frame, the pedals and gear. The cog-wheel is positioned next to the chain instead of inserted inside the chain; the pedals are drawn as if suspended in mid-air. The child knows that the cog-wheel, chain and pedals belong together. It is here that the awareness of relationship stops, it does not

extend to a more precise understanding of insertion and contact (Piaget, 1928, p 58). The drawing is for Piaget comparable to the child's thought and the thought to the drawing. The child's focus is furthermore on external reality, on the physical world around him and this focus should be discernable in the data of the sample.

Syncretism is a tendency of the child to connect all things in terms of primitive subjective .associations in the absence of all relativism of ideas. It involves oversimplification where things and phenomena are linked in the child's mind according to purely personal rather than logical connections. Syncretism is a "spontaneous tendency on the part of the child to take things in by means of a comprehensive act of perception instead of by the detection of details, to find immediately and without analysis, analogies between words or objects that have nothing to do with each other. ... It is the tendency to connect everything with everything else " (Piaget, 1928, p 4). The pre-operational child connects ideas and objects in a transductive way, moving from one particular to another, because of the lack of any feeling for the reciprocal nature of all relationships.

A major development that characterises children's thinking between the ages of 5 and 10 years according to Piaget, is the gradual transformation from **irreversibility to reversibility of thought.** Reversibility from a Piagetian perspective refers .to the property of a series of operations such that reversing their order restores the original state (Reber, 1985, p 647). "Operations refer to actions which are performed mentally and which can have the added property of reversibility" (Mussen et al 1984, p 228). The pre-operational child cannot decenter, that is, focus his attention on several attributes of an object or an event simultaneously and is unable to reverse a train of mental actions. Piaget speaks of the pre-operational child because a child of between 2 and 6 cannot perform logical operations like addition, multiplication and substraction, all examples of reversible thought. The **Pre-operational Stage,** however as its name implies, anticipates **operational thought** and it is the transitional aspects from the one stage to the next that I will now discuss from a Piagetian perspective, in order to be able to recognise such transitional signs in the data.

In order to understand one changing aspect of children's thought during the Concrete Operational Stage of development, it is necessary to understand the changing relationship that takes place between **syncretism and juxtapositioning.** For Piaget the phenomenon of juxtapositioning is the exact opposite of syncretism. "In visual perception, juxtapositioning is the absence of relations between details, while syncretism is a vision of the whole" (Piaget, 1928, p 59). It is the complementary character of the two features which begin to form some sort of relationship to each other, through children's growing awareness of themselves as thinking agents, that begins to make possible the next stage. Now the child's thought becomes progressively more conscious of itself and results in a certain degree of introspection, which is completely absent in the younger child.

Synthetic incapacity of thought is overcome slowly and by degrees. Thus there is a tendency in the child's reasoning to juxtapose classes and propositions rather than to establish their exact hierarchy (Piaget, 1928, p 222). Piaget's donkey test is an example of the synthetic incapacity of children at these two stages where even children of 11 years of age add up the conditions and juxtapose the classes instead of excluding the unwarranted elements (1928). Piaget calls this synthetic incapacity, for all synthesis implies choice and hierarchy rather than mere juxtaposing (1928).

This same tendency of synthetic incapacity can be observed in the verbal reasoning of a 7 or 8 year old child, where there is a frequent tendency to omit conjunctions of discordance (although, because) from successive judgements. The child is content to juxtapose judgements simply by means of "and". This means that explanations take on the character of a narrative, where instead of "because" use is made of "and then". However this does not mean that the mind of the child is filled with a multitude of unconnected judgements and disparate ideas which are discontinuous. And it is here that Piaget brings in the notion of syncretism, where the complimentary function of the mind in relation to juxtapositioning comes into play. There is a particular feature in the structure of childish ideas which serves as a transition between juxtaposition and syncretism and which allows for the overcoming of synthetic incapacity. This is the

relation of membership, which is to be distinguished from inclusion (Piaget, 1928, p 225). It occurs when a child can simultaneously understand a person or himself to be both a Capetonian and a South African and when the one no longer cancels the other. as it would from the more absolute perspective of the younger child. **Reversibility of thought,** as it relates to drawing and the verbal plane, refers to the ability to classify objects into mutually exclusive categories which leads to the ability to organise objects according to hierarchical membership. Such ordering and organisation skills should become evident in the data of the children of the sample.

The ability to leave one's own point of view and to enter other people's points of view destroys the deforming aspect of assimilation (eg a stream of spontaneous associations based on affective thought) as it forces the child to respect the objectivity of its data (Piaget, 1928, p 180). The resulting reciprocity of view points, a network of reciprocal relations the child is part of, enables him/her to incorporate new phenomenon and events to the ego and respect their specific character. It is this reciprocity of viewpoints that will, with time, adjust the child to the reciprocity of relations in general. It is sodal life that in fact prepares the way for logical reasoning. It is the irreversibility of thought on the other hand that characterises transduction.

Prominent in the consideration of Piaget's characterisation of the development of thought in the child is the fact that the pre-operational child reasons directly about objects and phenomena, without being able to separate his own subjective involvement from his thinking processes. As soon as he distinguishes himself as a separate thinking entity he can take his own reality as part of a wider network than the absolute aspects of things. This growing awareness of the priority of relations should, from a Piagetian perspective, inform the drawing process of children as they get older.

If Piaget is correct in his contention that initially young children do not distinguish between what they observe and their own minds as active perceiving agents, this should be evident in the way children **conceptualise their own minds.** Research demonstrates that preschoolers possess a basic understanding of the mind, in the sense that they

realise that persons have internal mental states such as beliefs and desires (Wellman and Hickling, 1995). If children move from a conception of persons operating in a physical world to an active mind operating in a mental world, this might be reflected in children's use of perception terms. References to perceptions might similarly move from descriptions of what objects people literally see to descriptions of ideas and thoughts people mentally see in the mind's eye (p 1566). Wellman and Hickling used two metaphor comprehension tasks which asked children to explain 28 metaphoric and literal statements on mind, wind, heart and car. The use of metaphors as such and specifically with reference to mind would imply a moving beyond a literal description to a level of inference, where something is a representation of an inner attribute eg "her heart is singing" can be interpreted as "she is happy". The use of metaphor and personification in children's drawing and talking data will be looked at in relation to these findings of Wellman and Hickling.

Wellman and Hickling highlight recent research findings which disagree with Piaget's notion of animism as a feature of the young child's thinking. "We know that children's apparently literal, animistic, or personistic descriptions and explanations stem from their attempts to explain certain phenomena on analogy to living things and humans, in order to understand and make sensible inferences about them" (p 1577). Five and six year olds did understand animate and personified metaphors for natural, mechanical and body-emotional phenomena such as the car, wind and heart metaphors. The fact that the same children do not personify the mind suggests that they do not understand the mind in this sense. "They do not as yet conceive of the mind itself as an active entity that is part of, but conceptually separate from, persons themselves" (Wellman and Hickling, 1995, p 1577). According to this research the development of such personifications of mind and th concept of an independent mind begins to emerge, gradually between the ages of 5 and 10. Wellman and Hickling's work suggest that in a broad sense personification would indicate that the child is moving beyond immediate realism and refers to inner attributes by means of personification.

A survey of Donaldson's (1978) work reveals that oral speech is embedded in every day

events and intentions of people for the young child who as yet does not separate language from events. The child will attend to what is meaningful to him and what is meaningful to him tends to be embedded in the daily flow of events and what she terms the matrix of personal inter-relations. Piaget in this respect is too abstract in his way of addressing the child, who according to Donaldson ought to be assisted in order to move beyond the bounds of human sense. For this study Donaldson's reiteration of what is meaningful for children, eg. their specific ways of apprehending meaning as related to real life as well as the reminder that children do only gradually become aware of language as a separate system, is important. It will need to be seen to what extent disembedded thought or **embedded thought** can be noted in the drawing and talking data of the sample. For Donaldson, children are skilled language users and thinkers as long as they are dealing with "real life"' meaningful situations in which they have purposes and intentions and in which they can recognise and respond to similar purposes and intentions in others (1978, p 121). Human intentions are the matrix in which the child's thinking is embedded and which sustain and direct his/her thought and speech. However, as long as children's thinking and language remain within the bounds of human sense, the children remain largely unaware of their own thinking and speech.

Before concluding the section on children's minds, I would like to discuss **perspective taking ability** and its development in childrep. I include this study in order to see at what ages the relational aspect of perspective taking features in children's drawing and talking data of the sample. Perspective taking involves a taking into account of relational aspects as it moves beyond immediate realism, as no two perspectives are ever the same. Dixon and Moore (1990) studied two aspects of perspective taking. One aspect is based on the premise that judgements attributed to another should depend on the information that is available to the other, which they term the "information effect". The second is how the other person's use of information differs from one's own and is termed "weighting effect". Dixon and Moore studied these two kinds of perspective taking in a moral judgement task with *5,* 8 and 10 year olds. Subjects were read a series of stories about a little boy transgressing and were asked to make judgements from both their own perspective and that of a mother character in the stories.

Expectations based on past research were that good perspective taking could be expected at about the age of 8 years.

The results of the study show that the development of perspective taking ability progresses with age but that there are also individual differences. Within each grade subjects perform the tasks at different ability levels. In contrast to previous research Dixon and Moore found that the Weighting effect (interpretation of same information) developed prior to the Information effect (perspective taking based on information available to two people). What they term the Harshness effect appears to be an immature form of the Weighting effect, as the children in the Harshness cluster distinguish their perspective from the story-mother only on the basis of how harsh the judgements are. Most interesting in this research is the finding that age is only a rough predictor of perspective taking abilities, that perspective taking may occur at different rates for different children.

This review on children's minds suggests that children between the ages of 5 and 10 progressively learn to decenter and focus on several aspects of objects and reality simultaneously as they get older.

2. CHILDREN'S EXPRESSIONS

During infancy children develop the ability to mentally represent objects and actions. The ability to symbolise, eg to represent personal symbols, manifests in children's drawings, while the ability to represent signs or shared meanings is mastered with language (Clarke-Stewart and Friedman, 1987). I will therefore consider these two forms of expression (drawing and language) as used by children between the ages of 5 and 10 in the relevant literature.

(i) Drawings

Lowenfeld and Brittain define art primarily as a means of selfexpression (1975, p 17). Selfexpression here means giving vent in constructive forms to the feelings, emotions and thoughts of individuals at their own level of development, where the mode of

expression is more important than the content. Constructive forms refer to tangible outward shapes of that which informs it, like feelings, thoughts and perceptions. There is general consensus that developmental stages are, at least roughly, discernable in children's art. Lowenfeld claims that it is possible to look at children's growth in art as being a process of organising thoughts and representing the environment in such a way as to give us an understanding of the development of thinking of children in this respect (1975, p 55).

The implication for this study is that, broadly defined, developmental trends should be discernable in the sample of children's drawings and that these can be linked to specific thinking strategies in, for instance, the conception and resulting organisation of space and the way objects are represented.

Harris (1963, p 221) contends that broadly considered children's graphic art can be distinguished as representation or illustration, as interpretation or expression and as abstract or in a sense decorative. Entirely apart from specific instruction there are discernable convergencies and trends in children's art work.

Verteramo (1988) found, in his review of 31 drawing studies that children do pass through different stages of development in their drawing, and they do depict spatial relationships in a variety of ways. That means that there are a number of spatial organisation conventions possible because children think in unique ways. I expect, beside developmental stages, I will find several ways of depicting space in any one particular stage.

There is little research on combined drawing and talking. De Kane (1960) did research the effect of drawing on subsequent communication skills with pre-primary children only. Three groups of children were taken on an outing to an exhibit and were later asked to tell a story about the outing. Only one of the groups was asked to draw a picture of the outing prior to the telling about it. So while De Kane showed them the exhibit, the drawing was contextualised, not spontaneous, and thus of limited use in this

study. The outcome suggests however, that children's drawing of an event does stimulate subsequent talking about the event. It is hoped that children's own pictures can similarly act as a stimulant for subsequent talk in this study.

Roche (1983) used five pairs of preselected children's drawings and asked children from the ages of 6 to 11 to give their preferences and reasons for a chosen drawing. Some of the conclusions do have some bearing on this study as the justifications given for preferences for specific drawings can giye an insight into the child's criteria in relation to drawing in general. It was found that the subject-matter or content of the drawing appeared to be the most important criterion of preference. Technical criteria did not appear to be important and colour was of secondary importance in relation to subject-matter. As gender differences do not play a significant role in this study, Roche's findings on gender attitudes are of no further consequence.

There are, generally, differences of opinion on the extent that aesthetic criteria play a defining role in children's art, when analysing children's drawings. Kellogg (1970) and Arnheim (1954, 71) stress the strong aesthetic inherent quality of children's drawings, which according to Kellogg defy cognitive analysis precisely for that reason while Arnheim notes that "representation never produces a replica of an object but its structural equivalent in a given medium" (Arnheim, 1971, p 162). The importance of the medium of paper and pencil as a separate factor is seen from different perspectives. The question this raises is: Are aesthetic and cognitive criteria really mutually exclusive? Kellogg argues that a young child may produce five different human figure drawings in the space of one week, which renders for her such a human figure drawing valueless as a test (Kellogg, 1970, p 191). Roche's (1983) research demonstrates that children's preferences for other children's drawing did not focus on aesthetic criteria and Lowenfeld (1975) reiterates that children use aesthetic values intuitively, that is unconsciously. I try in this study to discern whether aesthetic criteria are referred to by children themselves in their talking data. For me cognitive and aesthetic criteria need not be mutually exclusive particularly if the child is unconscious of the drawing process itself.

As with the dominance of aesthetic over cognitive criteria question, there are other areas of contention as to what motivates a child to draw an object the way he does. Arnheim gives an explanation of the phenomenon of the use of transparency in children's drawings and speculates that it is part of the child's overall mode of translating reality into two dimensions, where the distinction between flat and deep does not yet enter (1971, p 191). This is in contradistinction to the idea that children draw open houses or X-ray objects as if they were drawn in cross-section.

It will only be possible to point out some of the underlying hypotheses that children's representations in drawings raise. The literature on drawing is extensive and it is my intention in this study to relate the data of thinking, drawing and talking to each other in order to discern if there are common patterns. That means that rather than entering the debate as to what extent children's art is symbolic, versus more representational versus more purely aesthetic expression for instance, with Colomb, Kellogg, Arnheim amongst others, I will restrict myself to common and main discernable cognitive trends in the drawing sample. These major trends will be related further to cognitive trends in the talking data, like structuring and organisation of words. Whether and to what extent the found trends in children's art are based on aesthetic, representational or mental criteria is in fact a further question, which would move beyond the scope of this investigation.

I will briefly refer to some other research on drawing only which features largely controlled and prescribed tasks rather than spontaneous (non-prescriptive) drawings as such. For instance Van Sommers (1984) focuses on observation abilities, using drawings that are rendered from life and memory. The same applies to Willats (1977), who asked children to draw specific scenes in order to study how children between the ages of 5 and 17 learn to draw realistic pictures. There is extensive research on mathematical and geometric shapes, investigating the perspectival abilities and development in children's drawings of the representation of cubes and other shapes (Mitchelmore, 1978,80; Lewis, 1963,67,85). Drawings of simple arrangements of bricks were used to study left-right (horizontal) and vertical arrangements as alternative

depth cues used by young children in their drawings (Bremmer, 1984).

Crook (1984) investigated the possible meaning the use of transparency (an X-ray view) in children's drawing can have by giving children a series of specific drawing tasks. (It is precisely the giving of tasks that reduces the validity of such a study for the present study which aims to look at spontaneous occurrences of the use of, in this instance, transparency or X-Ray in children's drawings).

There is a prolific amount of research based on the analysis of the human figure drawing of children, which is seen as an index of intellectual maturity (Goodenough, 1926; Harris, 1963) or as a projective test (Machover, 1949; Roback, 1966; Svensen, 1968). Koppitz (1968) uses both developmental items as well as emotional indicators and projective interpretations when using the human figure drawing of children. These studies are mainly based on prescribed drawings which are used as psychological test material, which go beyond the scope of this study.

From a more exclusively cognitive perspective, the claim that children's drawings can be treated as a source of data about the nature of internal representations in memory, was not wholeheartedly validated (Kosslyn, Heldemeyer and Lockley, 1977).

It is not always possible to separate drawing totally from other art forms. Painting and drawing are often discussed together. The studies mentioned so far, all use prescribed and controlled means of investigation, concentrating on a particularly selected skill or postulate. There are a number of well known exponents on the value of spontaneous art, who have made an extensive study of children's spontaneous art development and abilities (Kellogg, 1970; Colomb, 1973/74; Arnheim, 1969/71; Harris 1963, Lowenfeld and Brittain, 1975).

As this is relevant to the study I shall discuss Lowenfeld's contribution at some length. My own data will be directly informed by this. Lowenfeld distinguishes four broad developmental stages in children's art: (1) The Scribbling Stage (2) The Pre-Schematic

Stage (3) The Schematic Stage (4) Drawing Realism Stage. For purposes of this study I will ignore the Scribbling Stage.

The **Pre-Schematic Stage** covers the child's first representational attempts from approximately 4 to 7 years of age. Here the child draws the typical head-feet representation of a person to start with and he/she begins to draw a number of other objects in his/her environment with which he/she has made contact (Lowenfeld and Brittain, 1975, p 48).

A child's drawing at this first representational stage will give the impression as if the drawn objects are placed rather randomly on the page. Closer inspection shows that children conceive of space as though it were around them, according to Lowenfeld, with the result that objects are placed above, below or beside each other. Children do not see themselves standing on the ground with other objects beside them on the ground. No spatial relationship concept has as yet been established outside children's concept of themselves. The child, therefore, conceives of space as revolving around him or herself. Lowenfeld refers to this concept of space as primarily relating to the body, hence it is sometimes called "body-space" (1975, p 160).

Schematic Stage (7 to 9 years) is when the child develops a definite form concept and children's drawings symbolise part of the environment in a descriptive way. The form the child develops for a person, for instance, is a schema that will be repeated again and again. The difference between the repeated use of a schema and the use of stereotyped repetitions is that a schema is flexible and undergoes many deviations and changes, while stereotyped repetitions remain always the same (Lowenfeld & Brittain, 1975, p 167). The schemata are highly individualised. Lowenfeld sees the drawing on the paper as a symbol of the mental image the child has of objects in his/her environment, the symbol standing for the object. Children's art product is an indication of what information is received and an indication of the way they interpret and comprehend this information. The schema represents the child's concept, demonstrating his/her knowledge of an object (1970 p 185).

It is at this stage that an interesting characteristic of children's drawing appears, the child arranges the objects he/she portrays in a straight line across the bottom of the page, the so-called base-line. The base-line schema is an abstract representation of two dimensions. The biggest discovery is that there is a definite order in spatial relationships; we are all on the ground. Lowenfeld points out that there are other means of space representation, which occasionally can be observed in subjective space representations that deviate from this type of scheme and which are caused by what he terms "meaningful experiences" the child may have had. (1975 p 188)

During the stage of **Drawing Realism** (9 years on) the drawings of children still symbolise rather than represent objects. However, the children are more aware of themselves and this greater awareness shows in the interest shown in detail and a decline in depicted action. Items are no longer placed in a row at the bottom of the page and the child moves away from the symbolic expression of a baseline concept to a discovery of the plane. During the transition period there are usually several base-lines and then the space between the base-lines is filled up rather rapidly (Lowenfeld, 1975, p 236). In the same way the sky is no longer drawn as a line, but extends all the way down to what initially was the base-line, but which has gradually become the horizon. The child has not yet become aware of the meaning of the horizon, not having developed a conscious visual perception of distance. He/she has taken the first step towards visual perspective taking and this results in his/her becoming aware of the plane and the use of overlapping in his/her drawings (Lowenfeld & Brittain, 1975). (During the pseudo naturalistic stage at roughly 12, the child becomes increasingly aware of natural surroundings).

Finally a word on aesthetics as defined by Lowenfeld, who sees aesthetic growth as an ingredient of any art experience. In the creative products of children, aesthetic growth is shown by a sensitive ability to integrate experiences into a cohesive whole. This integration can be seen in the harmonious organisation and expression of thoughts and feelings through lines, textures and colours that are used. Young children, says Lowenfeld, organise intuitively (1975, p 40).

(ii) Talking

Language development eg how children develop an understanding of words from the earliest stages and the study of word meaning development, is a subfield all on its own to which this study cannot do real justice. Language here is looked at from a broad structural perspective, of how language may demonstrate underlying strategies of conceptualisations.

The question that is inadvertently raised when considering children's language usages is: How much of language is innate and to what extent is language learned? (Clark & Clark, 1977). Nativists (Chomsky) propose that language is the result of innate capacities, specific to language and is only found in human beings. Empiricists, on the other hand suggest that language, like other skills, is learned as a result of experience. Clark and Clark (ibid) propose that it is likely to be a matter of degree of both innate capacities and exposure to language, as we need the two factors for language learning to take place. Rather than an all or none affair, we need some mechanism and predisposition that allows for language to be learned, while children need to be exposed to language in order to learn it. The real question then concerns the nature of the innate mechanisms (Language Learning Device) and what constraints it places on what is learned when a child is exposed to language.

Another question is: To what extent is language independent of or preceded by cognitive development? Piaget sees cognition as preceding language, or in other words, language development is an aspect of cognitive development. Children's talking should therefore reflect rather than demonstrate or lead thinking processes. From this point of view cognitive understanding guides language acquisition (Mussen et al, 1984).

One characteristic of children's language comprehension and production is that there is a gap between the two. Generally people understand many words they never use, while they seldom use words they don't understand. Language use and understanding are not necessarily synonymous. Children usually acquire a working knowledge of the rules of grammar of their language by the time they are 4 to 5 years old, by which time they

use many rules of syntax (grammar) correctly in their own speech. The mastering of syntax is accompanied by an understanding of the meaning of words by the age of 6 (Mussen et al, 1984).

