What on Earth is Going On in My Mind When I'm Orienteering?

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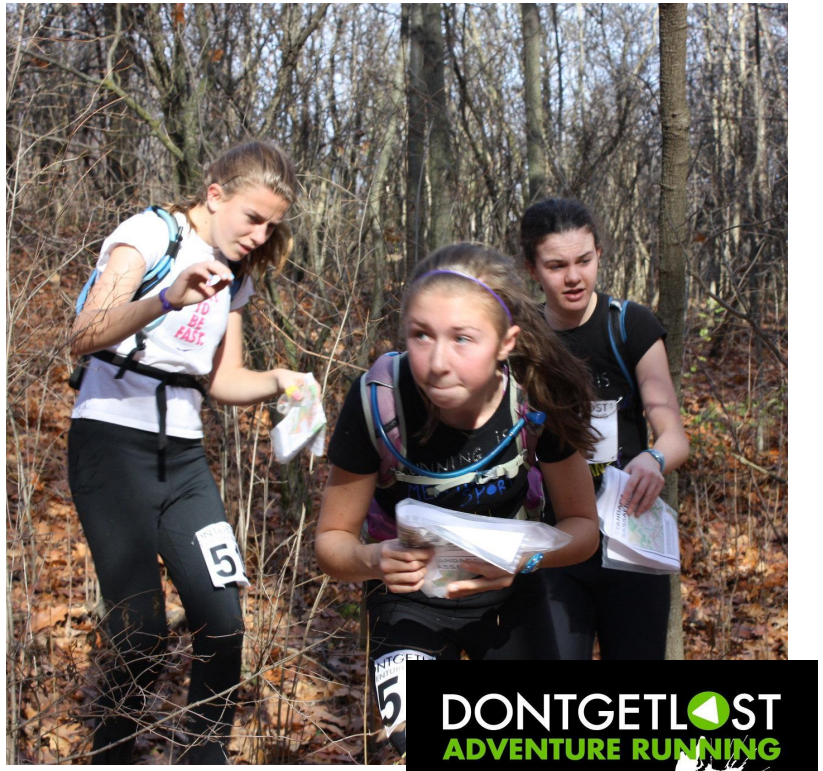
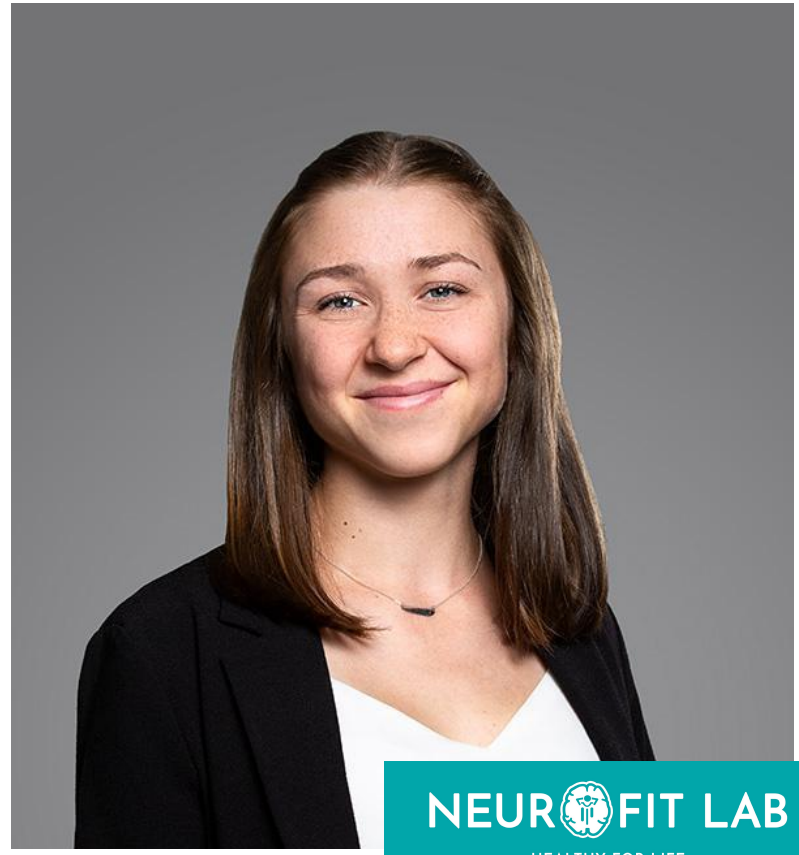
Sprint Camp 2025



