

2. THE EVOLUTION OF THE SIGN

Reading and writing ... It is well known that it is a complex operation, but these two words recall essentially signs and sounds to the mind.

By considering the sign, I observed the evolution of it in three children, Fiorenza, Sara and Stefano, 2 years and 9 months, 2 years and 10 months and 2 years and 4 months old, respectively.

At the beginning they were at the scribble stage. They were observed during weekly meetings over four months in a nursery school. The transition from a drawing to another in the same child was favoured by specific and programmed activities, by games mimicking movement in the school hall, manipulation of materials, slides and use of musical instruments.

Fiorenza, Sara and Stefano worked in a group with other children: Emanuele, Roberto, Enrica, Tiziana, and eventually also Paolo.

For the analysis of a selection of drawings by Fiorenza, Sara and Stefano it is surely useful to refer to the concepts reported below and expressed by scholars and researchers.

"... If the child traces a circle to represent a head, this circle ... is ... an actual invention, an important conquest which the child achieves only after an industrious series of attempts ..."

"... We must give credit to Gustav Brisch to have been the first (Munich, 1926) to demonstrate systematically that the graphical and pictorial practice evolves according to its own, defined laws, starting from the simplest patterns by means of a process of gradual differentiation ...". " ... Being an art teacher, he was not able to make use of the psychology of perception, but his discoveries support and are supported by the new trends in that field ..." (Arnheim, 1981).

"... From the scribbles one shifts to basic diagrams which turn to combinations and aggregates in the search of balance and order ..." (Kellogg, 1979)

"... The shape can never be considered as a conclusion, result, aim, rather genesis, becoming, essence, ..."

"... Shaping is movement, action, shaping is life ..." (Klee, 1979).

"... The first tracts, initially continuous, then discontinuous, circles, curves, oblique to vertical to horizontal lines, are determined directly by the ripening of the motional processes and by the symmetry axis represented by the bodily axis, which determines their direction ..." (Bouton, 1980).

"... The acquisition of a knowledge and, above all, of a group of knowledges (any knowledge, including the perception of an isolated element, is an integral part of a system, even if elementary), does not take part in an exclusively additive way, rather it implies continuous reorganizing starting from elements or relations which are initially privileged: from continuous decentralizations, thus starting from preliminary centralizations ..." *"... By filiation from the perceptive indices, it is not possible to obtain either systems of signs (which assume the social life with its aspects of ruled conventions, etc.), or systems of symbols. The latter, truly, can be conceived as connected to sensorial and motorial manifestations mediated by initiation, but initiation is not obtained by perception. On the other hand, anything we know of mental imagining nowadays indicates that it does not represent a simple extension of perception. Rather it assumes an active and schematizing reproduction, exactly like imitation, from which it is undoubtedly derived from inner projection..."* (Piaget, 1975).

"... Any real experience gets its comparisons from the bodily support in the situation (according to the different meanings of this word), i.e. in relation to time and space perceived in the body." "... Seen from living beings thoroughly different from us, man would appear obsessed by time and space, which dominate his worries in all the forms of thinking from the beginning of civilization ..." (Leroi-Gourhan, 1977).

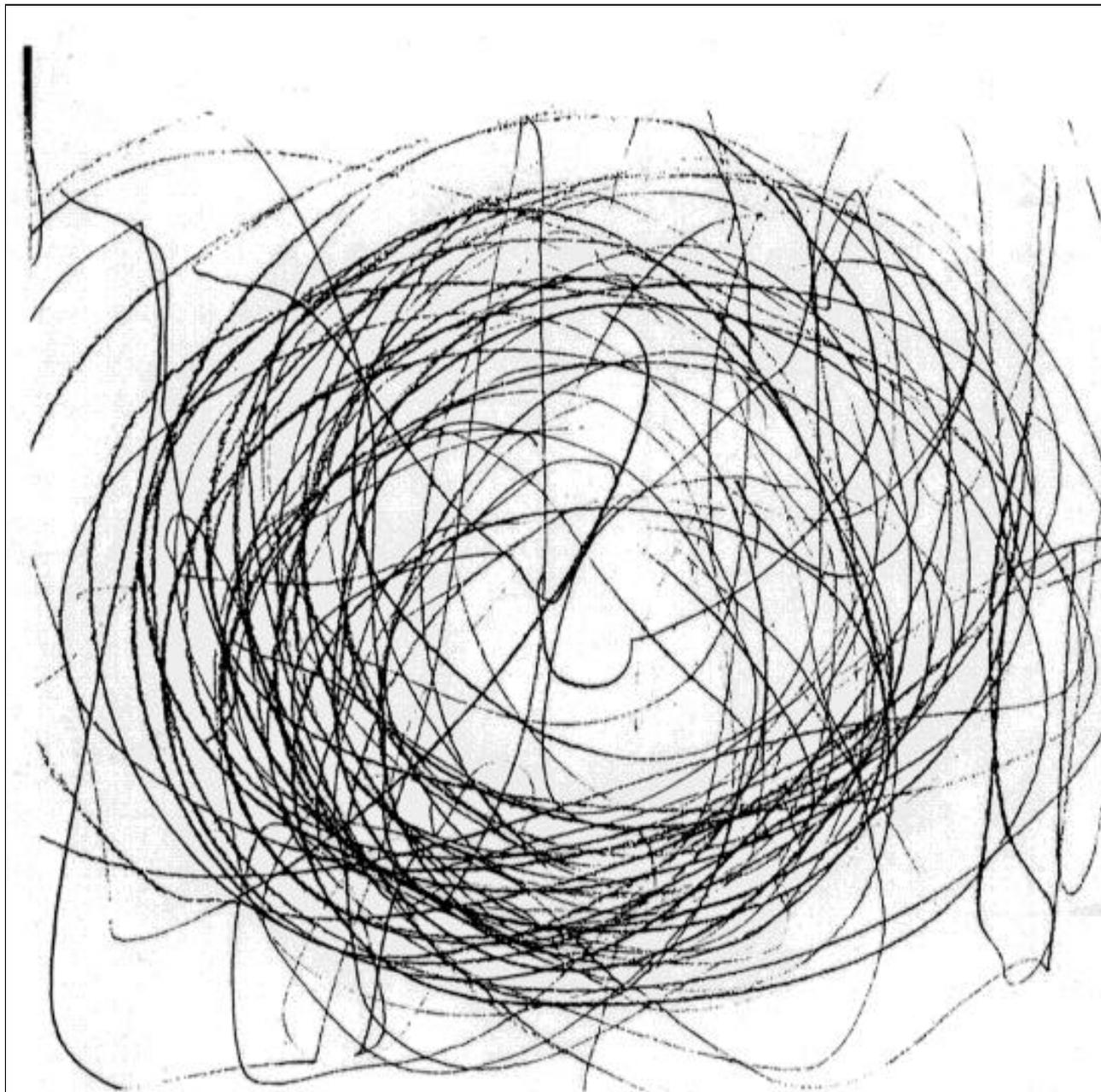
"... The art of representation always starts from an indication of meanings rather than portray of the nature and can never depart much from this reference point without abandoning also any indication of space and time...". "... I claim the perception of isomorphism is what creates the meanings of things in the human mind ..." (Hofstadter, 1984).

"... What else is the so-called conceptual image, the rough pictorial marking by a child or by a wild man if not the statement of his supremacy ...?..." (Gombrich, 1985).

"... But still a definition is needed of this extremely transient word "meaning". It may be convenient to define "meaning" as general as possible. Meaning can be considered as an approximate synonymous of structure, redundancy, information and restriction... The essence and the "raison d'etre" of the communication is the creation of redundancy, of meaning, of structure, foreseeability, information and the reduction of the casual component by means of restrictions ..." (Bateson, 1984).

