Supplementary Material

Bohbot et al., (2007) Journal of Neuroscience.

Verbal Reports

At the end of the experimental session, the experimenter asked 1) "Can you tell me how you solved the task from the beginning to the end of the experiment?" If the participant did not report anything about the starting position, we asked "do you remember whether the starting position was the same in every trial?".

Spatial memory group (n=8)

1) I always used the shapes of the mountains, the trees and the sun. I always tried to use them. In the high wall trials I tried to use the sky but it was very hard. I do not know if the starting position was the same.
2) I used the trees and the sun. The first two trials I also used the mountains. After that I continued to use the trees and the sun. I do not remember if it was always the same starting position because I paid attention only to the landmarks.
3) I always used the trees from the beginning to the end. I also used the mountains. I do not remember about the starting position.
4) I used the trees and the sun to orient my-self. Even in the high wall trials I tried to use the sun, which was behind me. Not sure about the starting position.
5) I always used the trees and after the first trial I also used the sun. In the first high wall trial I tried to use the corners and in the second one I also tried to imagine the position of the trees.
6) I used the mountains and the trees for the first few trials and after I also used the sky, but everything was in relation to the sun. I tried to use the sun in the high wall trials.
7) I always used the trees trying to orient my-self. I also used sometimes the mountains. I guessed in the high wall trials, it was impossible to do for me. I do not remember the starting position.
8) I always used the trees and the light, I mean the sun, specially in the high wall trials. I do not remember the starting position.

Shift group (n=6)

1) I started to use the trees and the sun. In the first high wall I realized that the starting position was always the same, and after few trials I started to count the arms from a tree.
2) I used the trees, the sun and the mountains. After the first high wall trial I thought to find another strategy in order to solve the task without using the landmarks, then I called the arms with a, b, c… After the first high wall I realized that the starting position was always the same.

3) I started the task using the trees and the mountains. Then, after the trial with the high wall I started to consider a sequence of open and closed arms (saying +, -). The starting position was always the same and in the last probe trial I also tried to use the sun.
4) I started using the mountains and the trees. After I made errors and I decided to change strategy. So, I counted the arms counter clockwise. After I realized that the starting position was always the same, I always counted the arms.
5) I used the trees, the sun and the mountains for the all first session. After I started to count the arms. In the first high wall I tried to use the sun and the sky, whereas in the second one I counted also considering the sun.
6) I started to use the trees. After I started to consider the possibility to count the open and close arms, starting always from the same place. The starting position was always the same.

Response group who used an external landmark (n=12)

1) I always used a tree to count the arms. In the high wall trials I used the starting position that was always the same.
2) I always counted, first from the trees and after from the starting position, which was always the same.
3) The path between the two trees was the number 1. Then I counted all the time. I also realized that the starting position was always the same.
4) I numbered the arm between the two trees as number 1. And I counted the arms from that for all the experiment. Always same starting position.
5) I always counted using the trees. In the high wall trials I tried to use a configuration of the open arms; the second probe was easier. I'm not sure about the starting position.
6) I counted from the trees. After the first high wall trial I counted from the sun.
7) I always counted the arm from the tree. In the first high wall trial I guessed the first and then I used the same sequence used before. In the second one I used the starting position, which I realized was always the same.
8) First I used the trees to start to number the arms and count them. After I realized that the starting position was always the same so I counted considering it.
9) I counted the arms from the one between the two trees. In the high wall trials I guessed the first arm and after that I used a sequence. Yes, the starting position was the same in each trial, but I'm realising that just now that you asked me.
10) The arm between the two trees I called number 1, and I counted all the time from it. I also realised that the starting position was the same.
11) I always counted from the trees. In the first high wall trial I guessed the first arm and after that I tried to use the correct sequence. In the second probe I had no problem since the starting position was always the same.
12) I used the small tree to count. In the high wall trials I used the starting position.

Response group who used the starting position (n=4)

1) I counted from the starting position all the time.
2) I verified that it was always the same starting position. I counted all the time from the beginning to the end.
3) I counted the arms using a sequence of open-closed arms. At the end I also look sometimes, while I was counting, at the sun.
4) I did not look at the landmarks in the environment because I always counted from the stating position, which I realized was always the same.