Orientation and Mobility.

Accompanying a wheelchair user who cannot drive themselves - A mobility route.

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Being a companion to a child sitting in a wheelchair who cannot drive himself is a big responsibility. You don't just have a practical responsibility for driving safely and well, but also a great ethical responsibility. The role of the wheelchair's driver is important, and respect for the child being driven is just as important. By using "driving rules" we can encourage that respect, and hold ourselves within the ethical framework. Here's a little example: Imagine that you were a passenger in a car driving along a motorway, and you thought you knew where you were going. Suddenly, without warning, the driver of the car turns off the motorway very quickly, onto a side road that has no sign to tell where it leads. This happens several times in a row in several places. It isn't difficult to understand the frustration, impotence, anger, and perhaps later apathy caused by having no control over where you're going. As teachers we must make a lot of effort trying to make the child active in meaningful situations. The activity is the guidance for the route. For example the meal in the kitchen. The child has reduced possibilities to get around of its own and is therefore dependent on others to get an overview of the days activities and to get to know the surroundings. This way of structuring this learning is useful when it is put in a meaningful context for the child and we can also get a possibility to get to know the childs orientation and perception better, by observing the childs reactions towards the environment. It is a challenge to structure a route adjusted to the childs need. It should be carefully noted what the child does and watch for recognitional behaviour towards situations. Observe if the child search for the doorknob in advance just before the kitchendoor is in front. This means that the child is building an understanding of the different spots in the route. We must meet the childs own initiative and ajust the surroundings to make that happen. By using a structured route we can start this job, but the aim is to make the route less structured along with the childs learning and understanding of its surroundings.

We often use the terms movement and orientation. Lowenfeld defines orientation as a part of "mobility":

"Mobility which is the capacity to movement, has two components. One is mental orientation and the other is physical locomotion. Mental orientation has been defined as the ability of an individual to recognize his surroundings and their temporal and spatial relations to himself, and locomotion as the movement of an organism from place to place by means of its organic mechanism". Lowenfeld, (1981)

I've chosen to use the definition given by Storliløkken, Martinsen & Landrø in 1991 because it includes this group of children: "Mobility is a determined activity attached

to objects in a room. In the book “Førlighetsopplæring.” (see references) the authors write:

“The definition focuses on functions and skills related to observable objects in space. This involves that one doesn’t get hung up in the child’s understanding of space and body consciousness. Such things are best provided for by a functional analysis of the child’s skills. The natural consequence of such analyses is structured route learning. Irrespective of whether this route learning focuses on greater independence for the child or the learning of signs, this goal-driven activity will always be connected to objects in space.”

START OF ROUTE.

This is a wheelchair user who cannot drive himself. The figure in the chair represents the child/student. The child has impaired vision, cerebral palsy, and has difficulty processing visual input due to cerebral brain damage
The route the child will drive through is from the entrance to the activity room. A goal of this route is to put focus on what a companion should take into consideration when one is responsible for driving a wheelchair with a child in it. In my conclusion, I have written 10 “driving rules” which can be helpful to keep in mind when one accompanies a child in a wheelchair.

I’ve also included one section on how one can best go through a door with a wheelchair, which in my experience can often be quite difficult.
Being moved somewhere must always have a decisive and meaningful goal for the person involved. Both the child and the companion should have a common understanding of what that goal is. For example, the goal here is the floor mat in the activity room. I call this the ROUTE (from the spot where the teacher first moves the child to the end goal, the mat). Along the route there will be permanent landmarks of that route and markers that can give the child an idea about where he/she is at a given time.

The main aims for learning in a route could then be:

To become more selfhelped
To communicate better through increased understanding of the surroundings.|
To increase the childs possibilities to take initiative and to become more active on his/her own terms.
To improve skills in orientation- techniques (tracking-trailing)
To get an understanding of the room and stimulate spatial perception
To get a better life where the child is “the driver”

By LANDMARKS I mean: permanent, natural distinguishing landmarks like walls, for example. By MARKERS I mean meaningful markers/signs like, for example, a bell on the door of the music room.

