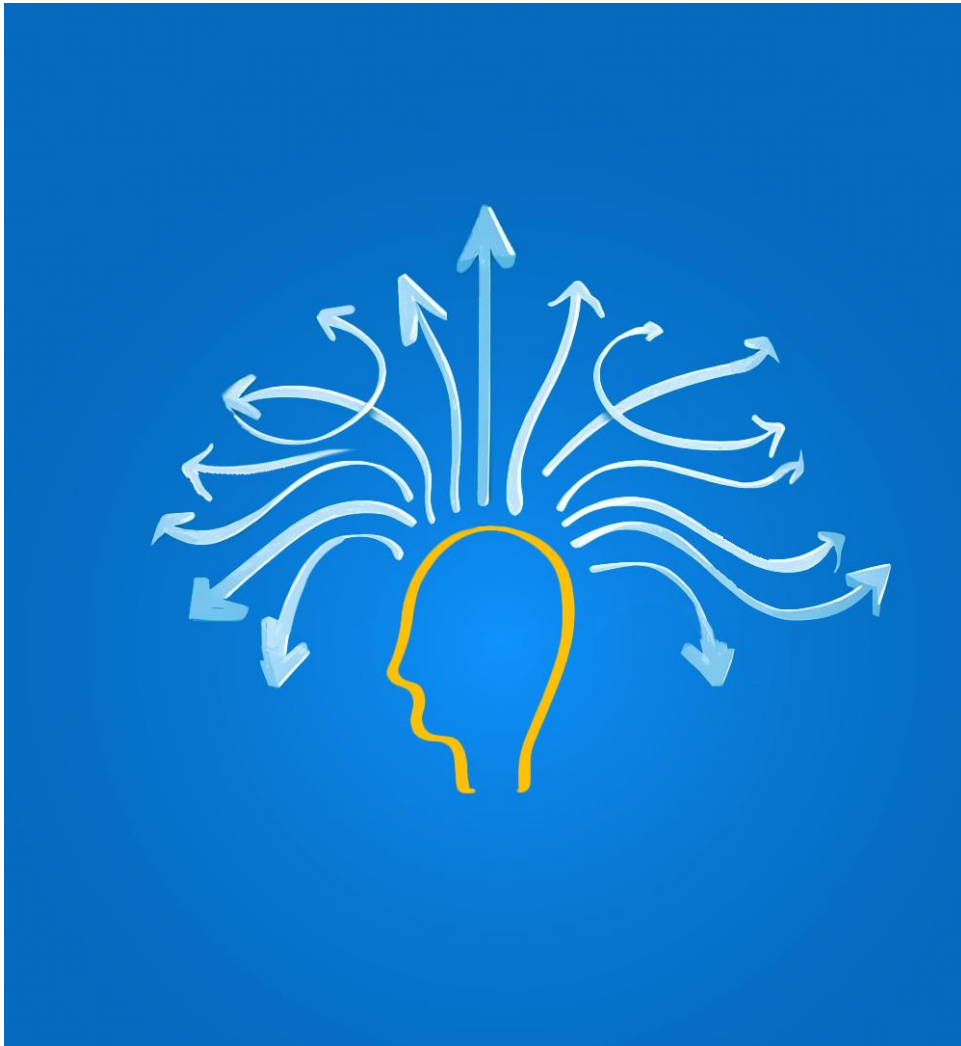


‘WegWijzer’

(Wayfinder)



**Psychoeducation
on navigation**

Psychoeducation: Navigation

Contents

1. What is navigation?.....	3
2. Goal of the training.....	4
3. Landmarks.....	5
4. Perspectives.....	6
4.1. First-person perspective	6
4.2. Bird's-eye perspective	7
5. Navigation strategies	10
5.1. Navigating from the first-person perspective	10
5.2. Navigating from the bird's-eye perspective	12
5.3. Combining the strategies	14
6. Applying new strategies.....	15

1. What is navigation?

To navigate is to find your way. We navigate every day, often without realizing it. For example, we navigate when walking to the supermarket or bus stop or cycling to a family member's house. Navigation isn't only used for long trips, such as going from home to work or on vacation. It also occurs during short trips, such as moving around indoors. Consider finding the outpatient clinic in a hospital or locating your keys, for instance.