2.1 Evolution of the sign in Fiorenza*

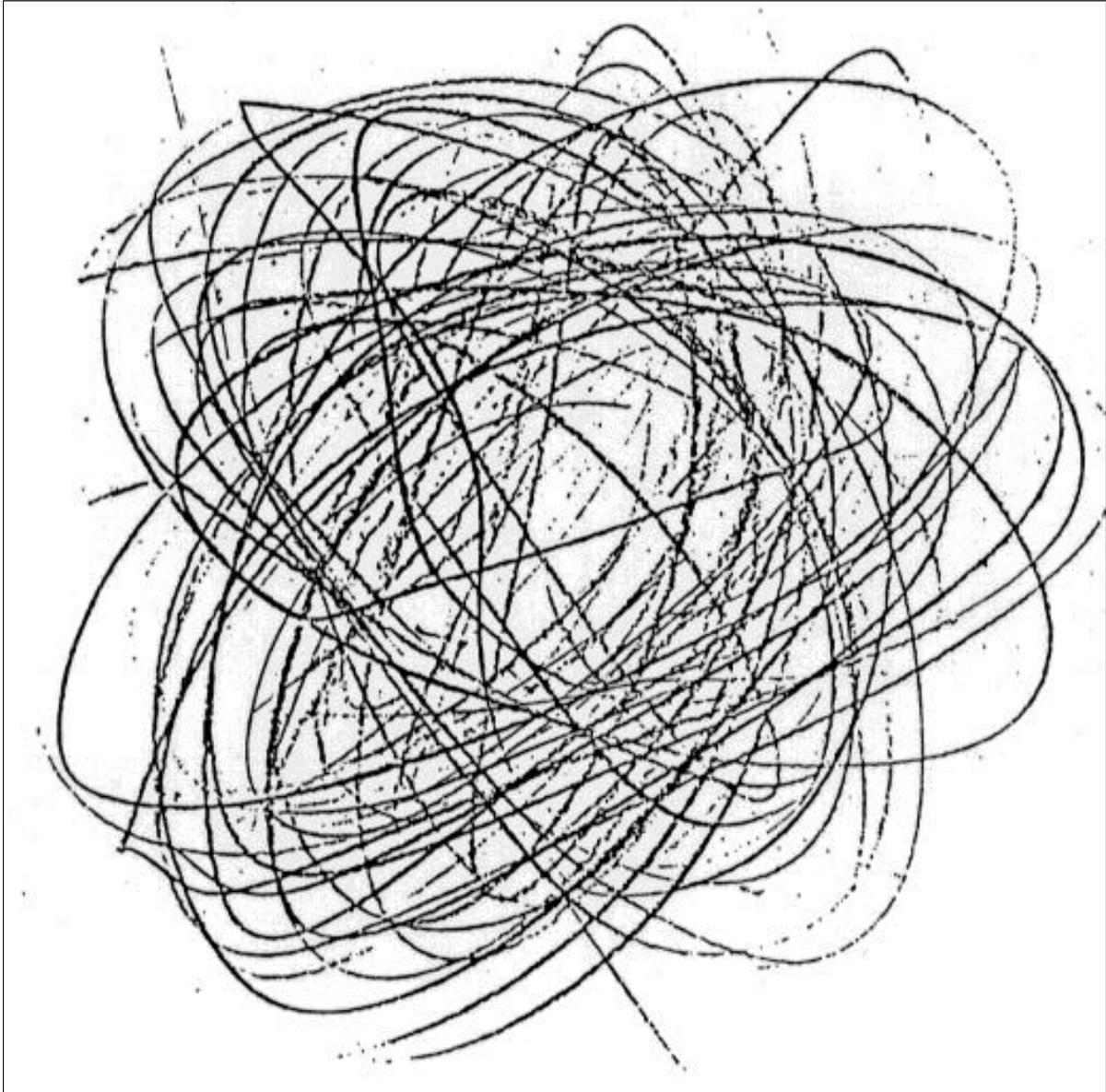
Some documents



Initially Fiorenza traces regular lines in circle and never gives a denomination of the drawings.

In the meantime we play with clay, make small balls and try them: by a light push they must roll. The little ball which immediately stops is discarded by the children who cry out "It doesn't work!", so the author must shape it better.

* 2 years and 9 months old at the beginning of the experience



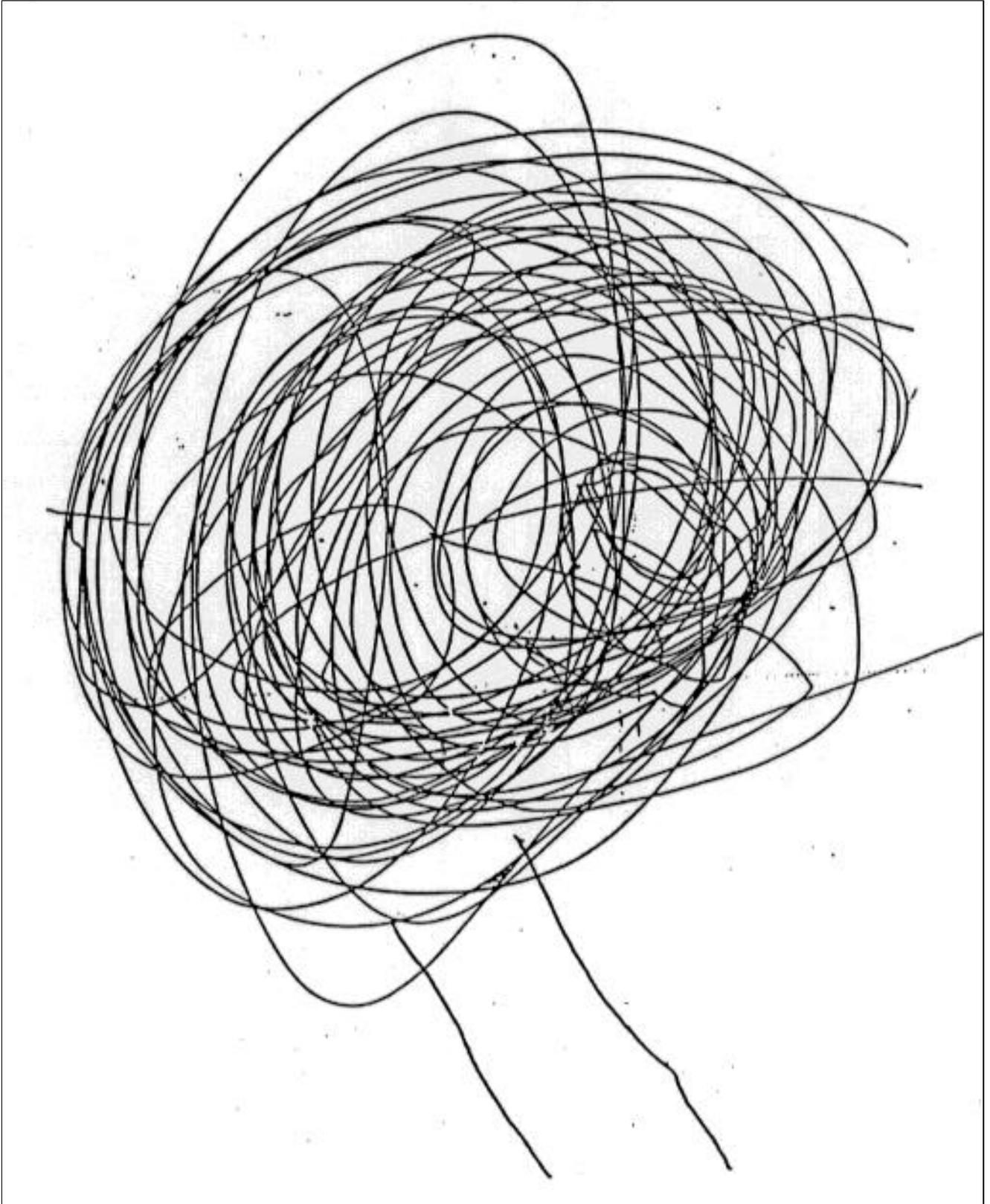
Fiorenza repeats the same pattern, but this time she defines the drawing: "*Here is the ball!*".

Related activities

The child can make use of short, 40 cm-wide strings of gummy material (which can be easily broken but also re-attached by the simple finger pressure), of 25 cm-long plastified iron thread, woolen thread/, scissors with rounded tips, paper stripes.

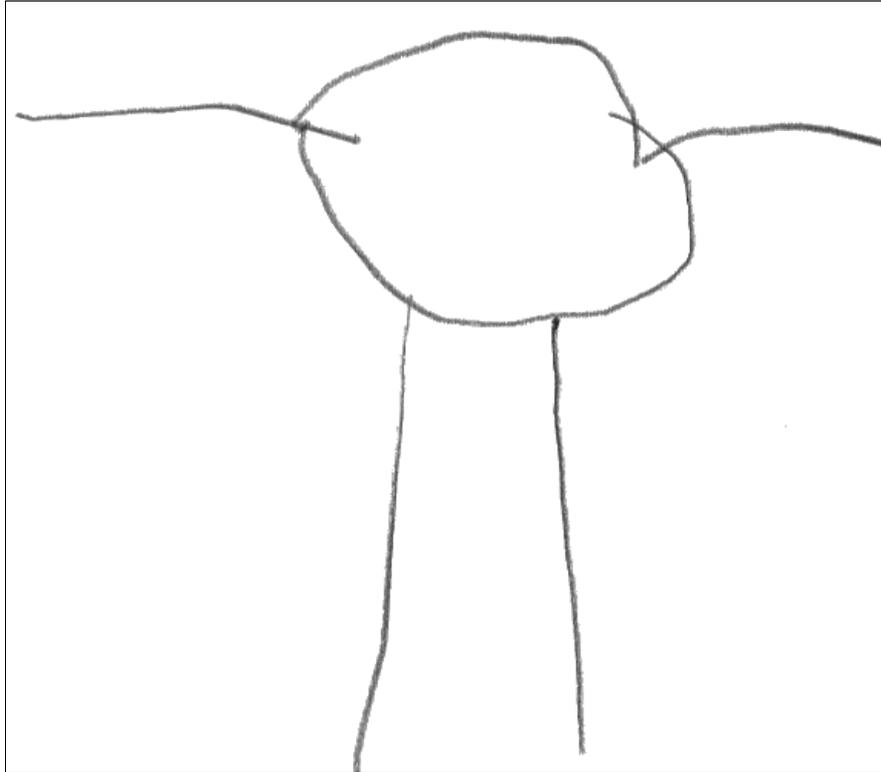
This material can be used as a manipulatory set by which one can draw on a plan, subdivide and compose. This material can be bent, can build up a vertical construction if put on small clay boxes, can make crowns, necklaces, rings, bracelets, to be worn for fun. Some children put the plastified wire around their head, keeping it below their chin. Then they stand up in group and walk around in the room pretending to be old women.

With the help of the teacher, Fiorenza proposes to write to Santa Lucia, in order to get a lot of iron wire and gum wire for playing as a present. The idea is welcome by anyone enthusiastically.