One recent article by Sinclair (1992) of changing perspectives on children's language acquisition, looks to a certain extent at Chomsky's generative grammar and linguistic theory as well as Piaget's conceptualisation of cognitive structures in children. The main interest of the research covered in the article deals with the acquisition of meta-linguistic skills, which involved studies exploring children's ideas of what a "word" is; children's awareness of phonemes and children's thinking about questions and sentences (Sinclair, 1992). The studies indicate that a high level of reflection, in the sense of the average rather than expert adult, does not appear before the age of 10 or 11. At that age children can conceptualise "table" as a word that means a piece of furniture, with "the" in front of it indicating the singular.

Sinclair also explores the connection between early speech of just before the age of 2 and answers given by 4 and 9 year olds in various meta- and epilinguistic (reflections on verbal behaviour) studies. These are called diachronic similarities and refer to multi-word utterances; eg pencil doggy, mummy pumpkin, sit chair, which could either be responses from older children in some situation where they are asked to reflect on language or early multiword, spontaneous utterances from almost two year olds (Sinclair, 1992, p 214).

Sinclair reijltes this to an earlier finding where children, when asked to count the words in a sentence "the boy washes the truck" would only indicate two words, the boy and the truck and slightly later include the word washes. These findings correspond with extensive studies done by Ferreiro with pre-school children, who in the sentence "the little girl eats a sweet" thought that only "little girl" and "sweet" needed to be written down (Sinclair, 1992, p 215). This bears some relation to the talking data as it is envisaged that a lack of sentence structure may bear some relation to early speech patterns.

A second phenomenon noted by Sinclair was rather the opposite. An example given is the count-the-word oral test. Children who use at the level of counting as words only the tangible elements of reality (leaving out non-meaning words like "the", "where" or even verbs) maybe found to focus on the rhythmic and syllabic aspects of the spoken sentence and thus count the accented syllables, lifting a finger for each accent as they reproduce the proposed utterance (1992, p 215). This could mean that children's verbalisations may demonstrate some of these same trends, leaving out non-meaning words and verbs as well as emphasising inherent rhythmic accents of their speech.

The basic feature of language is its "linearity" and is constructed during the period of transition from one- to two- word utterances via a process of self-repetition (Sinclair, 1992, p 216).

The point Sinclair makes is that there appears to be what she terms "a synchronicity of the construction of compositionality", which she clarifies as being the idea of relations between words rather than between words and action schemes or communicative intentions, and of a focus on the form of certain words (1992, p 217).

It appears that for the younger child there is, beside the meaning aspect of words and the construction of word order according to the need to communicate, the factor of the influence and inherent nature of sound itself, of word texture and word rythm; in short the very medium of language itself. Sinclair (1992) looks at the form of language itself, at the structure and compositional aspect of words as a determinative sound in the particular use of initial two word combinations a very young child uses (eg pied, pied hebe).

Another much quoted study is the Karmiloff-Smith study (Mussen et al 1984, p 194-95). She came to the conclusion that children younger than 8 years old characteristically treat a word as though it only had one function. She used the French indefinite article "les", which has two functions, indicating both plural and total (all) as in "les livres", which refers to all the books present Children under the age of 5 use the article "les" often,

but only for marking plurals. The sentences of children between 5 and 8 contained more markers than necessary, so that children would say all or "tous" les livres (all the books) to indicate the total number, even though "les livres" by itself was sufficient Other examples of redundancy or overmarking were observed in the speech of children this age. (A recurring English example of overmarking in pre-school children is "round circle").

In another study 5 year olds' linguistic concept of singularity and plurality was investigated and it was apparent that some children use numerals to mark singularity and plurality (Anisfeld and Tucker, 1966).

Finally, a basic assumption of language acquisition is that children learn the simplest structure and functions first and work up to more complex ones later (Clark & Clark, 1977, p 337). It would appear, according to Clark and Clark, that cognitive complexity sets the pace, at least partly, for language acquisition. This idea is supported by the fact that children tend to leave out words and word endings for which they have no meaning. It will be interesting to see to what extent children dispense with words and word endings in the talking data in this study. The idea that complexity of thought sets the pace for language development is supported by the fact that children acquiring quite different languages tend to start talking about the same ideas at about the same time (Clark & Clark, 1977, p 336). They give as an example the use of "more than one".

In the elaboration process of language structure children first elaborate the propositional content of their utterances by adding function words and word endings; the grammatical morphemes that help tie all the content words together. Next they begin to combine several propositions into a single utterance, producing the proper sentence structure (ibid p 242).

An aspect that has not been adequately covered in this review, is social influences or contextual factors. This is due to my use of Piaget as a starting point and his emphasis on universal cognitive structures rather than social or contextual factors. As the study

covers a wide spectrum (talking, thinking and drawing) I will not be able to investigate all these fields in any depth, but rather suggest trends. One particular research study related to children's understanding of social context looked at the development of the concept of family in elementary school children (Borduin, Mann, Cone and Borduin, 1990). The study examined the relation of age, gender and family structure to children's understanding of the concept of family. In the first study 1,387 children from Grade 1 to 6 were asked to classify various groupings of individuals as constituting or not constituting a family. Results showed both age and gender differences in children's conceptions of families. Younger children, and boys in particular, generally used concrete, absolute criteria for defining a family, while younger girls tended, like older children, to employ more abstract, relational criteria when defining a family (Borduin et al, 1990, p 33). Children's own family structure was not significantly related to these. findings. Further studies determined that the results were not due to cognitive differences in boys and girls, but the gender differences reflected differences in the socialisation of boys and girls.

This literature review has tended to look at age related trends in children's development and abilities in thinking, drawing and talking, rather than individual differences, although this is not meant to preclude individual differences. It is rather meant as some kind of a yardstick or overall pattern by which individual or "other" findings can be assessed. Similarly it is anticipated that the establishment of certain core structures and particular behaviour patterns do not preclude a process orientated approach at the same time. Finally, the presence of children from a variety of cultural (language, religion) backgrounds makes the exploration of universals, those factors that apply to all, a possible source of evaluation.

CHAPTER THREE : METHODOLOGY

This chapter looks at the aims, the procedures and sample of the study.

3.1 AIMS

The main aim of the study was to investigate conceptualisations of children as they manifest in their drawings and the subsequent comments they make about their drawings. It was envisaged that this exercise would indicate developmental and age related trends in children's drawing, talking and thinking strategies.

In addition the language backgrounds of the children were taken into account in so far as first and second English language speakers may differ in their ability to talk about their drawings in English. As categories for talking are derived from the data it is worth noting the "distractor" factor of language ability in categorising children's attempts to explain their drawings.

3.2 SAMPLE

The sample consists of 40 children selected from the same preparatory school. The school enrolment figure at the time of sampling was 368. The school caters for pre-primary, the one year before Grade 1 and goes up to Grade 3. There is one Special class.

The 40 children are subdivided into 10 groups of 4 each, 2 boys and 2 girls per group. Each group of 4 consists of one African-language-speaking child, one Afrikaans mother-tongue child, one English-speaking Moslem child and one non-Moslem English-speaking first language child. The groups vary approximately one year in age or less and span from the age of 5 to 10. The age range within groups is one year or less. All Grade 1 children in the sample did attend one of the pre-primary classes the previous year.

The groupings were in no way arbitrary, but followed the main population characteristics of the school. These consist of mainly English first language speakers, by far the largest population of the school. English speakers have been separated into

two groups of (i) the Moslem children, who attend Moslem schools on four afternoons from Grade 2 onwards and (ii) English speakers from any cultural background. A third and fourth group consist of non-English home language speakers, an (iii) Afrikaans and (iv) an African home language group. It should be noted that the degrees of language competence in either the home language or English varies greatly from child to child and that Afrikaans speaking children are in most cases addressed in Afrikaans at school.

I would like to briefly elaborate on my position in relation to the children. The children knew me as a member of staff, who was presently on study leave. A few (6) children had been in my class at some time during the previous four years. Many children knew me by face and name only. Children were selected from the (card boxes) in the office. (Each child is represented by a card which has the name, class, home language on it). It was important for me to select children in groups of four according to the described criteria. The children in each group also needed to be born within a year of each other. Teachers announced that I needed children's drawings for a project and that a few children per class would be called out for this purpose. It is not unusual for individual children to be called out for various reasons, eg remedial lessons, extra speech and tests. The children were at ease and never questioned the task asked of them.

3.3 METHOD

Children were taken out of their respective classes, one at a time, durjng school hours. They were taken to a quiet room, speechroom or library and asked to draw a picture, of anything they like. (I told them that I collect drawings for a particular project). No time limit was given for the completion of the drawing. When they indicated that they had finished, I asked them to tell me about their picture. I showed them a second piece of paper and said: "Look I am going to write down what you tell me about your drawing." I then proceeded to write down what they told me about their drawing.
Children were given a white demarcated area for their drawing and a packet of 12 kokis. I used a same sized sheet for the writing of the verbal descriptions. (See schedules Appendix A). These drawings (one per child) and the children's talk about these drawings formed the data for the study.

The approach used coincides with what Mouton (1996) terms a bottom up approach, which starts with the data. The actual drawings and the comments children make about their drawings, form the raw data and basic starting point of the study.

3.4 DERNING CATEGORIES OF ANALYSIS

The collected drawings and accompanying talking data were sorted respectively into 10 and 8 main categories. The categories were defined according to clearly discernible patterns of structuring and organisation observable in the data. These derived categories were related to existing literature and research and further refined and operationalised. The resuiting categories are listed below and explained in Chapter Four.

The common emerging patterns, such as developmental stages in art and cognitive development or language usages, were established by referring back to the literature.

The sample of children was analysed according to the co-variance patterns in the drawing and talking categories, that is which children share the same drawing and talking categories. The numbers of children that share the same drawing and talking categories constitute what are the patterns or particular groupings in the data. Such groupings or clusters of children were further interpreted in terms of what common factors could account for their co-occurrence and they are referred to as the co-occurrence C categories. Such factors were age, gender and language. A Bar diagram summarises the co-variance patterns (the C categories) in Chapter Four. The results of the co-variance grouping of two or more children is represented at the end of Chapter Four. The large number of single cases are listed in Appendix B. The language factor is represented in the co-variance groupings as to include the "detractor" factor in the results.

During the analysis of the qualitatively different categories Lowenfeld 's (1975) broad developmental stages of children's art influenced the deriving of the drawing categories from the drawings. I selected only one drawing per child and felt that this was enough to give a rough indication of stages. The fact that I am dealing with drawing and

talking data needed to be taken into account. There is no conclusion arrived at that because a child draws in a particular way, he cannot draw in different ways. The one drawing is not seen as an absolute indication of a child's ability. Rather each drawing is seen as a possible instance of children's capacities as reflected at a particular age and stage.

The talking categories were derived by means of immersing myself in the talking data and classifying differences. They should be seen as tools which enabled me to differentiate basic forms of communication and talking. The talking categories should be seen in relation to the drawings as the children's verbal descriptions are based on their drawings.

For drawing I have selected 10 categories to represent the different kinds of drawings as found in the sample (A1-A10). For talking I have selected 8 categories to represent different kinds of talk (B1-B8).
The categories are:

A.1 Two dimensional rendering of space.
A.2 Extended ground area with sky.
A.3 Partly representational including X-Ray vision.
A.4 Framed.
A.5 Connected middle-ground, moving toward perspectival drawing.
A.6 Elemental.
A.7 Non-representational
A.8 Person only.
A.9 Conceptual.
A.10 X-Ray.

B.1 Enumerating elements.
B.2 Description of actions.
B.3 Enumerating elements and "!"-actions.
B.4 Narrative.

B.5 Anticipation of future actions/A referring back to past actions.
B. 6 The use of reflection or hypothetical constructs.
B. 7 Egocentric identification.
B. 8 Summarising.

Both the drawing and talking categories reflect the different kinds of drawings and language usages of the data.

The analysis tries to fathom the underlying thought orientations that can be related to the different stages the categories represent as demonstrated in the literature on art, cognitive and language development and stages. Stages here refers to a qualitatively new or different way of comprehending or dealing with the task of drawing and talking about it. The description and interpretation of the data try to understand how children's development of a particular ability over time are represented in the sample, which offers an age range of 5 to 10 years and how these are represented by children's innate and unique capabilities, which need not be age related.

Finally possible links between the talking and drawing approaches in children's handling of their tasks are discerned and discussed. This consists of a characterisation of the data in terms of common and underlying conceptualisations, which could possibly explain some of the trends demonstrated in the drawing and talking examples. Piaget's cognitive theory is used as a tool to understand the structuring and organisation conceptualisations that inform the data.

Similarly, the categories are a way of entry into the data. The categories in this sense are a form of tool that classifies the data as a means of entry into the data. The categories are not ends in themselves, but used as an aid to understand and approach the drawings and talk about the drawings.

The co-occurrence patterns relate to groupings in the children, which either support or refute the broad developmental trends that are exemplified in the age related categories.

The co-occurrence categories of talking and drawing categories shared by children are a further tool that combines specific drawing categories with specific talking categories in the same pairs or groups of children. It allows for a further investigation of the children as regards their age, gender and home language in relation to the conceptualisations demonstrated in the drawing and talking data.

3.5 LIMITATIONS OF THIS STUDY

The study is overarching in design, as it aims to look at underlying conceptualisations in drawing and talking. It is a formidable task to scrutinise and become familiar with the literature on art, cognitive and language development of children. I think that the cognitive and art literature justifiably received the main emphasis, as the verbal descriptions are partly subsidiary to the drawings. I am aware that the language analysis in the study is in no way complete. Areas such as language development and second and first language speakers in relation to home language and the kinds of stimulation and interaction experienced at home could be further investigated.

A fairly conscious limit of this study is that it does exclude contextual factors. My focus on qualitative cognitive structures has resulted in the neglect of contextual factors. This project was framed from within a hypothesised central cognitive structure paradigm or a Piagetian perspective. The importance of contextual influences is simply beyond the scope of this study.

A technical shortcoming is that I wrote the verbal descriptions down rather than tape-recorded them. In only a few cases did I have to ask the child to wait a moment. Generally I managed to write the text down reasonably fast. I felt that the use of a tape recorder would have altered the atmosphere and meaning for me. I was allowed to share children's worlds with them. To put it on tape and have to explain this to them seemed to make the whole exercise rather unnatural and I decided against it. I was particularly struck by the care children displayed in their drawing and I do think that being in a natural relaxed atmosphere has something to do with it.. Fortunately the verbal descriptions were usuaUy short.

The aim of this study was to characterise children's conceptualisations as manifest in their drawing and talking and to relate it to existing literature and theories. The interpretation of how such theories manifest is the reason d'etre of the study. The multi-lingual setting further serves to underline or refute the universal validity of the findings.

CHAPTER FOUR: RESULTS

Chapter Four uses the drawing and talking categories discussed in Chapter Three to sort and comment on the sample. The chapter lists the categories in descending order of occurrence, indicating the number of children in each category after which each drawing and talking category is defined separately. Next I look at the co-occurrence patterns of children's drawings and language usages as they occur in groups of two and larger than two. Single cases are listed in Appendix B. Age, gender and language patterns will be indicated. The copies of the drawings numbered 1-40, are situated at the end of this chapter. The talking data belonging to each drawing can be found on the back of the drawing. (My comments are in italics).

4.1 DRAWING AND TALKING CATEGORIES DEFINED

On looking at 40 drawings by the sample of children and talking to them about their drawings, I found 10 distinguishable drawing categories and 8 talking categories. The groupings are determined by the elements in the organisation of their drawings and the descriptions they gave of them. Two tables list the drawing and talking categories, A1-A10 and B1-B8 respectively. I deal with Table 1 and the A categories first.

A1. Two Dimensional Rendering Of Space	14 instances
A2. Extended Ground Area with Sky	6 instances
A3. Partly Representational Including X-Ray Vision	6 instances
A4. Framed	4 instances
A5. Connecting Middle Ground Moving Toward Perspectival Drawing 4 instances	4 instances
A6. Elemental	2 instances
A7. Non-Representational	1 instance
A8. Person Only	1 instance
A9. Conceptual	1 instance
A10. X-Ray	1 instance

TABLE ONE : DRAWING CATEGORIES

I have chosen the most typical fearure of a drawing, in order to place each drawing into one category only. I will now define the drawing categories in descending order of occurrence.

A.1 Two dimensional rendering of space (14 instances)

This was the most common category with the sample. The format of a two dimensional rendering of space refers to either an implied or clearly drawn base- and sky-line, which are separated by an empty space in between. The baseline and skyline are thin, usually literally a line only. Sometimes the sky is indicated by a row of little clouds, or a few spaced out little clouds or even a blue sky band with clouds underneath (examples are illustrations 1, 9, 10). People, houses, flowers and trees are positioned on the baseline in a row, while aeroplanes, birds insects and moon and sun are arranged nearer to the sky-line. Central to this conception is the "nothingness" or openness between the top and bottom of the picrure. Space as depicted in the drawings is conceived of as two dimensional, it lacks any indication of depth and background. (see ill 12-21).

A.2 Extended ground area with sky (6 instances).

Six of the forty drawings (ill 23,24,25,26,32,33) evidence this category. The page is divided in a top and bottom extended ground and sky area. People; houses, flowers and animals do not necessarily stand on the same line; they are placed ori different levels of the ground region. The middle part of the drawing is treated as being open. A higher positioning of a person on the page (ill 24,25) delineates a ground area underneath, the birds around the head of a person an extended sky-area. It is.the total absence of any indication of distance, the emptiness surrounding persons and objects that give a two dimensional chaiacter to the drawings. In one drawing there is an introduction of ooliqueness (ill 32), where the swings on either side give an impression of receding into space. This fearure together.with the widening of the earth and sky dimensions is a first step toward the conception of the expression of nan.ire as a plane.

A.3 Partly representational including X-Ray vision (6 instances).

This catego y refers to drawings that portray both that which can be seen, for instance the external facade of a house and that which is not normally seen from the outside,

observed in the way figure and objects are drawn. A growing sense of proportionate dimension is apparent in the interrelationship of sizes of objects, ie the scale of objects in relation to each other and their wider setting.

A.6 Elemental (2 instances)

Simple shapes and patterns of abstract and recognisable objects are arranged randomly on the page in no apparent order. Objects are drawn from different visual angles, eg as seen from above or as seen from a .frontal perspective and without any correspondence to realistic sizes. Hence the curler shown as seen from above is much larger than the cousin next to the rainbow (ill 3,4). Another feature is the repetitive depiction of shapes.

A.7 Non-representational (1 instance)

The subject matter does not resemble anything pertaining to the visual world of objects, it is a graphic representation of a pattern. The format is of a repetitive design, which follows the page outline and makes use of alternating colours in a series of consecutive squares (ill 2).

A.8 Person only (1 instance)

This refers to the depiction of a person, without any further detail and context. The person is placed in the centre of the page with feet pointing outwards and in a slight tilting position (ill 36).

A.9 Conceptual (1 instance)

This refers to the use of the drawing as an indicator of abstract ideas. A Ferrari was drawn in order to illustrate some of the basic features it possesses. Only the relevant details are included. The Ferrari is drawn as a reference to an idea and not given any realistic contexts, such as ground, sky or other features (ill 38).

A.10 X-Ray (1 instance)

The most significant part of the drawing is presented as a cross-section of the object drawn, in this case an underwater sea scenario. The picture is made up of several

successive layers, eg the sky and an island with a man on it above the sea and an underwater scene with an ocean floor. Typically, the whole scene remains in a two dimensional rendering of space. There is in this drawing a clear awareness of the relative size of a proportional scale between items and the expansiveness of the sea **(ill** 22).

B1. Enumerating Elements	14 instances
B2. Description Of Actions	8 instances
B3. Enumerating Elements And I Actions	6 instances
B4. Narrative	4 instances
B5. Anticipation Of Future Actions And/Or A Referring Back To Past Actions	3 instances
B6. Use of Reflection Or Hypothetical Constructs	3 instances
B7. Egocentric Identification	1 instance
B8. Summarising	1 instance

TABLE TWO : TALKING CATEGORIES

TALKING CATEGORIES (14 instances)

B.1 Enumerating elements.

Children simply enumerate or list the various items in the drawing. Some children give a succession of names of objects: "This is a jet, house, tree, sun, sky. Did you write sky yet and grass, sun?" **(ill** 10). Other children add a descriptive element in the form of detail: "It have brown eyes, red mouth and black hair, pink dress and purple shoes etc. "(ill 18). The enumeration focuses on objects represented in the drawing **(ill** 2,3 ,4,8,9, 10, 17,18,21,27,29,30,32,35).

B.2 Description of actions (8 instances)

Children describe their drawing in terms of the depicted actions only. An example: "I was playing basket-ball so my friend did jump for the ball and the ball went past him. So the aeroplane came past and the clouds came out. So I saw a worm. That's all." The descriptions are given in short repetitive sentences with the emphasis on the verb

or action. Sometimes a child enumerates a string of actions (ill 13): "I am playing here and my daddy is washing the car. My mommy is cleaning the house." No elaboration of actions is offered, the action itself is the focus (ill 1,13,15,16,20,22,26,28).

B.3 Enumerating elements and "I" actions (6 instances)

This category refers to the enumeration of the various elements that make up the drawing, with the inclusion of a reference to who made the drawing. An example (ill. 7) is: "I make lines. And also trees mmmh. I make brown with a bird with a cap on. Only that." The "I" actions relate to the drawing process itself and not the "story" aspect of the drawing. The sentences tend to be repetitive, keeping to the same intrinsic structure throughout the listing of drawn items (ill 7,12,14,25,31,33).

B.4 Narrative (4 instances)

A narrative consists of a simple story, an account of events related in sequence. The narrative elaborates on what is depicted in the drawing, it goes beyond a literal description of what is drawn. The story can be made up of imaginary incidents or e. There is a structure to the narrative, with an introduction, a main part and ending. A simple subplot and an unexpected ending can distinguish a story as the following example illustrates: "This is a man sitting on a dragon and the dragon is flying to some place. And then he blows the door out with fire. So the man made a trap for him and so he got into the box, it is a box-trap. And so he wanted to blow the fire to open the box. And so there was only a little, there was only a small hole. And so he cutted a big hole for them to come out. And so he got a hole, but he went into another trap. And so the old man took the man's knife and all the smoke that was in the dragon's mouth. And so he tied the box up with rope and he gave it to the postman. He said to the postman that the postman must give it to the cousin. And there was a letter that said "I love you". And he couldn't get out and so the cousin opened it. And when he opened it, it was a statue. (That's all) (ill 39). "A string of events linked by "and so". Each narrative has its own distinctive character. The subject-matter can't be inferred from looking at the drawing, the narrative moves beyond what is depicted (ill 34,37,39,40).

