

DISTANCE – A QUESTION OF SYMBOLS ON MAPS FOR CHILDREN

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Abstract

To be able to make better maps, produced for children as map users, we need to know how children look at maps. More work needs to be done that focuses on the child's comprehension of different items on the map, such as colour, symbols and perspective.

In this study children aged 6-12 have been asked to draw a map of the way between their home and school. Their maps have been compared with respect to age, the distance between home and school, and sex. Interest has been given to what perspectives they have used, what objects they add to the map and how important distance is when they draw a map.

In general, with growing age, from 6 to 12, the child widens its map. The small child only draws the road, with its bends and slopes, with a few details at home and at school. The older the child gets the more it adds to the map around the actual road to school. The distance between home and school influence the map in the sense that different details are drawn on the map. It has not been possible with the present material to establish whether or not sex influences the way the children draw a map.

Nearly all children mix two perspectives when they draw a map. This can be used in maps for children when you want to attract the child's interest to a certain object on the map. Changes on the way to school, like bends in the road, slopes and houses, are far more important in the children's drawings than distance. It is clear that perspective in connection with choice of objects can be very important items to consider when producing maps for children.

1 Introduction

Little interest has been devoted to children as a user group of maps. This was discussed at the ICA Conference in Cologne in 1993 and I decided to carry out a study of children as map makers. This investigation should be considered as a pilot study for the compilation of knowledge for future map production related to children's use of maps.

The study focuses on how children draw a map, what objects they bring into the map and to what extent and how they show distance on the map. It also shows in what way we can use children's maps when we want to learn how to make maps for children. It is very important both to look at how children draw maps of their own, and to study how children interpret maps made for them.

In my next study one group of children of the same age will be studied over a number of years. The youngest children in the present study, aged 6-7, will during 1995 attend their first year of Primary school. This group of 25 children will be asked to draw maps once or twice every year. More work will be done on preparing maps that they are to interpret, focusing on different questions, and also on the children's verbal description of the map.

2 Method

In the study some 80 children aged 6-12 were asked to draw a map of the way between home and school. They all live in Saltsjöbaden, just outside Stockholm. The youngest children are in their last year in nursery-school and the oldest are in class 2, 4 and 6 in Primary school.

The work with one group of children took approximately one hour to complete. During that time they worked on the two tasks described below. Most of the children had never met me before, nor I them, and they had had no preparation for discussing maps or any other form of preparation prior to the study. While drawing the maps the teachers assisted me, talking to the children and helping them.

2.1 Task 1

They were asked to draw their map as exactly as possible, so that it would be possible to find the way between school and home. They were also asked to add important objects along the way that would help to understand where they live. Before starting to draw they were told to keep the drawing within the paper given (21x29 cm). No other rules were given as to how they should draw or whether or not they should write names of places etc.

Before drawing the map they answered 4 questions related to their way to school:

1. *How do you get to school?*
2. *How long does it take?*
3. *How far do you think it is between home and school?*
4. *What is the best thing about your way between home and school?*

These questions were asked both to help the children to think of their way to school and to help me in my evaluation of the results. After drawing the map some of the children verbally described their way to school. My intention was to interview all the children, but this turned out to be far too time-consuming and the preparation prior to such a number of interviews has to be more thorough in order to get results that can be evaluated.

2.2 Task 2

Finally they were given a sheet containing three "maps". The maps look just the same and show the road between two houses. One item on each map differs; on one there is a man cycling, on the other there is a man walking and on the third there is a car on the road. The children were asked to answer the question: *Which houses are farthest apart?* They either marked one of the drawings or gave the answer: *It is the same distance.* While doing this task the children were asked not to talk at all, which turned out to be very difficult.

3 Results

The drawings show both similarities and differences when I compare the way the different age groups have solved the task of making a map of the way to school.

Nearly all children mix two perspectives in their drawings. They draw objects like roads, railways and water from above and fill in the details by drawing them from the side. Also when they draw a lot of houses, without details, they draw them from above. When the children grow older they tend to draw more of the map from above, but these maps often lack details. In general you can see what objects along the road attract the child's interest, because these are drawn from the side.

The fact that children mix two perspectives is very important when working with maps for children. By drawing certain objects from the side and just marking others with a symbol you can focus the child's interest. This can be used, for instance, when pointing out places where it is dangerous to cross the road, or to show what it is important to focus on when learning how to find your way in a forest.

When drawing the way to school all children focus on the road and the way it bends. Another important thing with the road is whether it goes up or down a hill. This is difficult to illustrate but it is a very important item for the children to add to the map. Some children choose to change the perspective so that you first see the road from above when it bends and then draw the slope from the side, which becomes very confusing when looking at the map. Sometimes they fill the road in to illustrate the slope.

To show slopes effectively is important in maps for children. More work must be done to find out on what objects the child's interest focuses on.

When looking at differences in the drawings I have focused on three major questions:

How does age influence the drawing?