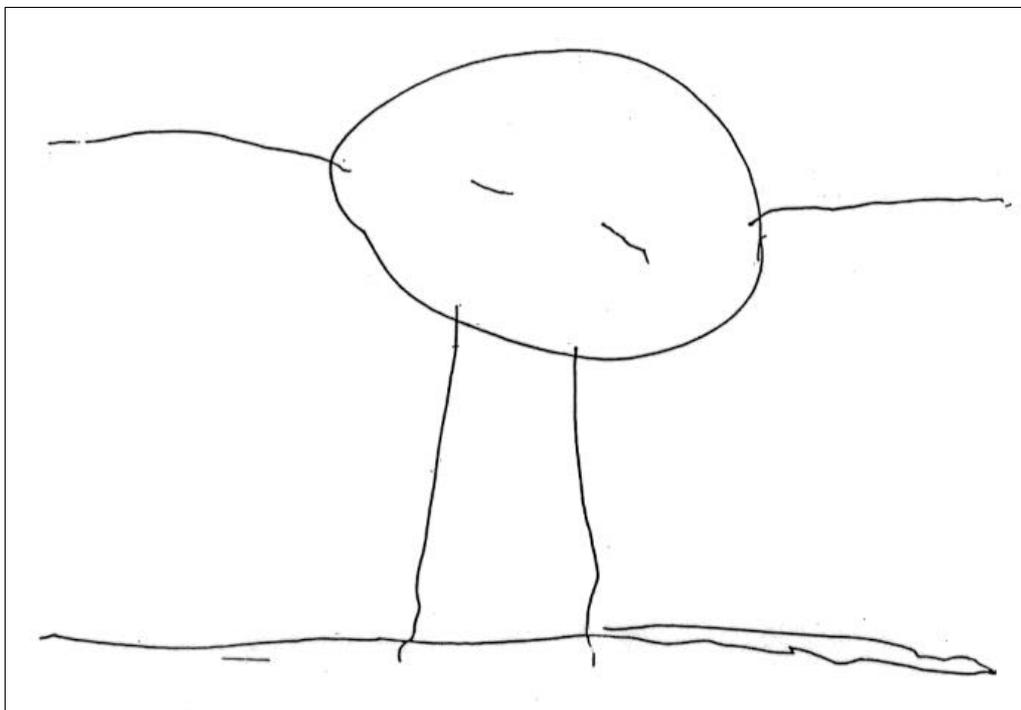
"Here is the ball walking".

From the scribble with circles and ellipses two steep, almost vertical lines are drawn, while short horizontal segments depart laterally.



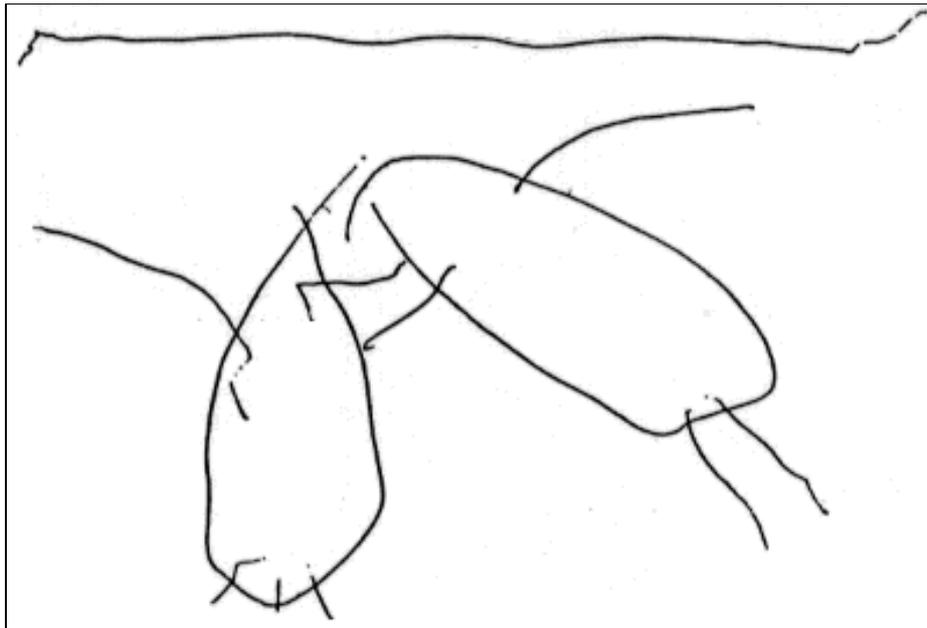
"Here is the child".

Fiorenza is able to control the mark and closes the circle. She traces two vertical lines (legs) and two horizontal ones (arms).



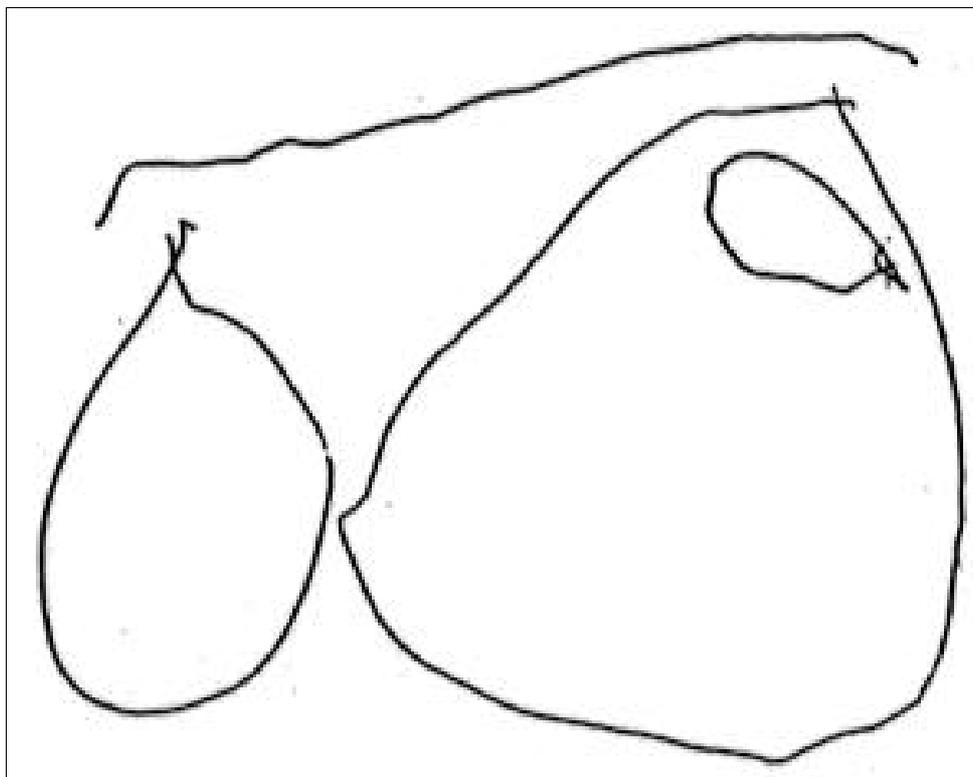
"I have drawn the child".

The drawn child has a support: the profile of the ground (baseline); in the closed line two short horizontal dashes (eyes) appear.



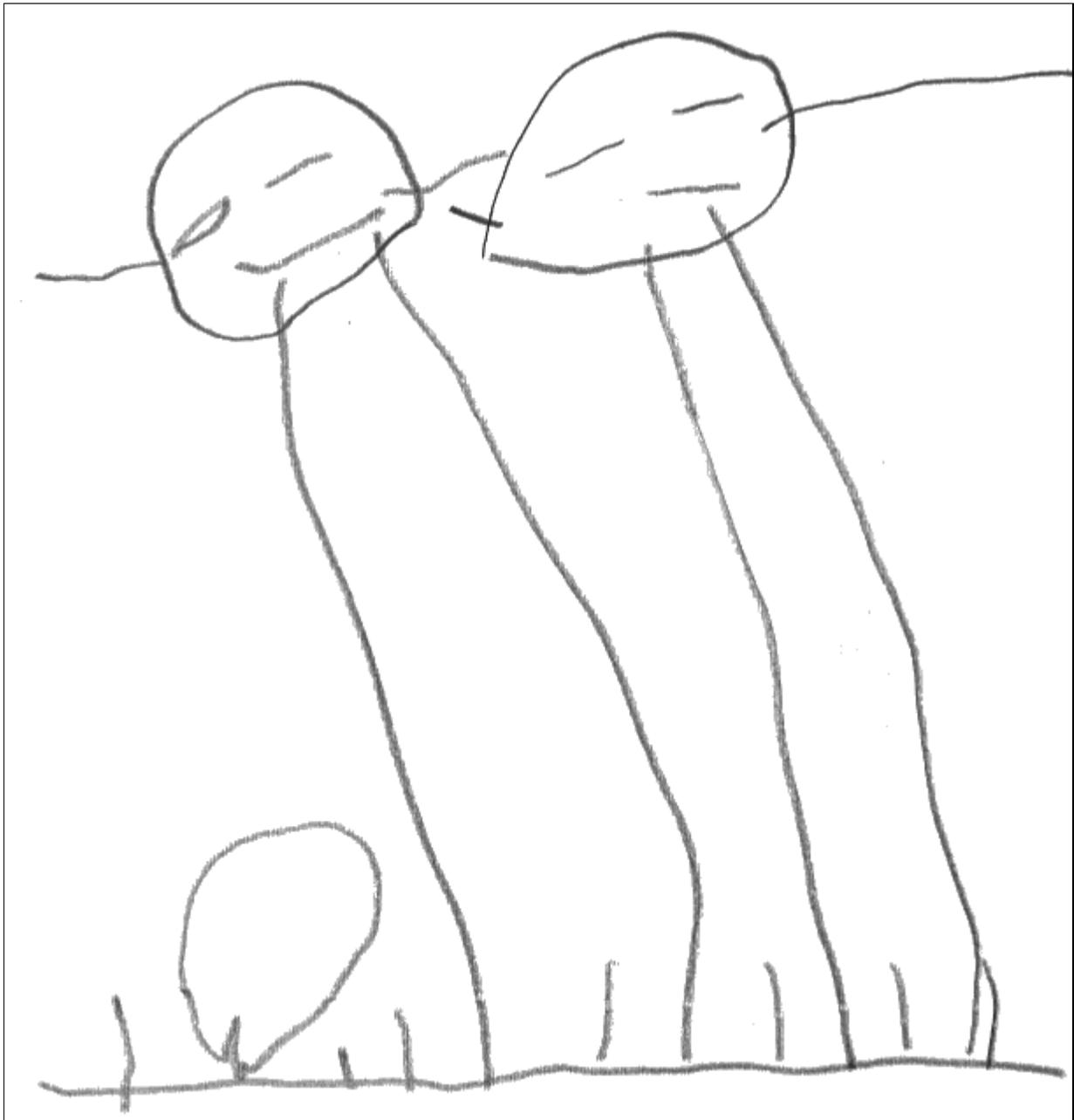
"Here are the children and the sky".