Navigating is a complex skill. Various cognitive processes work together to help us find our way. For instance, our visual perception helps us determine our location. Our memory allows us to remember places and find them again later. We also rely on our planning skills to figure out new routes. Therefore, navigation is not a simple process; it depends on the cooperation of multiple cognitive functions. Brain research shows that large networks in the brain become active when a person performs a navigation task.

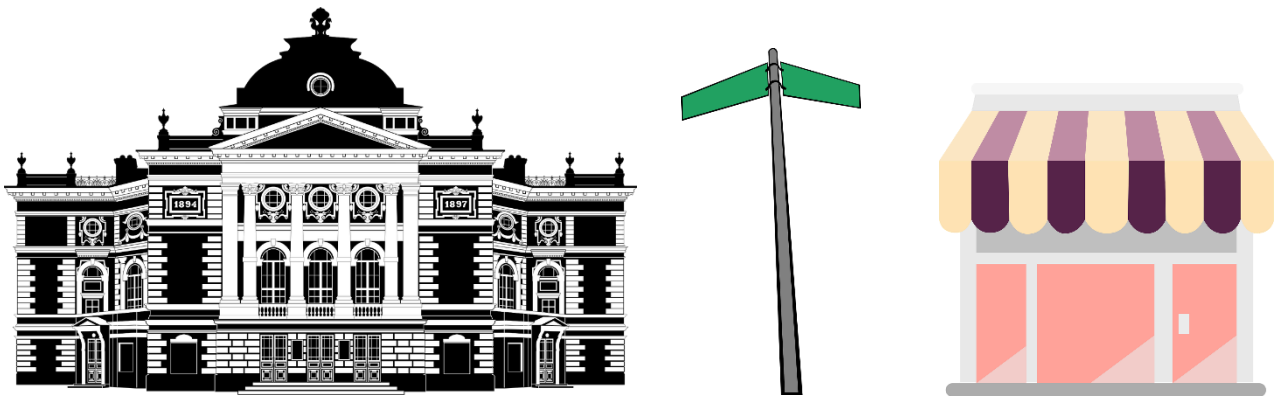
2. Goal of the training

Most people have little difficulty navigating. Thanks to our navigation skills, we can live independently. However, there are clear differences between individuals. Some people are better at navigating than others, especially in new or unfamiliar environments. You might think of someone you know who often gets lost. Navigation can also become more difficult after a brain injury.

Understanding how navigation works and practicing navigation can help with rehabilitation. In this training, we will determine which navigation method suits you best. You will receive a program to practice with at home. To improve your navigation skills, it is important to understand how you process spatial information.

3. Landmarks

Landmarks are objects or features in the environment that stand out and are easy to remember. Some examples of landmarks include buildings, specific intersections, street signs, or prominent objects such as train tracks or radio towers.



Landmarks are important for effective navigation. They can be used to organize the environment, help you understand your surroundings, and indicate your location along a route.

When you're navigating, you first remember what the landmark is (**what is it?**). Then you connect it with the place where it is (**where is it?**). There are different ways to do this.

4. Perspectives

We can remember a landmark and its corresponding location in two ways: from a first-person perspective or from a bird's-eye perspective. We will discuss both methods of remembering.

4.1. First-person perspective

When you look at the environment from a first-person perspective, you are at the center of it (egocentric). You look at your surroundings from your own perspective (see Figure 1a). For example, you might think, "The supermarket is to my right." If someone says, "The butcher is to the left of the greengrocer" or "My house is behind the train tracks," that person is using the first-person perspective to describe the locations.