The teacher has now met the student and has come into the corridor through the main door, and is standing in the corridor. The teacher must adapt her language and communication along the way based on the students abilities. When driving a child in a wheelchair, it is important to consider that a child with perception problems can have difficulties hearing what the person pushing the chair is saying, if that person speaks at the same time the chair is moving. In addition, the adult behind the wheelchair and the child in it are at two different height levels. One is sitting and the other one is walking. If the child is also wondering where he is going and where he is now, it's no wonder that this can be a challenge.
The floor mat that the wheelchair is on is a landmark. It has a different surface than the floor and can be recognizable to the child in the wheelchair because it is thick, soft, and different from the floor. Listen to other possible sounds (ceiling fans, the door closing behind you, etc.) These sounds can give the child useful information. When one is planning a route for the child, it is important to use all the landmarks and markers that can be useful for the child according to the child's abilities. Security and an overview are important points here!

STOP AND TURN.

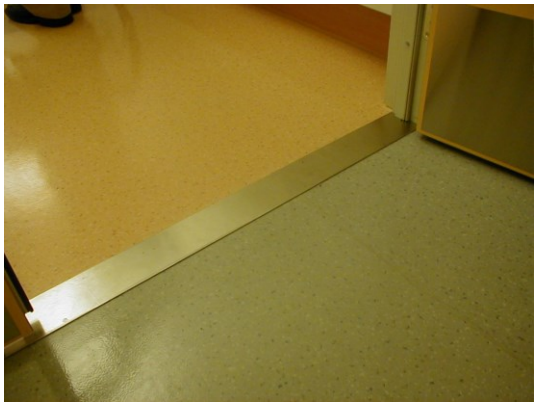
The companion has now started to walk straight ahead and approaches the door opening on the right side. Change of direction: The companion can place his right hand on the child's right shoulder, slow down the chair (marks a change), stop and say "we'll turn right through the door to the kitchen". Tip the chair a bit if necessary; turn it towards the right in a 90-degree turn.

DOOR.

Some doors are often left open, while others are closed. This door is open when the child approaches it, so we can drive through without opening it. Go straight ahead through the door opening. The child's hand can glide along the door on the right side to give the child an idea of where he/she is. Talk to the child about his/her initiatives and observe and comment on what the child does.

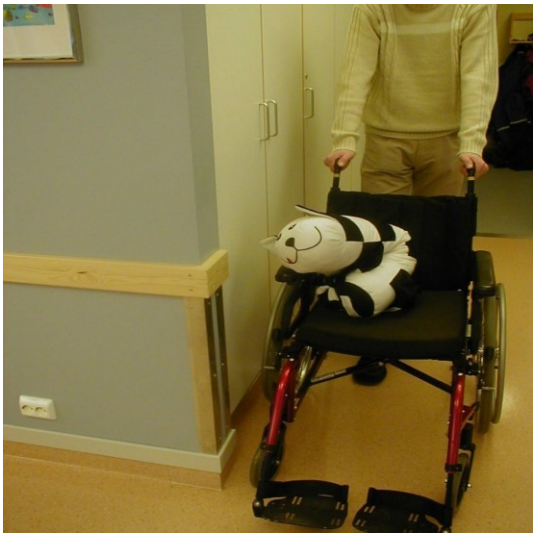
DOORSILL

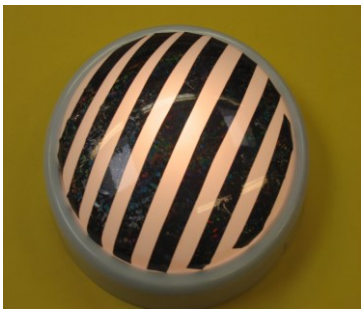
Doorsills can be good landmarks. Here the sill is completely flat and difficult to notice from the wheelchair. If the child is sitting bent over in the chair and looks down a lot, one might consider using this as a landmark since there is some reflection from the ceiling lights here. Remember to confirm for the child what they are looking at. Say in a simple way what you are doing “Now, we’re going through the door”.