The children are represented by the loops and the horizontal lines. While the baseline is neglected, the skyline is introduced instead.



"Here are the houses and the sky".

The houses are represented by two wide-bottomed loops. Additional loops are for the windows. Again the baseline is neglected and the skyline is represented instead.

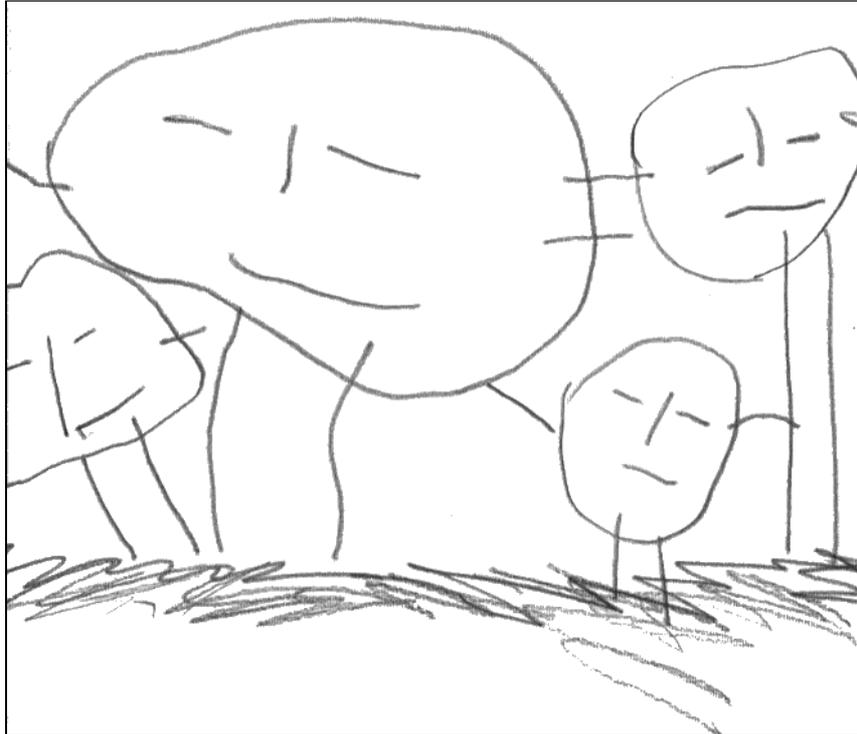


"The children play with the ball on the lawn and there is much grass".

A loop is used also for the ball. In the two shapes three horizontal lines appear: the eyes and the mouth, the arms and the body/legs. Vertical lines also for the grass. The baseline is present.

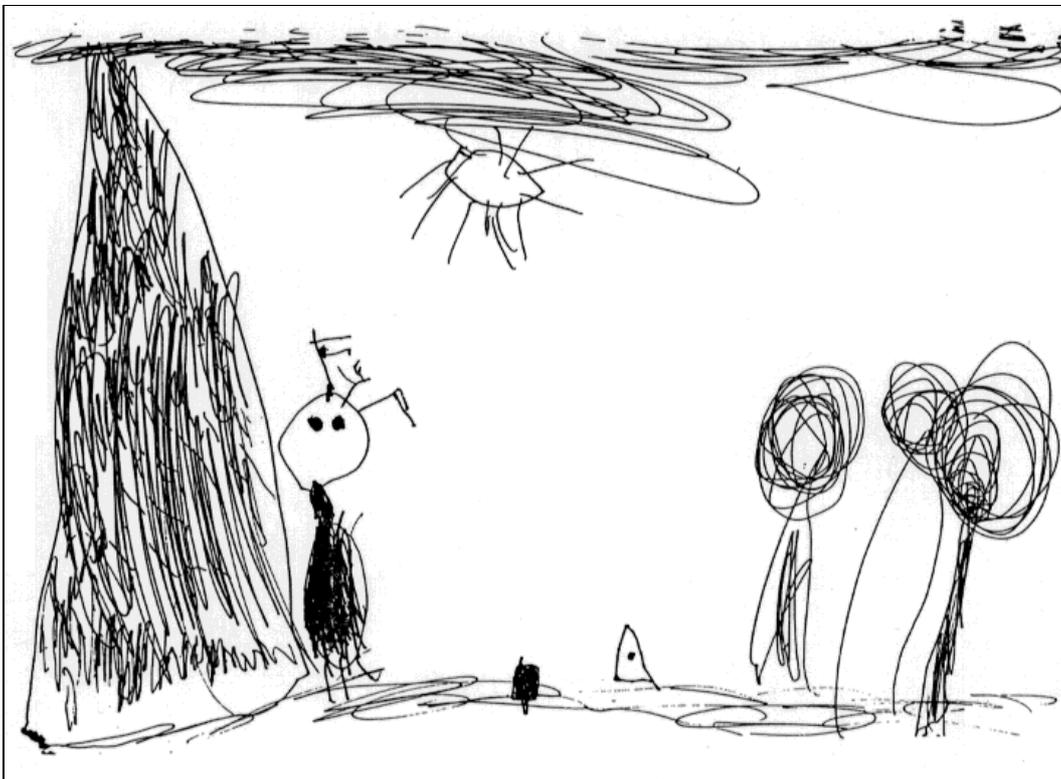
Connected activities

The children can use wide or thin brushes and water-holders. They dip the brush, paint their own face without being afraid of getting dirty or reproached. They paint eyes on their closed eyelids, the nose, the nails, etc... They paint on their school-mate. They experience sensations of cold and wetness on the painted zones. The children express their excitement and happy wonder by small screams and exclamations.



"Here is the children's ring-around-a-rosy".

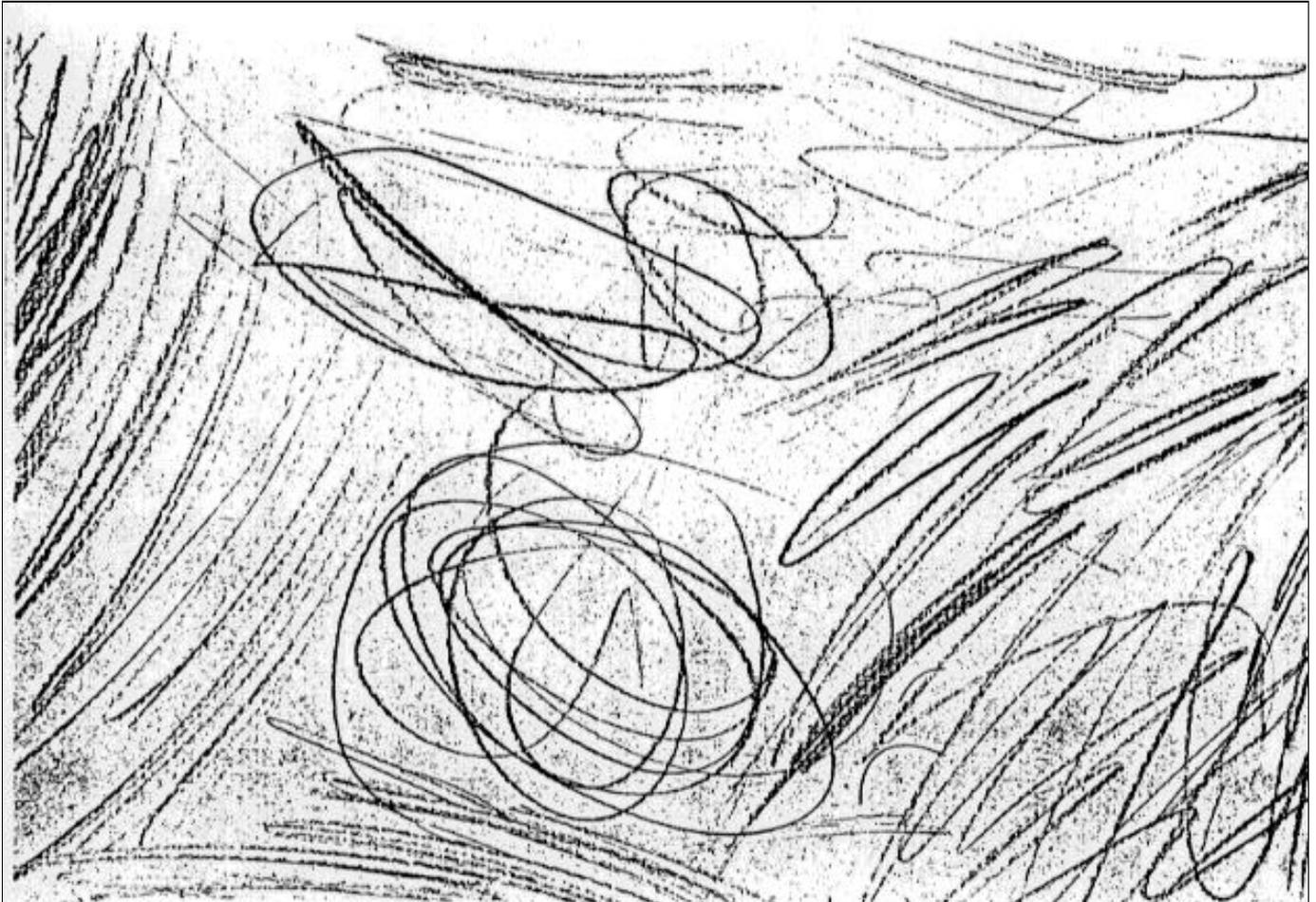
The shapes are kept close to one another. In the loops three horizontal lines appear: eyes, mouth and nose.