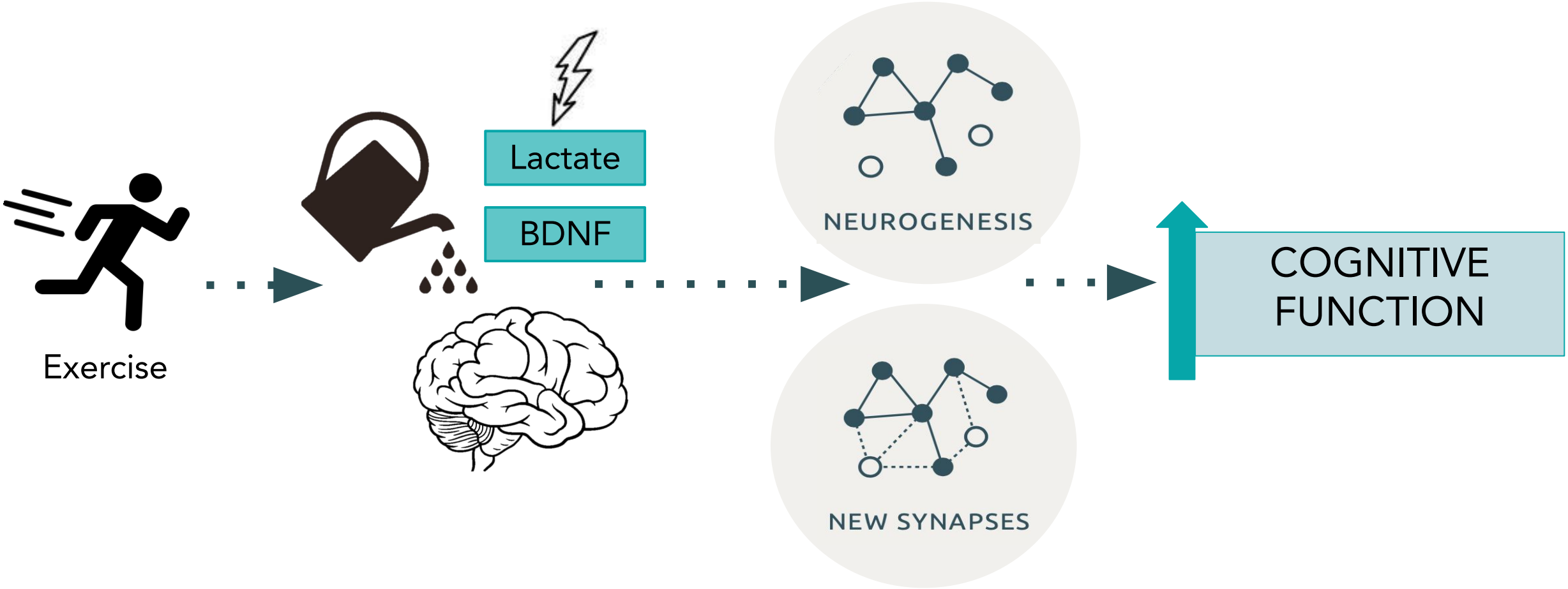
DONTGETLOST
ADVENTURE RUNNING
Kids

TEAM
CANADA
ORIENTEERING

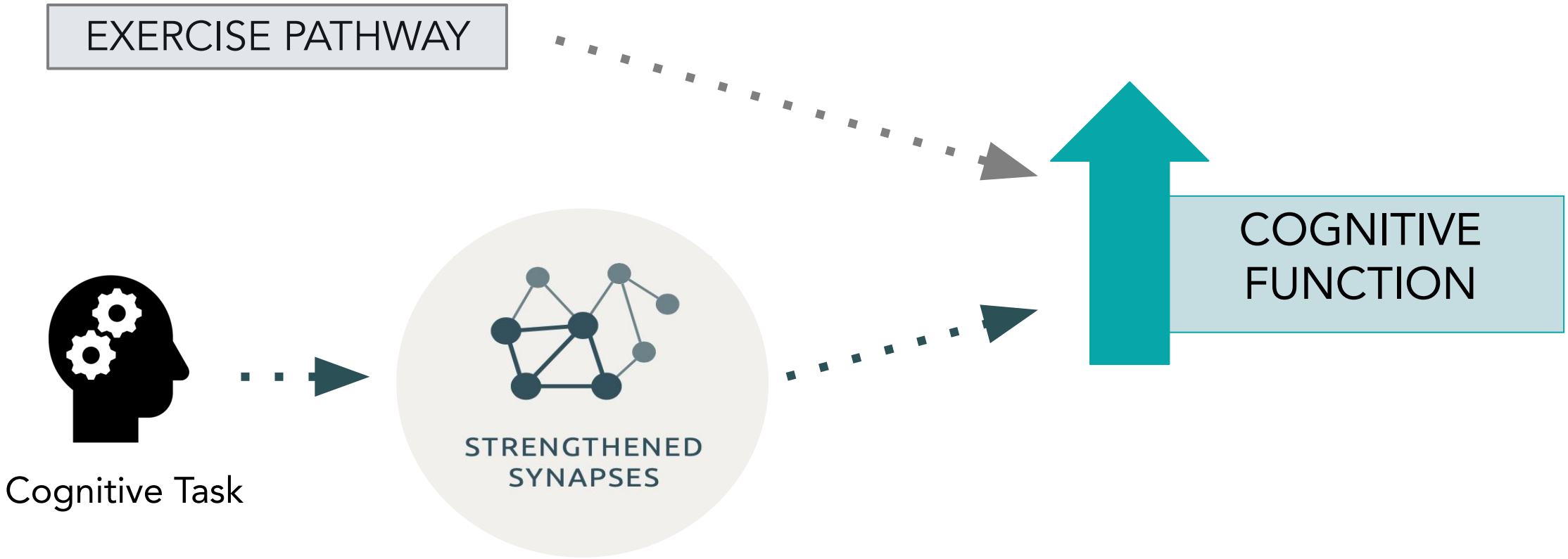


NEUROFIT LAB
HEALTHY FOR LIFE

Your brain on ... exercise?

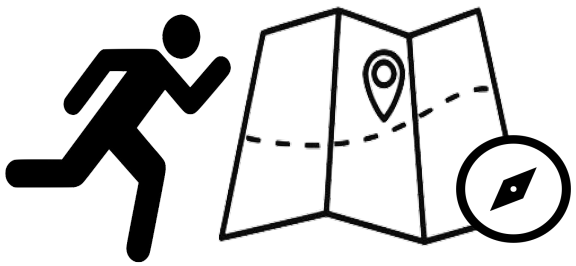


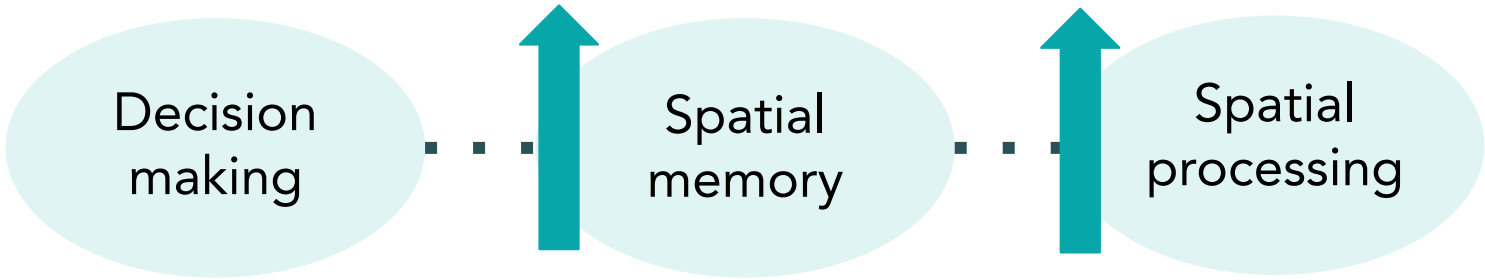
Two pathways to success



Orienteering: The ultimate brain training?

ORIENTEERING





Even after 1 session of ~12 minutes in total beginners,
when done at a high intensity!

But I Still Don't Know What Goes on in My Mind When I'm Orienteering?!

Three types of finding your way

Procedural/Landmark Wayfinding

- No spatial information or relationships
- Series of Landmarks
- "Turn right at the brown building"

**More commonly used by non-orienteers

Egocentric Spatial Navigation

- First person viewpoint
- Memory of a sequence of features along a route
- Viewpoint dependent

Allocentric Spatial Navigation

- Third person viewpoint
- Spatial relationships between elements/features
- Viewpoint Independent

**Orienteers of higher skill level are able to switch back and forth between both, regardless of age!

Think about it: How do you give directions?