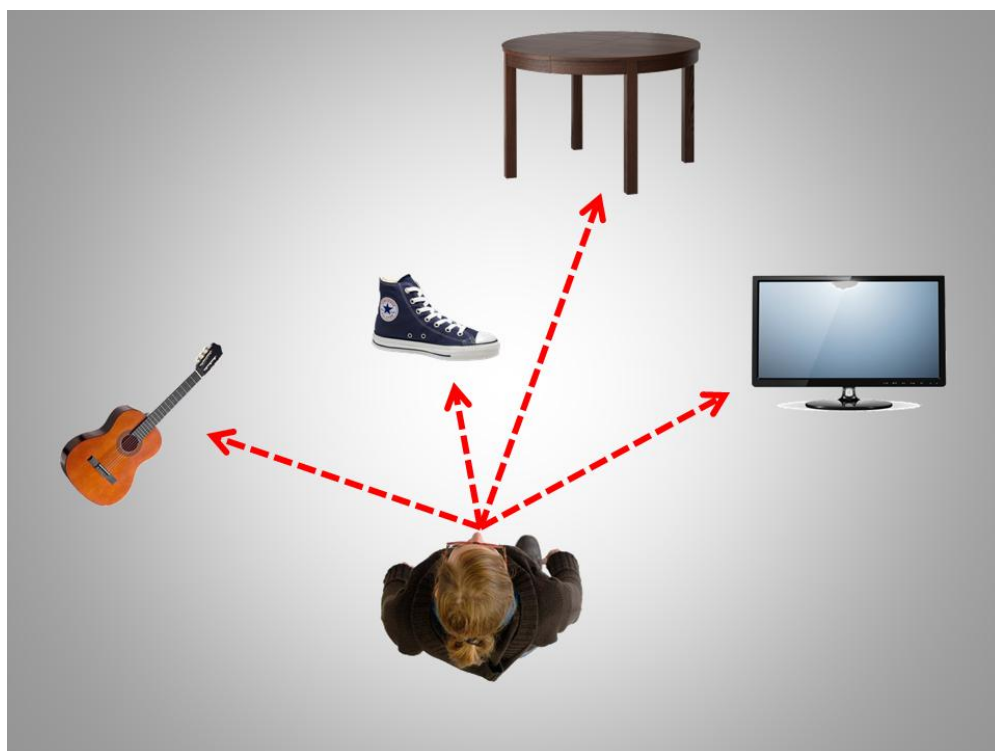


Figure 1a. **First-person perspective:** The locations of objects are remembered from your own point of view. For example, you remember that the TV is to your right and the shoe is to your left. You remember how far away and in what direction you are from the objects around you.

4.2. Bird's-eye perspective

When you look at the world from a bird's-eye view (allocentric), you see the environment from a different perspective. You look at how places are connected to each other (see Figure 1b). For example, "The supermarket is next to the train station." This way of thinking isn't tied to your own position. You can remember the locations and landmarks as a kind of map.

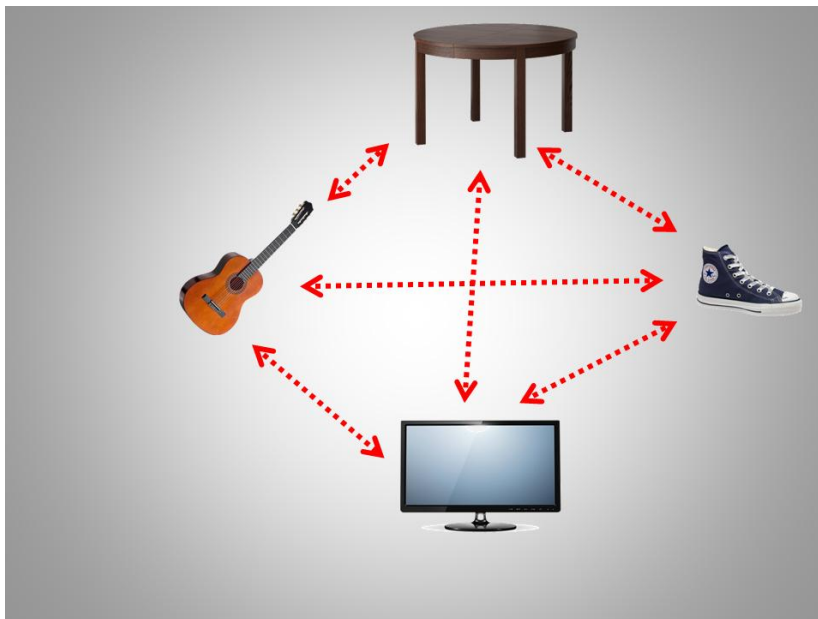


Figure 1b. Bird's-eye (allocentric) perspective: With the bird's-eye perspective, you remember locations independently of your own position. You create a kind of mental map of the objects and know how they relate to each other.