"I am disguised as a ghost; on my head I have my name written -Fiorenza- and my hairs. There is an ant and a very small ant in the cuddle. I climb the mountain as tall as the sky".

2.2 Evolution of the sign in Sara*

Some documents



Sara makes irregular scribbles and uses the whole sheet. She does not give definitions.

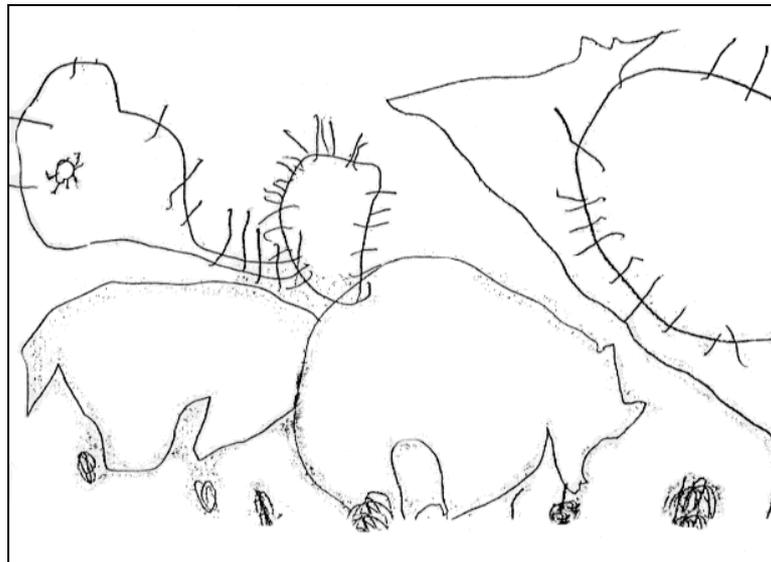
Connected activities

With water only and a paint brush the children paint over wide sheets of opaque and dark paper. Some of the children overlap the mark and speak about wonderful colors which they afterwards change continuously according to the variations that, by speaking and by fantasy, they make on the painted object (man or animal). At the end the sheets are left to dry up and everything disappears.

* 2 years and 10 months old at the beginning of the experience



Sara departs from the scribbles with some loops which she calls houses, and overlapping elliptical marks (rough color filling), which she calls *balls*.



Three different drawings: the thick and overlapped marking for the balls, the neat loop for the houses, the loop with variable length in all directions for the *big sun*, the *sun* and the *ant*.

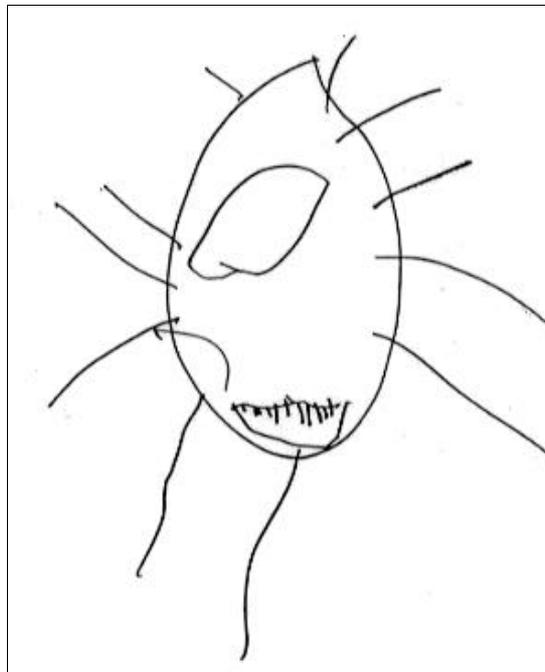
Connected activities

Clay instead of plastiline is preferably used to mould because it is not greasy. The teacher moulds something related to what a child is doing, then he/she goes to another child and tries to create some connections. At the end the teacher gathers his/her manufactures back in a ball of clay. The children quickly imitate the teacher and amuse themselves while observing their shapes disappearing in the growing clay ball. Some manufactures are however kept and put on the shelf.



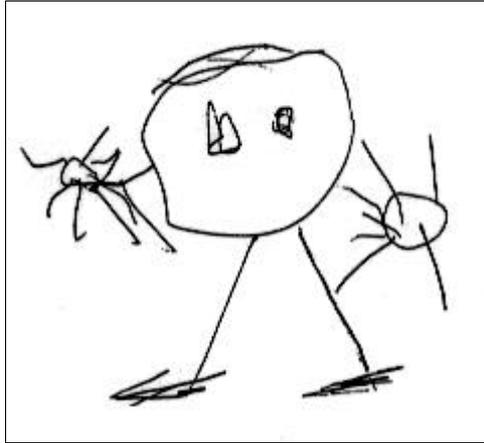
"I made the sun with the legs".

On the close line many marks are shifted to the top, while at the bottom two vertical marks appear separated.



"I drew the sun with the legs".

The procedure of the previous drawing is repeated. Inside two closed shapes a big eye and the mouth with teeth appear.

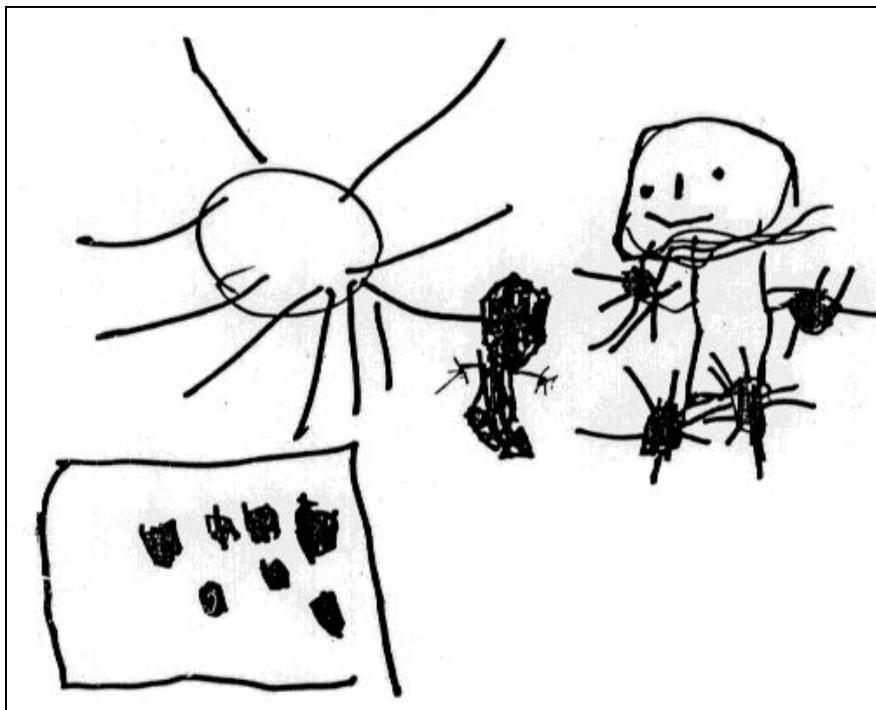


"I made the child".

The radiating shape is transferred to the representation of the hands. At the bottom a rapid dashing represents the feet.

Connected activities

For moulding the children can also use colored waxes. In the centre of the table the teacher puts some cardboard rectangles or circles on which every child, at will, carries what he/she moulds by him/herself. The teacher observes and takes part to the activity by creating particulars useful for giving a connection between the shapes moulded by the children. The shapes which stand up are praised, whereas the teacher "blames" the wax "children" which do not stand up and remain flat, as if painted on the table. The authors of the "flat children" must look for new strategies in moulding and the teacher helps them.



"I have drawn the child, the painted child, the sun, the house".

The radiating shape is used for the sun, the hands and the feet; in the latter, however, the centre is filled with colour. In the head the child has differentiated the shapes of the eyes, of the nose and of the mouth. A closed shape with horizontal and vertical marks represent the house and other painted, closed shapes the windows.