Procedural/Landmark Wayfinding

- Might write down a list of turns and landmarks
- Left/Right
- No cardinal directions

Egocentric Spatial Navigation

- Might turn your body to orient to hypothetical direction
- Imagining/remembering yourself doing the route in first person
- Left/Right

Allocentric Spatial Navigation

- Cardinal directions
- Might mention multiple landmarks in relation to each other
- Might draw a map

Think about it: Deciding what route to take in a familiar place

Procedural/Landmark Wayfinding

- Take the same route every time, regardless of speed/distance
- Trouble with detours from the route

Egocentric Spatial Navigation

- Visualize a series of first-person "snapshots" of key places on the route
- In the direction of travel
- Link the images together to determine route

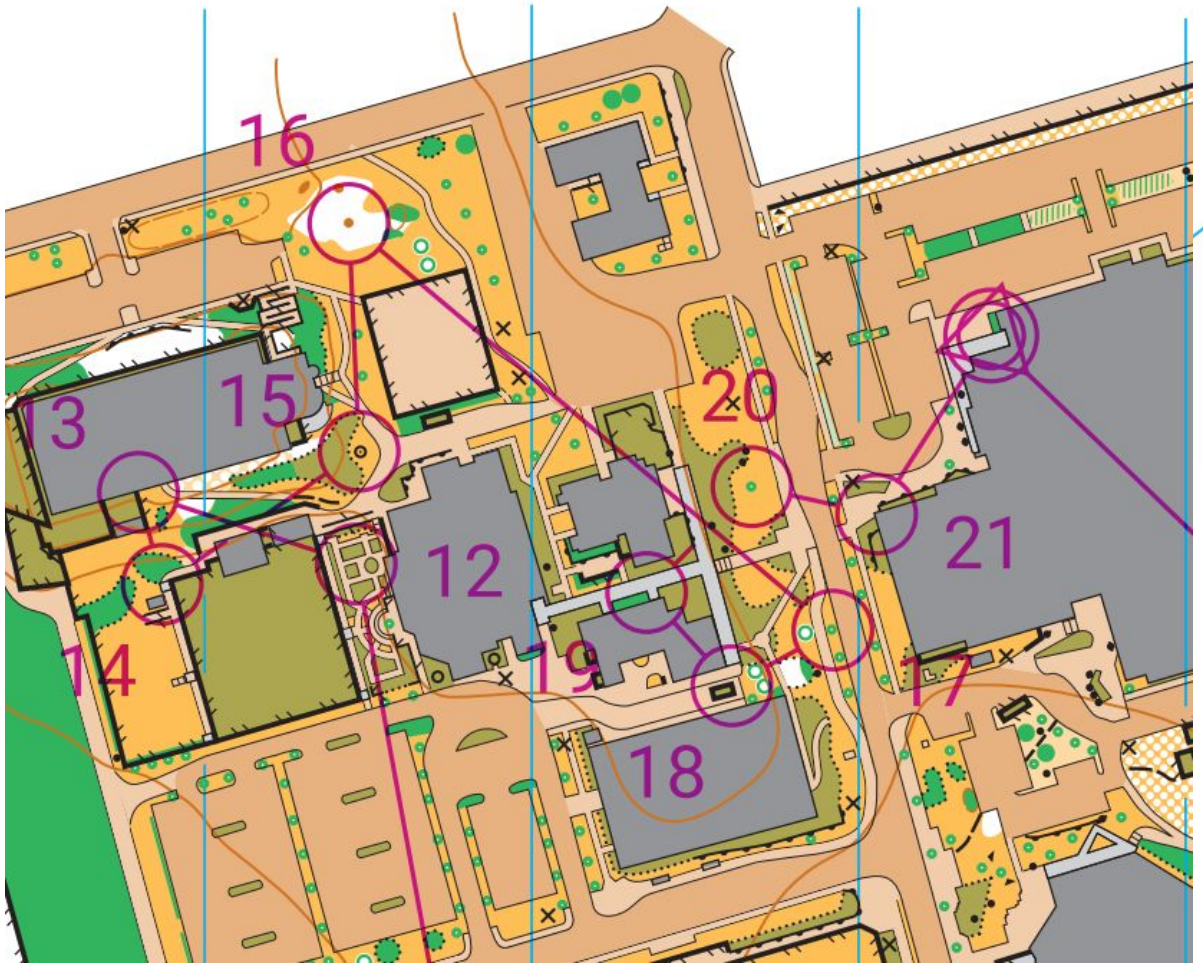
**This doesn't help much in places we've never been!!