B.S. Anticipation of future actions and/or a referring back to past actions (3 instances)

The description refers to the depicted action of the drawing as well as to what happened before or what is to happen next. An example is: "I drawed hmm a spaceman and jumping over the water, going to the earth away. And he is going back to his earth. A dinosaur and the dinosaur is going to bite him" (ill 23). There is an absence of descriptive terms, the focus is on past, present or future actions (ill 6,23,36).

B.6. Use of reflection or hypothetical constructs (3 instances)

The format includes cause and effect links as well as hypothetical constructs, which explain an object in a drawing, eg a staircase, a hat or a Ferrari with a parachute trailing at the back. The verbal description elucidates the drawing content. Descriptive detail can back up the hypothetical thinking of the child as the following extract of ill. 11 illustrates: "Yes, she is 1 year old, but she crawls up the stairs all day. Her mommy puts a pillow there. It is difficult to let her go down. There is no handles or something, it is a double storey. There is nothing over there. My aunty puts a pillow there, so that she can't go over." (ill 11,24.38).

B.7 Egocentric identification (1 instance)

The crucial aspect is the switching of perspective of the speaker, when referring to a person in the drawing. "A man. I stayed at home. I saw a tree, a fly-kite. I can kick a ball ..." (ill 5). In one of the narratives both the "I" and "she" perspectives are sustained for some time. Both the "I" and "she" (third person) perspective refer to the speaker.

B.8 Summarising (1 instance)

The essential action and purpose as represented in the drawing, are stated concisely and in the form of a summary. An example: "Me and my brother are standing on the grass and smiling and my mommy is taking a photo of us" (ill 19). The child states that which cannot be inferred from looking at the drawing, that it represents a photo and who took it.

4.2 DERIVING CO-OCCURRENCE CATEGORIES

The co-occurrence patterns of drawing and talking can be summarised in the following graph, where numbers per cell represent the numbers of children that share the same drawing and talking categories.

											Total
B8	1										1
B7				1							1
B6		1	1						1		3
BS		1		1				1			3
B4			2		2						4
B3	2	2		1	1						6
B2	5	1	1							1	8
B1	6	1	2	1	1	2	1				14
	A1	A2	A3	A4	AS	A6	A7	A8	A9	AlO	
Total	14	6	6	4	4	2	1	1	1	1	40

TABLE THREE : Patterns of combinations of drawing and talking categories

The Two dimensional rendering of space and Enumerating elements categories are both represented by 14 children, the largest amount. The main patterns in the combined categories consist of a combination of both these categories: Two dimensional rendering of space and Enumeration of elements are exemplified by 6 children. The other main pattern consists of a combination of Two dimensional rendering of space and Description of actions as manifest in the data of 6 children. There are seven pairs of two children, who share the same drawing and talking categories and 15 single children, whose combination of drawing and talking category is not duplicated. I will now give a more detailed presentation of this finding.

The Bar diagram on the following page summarises the frequencies of children in a combined drawing and talking category. The drawing and talking categories are listed underneath and Table Three is repeated for reference sake.

4.3 THE CO-OCCURRENCE PATTERNS

The co-occurrence patterns in the data (as presented in the Bar diagram and Table Three on the previous page) can be looked at in relation to gender, age and home-language as well as underlying conceptualisations. Home-language is a term used to indicate the child's relationship with the English language culture of the school. As Afrikaans is rapidly being phased out, the Afrikaans medium grades are now part of a dual medium class. If a younger Afrikaans sibling is in the school because of an older Afrikaans brother or sister, she will be addressed in Afrikaans by her teacher in an otherwise English medium class.

I have preceded the combined categories with C in order to distinguish them from the drawing and talking categories. I will only look at groups of children of two and more and start with the largest group. Single instances of combinations of drawing and talking data are listed in Appendix B and referred to in the Discussion or Chapter Six where relevant.

C.1 Two dimensional rendering of space/Enumerating elements

	Age	Gender	Language
Child 1	5 years 9 months	Boy	English
Child 2	5 years 9 months	Boy	English
Child 3	8 years 7 months	Boy	Afrikaans
Child 4	7 years 2 months	Girl	English (Moslem School afternoons)
Child 5	9 years 4 months	Girl	Xhosa
Child 6	9 years 5 months	Girl	English/Xhosa

TABLE FOUR

Child 6 is in the Afrikaans medium class because she went to an Afrikaans school from the age of 5 as this happened to be the closest school in her vicinity. She speaks mainly English at home while her mother is Xhosa speaking.

Generally it can be noted that the 3 youngest children come from English speaking homes, while for the 3 older children English is a second language. There is an equal distribution of boys and girls. The age range of boys (5 years 9 months - 8 years 7 months) differs from that of the girls (7 - 9 years 5 months), in that it is an older group of girls who show co-occurrence between A1 Two-dimensional rendering of space and B1 Enumerating elements. Striking is the fact that the 3 oldest children are English second language speakers and that there are no English first language speakers among the older children. This may indicate that enumerating of elements is a form of language usage that suits second language English speakers because of the relative simplicity of expression.

C2. Two dimensional rendering of space/Description of actions

	Age	Gender	Language
Child 1	7 years 9 months	Boy	Xhosa
Child 2	8 years 8 months	Boy	Xhosa
Child 3	9 years 5 months	Boy	English (Moslem School afternoons)
Child 4	6 years 11 months	Girl	English/Xhosa
Child 5	7 years 5 months	Girl	Afrikaans

TABLE FIVE

There are 3 boys and 2 girls with ages between 7 and 9½ years. The 2 girls are the youngest and the 3 boys are the oldest in the group. There are 3 children with Xhosa as a home-language with varying degrees of English being spoken at home and one Afrikaans speaking child, who has over the years picked up a fair amount of English at school as she has been in a dual medium (English/Afrikaans) class since pre-primary. Only the oldest child is English speaking, a boy who is in the Special class in the school. English first language speakers are under-represented in the group. The boys span a larger age range than the girls and they outnumber the girls by one. The pre-primary level is not represented in the group.

C3. Two dimensional rendering of space/Enumerating elements and "I" actions

	Age	Gender	Language
Child 1	6 years 6 months	Girl	English
Child 2	8 years 3 months	Girl	English (Moslem School afternoons)

TABLE SIX

Gender and language are the same, but within this co-occurrence table age is significant, a difference of 1 year and 9 months.

C4. Elemental/Enumerating elements

	Age	Gender	Language
Child 1	5 years	Girl	Xhosa/English
Child 2	5 years 8 months	Girl	English

TABLE SEVEN

There are several correspondences: Both subjects have a fair command of the English language, they are within a close age range, both in pre-primary, and both girls. Although the younger girl comes from a Xhosa speaking background the parents do speak English with their children as well (mother a teacher). Noteworthy is the fact that there are only pre-primary school children in this group.

CS. Partly representational including X-Ray vision/Enumerating elements

	Age	Gender	Language
Child 1	8 years 3 months	Girl	English
Child 2	10 years 3 months	Girl	Afrikaans

TABLE EIGHT

There are two girls, two years apart. One girl comes from an English background;

the other girl has till now hardly been exposed to English and comes from an Afrikaans school. The common factors are gender, relative closeness in age (2 years) and both girls speak their mother-tongue only. Only children of above 8 age group are represented in the group.

C6. Extended ground with sky/Anticipation of future and a referring to past actions

	Age	Gender	Language
Child 1	6 years 2 months	Boy	English
Child 2	9 years 4 months	Boy	English

TABLE NINE

This table shows co-occurrences in that both are boys with English as their home language, there is a relatively large age gap of over three years (one boy is in Grade 1 and the other in Grade 3) and there are no pre-primary children in this group.

C7. Extended ground area with sky/Enumerating elements and "I" .Actions

	Age	Gender	Language
Child 1	7 years 10 months	Girl	Xhosa
Child 2	8 years 11 months	Girl	English

TABLE TEN

There are two girls about one year apart, who have a good command of the English language (one girl being Xhosa speaking) (The youngest girl has attended an English school since nursery-school). Both are in Grade 2. They have a different home-language.

C8. Partly representational including X-Ray vision/Narrative

	Age	Gender	Language
Child 1	6 years 11 months	Boy	English/Afrikaans,Afrikaans parents
Child 2	9 years 6 months	Boy	Xhosa

TABLE ELEVEN

The Afrikaans .boy is in an English medium class and speaks English as well as Afrikaans. (He says he only speaks Afrikaans with his Granny, who lives with them). The other boy_ learned English at school. Both boys are bilingual with different home languages. They differ significantly in age, they are 2 years and 7 months apart. Bilingualism and gender are the common factors. There are no pre-primary children in this group.

C9. Connecting middle ground moving toward perspectival drawing/Narrative

	Age	Gender	Language
Child 1	9 years	Boy	English (Moslem School afternoons)
Child 2	8 years 3 months	Girl	Tswana

TABLE TWELVE

The age of the children is the commo!} characteristic. The subjects are not in the same grade, yet within a year of each other. There are no younger children (pre-primary and Grade 1) in this group.

The single instances of combinations of drawing and talking categories are listed in Appendix B, from C.10-C.24.

Age and language appear to create the major co-occurrence patterns in the combined categories. The patterns in the combined categories are spread widely in a large number of pairs and single children. The frequencies within the drawing categories and within the talk categories consist of larger groupings.

Chapter Four has listed and described the drawing and talking categories and shown how the samples fall. In addition C co-occurrence patterns have been studied and tabled to investigate the co-occurrence patterns of drawing and talking. These co-occurrence patterns demonstrate the most popular combinations of kinds of drawing and kinds of talk. They can be used in order to see if there are common conceptualisation strategies that inform both the talking and drawings so combined. Age groupings may confirm or refute developmental stages outlined in the literature. The co-occurrence categories serve as an extra tool to indicate the main overall groupings of the data as well as some more unique combinations of kinds of drawing in relation to kinds of talk.

The categorisations and their combinations will be explored and given tentative interpretations in the next chapter together with age appropriate occurrences and individual instances.

CHAPTER FIVE : DISCUSSION

Chapter Five is the chapter in which I attempt to describe the salient features of the study. The study characterises the drawings and talking about the drawings of the 40 children of the sample in terms of common thinking strategies and ways children express themselves. The study further indicates the major combined drawing and talking categories shared by a number of children, in order to see the significance in relation to the major occurring conceptualisations. The aim of the study is to arrive at a developmental overview or characterisation of children's drawing, talking and thinking strategies.

First I would like to look briefly at the bilingual versus English as a first language issue and how this relates to the talk about drawings.

Second I will highlight developmental and age related trends in the drawing and talking data and relate these to conceptualisation strategies evident in the data. Because conceptualisations relate to both the drawing and talking data, I will sometimes when it is more appropriate, refer to talking data in relation to the discussion on drawings.

For the second task the chapter will be structured into a developmental and age related section on, firstly drawing, secondly talking and thirdly the combined drawing and talking data in groups and individuals where applicable. As mentioned a certain amount of overlap is inevitable. In each instance I will refer to the youngest stage first.

5.1 LANGUAGE AS A FACTOR IN TALKING ABOUT DRAWING

Bilingualism was an observable feature as expressed in children's talking data. Bilingualism forms a major topic in its own right, and cannot be separated from its immediate contextual features. There is an ongoing psycho-linguistic debate as to

what extent language shapes our cognitive skills. According to Piaget language reflects our thinking, our thinking is not dependent on language, although language can have a supportive clarifying function for thinking processes. There is an extensive body of bilingual research that deals with the effects of bilingualism on thinking strategies. Diaz (1985) argued that when two languages develop and function in parallel, bilingualism increases children's cognitive functioning. However, when one langua e is mastered at the expense of the other, which happens when a Spanish-speaking first grader is plunged into an English only class, for example, bilingualism is a hindrance and the result is a semi-lingual child, who functions inadequately in two languages. For children to have the advantages of bilingualism, it appears, they must continue to learn in their native language as well as in English (Clarke-Stewart & Friedman, 1987, p 473).

In the data in this study it does appear that bilingual older children outnumber English first language speakers in the B1 Enumerating elements category. Enumerating elements of a drawing is the simplest and most frequent form of language use found in the sample. There are 6 of the 8 pre-primary children represented in this group, which makes it a possible age or developmentally appropriate language usage for this group. There are no Grade 1 children represented in this category. There are 3 English first ,language speakers represented beyond the pre-primary level and they are all in Grade 2. There are 5 bilingual children beyond pre-primary, one is in Grade 2 and 4 in Grade 3.

Of the 8 children in Grade 2 and Grade 3, 5 children are bilingual, which means that it is possible that simple enumeration is more likely to be used by bilingual children, as it involves as yet no complicated sentence structure and grammar. The pre-primary sample is equally representative of first English language speakers and bilingual children. The large proportion of children represented from this age group, indicate the tendency to enumerate as a developmentally related phenomena. This possibility is strengthened by the fact that both first English language and

bilingual children are reflected in the group. As the sample is relatively small this over representation of bilingual children, in the highest Grade can only be seen as a possible trend wh!ch would need further research.

A careful look at syntax across the sample does not reveal any significant differences between groups. Ignoring for this purpose the various length and complexities of the talking data, the distribution of mistakes seems more or less equal among the groups. Of the 40 children 28 made one or more mistakes, of which half are English speaking and half from a bilingual back-ground. Of the bilingual children, the number of children per group who make mistakes ranges from 6 out of 10 (Afrikaans), of the English speaking children 8 out of 10. Similar errors are represented by all children. Examples of errors are:

- the form of verbs (eg wrong tense and added on suffixes): cutted, wrotet, drawed, heared"
- singular and plural forms are confused : "there is flowers", and "this is the flowers", "this is a woods" and "so much flowers"
- there is the wrong use of personal pronouns : "it have brown eyes" (for a girl) and "them two.... them did get..."
- wrong use of a preposition: "we went at home" and "by the shop".

Overall bilingual children (20) are more likely in the total sample to use wrong personal pronouns and prepositions than English children. However, they do not make more mistakes overall in their talking data.

5.2 DEVELOPMENT AND AGE RELATED TRENDS IN DRAWING

(See drawing categories page 33 Table One)

The strongest trend that emerges from the analysis of data is developmental. There are, for instance, age related trends of the concept of space as depicted in children's drawings · which coincide with Lowenfeld's characterisation of children's developmental stages in art as outlined in the literature review. I will try and establish if there are common thinking strategies that link the different instances of drawing and talking data and determine' to what extent the data are unexpected and

differ from the discussed literature. The six conceptualisation strategies noted for discussion are spatial orientation, body image, juxtapositioning, framing, the Schematic Stage and X-Ray portrayal.

5.2.1 Spatial Orientation

The one A7 Non-representational, the four A4 Framed and the two A6 Elemental drawings in the sample are all done by children in pre-primary and one Grade 1 child. Two of the children have just turned *5,* three are 5.7 and 5.8 years, one is almost 6 years and the Grade 1 boy 6.1 years (ill 2-8). From a spatial orientation point of view the movement from a non-representational drawing, to an elemental and finally to a framed drawing illustrates a progression from a concept of a flat surface which is not related to a vantage point in space in a realistic sense, to a concept of space that bears some relationship to the child's own vantage point in the world. There is only one non-representational drawing, which represents a repetitive pattern, done by a *5* year old. In both the framed and elemental drawings children make an attempt to represent a number of familiar objects from their environment. In the framed drawings there is both an indication of a frontal view of objects and an attempt at the representation of the total space, as indicated by the frame and the frontal representation of objects. within the frame. The three categories coincide with Lowenfeld's Pre-Schematic stage, ranging from 4-7 years of age (1975). Typically, according to Lowenfeld, the child draws a head/feet image of a person as one of his first representations **(ill** 3,4).

Cross-cultural research suggests that not all cultures represent an automatic movement from the non-representational to drawings with increasingly realistic representation. This seems to be the case in more western orientated cultures (like Japan and the United States), but not in more isolated and remote places such as The Caroline Islands in the South Pacific (Clarke-Stewart & Friedman, 1987, p 311). In technological cultures children tend to draw houses and trees, even at pre-primary level. They move out of the non-representational mode during this time, while

children's art on several remote islands did remain abstract in design even in older children.

Before approximately the age of seven, according to Piaget (1928), the child has an egocentric relationship to his/her environment which Piaget defines as the opposite of an objective relationship, in so far as objectivity signifies relativity on the physical plane and reciprocity on the social plane. Another way of describing this mindset used by Piaget is **pure realism,** ie an immediate taking possession of the object, where no distinction is made between the mind and the physical object, they seem to fuse into one reality. This can be illustrated in the way two of the pre-primary children organise space in their A6 Elemental drawings. Instead of depicting space from a perspectival orientation, the elemental drawing gives evidence according to Lowenfeld (1975), that the child represents an immediate perception of space around her, without a floor as a common basis for objects to stand on. The child expresses that she is surrounded by things on all levels, with herself being at the centre (ill 3,4). In this sense it characterises an egocentric spatial orientation.

5.2.2 Body Image

The so called tadpole men that appear in both elemental drawings of the sample, are given different explanations in the literature (ill 3,4). Illustration 3 has two tadpole figures on the upper green line and illustration 4 a brown tadpole figure next to the rainbow. Lowenfeld (1975) refers to it as one of the first achieved symbol of a man by the child. Kellogg (1970) traces the origin of what she terms "humans" to scribbles, which result in a "modified mandala". She further relates early "humans" to suns, which form an aggregate of the development of the subsequent humans (Kellogg, 1970, p 94/5).

The symbol representation is initially, according to Lowenfeld rather changeable, only beyond the age of 7 do children establish a more conscious and complex

enduring schema for a man.

It is my personal feeling that the tadpole man's particular form or symbol, a circle with two lines coming out at the bottom is related to the child's undifferentiated and diffused body image. The circle is usually thought to represent the head of a man and the descending lines are presumed to be the legs of the man. The question this raises is why do children omit the trunk, surely they know they have a tummy? Young children's immediate perception of themselves could well be global, rather like a humpty dumpty. They possibly could experience the head, arms and trunk rather unconsciously and symbolise the head, trunk and legs globally. Hence the early almost archetypal representation that ensues not so much as a result of perception but from a global sense of self. This would further explain why young children often position arms as coming out of the head, when they draw them at all, sometimes with a trunk as well, sometimes only a head.

This would be in line with what Piaget terms **absolute realism,** where no attempt is made to distinguish between thought and perception and where objects themselves exist. An example will clarify this. An experiment, where children were asked to draw a picture of themselves, was preceded with an extensive question and answer session, where children moved from the crown of their head to their feet enumerating body-parts in detail. The drawings that followed were .filled with a wealth of detail when compared to earlier, more global and barren drawings of people (Clarke-Stewart & Friedman, 1987, p 312).

What I am suggesting is that Piaget's concept of immediate realism is not confined to perceptual abilities, but involves a global sense of awareness, where the internal and external reality are not clearly separated in children's experience. Their representation of themselves therefore merges with their physical sense of self and does not correspond in the first place to external, visual reality.

5.2.3 Juxtapositioning as a Form of Spontaneous Associating

There are clearly identifiable aspects of egocentric thought, as defined by Piaget (1959), observable in the A6 Elemental and A4 Framed drawings. Juxtapositioning, suggests a concept of objects that are placed side by side, without any apparent relationship between them. This tendency can be most clearly seen in the way the items in the elemental drawings are juxtaposed according to subjective associations. Both children's own elaboration about the content of their drawings seem to support this observation as I will try to demonstrate (ill 3,4).

In the one instance the drawing is divided by two horizontal lines in the centre. The child identifies this as: "This is a draw", the green oval at the centre as: "This is a duck". (Draw seems to mean drawer). Above the draw are some obvious tadpole people (with different schema as Lowenfeld would predict at this stage) and with what she identifies as "a wood, the trees and a number like that". The repetitive shapes below the draw are identified as: "This is a banana." She also points to several "patterns", and finally "this is a name of a apple".

The other drawing in the A6 Elemental category simply enumerates the drawn items in turn:" a rainbow, moon, a heart, curler, spider, bird, key, worm, key, my cousin, plates, chair", (pointing to each item). There is no apparent arrangement of the items, they appear as if randomly placed, without any attempt and awareness of one relative dimensional scale to co-ordinate the objects in relation to each other. This is juxtapositioning based on personal associations, without any attempt or evidence of what Piaget calls "synthetic capacity".

Elemental drawings can be understood from an immediate realism perspective, where patterns or objects are placed on the page as children ee fit. This placement of items on the page may be influenced by the egocentric way the children experience space around them, a sense of being surrounded by objects with

themselves being the central point. The child (ill 4) represents objects in turn, a curler as seen from above and much larger than the cousin, a rainbow drawn as if positioned directly in front of her and abstract shapes interspersed with recognisable objects. There is no integration of size and visual angle, the drawing is literally created by "a spontaneous attitude which runs counter to a comprehensive view of the universe" (Piaget, 1959, p 271).

It is my impression that the child is guided by spontaneous associations and that her drawing is not preplanned, but unfolds on the spot. The apparent random placement of items in the A6 Elemental drawing category may well spring from the fact that the drawing process itself is the primary focus of the child. Being intent on the actual drawing process, the priority of placement of objects flows out of children's motor co-ordination and the mastering of the drawing skill as well as purely subjective associations. In illustration 4 the child happily drew over already drawn items several times.

Harris (1963), annotating Van der Horst, makes some interesting observations about the different functions drawing and talking fulfil for children of different age groups. Van der Horst speculates that the motor, kinesthetic and affective elements are more important than visual perception and cognitive functioning for the younger (pre-school) child. This could be interpreted as saying that the visual perception and cognitive abilities are subsidiary to the experience of movement, touch and the general experience of the senses. It could also mean that cognitive and perceptual skills remain largely unconscious (or intuitive as Piaget would call it) in the pre-school child's drawings.