WALL

If the child can move his/her hands and arms and is curious about touching things, you can find permanent, tactile landmarks along the way. The child can touch these. Here there is a cupboard with a row of handles. Drive past the row and let the child touch it with the outside of their hand, while you slowly lead the child towards the corner where the wall (which is a new landmark) ends.





MARKERS

Markers: One way to give the child an overview of the situation is to associate meaningful tactile, auditory, and visual markers with specific places (changing room, bathroom, playroom, physical therapy room, resting room, go out) where the child spends time each day. It is important to evaluate the distance between landmarks and markers. The child should also be able to be active towards the markers. He/She should be able to put on the lightswitch, to reach out for the doorknob and so on. Discuss with each other at school/in daycare/with the child's parents how many and how often markers should come based on the how well the child's memory is and how well he/she functions generally.
One structures the movement of the child based on the child's activities throughout the day. It is important that everyone who works with the child knows the route, and that they all know the markers/landmarks for that child. The markers should be permanent and not be changed too often. They should be tried out first to see if they can be recognized, and to see if the child can anticipate them when he/she approaches them. Remember that language and communication are important to give the child an overview of the situation and to feel secure.

CORNER.

From the corner the child will cross a big, open space. Move yourselves with an even, and a little faster, pace towards the next marker, which is the next door opening from the kitchen out to the corridor. You can sing/talk/hum if you like so that the child can hear how the sound changes in such a big room. The sound of your shoes can also provide this information, but this will depend on the kind of shoes you have on that day. By moving more quickly the child will notice the change better when you stop moving again.

OPEN SPACE

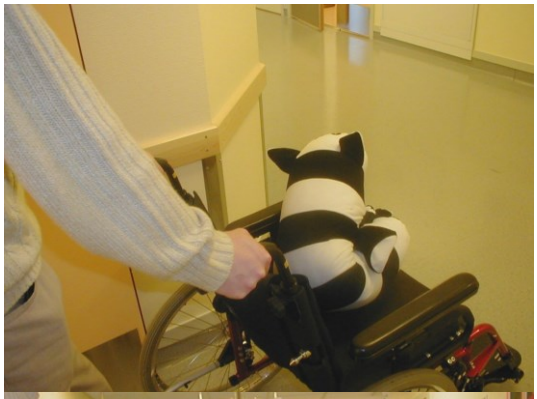
Slow down when you get near the next marker. Remember that the doorsill is flat here, too. Think about whether this is a door that is always left open.

Talk with your colleagues about the “house routines” where you work. Make it clear by changing your speed and saying “Now we’re going into the corridor.” Remember that everyone should call the rooms the same thing, so there’s no doubt which room you’re in or going into.

PERMANENT MARKER.

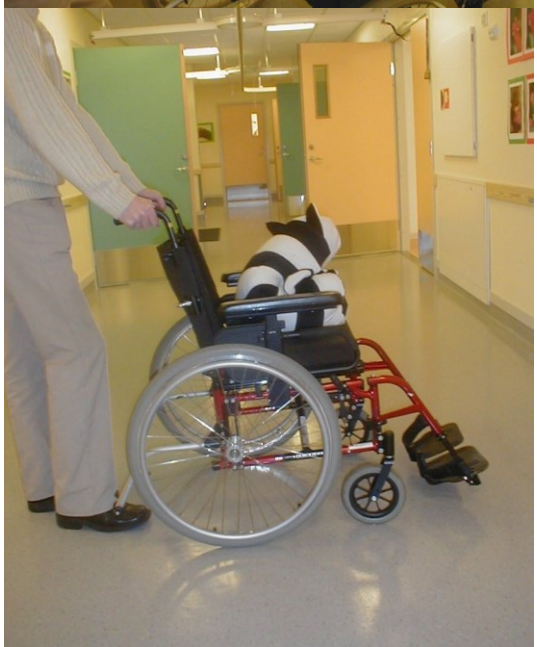
An example of a permanent marker along the route that can be used:
To the left of the door is a cabinet with doors that can be opened. This is a refrigerator where the child can feel temperature differences, hear the fan, and touch the cold door. This can be put into the route as its own activity/marker for the rest of the route. This can later be used when the child needs a drink of milk. Then you can drive there and get the milk so that it will be a natural stop, and the child will know where the milk comes from.