Imagine you're looking at a map of the Netherlands. You then know that Amsterdam is north of Rotterdam and that Utrecht is east of both cities. You can also remember the distances and directions between the cities.

You can also use the bird's-eye (allocentric) perspective on a smaller scale. For example, when you think about where the furniture is located in your house, you might have a "mental map" in your mind. When we remember locations using a mental map, this is called a bird's-eye perspective.

Examples:

First-person perspective



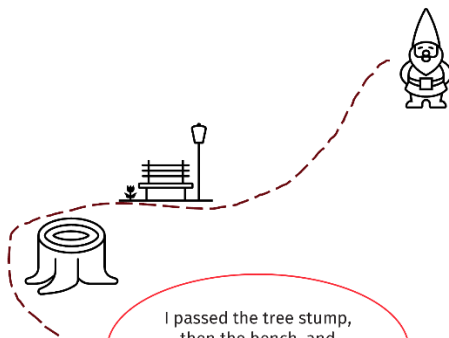
The white house
is on the right
side of the black
house

Bird's-eye perspective



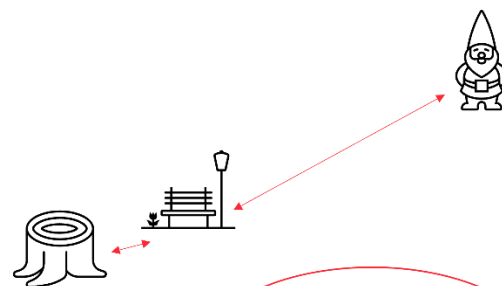
The white house is
five meters from
the black house

First-person perspective



I passed the tree stump,
then the bench, and
then I kept going toward
the garden gnome.

Bird's-eye perspective



The bench is located north
of the tree stump, and the
gnome is—at a greater
distance from the bench—
about 20 meters away in
the garden bed.

First-person perspective



Go straight at two
intersections. Take a right
at the third intersection.
Then, make a left turn
and take the third right
turn to reach the park.

Bird's-eye perspective



To get to the park, I turn
off of First Avenue at 4th
Street. Then, I walk down
Avenue A towards 5th
Street.

First-person perspective



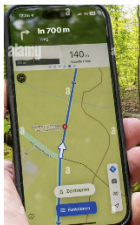
Go straight at two intersections. Then, take the third right. Next, turn left and take the third right to arrive at the park.

Bird's-eye perspective



To get to the park, I can turn off of First Avenue at 4th Street. However, I can also [...]

First-person perspective



I just have to follow the arrow.



Bird's-eye perspective



I walked with my face toward the sun between 9:00 and 10:00. The sun rises in the east, so I walked towards the east. It is now 4:00 p.m., and I want to take the same route back. Since the sun sets in the west, I will follow it to go back west.

First-person perspective



I just have to follow the arrow.



Bird's-eye perspective



There is a lake on my left and right. In front of me is a large lawn. So, I must be.... here.

5. Navigation strategies

We have now talked about landmarks and the perspectives we use to describe their location and remember where they are.

When we navigate, we have a goal: we want to get from point A to point B. To this end, we need to use information about the landmarks at point A and point B, and information about where they are located. Roughly speaking, there are two ways to do this: navigating from the first-person perspective and navigating from the bird's-eye perspective.

5.1. Navigating from the first-person perspective

People who navigate from the first-person perspective mainly use fixed routes. A route is a sequence of turns and landmarks that connect places. When you imagine a route, you usually do so from your own point of view. Think, for example, about the route from your home to the nearest supermarket.