5.2.4 Framing as an Instance of Syncretic Thought

The A4 Framed drawing category does demonstrate an initial, partly successful attempt at synthetic capacity. Here two separate conceptions of space, based on the child's experience of space, are superimposed upon each other. There is in the

drawing of the curved house, a sense that the child organised the drawing space according to a bird's eye view of the garden space (ill 6). This is despite the fact that the top line represents the blue sky and the bottom line the green grass, with earth (red) in between. Similarly the shape of the house gives a bird's eye view perspective. It may also express a known and experienced curved shape, eg a curved passage. Whatever is the case, the girl, the door, window and chimney, together with the sky and earth lines, represent the frontal perspective of things the child is aware of. The filling in of earth (purple lines) around the house also indicates that she knows that the garden area is solid and surrounds the house. There is therefore evidence of a syncretic approach, which is not as yet consistent and applied throughout all the drawing elements. It does as yet fail to synthesise all the spatial elements in one system, but tends to simplify by incorporating elements of both a top and frontal spatial view in the drawing. The same two perspectives are evident in illustration 5, with the sky clearly drawn above the squarely outlined plot.

There is further evidence that the girl herself (ill 6) and the boy (ill 5) are assembled from juxtaposed elements, eg from lines and dots and separate elements, which are not clearly related to each other (Arnheim, 1971). The arms in the girl are very short and lack hands, her stature is also far too big for the door of the house. The inner and outer physical reality of the house (ill 6) are represented together; we can see a hanging lamp and other abstract shapes which could indicate furniture, alongside the door and window seen as from the outside. Such features of spatial organisation can be understood in the light of transductive thought and what Piaget terms "synthetic incapacity", that is the inability of the child to portray existing relations between the different parts of a model or reality.

This can be further illustrated in another A4 Framed drawing, with a yellow outline (ill 8). Here the house has protruding windows and the car no window and steering wheel. It could be said from a Piagetian perspective, that the house is made up of

details, which are not related properly to each other. The child moves from the house frame to a door and to the windows. The door is too high, the windows oddly placed because he moves from one particular aspect of the house to another, there is no comprehensive scheme, only a beginning of one in the outline of the house.

Another feature of the yellow framed (ill 8) drawing is the frontal view of the attached lawn of the large house and the demarcation of the total plot space as illustrated in the yellow lines, which is seen from a top angle. The two schemes are again not related, but coexist as a result of juxtapositioning and a transductive approach, where the child assembles his drawing according to separately noted elements without an attempt to link them into a total consistent scheme or system. The fact that he combines different spatial elements shows that his awareness does begin to decenter and that he is attempting to focus on more than one spatial aspect and begins to include a minimum of detail.

The last framed drawing in the group (ill 7) combines an integrated network of patterns ("I make a lines") with a small realistic scene ("And also trees"). In the left hand top corner is an identifiable abstract shape ("mmmh I make brown with a bird with a cap on. Only that").

Because the frame consists of "lines", which look like patterns, this drawing is slightly different to the other three in this category. However the basic principle is the same, abstract patterns frame the scene from a bird's eye view. In this instance the trees and house give the impression of lying down, because there is no indication of sky and earth beyond the position of house and trees themselves.

Another way spatial organisation can be understood in the framed drawings is to compare it with the eastern traditional spatial orientation in art, where instead of an attempt at perspective with a vanishing point, items that are further away are placed

higher on the page and items that are closer, nearer to the bottom edge {Lowenfeld, 1975). This practice can further include a diminishing size for further away higher placed objects on the page. This could well be the case in illustration 8, the yellow framed drawing, where there is a clear distinction in size between the house and car near the bottom edge of the page and the house further in the background. This is also a likely explanation in the squarely outlined drawing, except that the size of the man is not as yet adjusted to the distance he is from the house {ill 5). The man himself is an example of a limited representation of a man, with hardly any detail; no feet, hair, hands, neck or indication of clothes. The child has "centred" on the bare essentials of the basic shape only. He has as yet not managed to devise a comprehensive schema for his man and leaves out essential details. This somewhat tentative explanation is further supported by Piaget's observation that synthetic incapacity is only gradually overcome. Each drawing demonstrates how different children find their own solutions to the representation and symbolisation dilemmas of the drawing process.

During the Pre-Schematic phase a first manifestation of syncretic thought is the child's attempt to organise the drawing space in such a way that there is some correspondence between the space as he knows it, eg the squarely outlined garden plot and the placement of familiar objects in this space. The juxtapositioning of objects is now accompanied with varied ways and attempts at integrating space as I have tried to indicate when discussing the A4 Framed category in this section. Immediate realism, in this process, begins to give way to a differentiation of elements which relate to spatial organisation of the whole page in relation to what is represented. The child is able to progressively handle a number of aspects related to representation, yet he fails to fully integrate these at this stage. He moves from an eclectic representation of space as he experiences it in the A6 Elemental drawings, to a mode of trying to organise and encompass the space he represents on the page. The pre-operational stage is further characterised by an increase in identifiable objects and a gradual disappearance of abstract Shapes.

5.2.5 Schematic Stage

The next stage is characterised by a further increase of syncretic capacity in thought as is evidenced in an overall scheme of the drawings that is more inclusive of the way spatial elements are integrated on the drawing-page. The A1 Two dimensional rendering of space category represents the largest number of children per drawing category (14) and can be called a space schema (Lowenfeld, 1975, p 187), which is almost entirely abstract, having only an indirect connection with nature as adults see it (ill 1, 9-21). It is characteristic of children between the age of 6/7 and 9 years old. Lowenfeld calls this the Schematic Stage, when the achievement of a form concept takes place. Lowenfeld refers to the Schematic Stage as a highly individualised schemata. "The schema may be determined by how a child sees something, the emotional significance he attaches to it, his kinesthetic experience with or touch impressions of the object, or how the object functions or behaves" (1975, p 185). For Lowenfeld the drawing reveals the information the child has received and the way he/she interprets and comprehends this information and the schema can be "read" as a representation of the child's concept of his/her world. For me the drawings in this category of this sample are marked by a greater clarity of form in drawn objects and spatial organisation. Most drawings are executed in a simple outline format. A few drawings use intense colour, which does lend them an emotional quality of warmth and brilliance not found in other drawings.

Spatial organisation takes on a simplified and more fundamental orientation, with an indication of the ground or base-line and a sky or open space above and a large empty space in between. The children's representation of space coincides with the two dimensionality of the page. They do not attempt to translate three dimensional reality into a semblance of three-dimensional space on their paper. What is obvious is a new ordering capacity, which broadly divides reality in a below and above and which places all objects and things as if standing on a common floor and this is the result of a growing synthetic ability where reality can be "abstracted" into a top/bottom dimension.

The way items are arranged on the baseline is characteristic of a transductive approach, where the importance of a person, tree or item is seen in its own right rather than from a relative point of view, at least initially. The younger the child, the greater the juxtapositioning tendency remains apparent alongside the new organising tendency. This can be seen in the drawing of a Grade 1 girl with a boy and girl at either end of the baseline and an enormous bird and butterflies that grace the sky above them (ill 12). There is a clear sense of a placing of items next to each other, within a general sense of spatial organisation. There is evidence of a certain amount of juxtapositioning, if diminishing, in the separate placement of the boy and the girl and the bird and insects and the amount of detail with which they are drawn. At the same time there is a growing sense of syncretic awareness in the control of the totality of the space. This is precisely what Piaget means when he says: "In every sphere juxtapositioning and syncretism are in antithesis, syncretism being the predominance of the whole over the details, juxtapositioning that of details over the whole (1928, p 59). Piaget sees these two features as being complementary. Finally, relative size is only partly achieved.

In the drawing itself (ill 12) it is clear that more care and thought has gone into each item. . There is evidence of a basic underlying schema for people, birds and butterflies. The talking data support a first manifestation of an ability to decenter: to focus on more than one aspect of an item. "I made a girl and some flowers and the grass, two butterflies and one bird. Here is one boy, one bird, one butterfly, the girl and flowers". In her enumeration of the items she includes the exact number of every item with the identification of each item.

An indication of a transductive approach can be observed in the isolated positioning of items. It seems all a little stiff, things are drawn as if moving from one particular (a girl) to another particular. There are other drawings in this category which tend to "enumerate" objects in a row as can be seen in illustrations 9,13,14 for example. I think this may precisely be so because of how Piaget describes the

nature of transductive thought to be, a moving from object to object, without bringing it into a relation with a general theme and hence with each other. However, a deeper relational aspect between items and people does only gradually manifest in a number of drawings and can be discerned in the talking data at the same time.

In illustration 12 the girl has arrived at a definitive people and animal/insect scheme, as apparent in the clear similarities and differences in the boy and girl. For example the gender characteristics are clearly distinguished in the type of clothes and hairstyles and so are the different kinds, positions and amount of wings in the bird and butterflies.

Striking in this A1 Two dimensional rendering of space category, is the child's newly found ordering capacity. The ordering (abstracting) capacity of children could be explained by what Piaget terms the syncretic tendency of the child, which refers to a kind of global cognitive processing which results in large unstructured schemas or what can be seen as a rather nebulous classification system (Reber, 1985, p 754). Despite the fact that the third dimension of space is totally omitted at this stage, it does represent a new way of thinking about the environment by the child, a move away from mere juxtapositioning in the A6 Elemental drawings and the partial organisation of space elements as seen on the A4 Framed drawings. Even if the new space schema contains ambiguities such as a central empty plane, there is.evidence of a sense of structuring of space. This structuring ability begins to bring into focus a sense of order which functions as a frame for the possible expression of the interrelatedness of things. It is precisely oversimplification that characterises syncretic thought, according to Piaget (1928), and the lack of depth is therefore simply not attended to. Items are all situated on the same base-line, or common earth, which is another oversimplification.

The space schema demonstrates a move away from the immediate realism tendency

of children's thought. Children create a vision of the totality, which despite contradictions, exemplifies an all inclusive schema, supplanting the earlier, partial attempts at the organisation of space on a page. This process coincides with the child's ability to decenter and attend to several aspects of an item at once. The accompanying talking data further illustrate this ability to focus on several aspects of an object in the increase of the use of elaboration. Children become more introspective and demonstrate a reflective ability, at least in some cases. Instead of connecting all things in primitive subjective associations as was the case in the A6 Elemental drawing and talking data, the decentering can be observed in the elaboration of a very simple scene of a "Mom and a Dad", who are presented in the centre of a base-line standing next to each other.

(ill 20) "A Mom and a Dad.
Them smile.
Them two hold hands.
Them love together.
Them did get (wat is in Engels a foto) a photo.
And that's all.
(She is Afrikaans speaking).

Clearly there is a beginning of a reference to internal states, smiling and loving as well as a more introspective orientation of the talking data, as each statement builds on the next one and fills out the picture. Despite an absence of hands in the Mom there is a greater degree of relatedness in the two figures, they are clearly two of a kind. They are formed by the same basic schema that is adjusted according to gender, eg solid shoes for dad, light shoes for mom. Such distinctions are several: hairstyle, earrings, bow, clothes, as well as common features, length, proportion, shape and facial features, the actual standing pose. The overall integration of such features into similar looking people suggests an awareness of relative size, dimension and attributes, which have been created into a particular scheme over time. It is no longer an arbitrary arrang ment of loosely assembled details. (The verbal description belongs to the B2 Description of action category, which I will discuss shortly).

Piaget (1928) suggests that children's perceptions seem to be formed by general schemes rather than by analysis. This can be said particularly of the Schematic stage with its simplified abstract spatial organisation scheme. Lowenfeld characterised this scheme as highly individualised.

5.2.6 X-Ray Portrayal

This drawing has been classified separately as an X-Ray drawing, because the main part of the drawing depicts an underwater scene (ill 22). The incidence of X-Ray portrayal does occur during earlier drawing stages to various degrees in a number of drawings. In this example, however, there is a top part of the drawing that represents a two dimensional scene of a man on an island fishing with a sky above him, above a sea teaming with creatures, represented as if in cross-section. It definitely demonstrates an awareness of a two dimensional plane only and includes what is known to exist, as well as what is seen to exist. It exemplifies syncretic thought, in the sense that an incongruous portrayal results in an oversimplification of a situation that is difficult to represent in one visual system. By collapsing the underwater reality into a visual spatial viewpoint by means of a layered representation, the child creates a striking scene of juxtaposed and different aspects of reality.

Arnheim (1971) sees the occurrence of X-Ray portrayal not as a cross-section representation of reality, but rather the logical outcome of a two dimensional orientation, where there simply is one reality plane and no indication of depth. Where this example falls short from the Schematic Stage is that there is no empty middle space. There is an empty space however as found in two dimensional schemes, in the above water scene. The two dimensional space schema represented at the top of the drawing has been extended into a more imaginative reality by means of the use of an X-Ray device which illustrates how syncretic thought can encompass different realities for the child. Imaginative factors are combined with reality factors into one bold two dimensional space scheme, that is highly

individualised. One characteristic of the Schematic Stage, according to Lowenfeld, is highly individual space schemata. What is paramount in illustration 22 is the actual ability to organise the page to suit the child's artistic need and "bend" reality to suit his own imaginative end, without straining the boundaries of credulity too much.

Arnheim's plausible explanation that the phenomenon of **X-Ray** portrayal in drawings can be understood as a logical result of a two dimensional concept of space, can be related to the other **X-Ray** instances. This thinking can be found in the A3 Partly representational including X-Ray vision category, which are at the same time examples of a A1 Two dimensional rendering of space (ill 39,40,11) and A2 Extended ground area and sky (ill 27-29) categories. In all instances the internal and external reality are placed side by side, as if the child was not aware of the visual incongruence. In some cases (ill 28), it may also be used as a devise to highlight something that is important to the child (in this case the presence of a mole). The categories are there to help the interpretations. They are not always mutually exclusive as the X-Ray examples demonstrate.

5.3 DEVELOPMENT AND AGE RELATED TRENDS IN TALK ABOUT DRAWINGS

In the talking data I will consider an individual instance of the concept of membership, the two most frequent used talking categories of enumerating and a describing of actions in the sample and an example of the onset of classification.

5.3.1 The concept of Membership

The talking data of illustration 22 reveal several interesting observations made by Piaget and which relate to the previous discussion. First of all the talking data focus on the actions and interactions of the creatures, which the child recounts as he moves from creature to creature. Secondly, there is a clear instance of a referral to the concept of membership or hierarchical thinking (talking data can be found at

the back of the illustrations).

Membership or hierarchical thinking are indicated, according to Piaget, by the appearance of a cognitive orientation which allows syncretic thought and juxtapositioning to reach a position of complementarity where the nature of assimilation (the application of a general schema to a particular person, object) and imitation are transformed as a result of thought becoming socialised. This is possible, because as soon as the child manages to move away from an absolute egocentric orientation to a more relative point of view, the ability to discern the objective reality of what is contemplated begins to manifest itself. In short the child attains shared common ground as a result of socialisation of thought, which helps him discern the specific nature of things (Piaget, 1928).

The child of the X-Ray drawing endows his creatures with intentionality. This is partly based on his knowledge of how sea-creatures behave as the following extract shows: "The man with the fishing rod is trying to get these fish. And hmm the crayfish also wants to get that (points at the blue shell), the sea-creature's shell is closed. The dolphin is jumping up to see what the man is doing. And the seaweed doesn't want to get touchen't." Intentionality and reflection are first signs of a presence of introspection. They are exemplified in the interactions of the sea-creatures in the talking data, which describe the inherent motives of the actions.
T_he issue of membership, which overcomes the absolute value assigned to things in the immediate realism phase, is illustrated in an earlier excerpt of the talking data: "...but the crayfish wants to get the periwinkle, but the periwinkle went under the sand. Can you see the periwinkle? But I didn't know periwinkles are sand-creatures. (I asked him how he did know). "I just heared it from my uncle; we were catching them. We were saying, there is one, there is one, there is one." The periwinkle can at the same time be an animal and belong to the hierarchy of sand-creatures.

This particular cognitive structure that allows for the inclusion of membership over and above the type of animal is an indication, according to Piaget, that the child is overcoming irreversibility of thought by means of a process which he calls socialisation of thought. It can be seen from the talking data that the child builds his premises on direct observation of what he has drawn, while he gives the description of actions a logical coherence.

A further point of interest is the use of "and" and "but" in the data rather than conjunctions of discordance (although, because). Only the last sentence uses "because" (And the seaweed is raising, because the seaweed doesn't want to get touchen't). Here is an instance of the transition from synthetic incapacity to synthetic capacity, where the child is able to separate a cause in a general narration of interrelations. The idea of membership is at the same time a first step of classification and possible because of the overcoming of the antagonistic tendencies of syncretic and transductive thought (Piaget, 1928), which I referred to in the discussion of the Pre-schematic and Schematic stage. It is an isolated example and I will now discuss the most prominent talking categories, the enumeration of elements and description of actions (B1 and B2 of the talking categories).

5.3.2 Enumerating Elements and Description of Actions

In one sense the distinction between enumeration or the naming of elements as I discussed in the elemental drawings and a description of action can be linked to a juxtapositioning to syncretic thought which encompasses a whole. Hence in the talking data description of actions are represented by simple integrated sentences as opposed to strings of words which characterise enumeration.

B1 The enumerating of elements is represented by a significant number of pre-primary children (6 out of 8). It is spread out over the whole age range of the sample, except for Grade 1. It is slightly overpresented by bilingual children in Grade 3, where there are no English first language speakers represented at all.

B2 The description of action category is represented by a slightly older age group. There are no pre-primary children represented in this group; it starts with the Grade 1 level. B2 The description of action category is reflected in 8 children's talking data and hence a much smaller represented category than B1.

There are a further three children in the B5 Anticipation of future and/or past action category. I have referred to two instances of the talking data of B2 Description of Actions category already: "A Mom and a Dad" (ill 20) and the underwater X-Ray scene (ill 22). The talking data of the B2 Description of action category describe the drawing in terms of the depicted actions only. The context to such actions may also be referred to in terms of active rather than passive descriptions as the following data of a boy in Grade 2 demonstrate: "I was playing basket ball so my friend did jump for the ball and the ball went past him. So the aeroplane came past. And the clouds came out. So I saw a worm. That's all. "(ill 15).

Although the drawing appears to be depicting a climax (scoring a goal), the actions in the drawing are narrated as if they were all of the same importance. (In the drawing the actual course of the ball is traced by means of a dotted line). There is no difference between the emphasis on the worm, a detail, and the scoring of a goal, the central event. Both actions receive the same verbal treatment. Taget calls the tendency of younger children to juxtapose their conceptualisations. In this case the emphasis is on actions in relation to things and people, rather than things in themselves. There is the interaction of "seeing a worm" and "I was playing basketball", that points to the beginning of an interrelational dimension between the actor and his action. At the same time the description moves from one action to the next as in transductive thought. The use of complete sentences further emphasises a grasp of the interrelatedness of the actions in relation to the people described.

The use of "and so" and the absence of any "because" show that the child's description is tied to the event as it happened, as he has depicted it, without further

interpretation. Perhaps this illustrates what Donaldson (1978) feels is children's natural habitat, their being in the world of sense. According to Donaldson, what she terms "disembedded thought" is not a natural process for children and is something they need to acquire with the help of others by means of education and schooling.

The emphasis in the B2 Description of Action category is usually on externally oriented activities, which are related in a time sequence of what happens first, next and so on. In one instance a Grade 1 girl invokes in her description a combination of different states of consciousness, which are also reflected in her drawing (ill 16). She depicts herself in a three-quarter view and a profile face, with cartoon style bubbles coming out of her head. These culminate in some writing and a red heart situated in the air nearby. There is a wall, at which she is staring and a tree with a bird precariously balanced on a nest of eggs. The girl herself appears to be hovering rather than standing.

The talking data are as follows:

"I did look at the walls.
I did dream that I was sleeping
Then I did look at the heart.
The bird was singing.
The eggs was cracking."

It appears that she is describing a transition from everyday awareness to a mood of day-dreaming. In this dreamstate she dreams that she is sleeping and looks at the heart, the content of her dream, while she hears, simultaneously, the bird's song and the cracking of the eggs. There is a repetitive poetic quality in her use of language, which is echoed in several other bilingual children (eg A Mom and a Dad) and which is accomplished with a minimum use of words.

The ability to direct thought and depict several levels of reality in an artistic way mark this particular drawing and talking data. She includes references to visual and auditory sense experiences, as well as sleeping and dreaming. It differs in this

respect from the focus on concrete actions mostly found in this category and moves beyond an immediate realism focus. It also reflects an ability to direct a stream of observations logically, which is marked by an overcoming of contradictions, as is demonstrated in the clarification of the heart and bubble. Such abstract shapes were merely included and juxtaposed in the A6 Elemental category, without further explanation. This ability to move back and forth between different realities is a sign of the beginning of the use of reversibility of thought in children's thinking.

If the age distribution of B1 Enumerating elements is compared with B2 Description of actions category the latter group is represented by no pre-primary children, as opposed to five in the former category. In B1 Enumerating elements category there are five 5 year olds, three 7 year olds, three 8 year olds and two 9 year olds. There are no Grade 1 or 6 year olds in the group. The average age is 7.2 years.

In B2 Description of action category the age range starts with Grade 1. There are two 6 year olds, two 7 year olds, two 8 year olds and there is one 9 year old. The average age is 7.8 years.

These two categories may well demonstrate the two most fundamental and common language usages in children, which may go back to how children initially process language. The use of repetition of sound and alliteration is noticeable, to different degrees, in both B1 Enumerating elements and B2 Description of action category data (as I will illustrate).

The frequent occurrence of B1 Enumerating elements could be a consequence of the fact that it represents an early and fundamental language utterance. It is a manner of speech which occurs either in one or two word combinations in young children's utterances. Sinclair found that when older children where asked to reflect on words, they often displayed the same language form as young children, of what she terms "diachronic similarities" used by two year olds. Such two word similarities extend

beyond meaning to the compositional roots of words. It relates words in both a purely linguistic, sound and meaning "sense". This language sense, spontaneously combined with the communicated information can be heard in many instances of the sample. In the following example of enumerating elements of a Grade 3 girl this simple compositional, integral sound quality is evident in the repeated sounds of consonants in words, which are relatively closely placed, as well as its repetitive rhythmic quality (ill 18). (She is describing a drawing that portrays her sister). "It have brown eyes, red mouth and black hair, pink dress and purple shoes. And it have red buttons and round head and small neck, five fingers. And it have green grass, brown nose and it have straight legs. That's all". (I ask her: "Who is it") "It is my sister". ("And what is her name?") " It is Yolanda".