TURN LEFT



It’s easier for the child to get an overview if you always make 90-degree turns and don’t cut corners.

LONG CORRIDOR



Now we are in the corridor. We slow down, stop and put our left hand on the child’s left shoulder. We say “Towards the left through the corridor”, tip the chair a little if necessary and turn the chair 90 degrees to the left.

LIGHT AND SOUND

Look at the picture. If we consider a child with vision problems we have to be aware of glare from direct and indirect light in the room. This can mean that the child's vision can be reduced in this room. There are several factors to take into consideration here:

- Reflections from the light fixtures in the floor
- The doors that open into the corridor create a visual and auditive disturbance that can make it difficult to get a full overview. They can also create dangerous situations if one runs into them.
- One might consider putting a white line/stripe on the floor so you have something to follow, if the child has some sight that can be used for this.

We drive with a little speed now, in the middle of the room towards the end of the corridor.
Observe the difference between this picture and the next one when it comes to visual tranquillity.

LIGHT AND SOUND -DOORS CLOSED

Here is a picture of the corridor with all of the doors closed. Notice how much the picture can change visually and acoustically during the route. When the doors are open, there is a totally different acoustic in the room, as the sounds from the other rooms come out into the corridor.
This can be informative for the child, but can also be confusing.
When you decorate the walls with art, it might be an idea to try to use this art in a functional way. Here it could be set up

and used as a “guiding line” along the wall. If all of the pictures were moved down and hung in a straight line, at the height of a child in a wheelchair, they could function as a guiding line and at the same time the child would be able to look at them.
It could make a big difference in the visual boundaries of the room. One could also consider painting the wooden beam that is hanging on the wall in a contrasting colour.

THE END OF THE CORRIDOR

Outside the door to the activity room at the end of the corridor.
Slow down
Put your hand on the right shoulder and say:
“to the right, into the door of the activity room”
Tip the chair carefully, turn 90 degrees in a swinging motion and start going.

You can use a marker at the door that is adapted to the child and the room to tell the child when we have come to that room. Let the child feel the marker, and use some time on this.
Wait for the child’s initiative.
It is important to know when you see that the child anticipate the route, you know that it starts to understand what comes next. The way of telling the child to change directions during the route must be adjusted in time. You don`t have to do it as clearly as this if you know that the child knows your next move. You must adjust and let the child take initiative by themselves.

WHEELCHAIR 1

The wheelchair must be checked regularly and should be adapted to the child’s handicap and needs. It must, among other things, counteract spasms and crooked positioning and should be a comfortable means of transportation for the child. There are different types of chairs for different purposes, for example outdoor chairs, work chairs, resting chairs, etc.
When the chair is easy to manoeuvre, it is easier to move the chair around in a correct and functional way.

Remember that different levels of air pressure in the wheels, as well as the material the chair is made of, will give a different transmission of information through the wheelchair. Try things out yourself to see if the chair can handle it.

WHEELCHAIR 2

Another example of a wheelchair.
It is a different experience when one is moving while sitting high up over the ground than when one is sitting lower and more upright.

What is left of the child's sight can be interesting when it comes to orienteering. By adapting light, colour and contrast, the child might be able to use their sight for orientation with the help of some of the markers and landmarks. It can be a good idea to create good contrast along the door frames so the child doesn't crash into them, or to give the child a chance to separate them from the rest of the visual information.

It is always a good idea to go along the route together with the child first before one chooses the different markers along the way. The child knows what they are. It is important that the route is adapted individually and is safe, informative and predictable.