One way to remember a route is by using a series of turns. For example: 'Take the first left, then the second right.' This allows you to follow the route without having to remember landmarks. Another way to remember a route is to link turns to landmarks. For example: 'Turn right at the supermarket, left at the butcher's, then continue to the square.' Here you link a place (e.g. the post office) to an action (e.g. turning right).

People who navigate from the first-person perspective mainly remember the order of places. They link this order (first, second) to an action (left, right, straight). Other details of the environment, such as exact distances, are usually less important. Another way to navigate from the first-person perspective is to use your sense of direction. Imagine this as a compass that always points to a specific place, such as the entrance to a building. If you walk through an environment and imagine where the compass is pointing, you can find your way back.

Figure 2. Example of first-perspective navigation

- a. At the **shop** you turn left. Walk straight ahead until you see a **yellow building**.
- b. At the **intersection** near the **yellow building**, you turn left.
- c. Afterwards, take the first turn right.



5.2. Navigating from the bird's-eye perspective

A **bird's-eye perspective** is not dependent on your position within an environment. It's as if you have a mental map of the area.

The most well-known example of this perspective is the use of a map. You can use a paper map or digital maps, such as Google Maps on your phone. Then, you link the abstract knowledge about the environment on the 2D map to your own point of view.

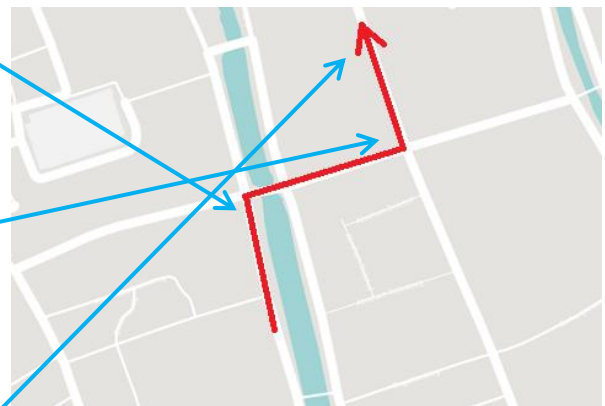
You don't always have a map on hand. However, as you walk through an area, you can also mark landmarks on your mental map and use them to find your way around. For example, by thinking about the directions and distances between the supermarket, the baker's, and the church, you can determine your location. Here, you create a bird's-eye perspective from your first-person perspective to determine your location.

You can also use major landmarks in a city. In the city centre of Utrecht, the Dom Tower can be seen from many places. You can determine your position by looking at where the Dom Tower is. For example: you are walking along the canal and see the Dom Tower on your left. This means that you are walking south.

Figure 3. Example of navigating with the bird's-eye perspective



De richtingen en afstanden tussen kruispunten worden als een 'mentale plattegrond' onthouden



Using the bird's-eye perspective allows you to create a mental map of your surroundings. If you know where you want to go, you can use this mental map to find your way there. At intersections, you can determine your location on the map and the direction in which you need to go.

5.3. Combining the strategies

Both perspectives and navigation strategies help you find your way. Neither is always better. The best strategy depends on the situation.

Example 1: If you are in a building with narrow, similar-looking corridors and few landmarks, it is better to use the **first-person perspective**. Remember a series of turns, like left, right, left. It's hard to create a mental map without landmarks.

Example 2: If you park your car in a big parking lot, like at the beach, it can be difficult to remember the way back to your car. In this case, it is better to use a **bird's-eye (allocentric) perspective**. Imagine how the parking lot looks from above and roughly remember at what location on this mental map you have parked.

6. Applying new strategies

We have discussed the background information on navigation. During the training, you will practice new ways of navigating and using both perspectives.

Tips for practicing new navigation skills:

- Navigation already starts before you leave the house. Come up with a plan: what will you pay attention to?
- Look closely at your surroundings and think about what information is important and how you can use it. Take your time to consider the options you have.
- Afterwards, think about how the navigation went. What went well? What was difficult?
- Explain your new navigation strategy to a friend or acquaintance. Explaining it will help you understand the strategy better and may help you discover new insights.