Enumeration does change its character with age. Older children tend to use short repetitive sentences with a fair amount of detail in their descriptions. The pre-operational child tends to list objects without the inclusion of detail. In the quoted data a combination of two words with interrelated meaning (brown nose) is the dominant norm. The girl moves from detail to detail, from the particular to the particular and attends to the whole, only when she is asked at the end. This is an example of pure transductive thought.

The appearance of B2 Description of actions category in slightly older children's talk and the general absence of this category from pre-primary children's talk in the sample, could be linked to several factors. First of all to qualify for this category requires a degree of relational awareness, of what people do, rather than a focusing on what is represented only. This in itself demands a certain awareness of a sequence in time, of what happens first and last for instance. It differs in this respect from a side by side representation of items on a page, as a time sequence can't be seen, but needs to be abstracted, while it often denotes a logical sequence. This sequencing in time can be seen in the one example of a BS Anticipation of future actions and/or a referring back to past actions category of a pre-primary

child: "I wrotet a house and I wrotet a little girl. And I wrotet mmmh this (going over whole area). She is walking into the house and she is going to cook. Then she is going to eat and then she is going to sleep" (ill 6). The listing of objects by another pre-primary child in the B1 Enumerating elements category does not follow any apparent sequence: "This is a jet, house, tree, sun, sky, did you write sky yet and grass, sun? That's all."

Sequencing in time demands a logic of relations which is absent in the mere enumeration of objects examples. When it involves the enumeration of detail, it requires a more precise sequencing according to place. This is still juxtapositioning rather than a relational or logical series of actions though.

Secondly, the B2 Description of action category reflects a next step in the sequence of acquiring language linearity, the ability to structure a sentence and combine verbs with nouns in a sequence in the very young (2 year old) child. It is therefore not quite as fundamental an utterance as the two word combination, or a single noun is, but represents the next step in speech acquisition from a developmental perspective. It could be expected that spontaneous speech, as is the case in this study, would bring to the surface, innate and partly unconscious speech patterns of the child. It may therefore be speculated that the two largest talking data categories, B1 Enumerating elements and B2 Description of actions exemplify universal language utterances as found in children's speech. The fact that they are used by children across the sample's age spectrum would support this. There seems however to be a large group of second English language speakers amongst the B1 Enumerating elements category and relative few older first English language speakers. As mentioned before this could be specifically related to the second language factor and an instinctive resorting to a simple form of expression due to a lack of English language facility.

It is my belief that because of the wide distribution of age found in these two talking

categories, they may constitute a basic form of language usage. They are consequently likely to be used in oral situations where a child is asked to talk spontaneously. Basic communication strategies are more likely to occur when children have to, at the same time, concentrate on something else (in this instance the content of his drawing), particularly as far as the under seven is concerned. As Piaget maintains, it is difficult for a young child to decenter and focus on more than one thing at a time. This may also apply to those who have to cope with language barriers, they may intuitively resort to the language level they are most comfortable with.

5.3.3 Classification

Only gradually, between the years from 5 and 10, do children learn to structure thinking according to hierarchies of membership. The talking data of a Grade 3 girl demonstrates an awareness of a three-dimensional plane in her drawing and combines it with a B3 Enumerating elements and "I" actions approach in her talking data (ill 31). Her enumeration reflects a sense of ordering of her "items" according to categories that belong together. She describes her drawing as follows: "I got a sun, birds, butterflies, flowers, grass. I got a girl, a bag (points) on my back. I got a skirt, shoes and that's all" (Is it you?) (nods) "Yes." Even if done unconsciously, she has categorised her drawing data into kinds that belong together. She classifies elements of nature together in one sentence. She then places herself with her satchel, a personal belonging that she values and finally her clothes are listed in one sentence.

Alongside the tendency to move from the particular to the particular, there is evidence of a sorting of items and details into kinds, which is a classification process. It is not a selection of detail only, but rather a summing up of what is essential in the drawing, starting with nature, then herself and finally her clothes. In this sense the talking data exemplifies part of the transition process from synthetic incapacity to an emergence of a categorisation of things into groups that begins to

structure the overall talking data. Her B3 Enumerating elements and "I" actions is ordered in relation to the whole, ie the totality represented in the drawing. She concentrates on concrete elements and she arranges objects into clearly differentiated dimensions without indicating the membership terms, such as clothes, nature, personal belonging themselves, but these are clearly implied in the groupings. Piaget (1928) calls this the onset of a synthetic capacity, which is at the same time a way of conceptualisation that makes possible the transition from irreversibility of thought to reversibility of thought.

5.4. SPATIAL ORGANISATION IN THE OLDER CHILDREN OF THE SAMPLE

Having discussed some of the main trends that are represented in the talking data as well as some individual unique instances, I would now like to return to the drawing data of the older children (Grade 2 and Grade 3). It should be borne in mind that because of the increasing evidence of synthetic capacity in the older child's thinking, the drawing and the talking about the drawing become in many cases more integrated. Drawing inferences from the drawing and talking data are therefore often necessary.

5.4.1 Overlap and Oblique Projection

A co-occurrence in illustration 31 of the previous discussion, are its two instances of the use of overlap. This can be seen in the rays of the sun as they are drawn across the apple tree, flooding it with sunlight and in the positioning of the satchel on the girl's back. At the same time the girl is not depicted in the usual fully frontal (immediate realism orientation) pose, she has turned her head to look at the appletree beside her. The flowers, butterflies and birds are all drawn according to a strictly adhered to schema (eg one leaf to the same side of the stem only in the flowers).

In a study of how children learn to draw realistic pictures by Willats (1977), an

increase in the ability to use overlap as a pictorial device appeared to be continuous from the age of nine onwards. A rapid learning takes place in this respect between the ages of ten and twelve, while below the age of nine few children made use of overlap.

Oblique projection, which is illustrated in the drawing of the boy in the park in the oblique row of swings on one side, the angle of the swing on the other side (ill.32), and the use of overlap are two ways of indicating a third or depth dimension in a drawing.

According to Willat's research findings this instance of overlap is an early one for the girl is not yet eight (7 years 7 months).

5.4.2 Reversibility of thought

The transition to a fuller perspective seems to occur predominantly in Grade 2 in this sample, despite the fact that at the same time many children persist with a two dimensional orientation in Grade 3. There are individual differences within Lowenfeld's broadly defined drawing phases. Piaget (1928) characterises the onset of synthetic capacity and the resulting growing evidence of reversibility of thought in the child over seven to nine years old and beyond as consisting of an increasing focus on the priority of relations. This would suggest a greater awareness of self and the environment and a realisation that the base-line representation in children's drawings does not adequately reflect the reality of nature from a visual perspective. According to Lowenfeld the child's growing visual awareness and more accurate observation leads him to the discovery of the plane of nature fairly rapidly. The change from a single base-line to a representation of a plane occurs via a transitional stage of drawings, A2 Extended ground area with sky which contain several base-lines and an extended sky region (ill 23,25,27).

There are six A2 Extended ground area with sky examples in the sample, with four

children in Grade 2 and one each in Grade 1 and Grade 3. Objects and people are placed at different levels of the ground, yet the basic orientation remains two dimensional with a central diminished empty background. This stage culminates in the representation of a three-dimensional plane on a two-dimensional page, even if there is at this stage no awareness of a horizon in the sense of a vanishing point perspective (ill 31,34,35,37).

There are four drawings with an indication of a continuous depth plane or the AS Connecting middle ground moving toward perspectival drawing in the sample done by three Grade 2 children and one Grade 3 child. The pre-primary and Grade 1 children are not represented in this group as would be expected according to Lowenfeld's description of stages as related to age. The most remarkable visual effect of these drawings is their relative fullness and a sense of completeness, when compared to the rather bare impression many of the baseline drawings give. The greater sense of completeness occurs despite the fact that in most drawings the ground is only indicated by the different levels items and people occupy (ill 34). In other instances the ground is suggested by several lines indicating successive planes (ill 31). The additional sense of depth creates a feeling of unity and continuous space, allowing for the integration of objects and people within one slice of reality rather than several juxtaposed ones like the top/down representation with its empty centre space.

The most remarkable shift in this whole process of developing the plane is the sense of composition that emerges, a feeling of satisfaction when looking at the drawings, because of the incorporation of an increasing sense of interrelatedness between depicted items and a more accurately depicted overall scale in the size of things.

The placement of items (eg the cars on the bridge ill 35) does bear a more realistic relationship to their expected visual size. The cars in this drawing are shown from a back view lower down on the bridge and from a roof position higher up. The

child is clearly able to envisage the different angles cars present on a rising bridge from a higher vantage point and he incorporates those in his drawing. (It would however be impossible to see such different angles in cars that are as close in proximity as those in the drawing in question). In this respect, Lowenfeld (1975, p 231) observes that despite the greater realism found in children's drawings these are still far from visual representations: "The drawing is not an outcome of the child's visual observation, but rather his characterisation of what he sees."

This characterisation can be seen in the simplicity of the cars and the bridge or the simplicity of the house, car and the boys in the three waving boys (ill 34) drawing for instance, as well as in the rudimentary organisation of the overall composition in the drawings. Another unrealistic feature is the consistently larger drawn waving hand in the three boys, a sign of exaggeration which happens unconsciously in children's art, according to Lowenfeld (1975). The child's need to express waving overrides any sense of visual realism.

Perhaps the greatest contributing conceptualisation factor that informs the compositional integration of a depth perspective drawing is the fact that children do no longer attend to objects in turn, but can deal with the objects and people on the page simultaneously. Hence they are no longer presented in a row on a line, but are arranged together in relation both to each other and the totality of the depicted scene and space. This ability to organise simultaneously is what Piaget terms synthetic capacity and this ability enhances the aesthetic appeal of the drawings, due to a greater evidence of an overall sense of integration and interrelatedness of depicted items. Except for one of the four drawings, the emphasis is on concrete reality only.

Drawings up till this stage have tended to be conceived in a top/down and left right/dimension only and the same horizontal/vertical scheme is evident in the rendering of objects and people in younger children's drawings. Oblique

relationships are applied gradually in the position of arms and legs as the child gets older from Grade 2 onwards, as can be seen in the drawing of the girl with the skipping rope (ill 30). In this drawing the fusion of body-parts by a common more differentiated contourline conforms to what Arnheim (1971) sees as a shift from a differentiation of shape by the addition of selfcontained elements like body-parts, to a fusion of several units by a common, more differentiated contourline. An early example of differentiated shape is illustrated in a selfportrait of a girl in a blue dress of a Grade 1 girl and can be seen in the undulating contourline with its emphasis on accentuating form (ill 36). It is drawn from within vertical/horizontal scheme as well as an immediate realism frontal perspective. At the same time it exemplifies an early awareness of differentiated form expressed by means of a descriptive contour-line, tracing knees, wrists and other body-parts. Fluidity of line as it renders details within the totality of an object can be seen as an instance of synthetic capacity and reversibility of thought.

5.5 INDIVIDUAL CASES AND COMBINED DRAWING AND TALKING DATA

The emphasis will now be on both the talking and drawing data in relation to each other and I will end with an example of the combined drawing and talking categories. The combined drawing and talking categories set out under C (co-occurrence patterns) in Chapter Four, generally represent, in the two major groupings, the combinations of the most occurring drawing and talking categories, as would be expected. However there are smaller groupings of pairs of children, who share the same drawing and talking categories which share more unique features. I will give one example at the end of the discussion of contrasting approaches within the combined categories of drawing and talking.

5.5.1 Personification

A Grade 3 girl uses metaphor and personification in her drawing and talking data as well as exaggeration and dramatisation (ill 37). She refers simultaneously to

external and internal reality. She uses both egocentric identification and a "she" perspective in the talking data. Centrally positioned in the foreground is a detailed drawing of a girl with clearly defined gender characteristics. Two bubbles are drawn as if coming out of her head. One bubble depicts a person standing in the rain, the other what could be a fish and fire. There is a "dotted" stone higher up, an enormous smiling sun just beyond the girl and a row of small clouds above a range of distant mountains. Her talking data are as follows: "I was playing outside at home and I was thinking: It is so hot now. And I am wishing it is going to rain. And I wish that I had fishes and I can play with them. And the sun is burning and it is hot and the stones are shaking. And she just wish the stuff and then she didn't know the hills was at the back of her. " Interrupting herself and asking me: "Do you have to fill up that whole page to me?" (Continues after I shake my head into No). "And she is looking up to the clouds and she is thinking it is going to rain. That's all."

As in the example of the girl staring at the wall, she simultaneously invokes internal and external states of awareness. She actually annotates the exact thoughts of the girl in the opening paragraph. She also uses metaphor or dramatisation as a devise to express internal states (thinking and wishing), such as the fact that the "stones are shaking", expressed visually in orange (a warm colour) dots. The heat is further illustrated by the grinning enormous sun, which seems to have got "literally" out of hand. The switch to a present tense in part of the data heightens the immediacy of the dilemma, while the smile on the sun's and girl's face, drawn according to the same scheme, highlight the sense of humour and the implied relief that is on its way. (She only needs to turn around in order to witness the spread of clouds). The girl demonstrates a literal awareness of space as well as an awareness of different perspectives. She talks about "at the back of her" and she asks me if I have to fill up the whole page with her talking.

Introspection in the form of a reference to the content of thoughts, is generally not

evident in the talking data. Here it is combined with the use of metaphor as in rain, fishes and the expressively large burning sun in her drawing. Playing with fishes and rain symbolise relief. This example demonstrates the use of personified metaphor for natural phenomena as referred to by Wellman and Hickling(1994). The girl is 9 years old.

5.5.2 Cause and Effect in Thinking

An individual occurrence of cause and effect thinking (reversibility of thought) is of a drawing that illustrates a conceptual idea and falls into the A9 Conceptual category (**ill** 38), done by a boy in Grade 3. The talking data are abstract and adhere to a logical cause and effect description of what the drawing illustrates. The drawing is of a side view of a Ferrari, with its nose placed against a wall and a parachute trailing at the back. The front wheel does look like it received a bit of a bash. There is no indication of any context such as a groundline, sky and the drawing goes beyond the page boundary. It is executed in a simple outline format with an indication of relevant factors and no extraneous detail. The talking data are based on cause and effect mechanical relations and made up of short statements. Here follows an extract: "..It has got a parachute because if it goes fast, because sometimes the brakes die. Because if you go too fast the brake's capacity comes off and then it needs the parachute, the parachute flies out. .. "

The boy uses reflection and hypothetical constructs in his description of the car. His data are based on technical information and inferences about what happens when the brakes fail and how the driver can protect himself and survive such an eventuality. The objective of the drawing is to describe the main mechanical feats this particular Ferrari is capable of and the talking data describe these features in a matter of fact way, giving the basic facts. The emphasis on pure information in this drawing and talking example, contrasts with the drawing of the gigantic sun with its emphasis on inner experience (**ill** 37). They demonstrate different approaches to an "abstracting" capacity.

The most important characteristic in illustrations 37,38, the "sun" and Ferrari drawings, is a movement away from a portrayal of a direct concrete reality to an abstracted and inferred reality plane. In the Ferrari example the emphasis is on cause and effect relations, which demonstrates reversibility of thought. In the "sun" example there is evidence of introspection, a distinction between external and internal reality. Both are features of the possibility of what Piaget terms social thinking, where the opinions and thoughts of others are considered as well as a manifestation and understanding of interrelationships and causality. It is a move away from egocentric thought and is represented by what Lowenfeld (1975) terms the onset of "The Gang Age" (9-12 years), where children manifest the ability to work in groups (1975). The Gang Age culminates in the Pseudo Naturalistic stage at the age of approximately twelve, with an ever increasing awareness of natural surroundings. The girl and the boy are respectively 9 years and 9 years and 5 months old and would be classified as being at the beginning of Lowenfeld's Gang Age. Their general orientation coincides with an emerging ability of introspection and abstract thought.

5.5.3 Narrative and Partial X-Ray Portrayal

One of the narratives (ill 37) has been referred to. Broadly speaking B4 Narratives either relate an everyday event or an imaginary story. There are two Grade 2 boys whose drawings fall into the A3 Partly representational including X-Ray vision category (ill 39-40) and whose talking data share the B4 Narrative category. One drawing (ill 40) depicts in fine detail the interior and exterior of a car and house. The little pathway running up to the front door and the blank adjacent wall next to the house could be early indications of an awareness of a beginning of a depth perspective. The talking data describe a family outing and uses a rather extraordinary form of repetition as in: "And this is my house, my mother's house and my daddy's house and we was going to Claremont." He uses both "we" and the above form of repetition throughout, which gives the talking data more of a narrative character of happenings of an outing in sequence and from a concrete

reality perspective only. If it wasn't for the persistent and emphatic use of repetition, it would fall within a B2 Description of Action category. It can however be understood from that perspective, as it sequences actions such as living, buying and going to the Cinema.

Illustration 39 on the other hand represents an imaginary story. The drawing and talking data clearly depict the same story. I will quote the last part of the story, which includes some twist to the plot. The story is about "a man sitting on a dragon and the dragon is flying some place." (This can be seen in the drawing). …. "And so he got a hole but he went into another trap. And so the old man took the man's knife and all the smoke that was in the dragon's mouth. And so he tied the box up with rope. And he gave it to the postman, that the postman must give it to his cousin. And there was a letter that said "I love you." And he couldn't get out and so the cousin opened it. And when he opened it, it was a statue. That's all."

The actions are strung together in "and so" fashion, without any causal relations. The story is told as a string of events which are joined by "and so" and described rather than explained. The story does consist of a string of happenings, which although they are imaginary follow their own logical sequence, with a somewhat unexpected twist at the end.

There is a main plot (boy and dragon) and there are several subplots. (the old man, the postman). The actions in the story are juxtaposed within a definite sequence with a beginning, middle and end. The twist at the end is interesting as it is reminiscent of Anderson's Tin Soldier story, which is shown regularly at the school in question as it forms part of the video repertoire. This coincidence is particularly striking in the X-Ray portrayal of the heart on top of the letter, which is very like the tin heart that is all that remains of the melted tin soldier at the end of the video version. It could be speculated that the boy internalised the story and used this twist to his own end in this story. The letter "I love you" further relates to the love

fulfilled in the death theme in Anderson's tin soldier and ballet dancer. They recuperate the same themes of love and death as exemplified in the turning into a statue. Be that as it may, this instance is a rare instance of a pure flight of imagination, where imaginary associations rather than concrete reality dictate the drawing and talking content of the child. The simplicity of the drawing, which remains partly at an abstract level as there is no indication of any ground or sky orientation and the evidence of directed thought in the sequence of the talking data, place this drawing at an "awareness of social relations level". The whole story deals with the interrelatedness of people on an imaginary action level, without going into cause and effect links. Despite its uniqueness this drawing can be understood from a B2 Description of Action perspective, but inclusive of an imaginary dimension as well.

The more exceptional individual instances of drawing and talking data can generally be linked and understood from the main categories as represented in this sample of children's data. They tend to illustrate the uniqueness of the individual, within the larger trends of children's conceptualisation abilities.

To conclude this discussion,. it should be said that the dominant trend of this discussion was an attempt to illustrate Piaget's theory rather than a finding of proof. I have attempted to characterise children's conceptualisations according to the general trends of cognitive developmental stages Piaget discovered in his study of children's thought and speech. The discussion focuses on a way to discern thinking patterns in the drawing and talking data of the sample. The discussion attempts to reveal from the available data, the move in children's conceptual development from an initial static representation of reality as made up of separate elements to a gradual emergence of a more integrated reality where the interrelatedness of people and objects begins to feature.

It was my intention to understand the underlying conceptualisations of children's

spontaneous drawings over time and their accompanying descriptions of these drawings. The exercise of sorting children's drawings and talk into categories and relating them to existing literature has made the main trends of children's minds as evidenced in their data more accessible to me. I am further aware that it is however nothing more than a general outline, which could differ if a new sample was selected or if a different method was used. However it is hoped that some of the main trends would be discernable in any sample as Piaget sees basic cognitive structures as invariate. I will summarise the findings in the conclusion.

CHAPTER SIX: CONCLUSION

The sorting of the drawing and verbal descriptions yielded two main categories: the A1 Two dimensional rendering of space and the B1 Enumerating elements, each represented by 14 children. Both these categories have a strong link with another category, which in both cases is represented by another 6 children.

The A1 Two dimensional rendering of space can be linked to A2 Extended ground area with sky as this represents a two dimensional organisation of space but with a more expansive sky and solid earth area.

In the talking categories there is a similar link between B1 Enumerating elements and B3 Enumerating elements and 'T' actions, where the latter extends the first with an inclusion of a reference to,the speaker. In both cases the linked category, represented by 6 children, adds another element. They can be seen as a step toward a next phase yet qualitatively they remain within the fundamental categories of a two dimensional space scheme and basic enumeration of elements.

I can therefore conclude that half of the sample's children are represented in the Two dimensional rendering of space categories from a drawing perspective, inclusive of the linked category. The same applies to the Enumerating categories of language usage, which is also represented by half of the children.

These categories emerge as clear dominant patterns in the data of the sample. The A1 Two dimensional rendering of space coincides with Lowenfeld's Space Scheme for children of approximately the age of 6 to 9 years. It would therefore be expected that this category would be large in view of the age range of 5 to 10 years in this sample.

X-Ray is a form of portrayal that is essentially two-dimensional in its portrayal, where the use of transparency renders the inside and outside reality of cars, houses and other

objects on one plane. It is the absence of a depth perspective that makes this possible for the child (Arnheim, 1971). This could explain its frequent occurrence throughout the sample. In an age group of 5 to 10 years where the **A1** Two dimensional rendering of space is the natural and most frequent occurring category according to Lowenfeld's Schematic Stage, the co-occurrence of the X-Ray phenomenon would be expected.