HOW DO YOU GO THROUGH A DOOR?

THE DOOR OUT

The child must know which door it is, predictability is important.
Slow down right before the mat, drive up on it and stop outside the door right before the outer door (the door out to the schoolyard). If you just say "door", well there are a lot of doors.
It's a good idea to plan how one is going to go through the door in advance, so that one does it in the same way each time. In this way the child will know what to expect and will learn to be more independent. Let the child participate as much as possible.

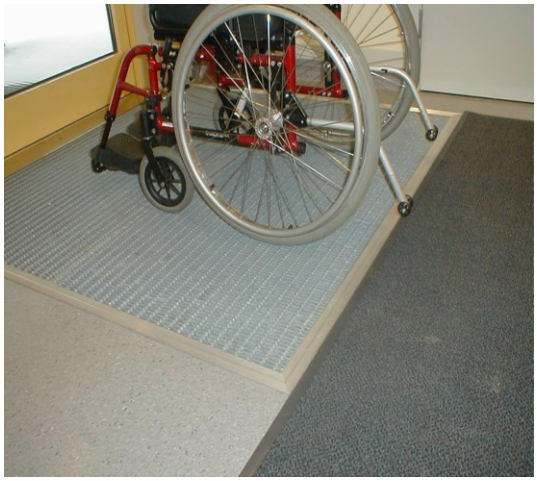
If the door can be opened automatically by pressing a button on the wall or by pulling on a rope inside the building, then this is the easiest way to do it. The child can perhaps participate by finding the button himself and pressing it. Tell the child to listen to the sound of the door opening and start driving the chair through the door.

If the door is a manual one, then it's a good idea to have a permanent place to keep the doorstopper. Tell the child that you are going to go get it, open the door and put

the doorstopper in place. Then go back to the child, drive the chair over the doorsill and outside. Remove the doorstopper and drive on to where you're going.

On busy days it's easy to forget how this should be done. I've done this myself, gone up to a door and pushed it open with the chair, or turned the child around 180 degrees to drag the child through the door backwards, and then turned the chair 180 degrees back around again and gone on. It feels terribly uncomfortable for the child in the wheelchair.

LANDMARKS



Permanent landmarks for the child can now be:

- the procedure itself
- the mat in front of the outer door (if it is always there)
- the sound of the doorstopper when it is placed under the door
- the change of air when the door opens
- the sound of the outer door opening and closing
- perhaps the child being out in the schoolyard, if it's recess time and one goes out at the same time every day...

Remember to plan things, so one can take the time to make these movements throughout the day and maybe use them as a part of the learning process for the child, to give the child an overview and that the child is active and learning during these movements.

10 "Driving Rules" For Companions Who Drive Wheelchairs

1) Give short, clear and relevant verbal information to the child before doing anything. Try as best as you can to give information face-to-face.
2) Plan the route before walking it. Your goal is to create a good overview and provide security for the child.
3) Try to avoid doing other activities that can disturb the child while you are driving the chair, for example talk to colleagues, etc.
4) Use speed with the chair in a deliberate way to signal the child. Slowing down means that there will be a change, that something is going to happen.
5) If possible, make 90-degree turns to change direction.
6) Indicate a change of direction by:
    - Slowing down
    - Put your hand on the child's shoulder to show the direction (Left hand on the left shoulder means "towards the left")
    - Say where the two of you are going
    - Tip the chair carefully and make a 90-degree turn
    - Start to go
    - Walk in a steady pace

7) Avoid unmotivated "stop and go" driving.

8) If you have to leave the child (out of sight/hearing range), place the child up against something, and not in the middle of a room without secure holding points
9) Use the wheelchair constructively. Remember to avoid pulling the chair backwards and don't open doors towards the chair.
10) Try to put yourself in the situation of a visually impaired child. Try to sit in a wheelchair yourself, and let others drive you around. Drive through routes and transfer your experiences over when you yourself are driving the chair with the child in it.

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2. ACTIVITIES OF DAILY LIVING