Does the distance to school and how the child gets there influence the map?

Do boys and girls show any general difference in the way they draw a map?

3.2 Children aged 8

The maps drawn by 8-year-old children show a very wide range both in drawing skill and in what they add to the map. You can see that these children have a wider knowledge of the surroundings and that they more often go to school on their own, though many of the children are still taken to school by car. They notice more things along the road, such as what a road-crossing looks like. Other important items are their own house, the shopping-centre close to school, road-crossings, green areas, parking lots and details on the school-yard

Nearly all these children now write things on the map, mostly names of houses and things, but also explanations like; "I walk behind the house".

In this age group you find children that do not really care if the road turns the right way, as long as it turns. This also appears at other ages but this is most common with children around the age of 8. In many of the maps the road to school is illustrated by drawing it "around the paper". They start with their own house in one corner and let the road follow the rim of the paper, bending back and forth along the way. They finish with the school, which then is located just beside their home. They realise that this is wrong, and are very surprised at the outcome of the map. With the younger children you don't have this problem, because their maps are much smaller, and the older children plan the map better. I also got comments like; "Here I draw to the left instead of the right because otherwise I can't fit it all in!"

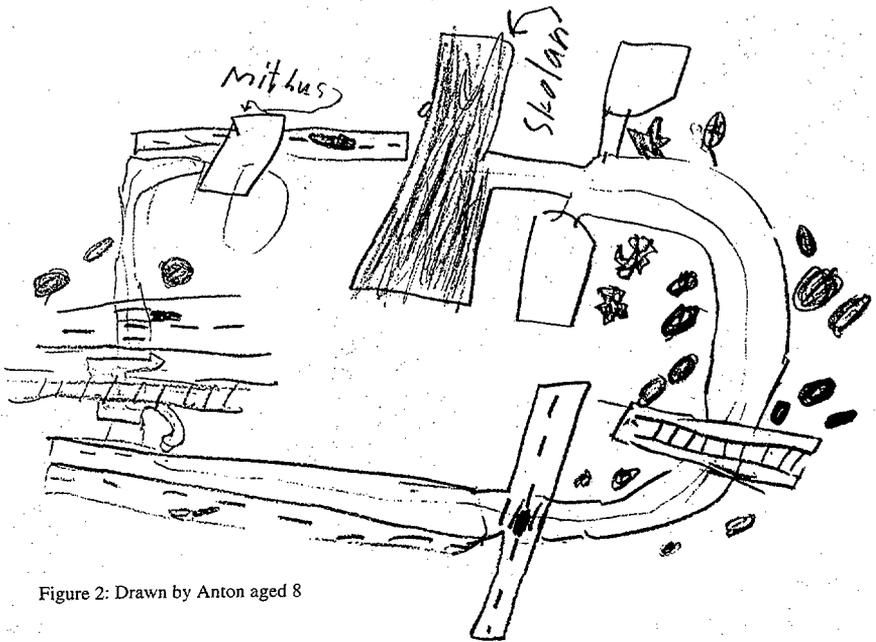


Figure 2: Drawn by Anton aged 8

They know in detail how long it takes to get to school, and the difference if you walk or go by car. They also have a fair idea of the distance, but this still varies from child to child. In the drawings they still tend to distribute the distance evenly from their home to school. In some of the drawings you can see that parts of the road are drawn longer to illustrate a longer distance, but when "nothing happens along the road" the children tend to shorten it.

The most common answers to the question "What is the best thing about your way between home and school?" are "Nothing in particular", "That it is short", "Not so many cars" and "Walking through the shopping-centre".

3.3 Children aged 10

When you look at the maps drawn by the 10-year-old children you can see a much better awareness of the surroundings and also of the way the map is built up. But now many children also live further away from school and therefore have a more difficult map to draw. The distance makes a big difference to how they draw the map and what items they draw. In general the maps are more conventional and do not have so many details drawn from the side. They concentrate on building up the map with roads, houses and green-areas, which also become the important items on the map. You also find maps with altitude curves.

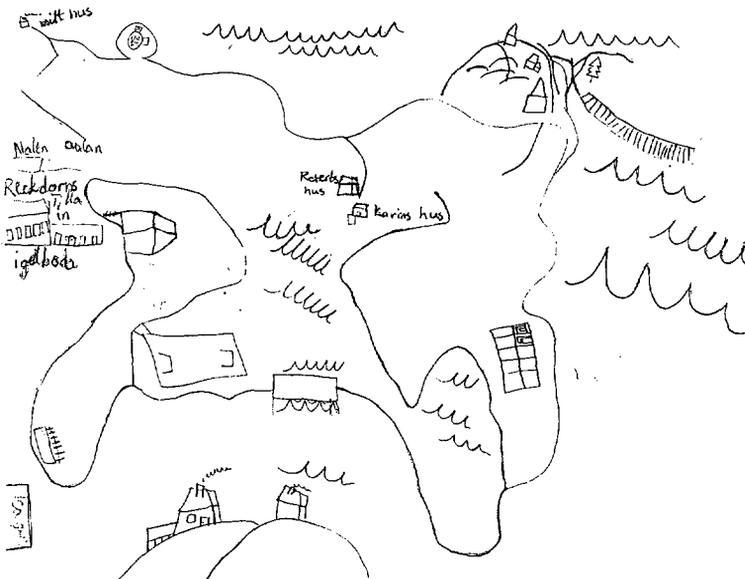


Figure 3: Drawn by Ellen-Maere aged 10

These children have two other ways of getting to school. Besides walking or going by car, they can ride a bicycle or go by train. This also influences the map as they experience the road in a different way and as the railroad can be more important than the road.