It is only in drawings that do display a full awareness of a depth perspective that the incidence of the use of X-Ray would seem out of place from Arnheim's perspective. In this sample there are no X-Ray instances in the AS Connecting middle ground moving toward perspectival drawing category, only in the :A2 Extended ground area with sky where it still can be expected to a diminishing extent. It can therefore be said that from Arnheim's perspective the co-occurrence of X-Ray in the total age range of the sample is to be expected and constitutes no real surprise or incongruence. In this sense the **A1** Two dimensional rendering of space and *A2* Partly representa1 including X-Ray vision and AlO X-Ray can be seen as belonging to the flat conception of the representation of space so characteristic of the Schematic Stage.

The pre-primary children fall generally into the A6 Elemental, and A7 Non-representational categories, with two instances in the **A1** Two Dimensional rendering of space category. Immediate realism is evident in the apparent random positioning of objects in the elemental drawings. Syncretic thought is evident in the partial solutions of the integration of space on a page as seen in the framed drawings, which include a bird's eye view as well as a frontal representation of parts of the drawing. The fact that these kinds of drawings are clustered in the 5 year olds and one Grade 1 child coincides with Lowenfeld's Pre-Schematic Stage.

Both categories of Enumerating elements represent the dominant form of language usage. I relate this speech form to early language development, where children use single or two word combinations before the construction of a sentence occurs in language. I argued on the basis of Sinclair's findings (1992), that children may intuitively resort to such language usages, when they are concentrating on something else, in this case their drawing.

Another suggested reason was the inability to express oneself adequately in English in the case of second language English speakers.

A third reason given for the A1 Enumerating elements category is the basic tendency of young children to juxtapose items in their thinking rather than to relate them. Hence the listing of objects according to primitive subjective associations characterise young children's enumerations. Older children's enumerations do not relate items, but include more detail and may even group items together that belong together, without spelling out the relations (eg ill 29,30). It appears from the sample that many older children retain the simple tendency to list items without further relating them with each other. Enumerating, then, is a language form that is exemplified throughout the sample.

A second major language usage, which contrasts with enumeration and which is represented by 8 children, is B2 Description of actions. Here activities as such form the focus and instead of a string of words and two word combinations found in enumerating, children use full, if simple sentences, in their language usages. While justapositioning denotes an absence of relations (Piaget, 1928), the use of a sentence denotes the syncretic understanding which encompasses the formation of the whole sentence. It presupposes the understanding of the interrelated meaning and position of words and can be seen as a next step in the development of thinking as it moves beyond mere representation (enumerating or naming) to a description of what are essentially relations, the descriptions of people's actions in sentences. Description of action represents a step closer to an awareness of the relationships of objects and people. It describes the interrelationship of the action and the one who carries out the action.

The B5 Anticipation of future actions and/or a referring back to past actions can be linked to B2 Description of actions category. It simply widens the actions to an inclusion of future and past actions. This means that after the combined enumerating categories, represented by 20 children the combined Description of actions categories represent the next largest group of 11 children. The average age represented by the B2 Description of Action category itself is slightly older than the basic B1 Enumerating

elements category. (This age difference may have been slightly diminished by a possible overrepresentation of bilingual children in the upper age group of the A1 Enumerating elements). Such an age distinction corresponds with Piaget's general observation that the awareness of social reciprocity and relativity flows from a diminishing antagonism betweenjuxtapositioning and syncretic awareness, which are complimentary tendencies.

Generally speaking these groupings evidence a trend from enumeration and transductive thought to an inclusion of a focus on the totality of spatial organisation and the sentence structure as would be expected from a Piagetian understanding.

A unique group of drawings from the total sample's perspective is the A5 Connecting middle ground moving toward perspectival drawing. They are unique in that they herald a new stage. They do not include pre-primary or Grade 1 children, only Grade 2 and Grade 3. Noteworthy in this respect is that none of the 8 oldest children, born in 1986 are represented in this group. This may indicate that children achieve this stage very much at their own pace. Yet it may also indicate that it is slightly misleading to simply look at the categories separately. Some children in the A1 Two dimensional rendering of space category do for instance achieve a remarkable fluidity of line and integration of figure drawing yet give no reference to a plane as yet, remaining in a top/down space scheme. Children seem to move stepwise from one stage to the next and steps differ in individual cases. This can be seen in other cases where the plane is suggested by the overlapping of earth and sky items, yet they remain situated in empty or two dimensional space. The plane is suggested rather than attained.

Where the plane is achieved as in the 4 drawings (31,34,35 and 37) in the sample a new sense of unmistakable wholeness and integration is evident in the composition, despite the absence of an awareness of a vanishing point. This new sense of wholeness and integration can be characterised as the attainment in greater measure of the priority of relations Piaget uses to describe this development in the child's conceptualisation of his world. This same process can be followed in some of the B4 Narratives, some of the B2 Descriptions of actions, in B6 Use of reflective or hypothetical constructs and in B8 Summarising language usage categories as outlined in the discussion.

Generally, as demonstrated in the sample, children move from an absolute realism orientation, where objects are placed side by side, to an integration of reality by means of an inclusion of the representation of the relativity of relations in an overall space scheme. This shift is possible because of the child's progressive ability to socialise and enter other points of view (Piaget, 1959).

Language usage accordingly moves from a naming, to a description of external objects and events, to an inclusion of wider perspectives, be it introspective, past/future or imaginative references.

Children's thinking moves from a subjective associating to an establishing of logical relations between objects and later implied relations of thoughts. Children become aware that they themselves have a place in the scheme of things and this leads to the discovery of the reciprocity of relations.

Children's thought becomes directed and moves beyond the tendency to go from the particular to the particular instance (transductive thought). Children acquire the ability to make logical connections, eg to classify and to make hypothetical deductions, which are examples of reversibility of thought and the ability to infer relations, that is to generalise. Hence children learn to move beyond their sense boundness and beyond immediate realism by degrees.

The sample of drawing and talking data is of interest as the data reveal some of the main conceptualisation strategies that characterise Piaget's cognitive stages from an empirical perspective. The sample further illustrates the progressive and individual developmental steps children take in their conceptualisations. The aim of giving a comprehensive overview of children's drawing, talking and thinking strategies has therefore been achieved.

There are several weaknesses in the design of the study. One obvious shortcoming is the use of first and second language speakers in the same sample. The descriptions of

the drawings with the resulting different language competences of the children in the study makes generalisations difficult, if not impossible. It can however be argued that language has an auxiliary function in the study and that using mothertongue field workers would have complicated the study in other ways. A positive aspect of this state of affairs is that the population of children, as it existed at this school, was diverse and that the study includes this diversity.

The actual sample is small and the size of the sample was mainly determined by the dwindling Afrikaans population at the school. From a practical point of view a larger sample would have become unwieldy and difficult to manage within the constraints of this dissertation. The test therefore of this study would be to see if a larger sample would yield similar trends in drawing, talking and thinking, ie to see if the categories hold. Such a further study would reveal more clearly the age related trends.

Another limitation is the absence of a study of contextual factors. Language development of children is not commented on in depth in this study. The study is descriptive and does not aim to arrive at proven conclusions, but to arrive at some understanding of drawing and talking as forms of self expression. As somebody who works with children of this age group on a daily basis and is not a specialist in the fields of linguists or psychology, this understanding is a significant professional contribution.

REFERENCE LIST

Anisfield, M and Tucker, R.G. (1967) English pluralization rules of six year old children. *Child Development,* 38, 1202-1217.

Arnheim, R. (1954) *Art and visual perception: A psychology of the creative eye.* Berkeley: Univ. of California_ Press.

Arnheim, R. (1970) *Visual Thinking.* London: Faber & Faber.

Bishop, D. and Bourne, E. (1985) Do young children understand comparatives? *British Journal of Developmental Psychology,* 3,123-132.

Borduin, C.M.; Mann, B.I.; Cone, L.; Borduin, B.J. (1990) Development of the concept of family in Elementary School children. *The Journal of Genetic Psychology,* 15, 1,33-43.

Bremmer, I.G. (1985) Provoked use of height in pictures as a depth cue in young children's drawings. *British Journal of Developmental Psychology,* 3,95-98.

Case, R. (1991) *The mind's staircase.* Hillsdale, N.J.: Lawrence Erlbaum Publishers.

Chen, Q.; Goldsmith, L.; Feldman, D.H. (1994) The crafted world: Children's understanding of the distinction between artifacts and natural objects. *Child Study Journal,* 24,2,89-105.

Chomsky, N. (1968) *Language and mind.* New York: Harcourt, Brace & World.

Clark, H.; Clark, E. (1977) *The psychology of Language; An introduction to psycholinguists.* New York: Harcourt Brace lvanovich.

Clarke-Stewart, A. & Friedman, S. (1987) *Child development: infancy through adolescence.* New York: John Wiley & Sons.

Coie, J.D.; Constance, P.R. and Farnhill, D. (1975) Specific transitions in the development of spatial perspective taking. *Developmental Psychology,* 9,2, 167-177.

Colomb, C. (1973) Children's representation of the human figure; the effects of models, media and instruction. *Genetic Psychology Monographs,* 87-88,197-253.

Colomb, C. (1974) *Young children's sculpture and drawing: a study in representational development.* Cambridge: Harvard University Press.

Crook, C. (1984) Factors influencing the use of transparency in children's drawing. *British Journal of Developmental Psychology,* 2,213-221.

Crystal, C.A. (1991) *A dictionary of linguistics and phonetics.* Oxford: Basil Blackwell.

De Kane, T.P. (1980) Young children's drawings as related to basic communication skills. *Research Monograph,* 31, 1-67.

Dixon, I. and Moore, F.M. (1990) The development of perspective taking: understanding differences in information and weighting. *Child Development,* 61,1502-1513.

Donaldson, M. (1970) *Children's minds.* New York: Norton.

Ferreiro, E. (1984) The underlying logic of literacy development, from *Awakening to literacy.* Goelman, H., Oberg, A.A. and Smith, F. Exeter, N.H.: Heineman Educational Books.

Ginsburg, H.; Opper, S. (1969) *Piaget's theory of intellectual development.* Englewood Cliffs, N.J.: Prentice Hall.

Halford, G.S. (1996) Central conceptual structures; achievements and challenges. *Human Development,* 36,300-308.

Harre, R. and Secord, P.F. (1972) *The explanation of social behaviour.* Oxford: Basil Blackwell.

Harris, J. (1990) *Early language development implications for clinical and educational practice.* London: Routledge.

Harris, D.B. (1963) *Children's drawings as measurement of intellectual maturity.* New York: Harcourt, Bace and World.

Henkes, R. (1989) The child's art expression. *Early Child Development and Care,* 47,165-176.

Kellogg, R. (1970) *Analysing children's art.* Mayfield Publishing Co. Palo Alto: California.

Kogan, N. and Saarni, C. (1989) Cognitive styles in children: some evolving trends. *Early Child Development and Care,* 43,101-120.

Koppitz, E.M. (1968) *Psychological evaluation of human figure drawing.* New York; London: Grune & Stratton.

Kosslyn, S.M.; Heldemeyer, K.H. and Locklear, E.P. (1977) Children's drawings as data about internal representations. *Journal of Experimental Child Psychology,* 23,191-211.

Laupa, M. and Turiel, E. (1993) Children's concepts of authority and social contexts. *Journal of Educational Psychology,* 85, 1,191-197.

Lewis, H.P. (1967) Correlates of developmental levels of spatial representation in children's drawings. *Studies in An Education,* 8,2,46-55.

Lewis, H.P. (1985) Children's drawings of cubes with iterative and noniterative sides. *Studies in An Education,* 26,3,141-146.

Lowenfeld, V. (1945) Tests for visual and haptic aptitudes. *American Journal of Psychology,* 58, 1, 100-111.

Lowenfeld, V.; Brittain, W.C. (1975) *Creative and mental growth.* New York: Mac Millan Publishers Co.

Machover, K. (1953) Human figure drawing. *Journal of Projective Techniques,* 17,1,85-91.

Mathew, J. (1984) Children's drawings: Are young children really scribbling. *Early Development and Care,* 18,1-2,1-29.

McCarty, S.A. (1924) *Children's drawings: A'study of interests and abilities.* Baltimore: Williams & Williams Company.

McNeill, D. (1970) *The acquisition of language: the study of developmental linguistics.* New York: Harper & Row.

Mitchelmore, M. (1980) Representation of regular space figures. *Journal for Research in Mathematics Education,* 83-93.

Mouton, J. (1996) *Understanding social research.* Stellenbosch: J L van Schaik.

Mussen, P.H.; Conger, J.J.; Kagan, J.; Houston, A.C. (1984) *Child Development and Personality.* New York: Harper & Row.

Odhams Dictionary of the English Language (1955) London: Odhams Press Limited.

Piaget, J. (1977) *The development of thought.* Oxford: Blackwell.

Piaget, J. (1970) *Genetic Epistemology.* New York: Columbia University Press.

Piaget, J. (1928) *Judgement and reasoning in the child.* London: Kegan Paul, Trench, Trubner.

Piaget, J. (1959) *The language and thought of the child.* London: Routledge & Kegan Paul Ltd.

Piaget, J. (1973) *The child's conception of the world.* London: Paladin.

Porath, M. (Sept. 1993) Gifted young artists: developmental and individual differences. *Roeper Review,* 16,1,529-533.

Reber, A.S. (1985) *Dictionary of Psychology.* London: Penguin Books.

Roche, R.S. (1983) *Children's justifications of preference for other children's drawings.* Masters Thesis. University of Natal: Durban.

Sinclair, H. (1992) Changing perspectives in child language acquisition. ln: *Piaget's theory, prospects and possibilities.* Edited by Beilin, H., Hillsdale, N.T: Erlbaum, L.

Sophian, C. (1995) Representation and reasoning in early numerical development: counting, conservation and comparisons between sets. *Child Development,* 66,559-577.

Svenson, C.H. (1968) Empirical evaluations of human figure drawing 1957-1966. *Psychological Bulletin,* 70, 1,20-44.

Tudge, J.R.H. and Winterhoff, P.A.; Vygotsky, Piaget and Bandura: perspectives on the relations between the social world and cognitive development. *Human Development,* 36,61-81.

Van Sommers, P. (1984) *Drawing and cognition.* Cambridge: New York: Cambridge University Press.

Verteramo, U.R. (1988) *The development of children's drawings: An annotated bibliography.* Indiana University.

Wellman, H.M. and Hickling, A.K. (1994) The mind's "I": chiJdren's conception of the mind as an active agent. *Child Development,* 65,1564-1580.

Wi11ats, J. (1997) How children learn to draw realistic pictures. *Quarterly Journal of Experimental Psychology,* 29,367-382.

APPENDIX A

>ATE: _____ SCHOOL _____

'UPIL: ---------- CLASS: _____

TASK 1: In the space below, draw any picture you want to.

COMMENTS:

DATE: _____ _ **SCHOOL:** _____

PUPIL _____ **CLASS:** _____

TASK 2: After the child has drawn her/his picture, ask her/him **to teil you about** it. **Write down everything she/he says.** Te!! her/him, ·Look, f am writing down -everything you say **about your picture.'"**

COMMENTS:

APPENDIXB

The following combinations of drawing and talking categories were found and I have labelled them C.l-C.24 in order to distinguish them from the drawing and talking categories (respectively A.l-A.10 and B.1- B.8).

C.1 Two dimensional rendering of space/Enumerating elements.

C.2 Two dimensional rendering of space/Description of actions.

C.3 Two dimensional rendering of space/Enumerating elements and "!"actions.

C.4 Elemental/Enumerating elements.

C.5 Partly representational including X-Ray vision/Enumerating elements.

C.6 Extended ground area .with sky/Anticipation of future and/or a referring back to past actions.

C.7 Extended ground area with sky/Enumerating elements and "I" actions.

C.8 Partly representational including X-ray vision/Narrative.

C.9 Connecting middle ground moving toward perspectival drawing/Narrative.

C.10 Partly representational including X-Ray vision/Use of reflection or hypothetical constructs.

C.11 Conceptual/Use of reflection or hypothetical constructs.

C.12 Extended ground area with sky/Enumerating elements.

C.13 Extended ground area with sky/Use of reflection or hypothetical constructs.

C.14 X-Ray/Description of actions.

C.15 Two dimensional rendering of space/Summarising.

C.16 Extended ground area with sky/Description of actions.

C.17 Partly representational including X-Ray vision/Description of actions.

C.18 Framed/Enumerating elements.

C.19 Framed/Enumerating elements and "I" actions.

C.20 Framed/Anticipation of future actions and/or a referring back to past actions.

C.21 Framed/Egocentric identification.

C.22 Connecting middle ground moving toward perspectival drawing/Enumerating elements.

C.23 Connecting middle ground moving toward perspectival drawing/Enumerating elements and "I" actions.

C.24 Person only/Anticipation of future action and/or a referring back to past actions.

DATE: SCHOOL:
PUPIL: CLASS:

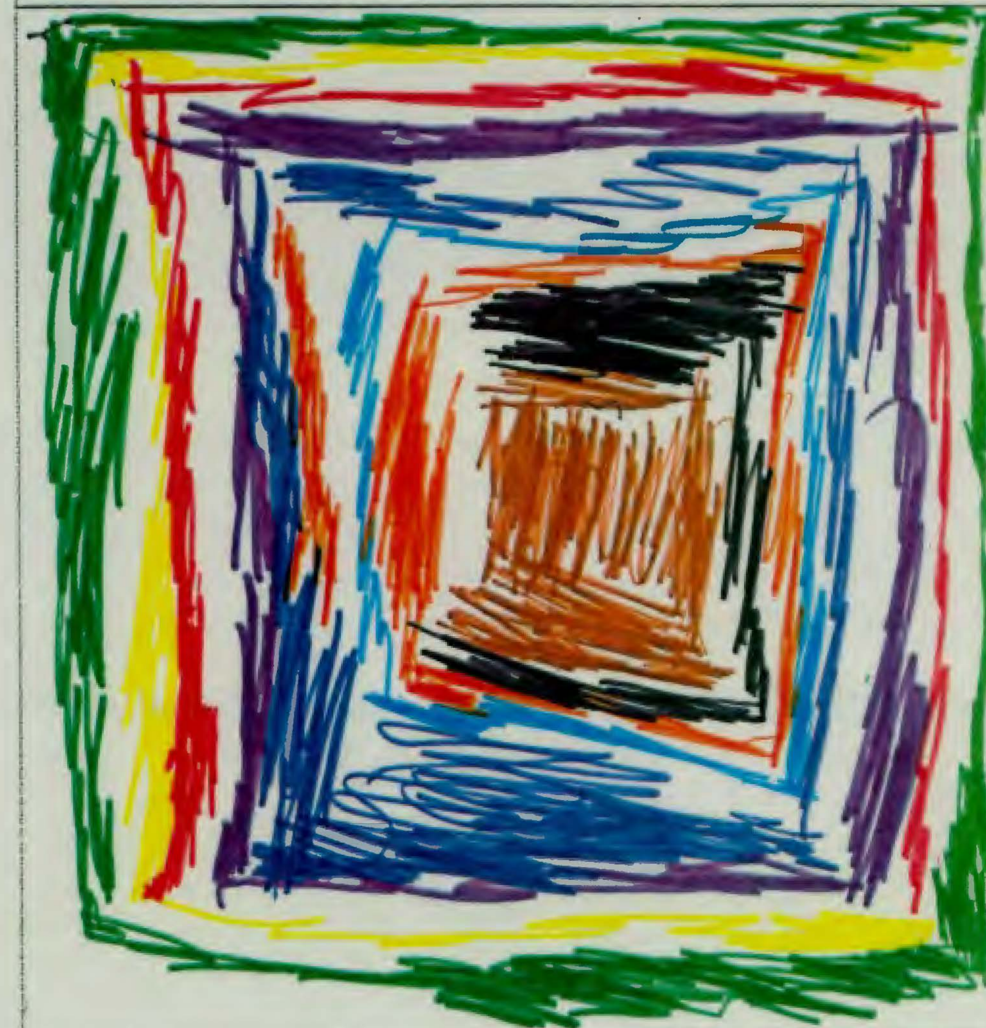
TASK 1: In the space below, draw any picture you want to.

COMMENTS:

1

DATE: SCHOOL:
PUPIL: CLASS:

TASK 1: In the space below, draw any picture you want to.



COMMENTS:

He first started to copy T (left corner)
His sister is teaching him to write.
Took him sometime to understand what I meant.
He is only beginning to pick up lay
His sister who is in grade 1 is he

2

No I

"My mother is standing on the other side and me and my hrother are taking a photo". *(Where are you?)* "We're at home. We're standing in the garden".