Allocentric Spatial Navigation

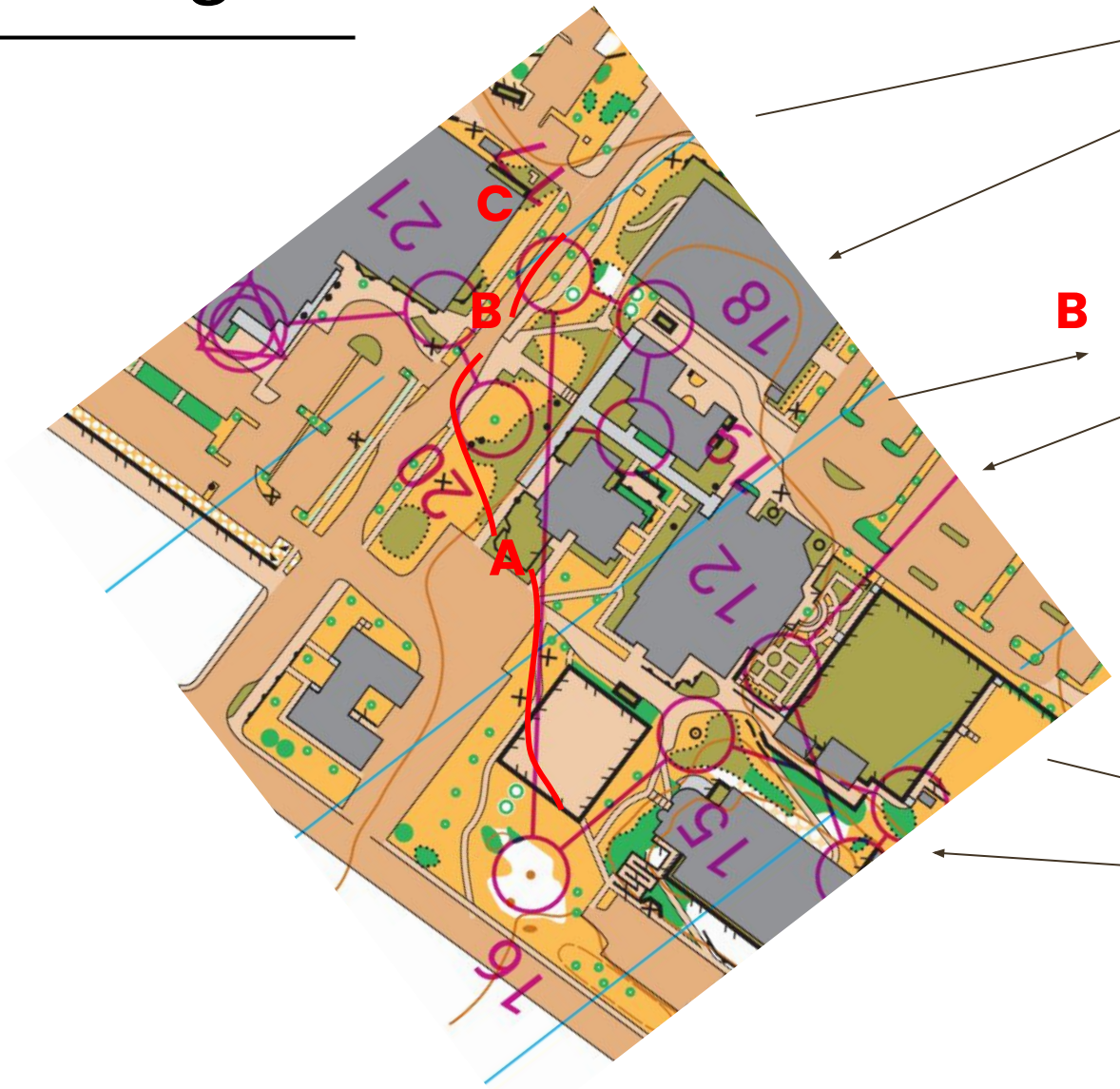
- Visualize road map in mind
- Imagine a car driving down the roads from third-person view
- Use the relationship of elements of the map to decide best way to get there

*Essential for navigating in NEW places

Combining egocentric and allocentric navigation



Combining egocentric and allocentric navigation



A

B

C

Ever mess up a control you've already been to?