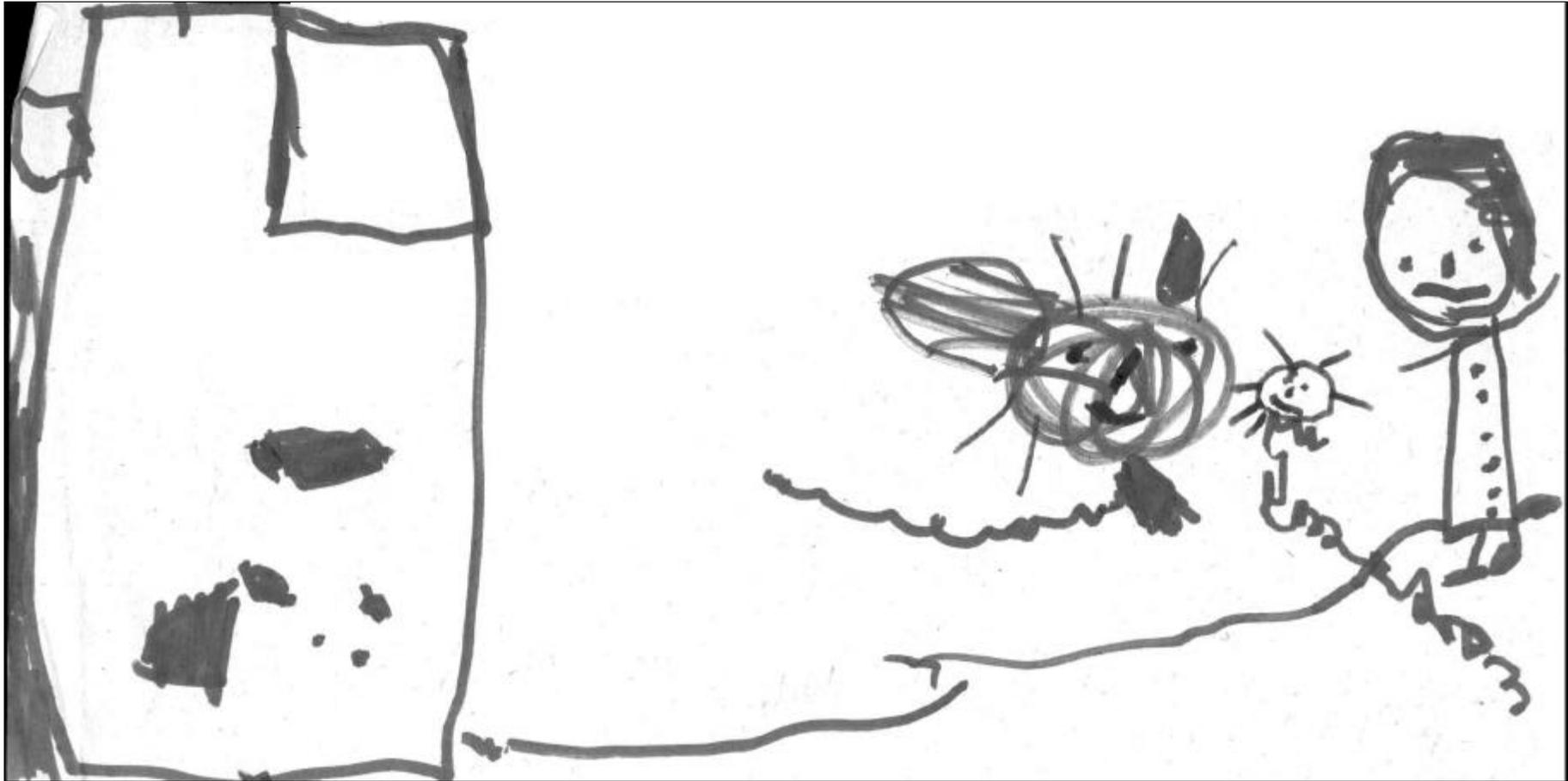


"I drew the child".

In the drawing the arms are omitted. However Sara introduced nose and mouth (by vertical and horizontal marks) and a hint of the body.

Connected activities

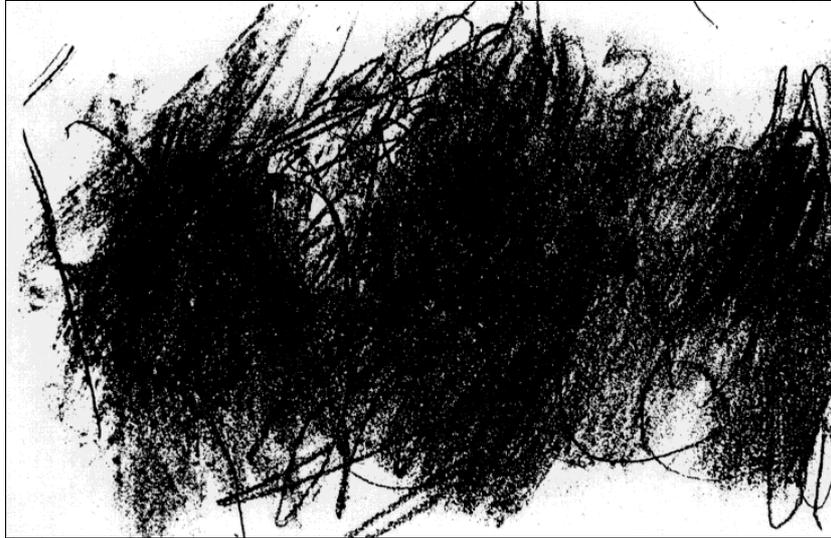
The children work in groups of 3-4 components. They draw with some white chalk over long sheets of dark paper laid on the floor. The children fill all the free space. They invent names for the colours, change them, overlap them: a child is black as a cellar" and soon after "as green as a devil". The teacher is careful because children changing position often try to crosscut the big sheet on their knees, thereby destroying all the work done by the mates.



"Mom goes home to clean up all the dishes. There is the cat and also the snake".

2.3 Evolution of the sign in Stefano*

Some documents



Stefano chooses the charcoal pencil, draws, spreads the colour with his fingers, but does not give any definition.

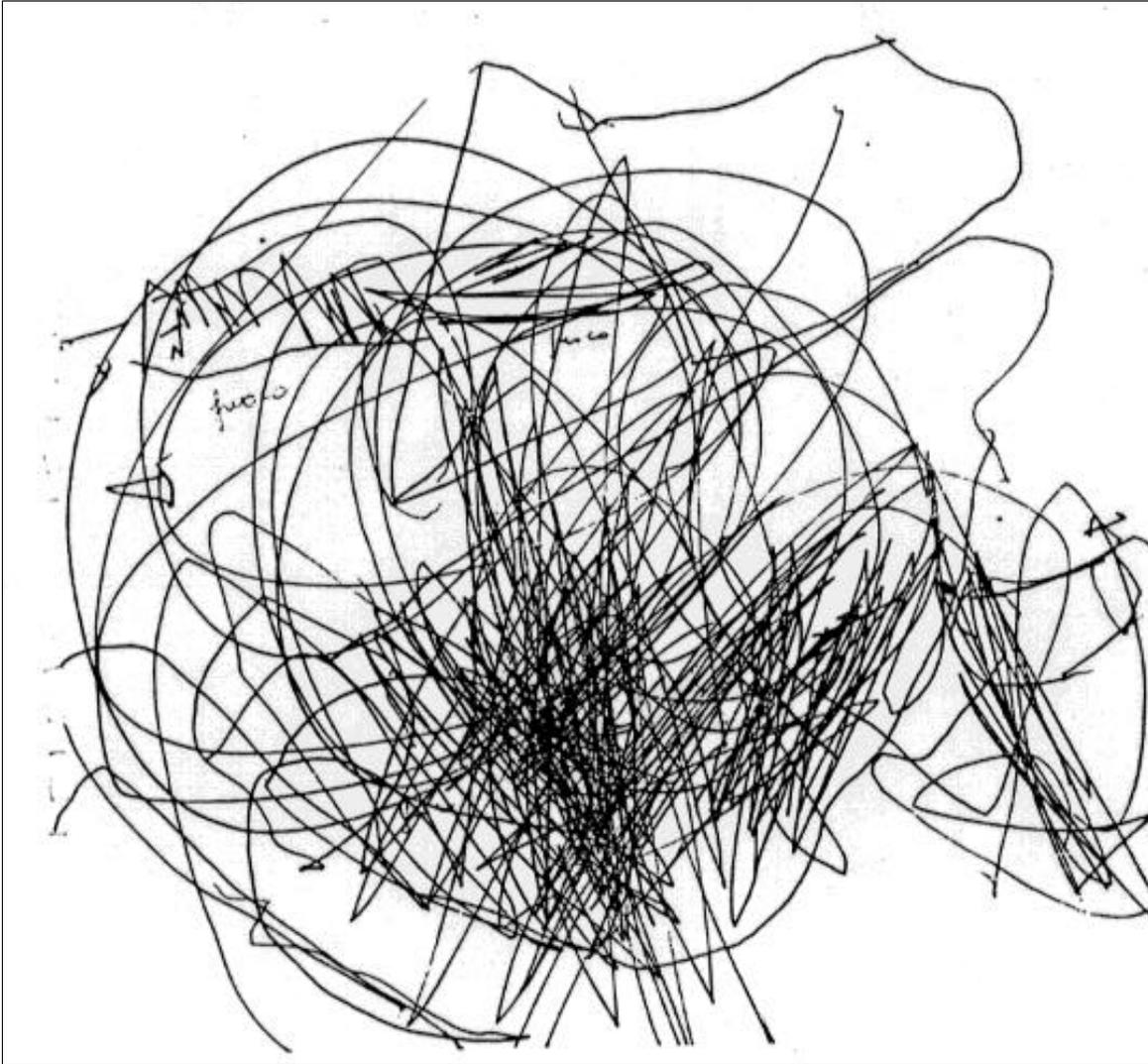
Connected activities

The children can use felt pens, wax pencils, coloured pencils, ink pens, charcoal pencils, etc.. At first many choose charcoal and coloured pencils with pleasure, but then they refuse them because they see their hands dirty and, worried, they ask to go and wash themselves. This happens also by using glue. On the contrary, Stefano quietly goes on with the charcoal pencil.



Horizontal and vertical movements: no definition given.