No 2

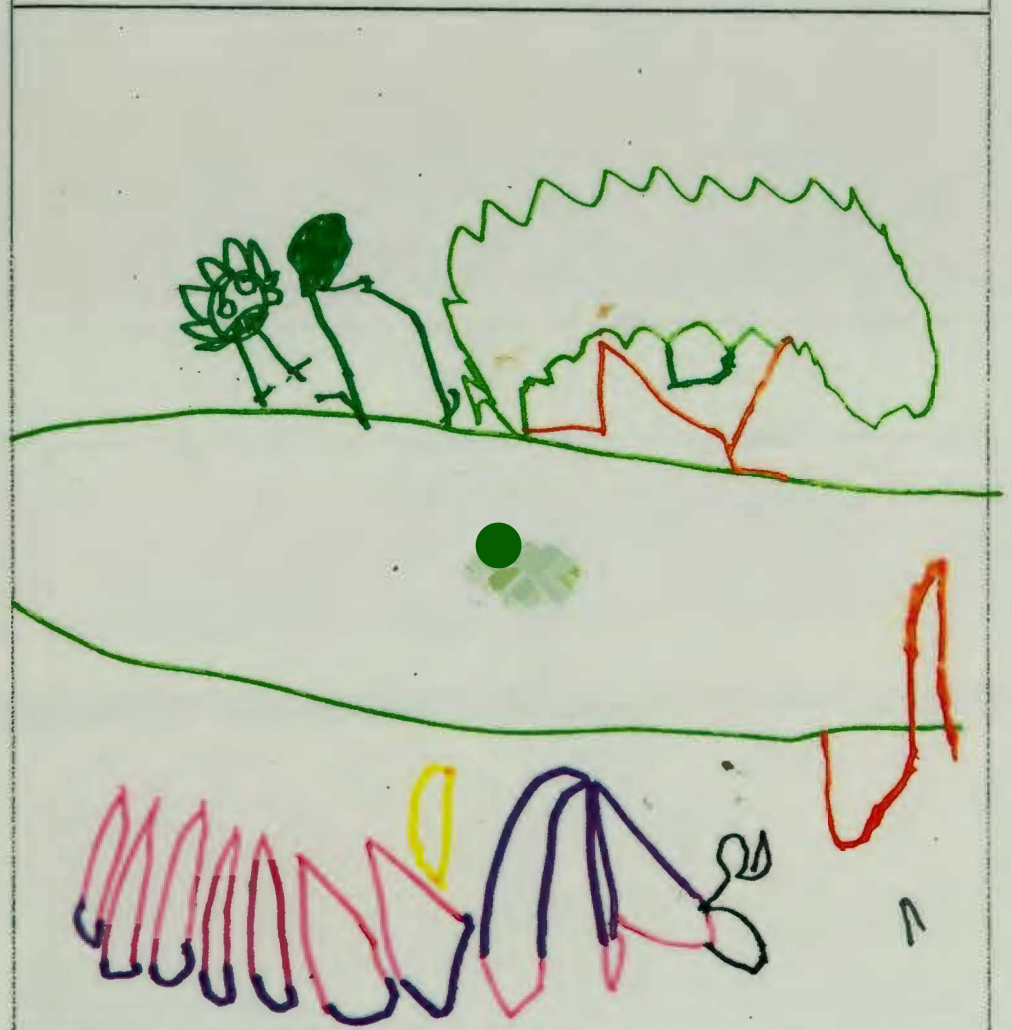
"Draw" (repeats it twice).

(The hoy is only learning to speak English al school. lie lilts his shoulders as if to say "I don't know").

DATE: ts;eca,..t SCHOOL:

PUPIL: CLASS: ff,

TASK 1: In the space below. d,:ew any picture you want to.

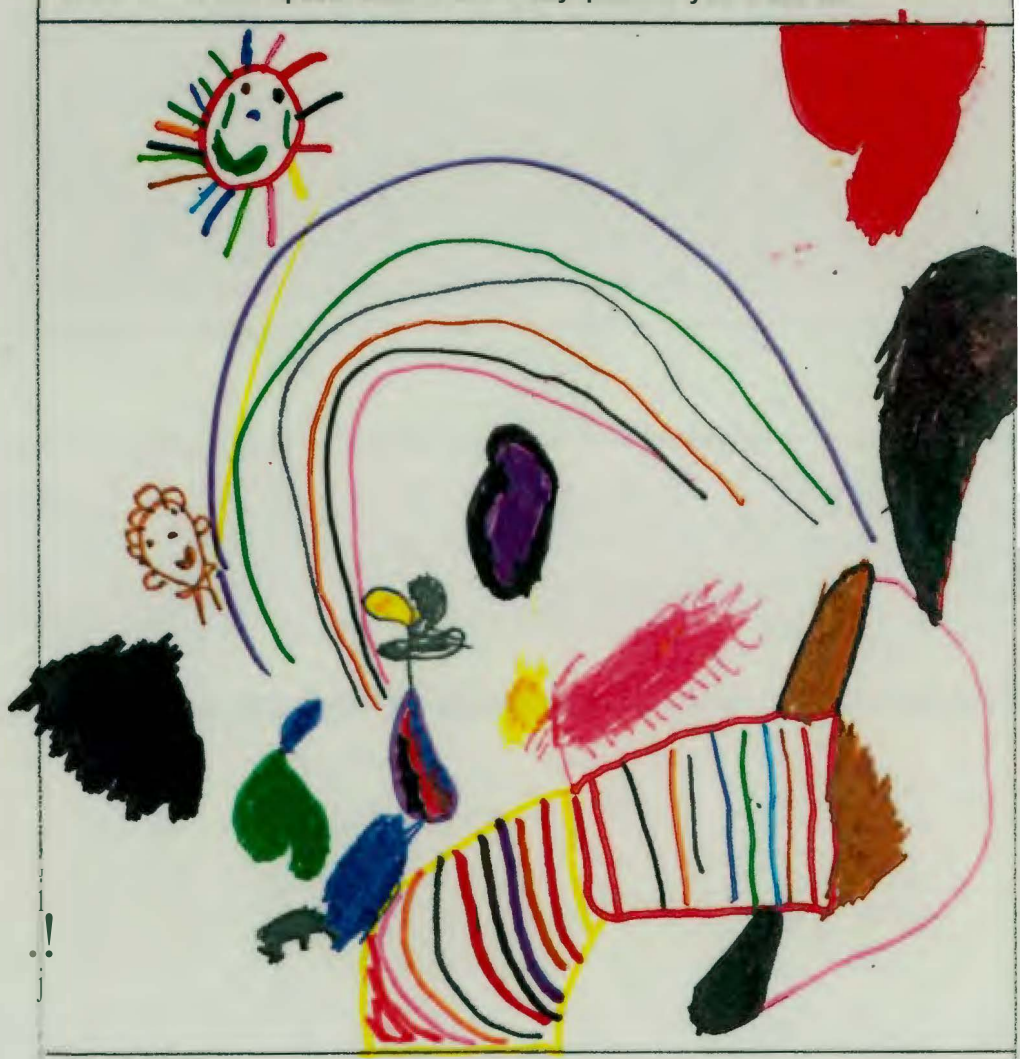


COMMENTS:

DATE: fio(<2.to)/iii SCHOOL:

PUPIL: CLASS: PP2

TASK 1: In the space below. draw any picture you want to.



COMMENTS:

No 3

"This is patterns. This is a hanana. This is a draw. This is a duck. This is a woods. the trees and there is a number like that and here is the finwer. This and this.

This is another patterns.

This is a name of a .. fpr apple".

No 4

"A rainhPw. moon (points to left top side of picturl'l. a heart. rurler. spitll-r. hird (tourhes shape 011 the left or red spider). key <red. right top corner). worm (black right side). my cousin (person left of rainhow). plates (him: and grey). chair (points to puq1le with hlal'k arou1,1d it."

DATE: SCHOOL:
PUPIL: CLASS:

TASK 1: In the space below. draw any picture you want to.

COMMENTS:

DATE: SCHOOL:
PUPIL: CLASS:

TASK 1: In the space below. draw any picture you want to.

COMMENTS:

No 5

"A man." *(And It'lat else).* "I stayed at home. I saw a tree, a fly-kite. I can kick a ball. I made the triangle house. That's all."

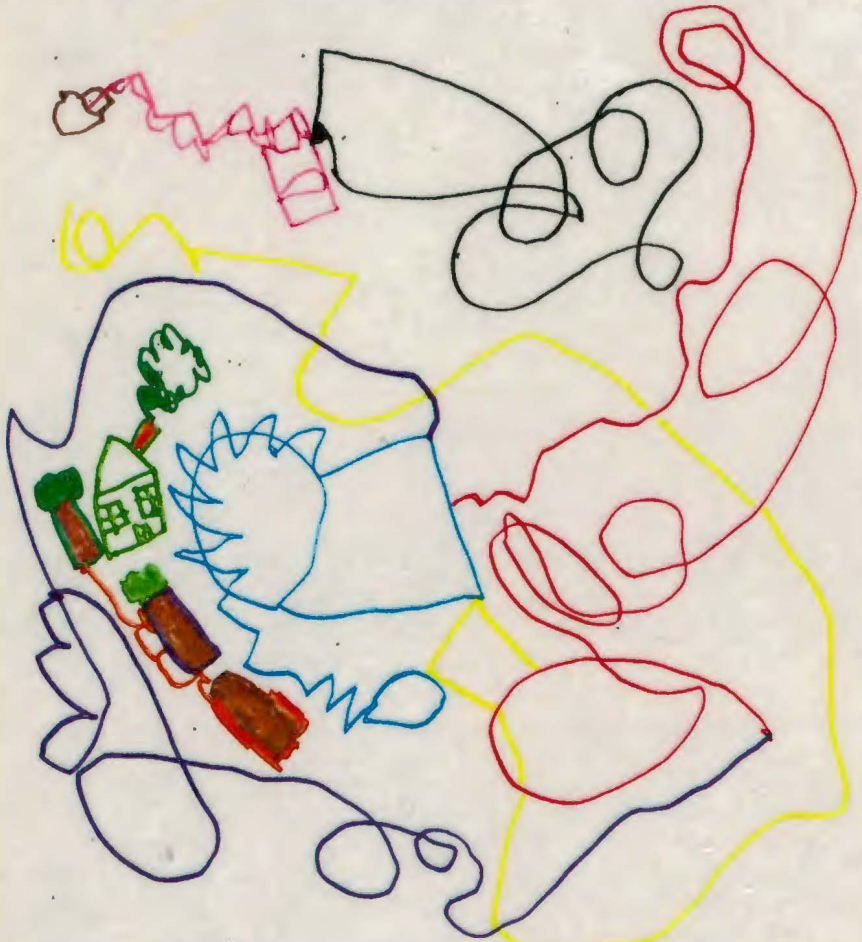
No 6

"I wrotet a house and I wrotet a little girl. And I wrotet a little..mmmh...this (going over whole area).· She is walking into the house and she is going to cook. Then she is going to eat and then she is going to sleep. That's all."

DATE: ...apr... SCHOOL: ...

PUPIL: ... CLASS: PP1

TASK 1: In the space below, draw any picture you want to.



COMMENTS:

DATE: ...Jan... SCHOOL: ...

PUPIL: ... CLASS: PP1

TASK 1: In the space below. draw any picture you want to.

COMMENTS:

No7

"I make a lines. And also trees. Mmh.. I make brown with a bird with a cap on. Only that". ***(Are you sure?)*** "Yes."

No 8

"This is a bus points to black vehicle) and a heart, house (touches small orange one) and another house. Two only, only two. Just that, ja."

No 9

"My sister and then my cousin. And the flowers and the clouds and the sky."
(What are they doing, your sister and your cousin?) "They're walking."

No 10

"This is a jet, house, tree, sun, sky. Did you write sky yet and grass (no) sun? I think that's all."

DATE: 11 4r;-J SCHOOL:

PUPIL: CLASS: Pf,

TASK 1: In the space below. draw any picture you want to.

COMMENTS:

DATE: Uofl,, «1(SCHOOL:

PUPIL: CLASS: ee,

TASK 1: In the space below. draw any picture you want to.

COMMENTS:

No 11

"I made a double storey. *(Who lives in it?)* "My cousin. She likes flowers, but she picks her flowers from her mommy. Mommy says that is nice flowers. She likes playing with her brothers, but she is a small little baby." (She *is smaller than you?)* "Yes she is one year oid. But she crawls up the stairs all day. Her mommy puts a pillow there. It is difficult to let her go down for she falls there. There is no handles or !lomething. It is a douhle storey. There is no nothing over there. My aunty put!l a pillow there so that she can't go over" (!lhow!l me on drawing). "There could be a light over there. She can jump and get full of blood because of the glass. My aunty is afraid because she can jump."

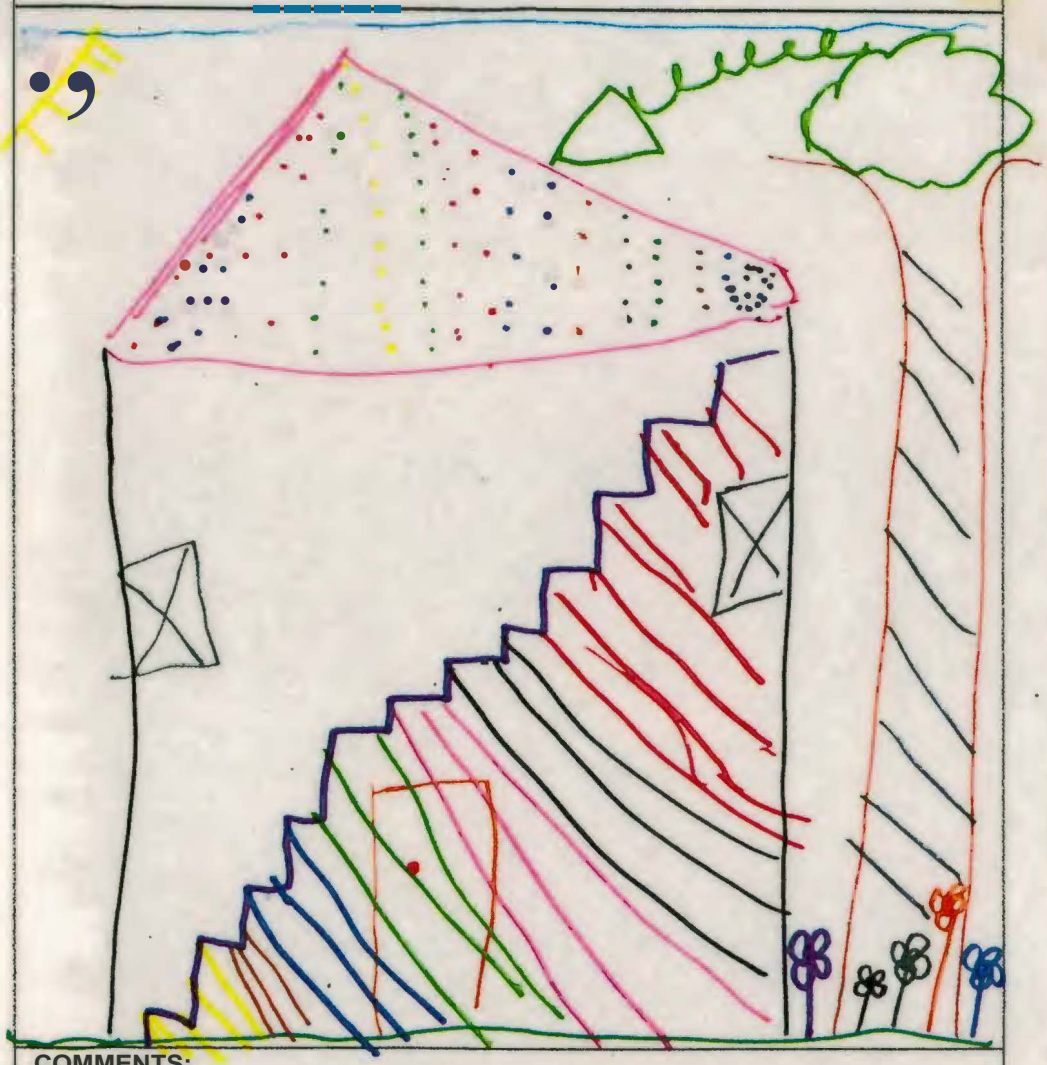
No 12

"I made a girl and some flowers and the grass. Two butterflies and one bird. There is one boy, one bird, one butterfly the girl and flowers" (points to items).

DATE: 11 April 1991 SCHOOL:

PUPIL: CLASS: Grade 1c

TASK 1: In the space below, draw any picture you want to.



COMMENTS:

DATE: 11 April 1991 SCHOOL:

PUPIL: CLASS: Grade 1c

TASK 1: In the space below. draw any picture you want to.

COMMENTS:

No 13

"I am playing here and my daddy is washing the car. My mammy is cleaning the house. That's all.

No 14

"I drawed a house, flowers, tree, a bird, birds, a sky, sun, me and a lollipop for me, I always like eating lollipops, a sun did I say a sun? A chimney for me and some windows and a door and a bell. I forgot to make that for where the bell stands in. (draws it) That's all."

DATE: 14 of April SCHOOL:

PUPIL: CLASS:

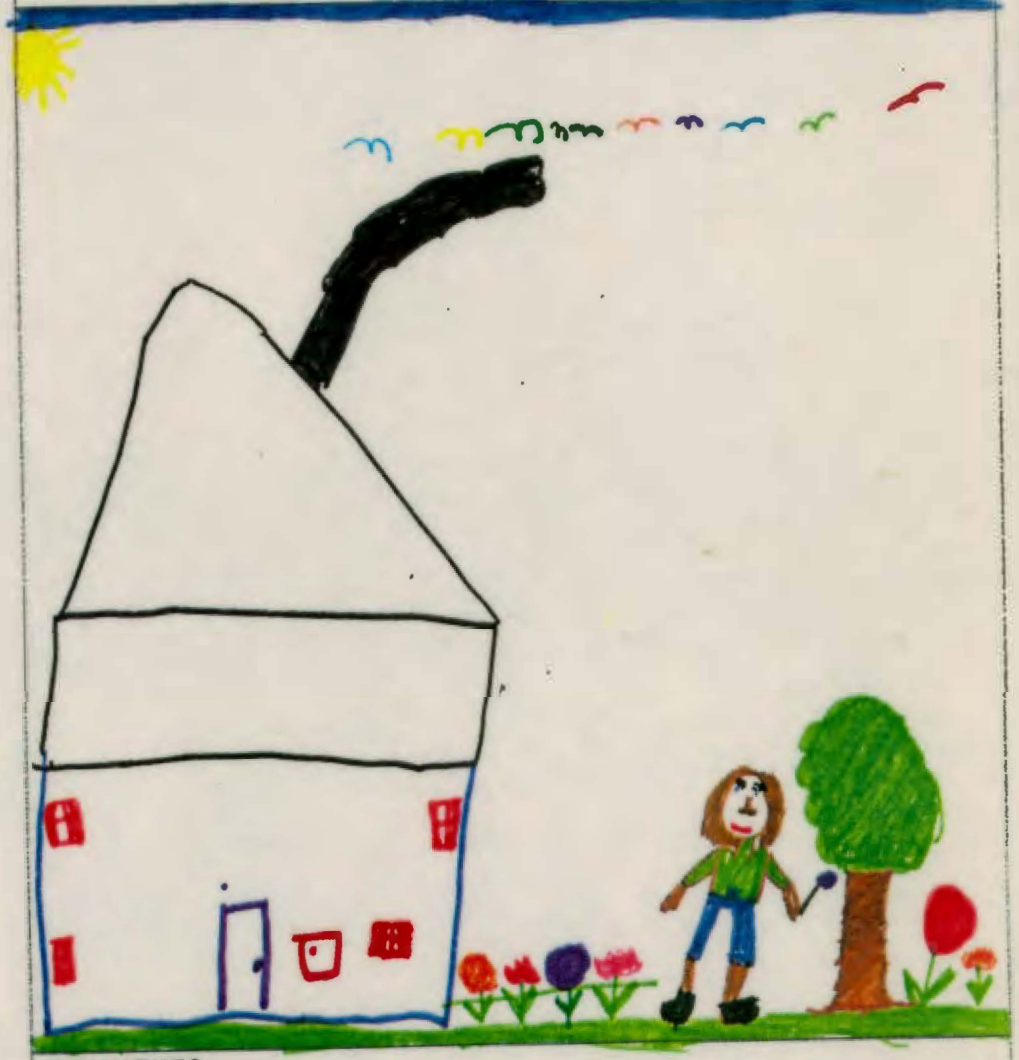
TASK 1: In the space below. draw any picture you want to.

COMMENTS:

DATE: 14th April SCHOOL:

PUPIL: CLASS: 2

TASK 1: In the space below, draw any picture you want to.



COMMENTS:

No 15

"I was playing basket ball, so my friend did jump for the ball and the ball went past him. So the aeroplane came past and the clouds came out. So I saw a worm. That's all."

No 16

"I did look at the walls" (proceeded to draw the left wall). "I did dream that I was sleeping then I did look at the heart. The bird was singing. The eggs was cracking. Finished."

DATE: [illegible] SCHOOL: [illegible]

PUPIL: [illegible] CLASS: 7b

TASK 1: In the space below, draw any picture you want to.

COMMENTS:

DATE: [illegible] SCHOOL: [illegible]

PUPIL: [illegible] CLASS: [illegible]

TASK 1: In the space below, draw any picture you want to.

COMMENTS:

DATE: SCHOOL:

PUPIL: CLASS:

TASK 1: In the space below. draw any picture you want to.

COMMENTS:

DATE: SCHOOL:

PUPIL: CLASS:

TASK 1: In the space below. draw any picture you want to.

COMMENTS:

No 17

"Mrs Pearson and hair, eyes and nose and neck, shoulders, hands. shoes, a leg, her feet, a sun" (smiles, can't find word for sky) *(sky?)* (Nods).