They write a lot of words on the map to describe what they pass and to make the map clearer. These older children also used all their time to draw the map in black and didn't colour it, which the younger children did.

They know how long it takes to get to school and also have a fairly good understanding of the distance. A lot of the children cycle to school and things connected with cycling are what is best about the way to school.

3.4 Children aged 12

The oldest children in this study are 12 years old. At this age they have a good knowledge of the surroundings and can see them in a "map perspective". Not many details are drawn from the side and they put names on the items they have drawn. Some of the children also put a legend on the maps. This was done spontaneously without anyone asking them to. When I pointed out the fact that they had described some symbols in a legend, they didn't know what a legend was and could not explain why they made one. It just came naturally to them. There were also children who draw the different ways of going to school in different colours and made a legend to explain the different colours.

They have a good knowledge of time and distance. What is best about their way to school is often how they get there: "The best thing is that I can cycle to school."

3.5 In general

There are differences in how the children draw a map of the way to school depending on how far away from school they live. Living close to school the child draws a map that looks more complete, with all the details closer to one another. It is also easier to get the proportions of the map right when the distance is shorter. With a longer distance all the details get spread out along the road and the map gets "narrow". But both maps really contain the same amount of information, only shown in two different ways.

It is difficult to state if the way the children go to school influences the map. The younger children are also the ones that most frequently go to school by car. Often the same child gets to school in different ways and comparing the drawings has not established any differences in this respect.

I have not seen any obvious differences in the way boys and girls handle the task of drawing a map. The differences are more in their drawing skill; where girls draw more details and try to "make the map pretty", the boys often draw a correct map with less "fantasy". The girls more often say that they do not know how to solve the problem, but it is some of the boys that fail to complete the map.

4 Summary

It is clear that it is for younger children, aged 6-10, that it is important to prepare maps that can be easily understood. As the children grow older, their way of looking at the surroundings and drawing them as a map becomes similar to an adult way of thinking, and it is more appropriate to use ordinary maps.

When working with a group of children there is a wide range in every individual child's capability and interest in the task, in this case, drawing a map. I am impressed by the good knowledge and capability the children have when solving a task as difficult as this. Very few of the children expressed the "I can't do this" feeling. In this group of 84 children I can only pick out a few drawings, made by children of all the different ages, that never really produced a completed map. I do not think these children have a bad knowledge of their surroundings; they just don't know how to go about the problem and then get stuck because they are afraid to do the wrong thing. In general, I am very impressed by the way they draw a map of the way between home and school.

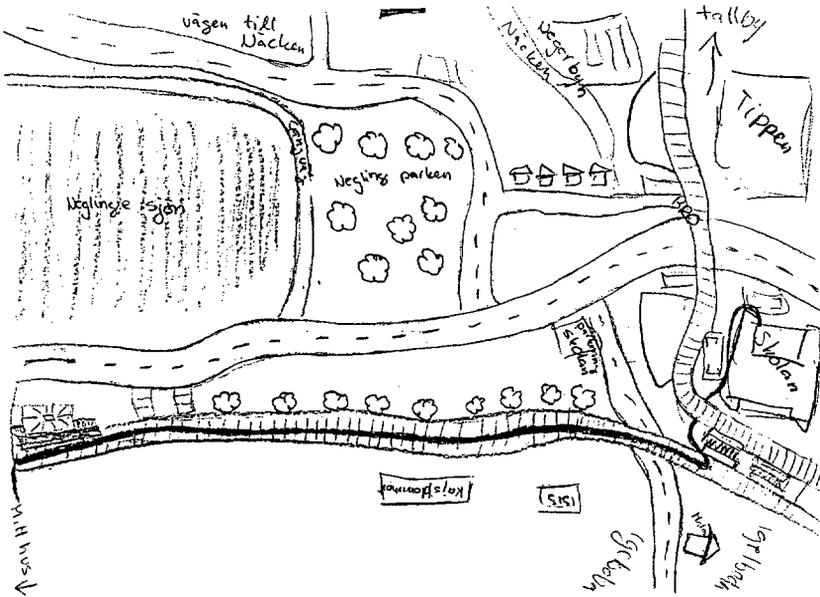


Figure 4: Drawn by Ebba aged 12