* 2 years and 4 months at the beginning of the experience

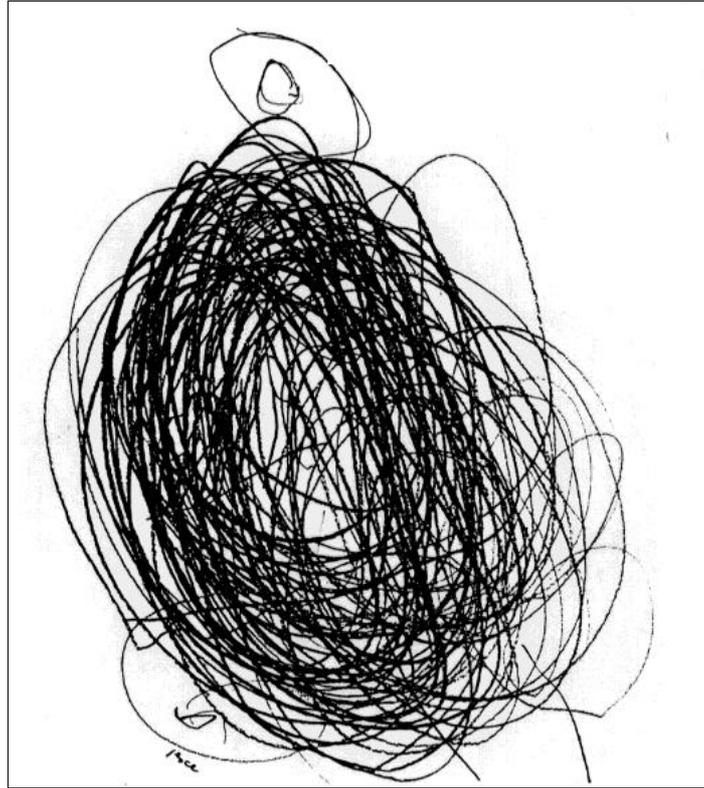


"It's the fire, all fire".

Connected activities

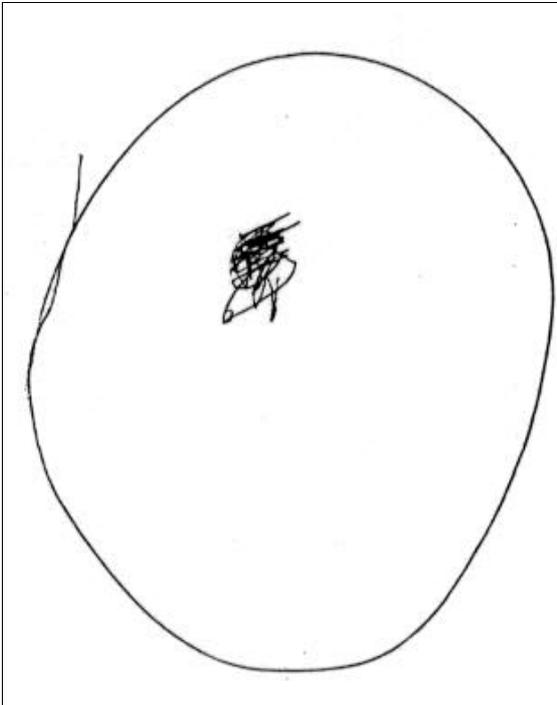
The teacher shows some slides made of transparent, neutral or coloured film, thin, permanent felt pens and frames. These are series of 6 or more slides in which, as in a mini-cartoon, one can see a dot moving along a trajectory and leaving a track, or else a line grows slowly, bends, stretches and closes itself in a loop. Two lines start from opposite points and crosscut, two trajectories intersect, a dot moves along a direction and then comes back, etc...

The children observe, make comments, recall images, accompany the vision with sounds typical of movements "aaaa-aa ... sbang!", with hand gestures and bending of the body.



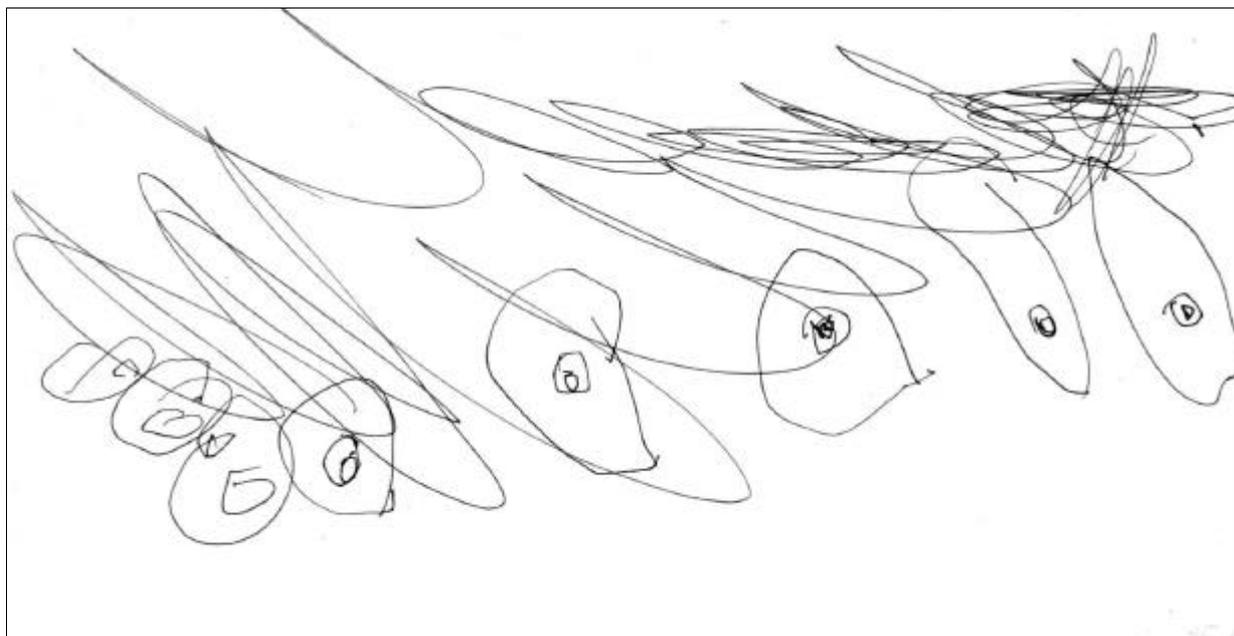
"The fish"

The movement is regular in circles: noteworthy is a first attempt of the control of the marking in two small "closed" shapes which the child calls "fishes".



"It's a poisonous apple".

The child perfectly controls the mark and stops it in a circle with a colour filling.



"The small birds".

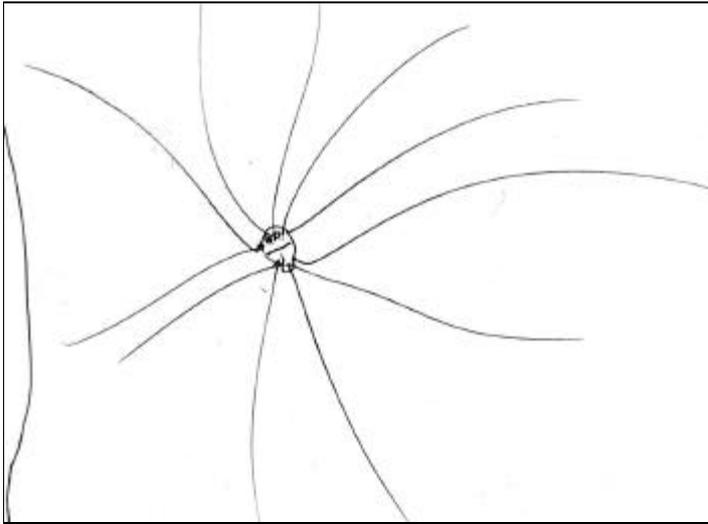
The scheme used for the poisonous apple is transferred to the birds. The "small birds" are eight. The quick marking over them represents the flight and the air as well.

Connected activities

In the moulding activities with clay, the teacher builds and continuously connects shapes according to children's themes. Objects made of different matters, such as "Lego" bricks, plastic toy animals, wire arches, are included in clay and over them the children position coloured "pongo" birds.



"The big and the small birds".

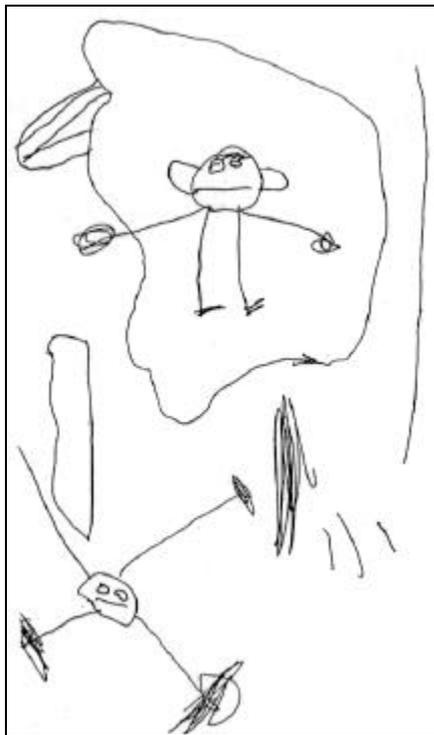


"It's a spider".

The attention of the child is shifted on to the directions.

Connected activities

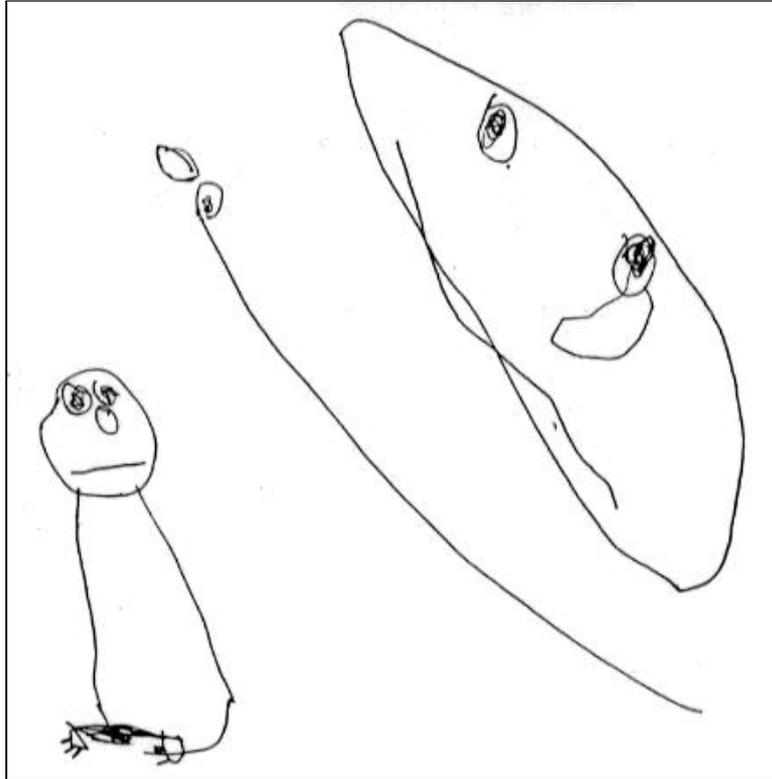
Patchworks are made by thin stripes of black glossy paper cut by tipless scissors or by tearing the paper. The teacher offers the child also long gummy licorice stripes to be cut or used for compositions. These licorice stripes should not be eaten but "strangely" they become shorter and shorter and eventually disappear!!!