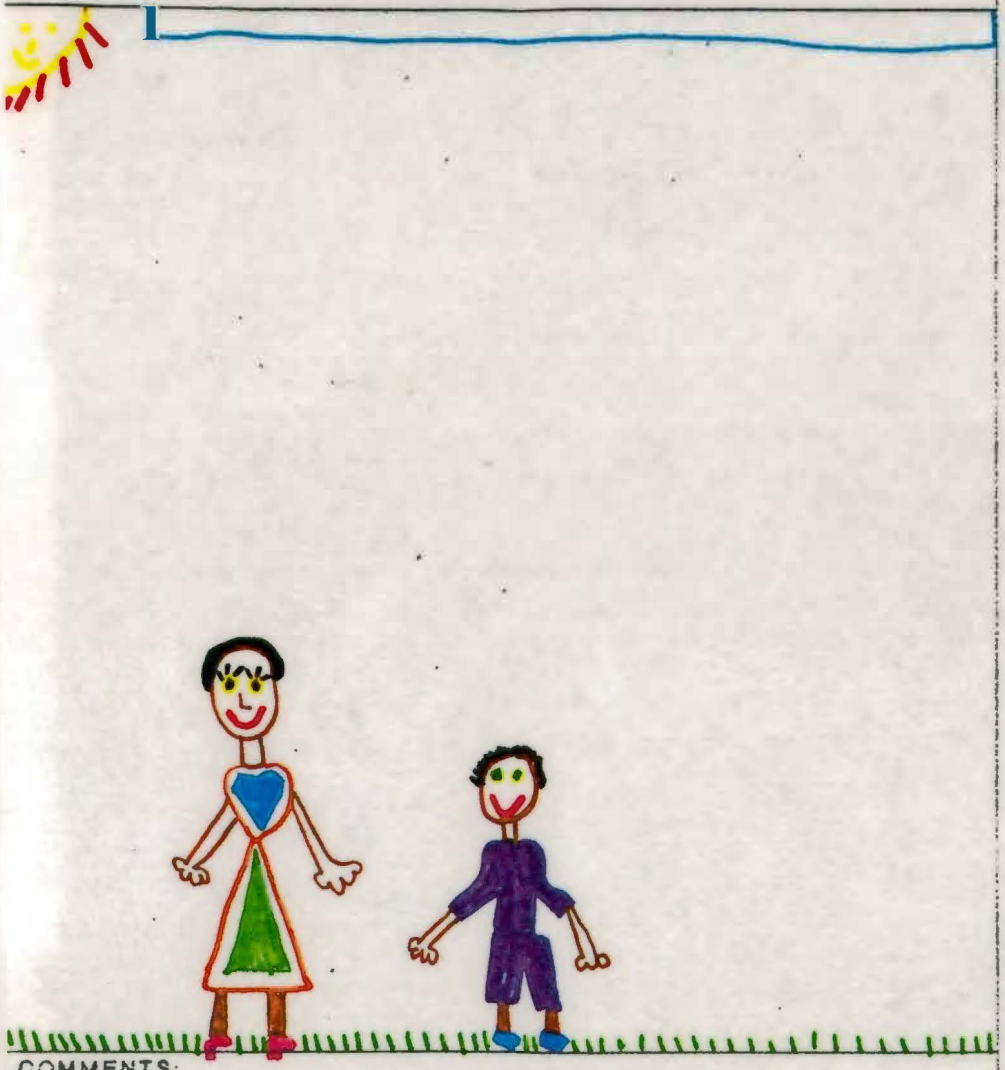
No 18

"It have brown eyes, red mouth and hlack hair. pink dress and purple shoes and it have red buttons and round head and small neck, five fingers and it have green grass, hrown nose and it have straight legs. That's all." *(Who i; it?)* "It is my sister." *(And what i.r htr name?)* "It is Yolanda."

>ATE: SCHOOL:

'UPIL: CLASS:

TASK 1: In the space below. draw any picture you want to.



COMMENTS:

nATE: SCHOOL:

PUPIL: CLASS:

TASK 1: In the space below. draw any picture you want to.

COMMENTS:

No 19

"Me and my mother are standing on the grass and smiling and my mommy is taking a foto of us. That's all."

No 20

"A Mom and a Dad.
Them two stand together.
Them smile.
Them two hold hands.
Them love together.
Them did get (wat is in Engels a foto'!) a r,hoto. And that's all."

DATE: _____ SCHOOL: _____

PUPIL: _____

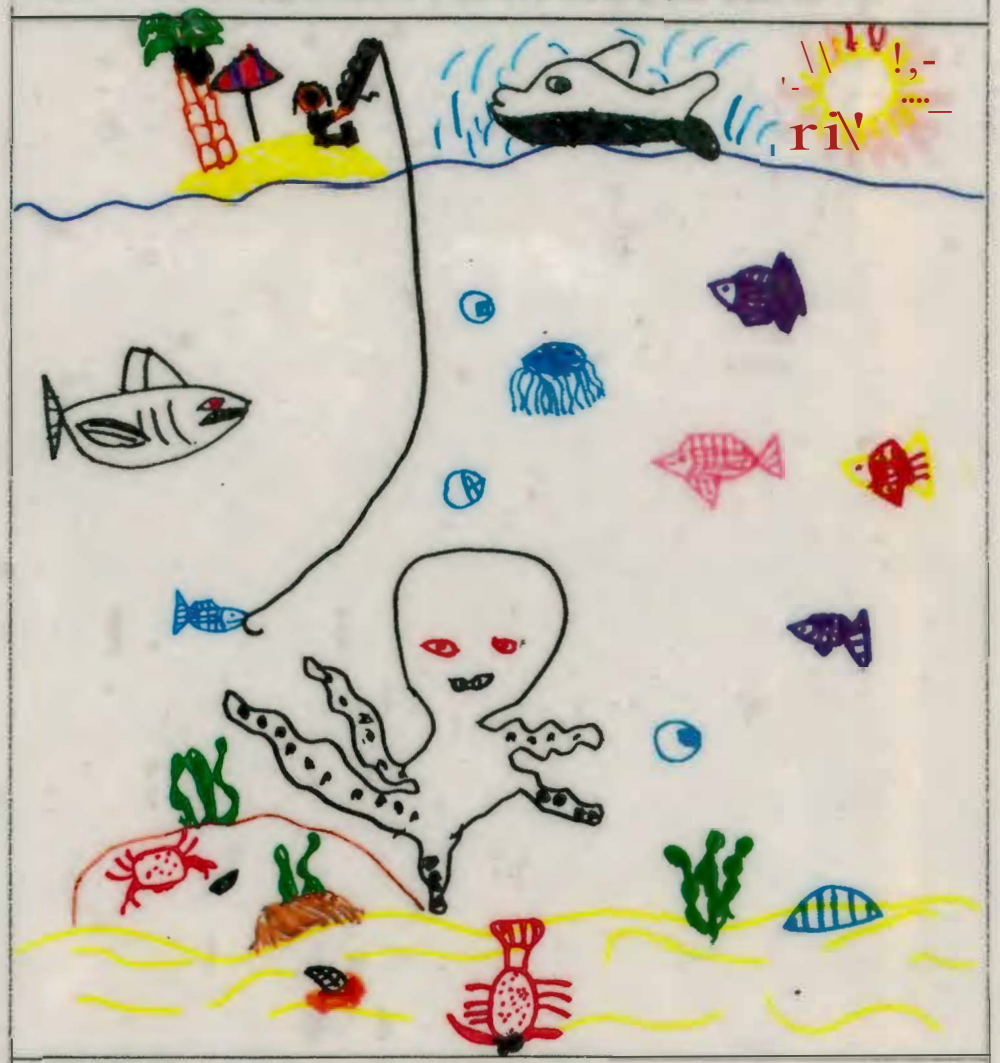
TASK 1: In the space below. draw any picture you want to.

COMMENTS:

DATE: _____ SCHOOL: _____

PUPIL: _____ CLASS: _____

TASK 1: In the space below. draw any picture you want to.



COMMENTS:

No 21

"There is flowers in my 1arden. There is sun; there is very hot today. There is two lovely "wolke" in the sky. And the cat is in "die" garden also.•

No 22

•A man fishin1; a dolphin jumping. The octapus is tryin& to &et the crab. And the shark is trying to &et the jellyfish, but tbe crayfllb wants to &et the periwinkle but the periwinkle went under the sand. Can you see the periwinkle? But I didn't know periwinklea are sand-creatures?

(Asud him how IN did brow?) I just heared it from my uncle. We were catchln& them. We were sayin&, there is one, there is one. there ii one. The man with the fishin& rod is tryina to aet tbeae fish. And mmh the crayfish also wants to act dial (blue sbell),but the soacreature's shell is closed. The dolphin ii jumplna to sec what the man is doina. And the seaweed is railina became the aeaweed doesn't want to &et toucben't.•

DATE: 11 of April 1991 SCHOOL:

PUPIL: CLASS: Grade 1d

TASK 1: In the space below, draw any picture you want to.

COMMENTS:

DATE: 11 - 0/0.;,,' SCHOOL:

PUPIL: CLAII:

TASK 1: In the space below, draw any picture you want to.

COMMENTS:

No 23

"I drawed hhmm a spaceman and jumping over the water, going 10 the earth away. And he is going hack to his eanh. A dinasour and the dinosaur is going to him 10 bite him. That's all."

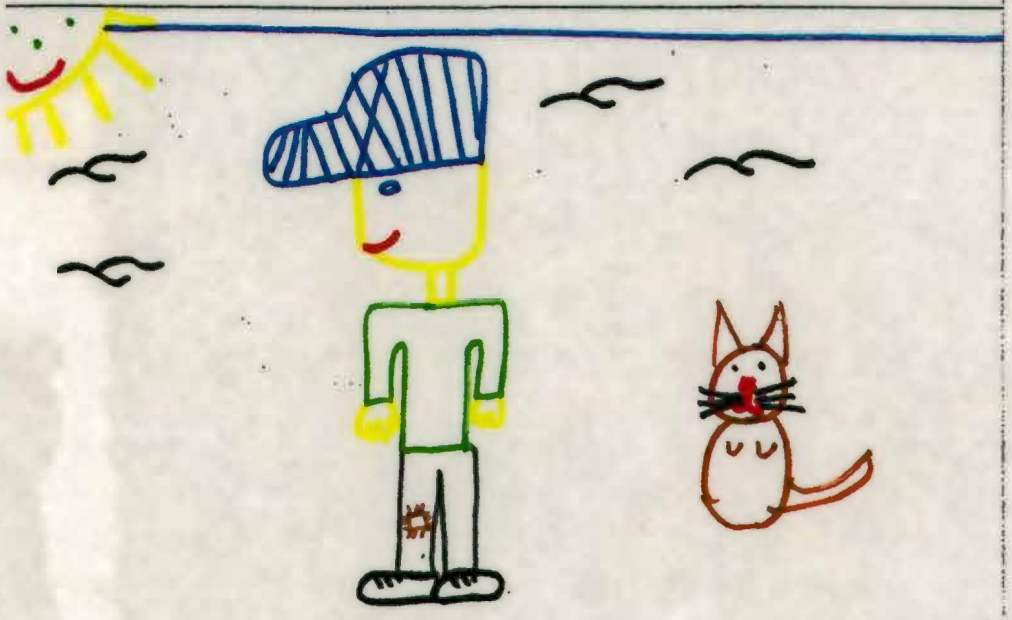
No24

"This is Ban Simpson standing on the grass and watching the other children play." *(Anything else?)* "Yes that is why he is wearing a cap because it was raining and it stopped raining now. He just came from soccer now. That's all."

>ATE: 1st of April SCHOOL:

•UPIL: CLASS: -{f<2ka—

TASK 1: In the space below. draw eny picture you want to.

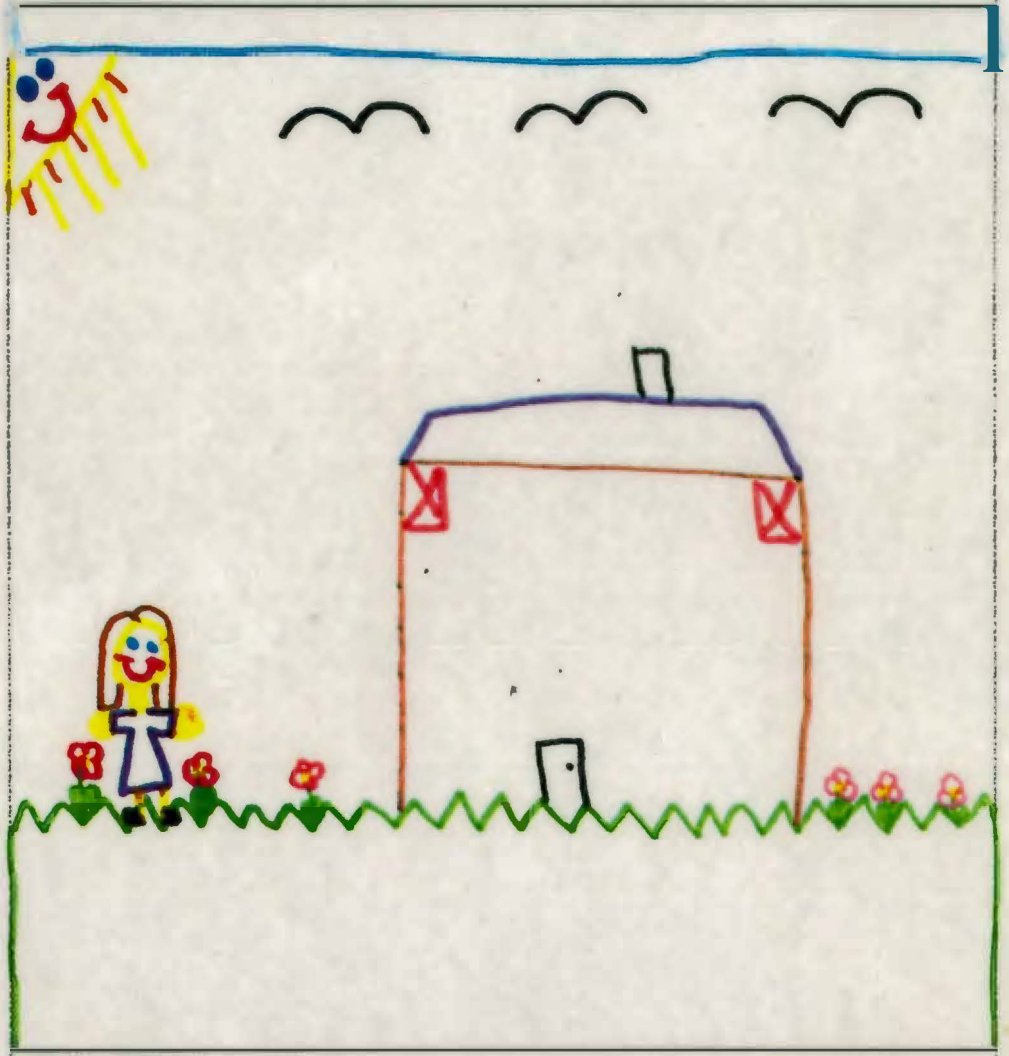


COMMENTS:

OATE: SCHOOL:

PUPIL: CLASS:

TASK 1, In the spece below, draw any picture you want to.



COMMENTS:

No 2S

"I drawed a boy and a cat and four birds and a sun, grass and sky. He has got a cap on and he has got a smiley face on. He has got grey pants on and he has got a light green t-shirt and he has got hlack shoes. And the cat has black whiskers and he has got a patch on his pants. That's all."

No 26

"This is my house. This is me. And this is my garden. And this is my birds (pause). And I have flowers (long pause). And I have red windows (pause). And I have a brown house And I have pink flowers. And I have red flowen. And I have a purple roof."

)ATE: Cawll/ff SCHOOL:

>UPIL: CLASS: 11s fJ«

TASK 1: h the space below. draw any picture you want *to.*

COMMENTS:

DATE: rrofa d SCHOOL: _,i._

PUPIL: CLASS: Vz Gr2

TASK 2: After the child has drawn her/his picture. ask her/him to tell you about It. Write down everything she/he says. Tell her/him, "Look, I *am* writing down everything you say about your picture.•

COMMENTS:

No 27

"Hnu e. on, wolke" *(In Engtls?)* "In Engels. Ballon, here hlomme, mannike, mannike, mannike, mannike (touches them in turn) venster, venster. venster. venster. Boom, oh ja, halwe maan. sorry."

No 28

"The hoy ran to the mole and he is looking at the rriole and he is digging in the ground." (Pam e)
(Whnu houst *is it?)* "ft is his mommies and his daddies. That's all."

DATE: 1<oj lt.p.;1 SCHOOL:

PUPIL: CL.All: 2c

TASK 1: h the space below. draw any picture you want to.

COMMENTS:

::>ATE: SCHOOL:

PUPIL: CLASS:

TASK 1: h the space below. draw any picture you want to.

COMMENTS:

No 29

"This is my sister and she is in a hut. There are some balloons and butterflies, some balloons and a balloon is a cat and another is a cat balloon. And a tree with cherries in it. And a flower and some grass and the sun with a face on. And blue sky and green grass and a flag and some lights and some triangles. (She draws another balloon). And a toy balloon."

No30

"The girl has a purple shirt. The butterflies are green, yellow, pink and orange. She is skipping with a green skipping rope. She has a blue pompom on her head. She has red shoes; the flowers are red. She has black hair, a red mouth. Her skirt is orange. The sky is blue. The sun is yellow and orange. The sun has a face on it. Her face is brown. She is skipping on grass.(pauses). She has black eyes. Finished."

>ATE: lj.et. o'"61 SCHOOL:

?UPIL: CLASS: C;,l2..6

TASK 1: h the space below. draw any picture you want to.

COMMENTS:

DATE: /asCG.ed SCHOOL:

PUPIL: CLASS:

1 TASK 1: h the space below. draw any picture you want to.

COMMENTS:

No 31

"I got a sun, sky, birds, butterfies, flowers, grass and I got a girl, a bag (points) on my back. I got a skirt, shoes and that's all." *(Is that you?)* "Yes."

No32

"Must I tell you this? (points to man).
(points to swings) That's the swings. That is the sun and this is the flowers, the junglegym and this is me (touches man). And this is mmhm (touches small child, hesitates a long time) This is me. And a bigger junglegym. This is a small one. Bigger one. What 'er stuff is this 'wolke' and the grass."

>ATE: 16 of April SCHOOL:

UPIL: CLASS: Gr 2 b

TASK 1: In the space below. draw an Y picture you want to.

COMMENTS:

DATE: 12 of April 202 SCHOOL:

PUPIL: CLASS: Gr 2

TASK 1: In the space below, draw any picture you want to.

COMMENTS:

No33

"There are so much flowers. The sun came out and the birds are coming. There is an apple tree and it is so hot today." (aside to me:) "Over here it is cold. And they are busy making a fire so the smoke is coming out. Now I am finished."

No34

"Three boys lived in a pink house. They, their Daddy went to work. He was a policeman and he came home at night and the three boys waved at him: Buy! His Mommy was making food for them. The next morning they went to school. They played basket ball at school. So they did lose. Then they came home and they played with the cars. Their Mommy went to a meeting. So they were waiting for their Daddy to come. Hhm. They slept late so they were playing TV games. They heard their Mommy was coming so they quickly went to bed. That's all."

DATE: SCHOOL:
PUPIL: CLASS:

TASK 1: In the space below, draw any picture you want to.

COMMENTS:

DATE: SCHOOL:
PUPIL: CLASS:

TASK 1: In the space below. draw any picture you want to.

COMMENTS:

No 35

"This is a sky and this is a yule, like a bridge. This is the cars." *(Do you want to tell me anymore?)* (Nods no). "This car is going this way and this car is going that way.•

No 36

"Me. She is wearing a skirt. She is going hy the shop. She is going to buy biscuits. Then she is going to go hack home. Then she is going to eat.•

DATE: _1]. (4,,c,f___ SCHOOL: _____ CLASS: P.1b

PUPIL: _____

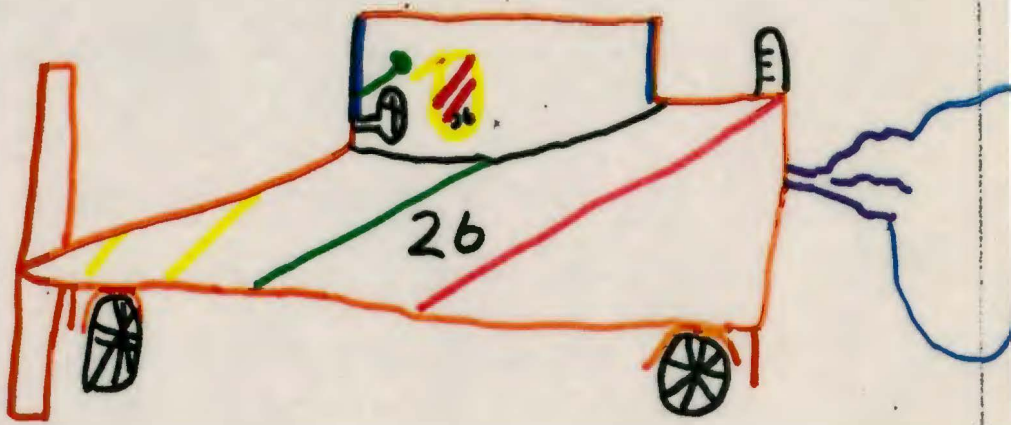
TASK 1: In the space beiow. draw any picture you want to.

COMMENTS:

:>ATE: _"?' -a,a,_ SCHOOL: _____ CLASS: P.1(

PUPIL: _____

TASK 1: In the space below, draw any picture you want to.



COMMENTS:

No37

"I was playing outside at home and I was thinking: It is so hot now. And I am wishing that it is going to rain. And I wish that I had fishes and I can play with them. And the sun is burning and it is hot and the stones are shaking. And she just wish the stuff and then she didn't know that the hills was at the back of her." (to me) "Do you have to fill up that whole page to me? (I nod no and she continues). "And she is looking up at the clouds and she is thinking it is going to rain. That is all."

No38

"It is that old fashioned sports car. It is a Ferrari. It has got a parachute, because if it goes fast, because sometimesthe brakes die. Because if you go too fast the engine will make the brake's capacity come off and then it needs the parachute, the parachute flies out. Sometimes it crashes in the wall and the parachute comes out. The driver is alive, because he is wearing a helmet, special clothes and because when he crashed in the wall the parachute brought him a bit slower back. And of course he got a punch in the tyre." *(Now there is no driver)* (Starts to quickly make one). "I am only going to draw the helmet only."

DATE: 12 of March 1996 SCHOOL: [illegible]

PUPIL: [illegible] CLASS: V2 Gr.2

TASK 1: In the space below, draw any picture you want to.

COMMENTS:

DATE: 14 of March 1996 SCHOOL: [illegible]

PUPIL: [illegible] CLASS: 11th

TASK 1: In the space below, draw any picture you want to.

COMMENTS:

Speaks Xhosa at home
learned English at school.

No39

"This is a man sitting on a dragon and the dragon is flying some place. And than he blows the door out with fire. So the old man made a trap for him and so he got into the box; it is a box trap. And so he wanted to blow the fire to open the box. And so there was only a little, there was only a small hole. And so he cutted a big hole for them to come out. And so he got a hole, but he went into another trap. And so the old man took the man's knife and all the smoke that was in the dragon's mouth. And so he tied the box up with rope. And he gave it to the postman. He said to the postman that the postman must give it to his cousin. And there was a letter that said: 'I love you'. And he could't get out and so the cousin opened it. And when he opened it, it was a statue. That's all."

No 40

This is my brother and this is my sister and this is my Dad." *(You're all in the car?)* "Yes. And this is my house and my mother's house and my Daddy's house and we was going to Claremont to buy things for the house and food. And we went to buy my clothes and my brother's clothes and my sister's clothes. And we went to the bioscope. After we went to the bioscope we went at home."