"The monster in the house".

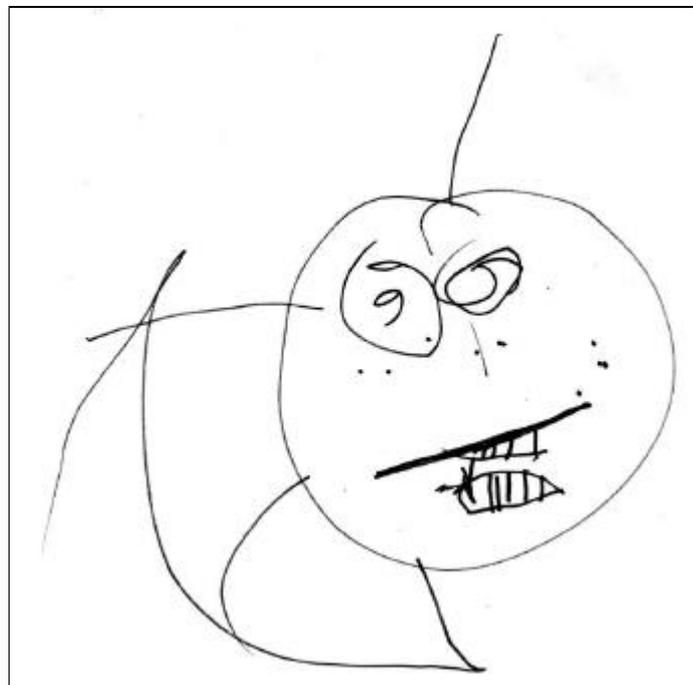
Closed, horizontal, vertical and oblique. The "spider" is near a "small" house without door. The "monster" stays in a "house" with a door. On the right side, on the contrary, vertical lines represent the monster's "rockets".

Hands, fingers, fists, arms, legs and the whole body are used while playing by mimicking movements. By breathing wind is blown on small pieces of white paper which can represent any thing or any animal pushed all around by the storm until they are disappeared on the ground. By the fists of two or three children a long train is made, by the fingers a dancer, by the hands a flame in the fireplace, by the head and the arms slightly open a mountain is made on which one climbs and walks down.

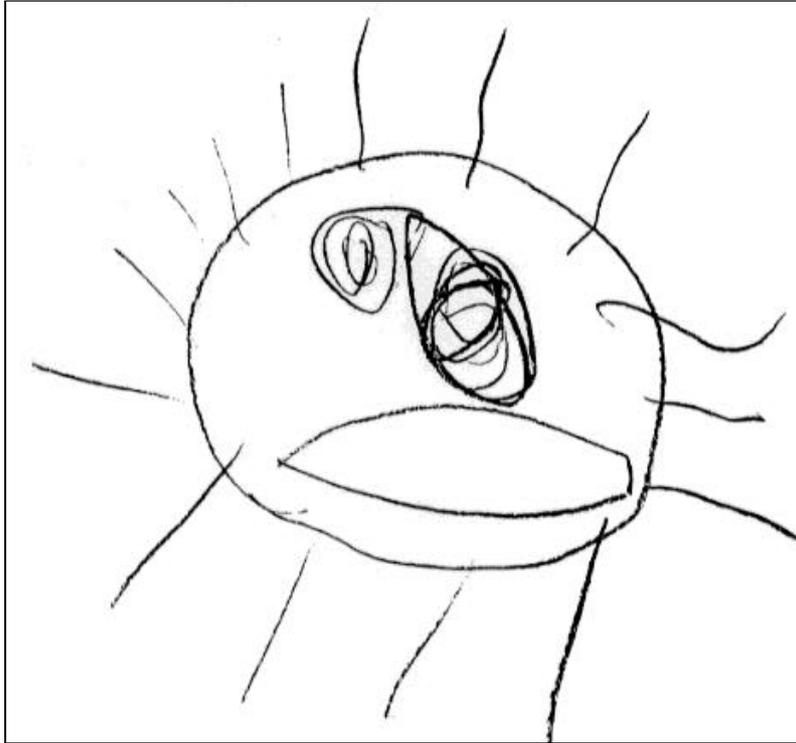


"The monster, the snake and the child".

In the figure the nose appears. The arms are neglected, but the body becomes differentiated. The "monster" is only head; the "snake" is head and body and then there is the "child" with the radiating shape for the feet.

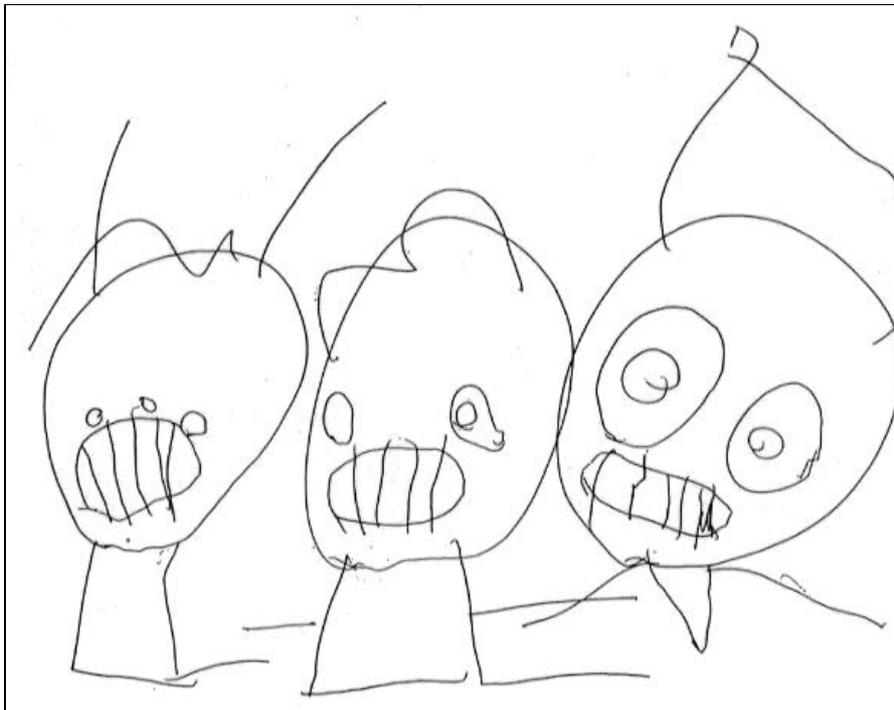


"The monster fish".



"The sun".

The shape of the mouth changes.



"Three children".

In the mouth teeth appear and the body becomes differentiated.



"I have drawn the witch with one leg, the poisonous apple, the witch's sticks, the witch's bad words and the song "Star little star, the night is coming up ...".

The bad words are drawn by a continuous and whirling mark, the nursery rhyme is represented by two detached dashes: the first one corresponds to "star little star" and the second one to "the night is coming up". The radiating shape is transferred from the feet to the hands.

Connected activities

The teacher uses all the objects producing music which are kept in the school: tapes, small bells, dishes, a cymbal, maracas, etc.. A piano can be played by one of the teachers. Also slides and cards representing space-space and space-time relationships can be used.

After about 4 months, when our meetings are about to be over, the child Paolo is included in the group. Paolo is of the same age as the other and is lively, open, clever but has never attended a nursery school. The freedom and the ability acquired by the children we have taught to stand out in front of the uncertainty and of the hindrance Paolo shows while drawing. Fiorenza, Sara and Stefano work at the same table with Paolo and two other children, Emanuele and Roberto. As we have seen, they draw and make comments with ease.

Paolo stares at them and listens immobile, charmed, then he overcomes the embarrassment, grabs a sheet of paper and ... paints dots as well.



Dotting and no denomination.

In the meantime Emanuele is drawing and commenting: *"The sea, Daddy who is swimming and the child going to the beach, the long road, the big sun, many houses and the road: a very long road to the beach and the baby rabbit with the ears"*.

Paolo observes and, stimulated by Emanuele's talk, draws closed shapes whom, however, he does not name.



Closed shapes and no name; vertical lines, two shapes and no comment.

Roberto is drawing and saying: " *Here is a complicated house with bricks, a car with a man, two houses and then many houses with nobody because everybody is dead; a road, the water, a bridge, a fish locked in a box with a chain, many bridges and many rocks, two small men, one is Dad*".

Roberto shows his drawing to Paolo and says "Look, his ears, all came down!". Also Paolo starts drawing horizontal and closed lines very densely, he does not give any verbal comments.



In conclusion, it is possible to observe and isolate the dashing marks used with skill by the children looked after: the closed shapes for the head, the ball, the house, the window, the fish, the sun, the hands, the mouth, the birds, and marks in different directions for arms, legs, nose, grass, teeth, rays, hairs, etc..

From this moment onwards, at will the teacher can help the children in focalizing the shapes, the positions, the relationships in the space of the sheet and make them learn without difficulties the conventional forms of the verbal expression by means of the basic signs by operating in the way which will be illustrated afterwards.