Why Does This Happen?

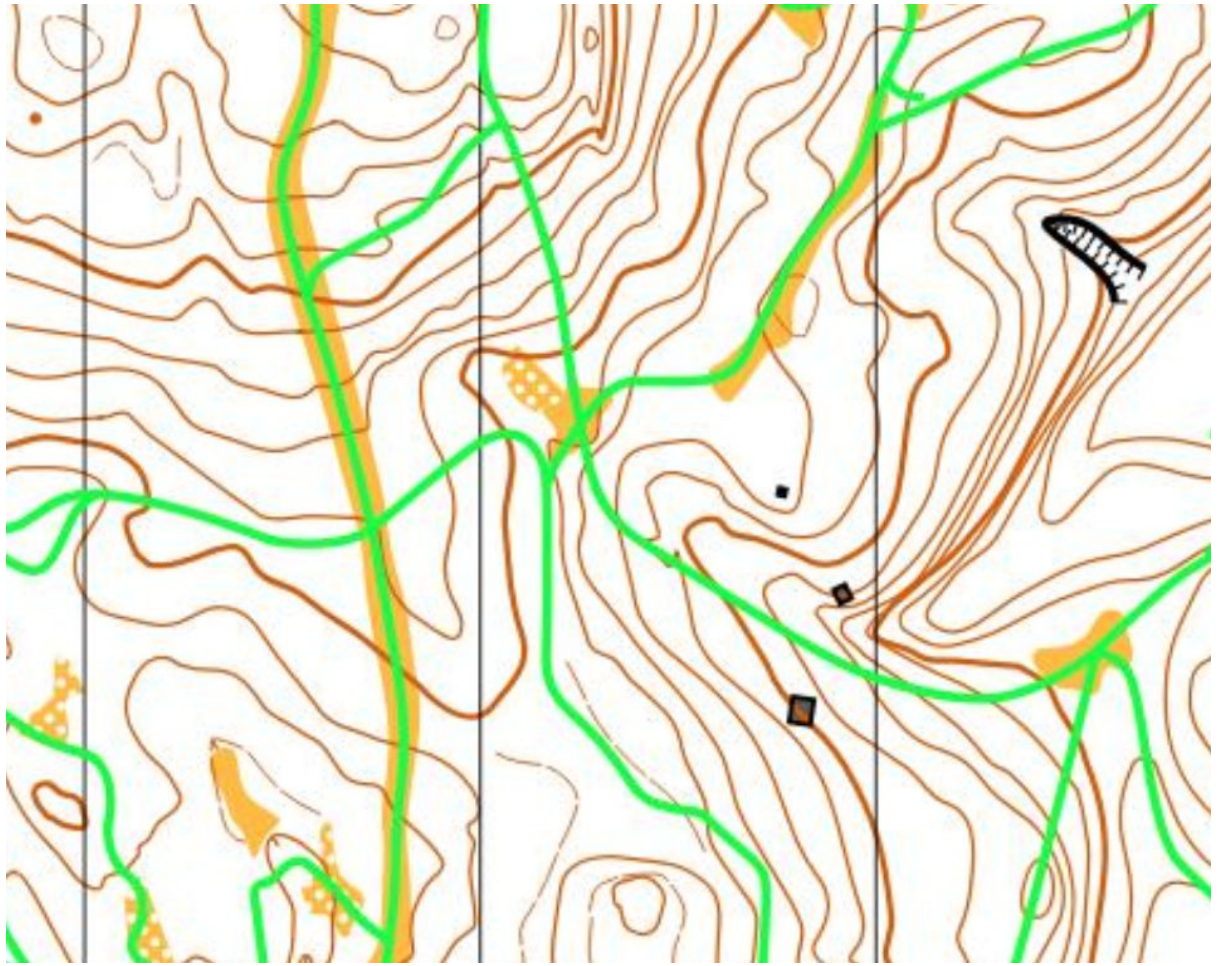
Orienteering Explanation:

- Underestimated difficulty
- No plan, "I've already been there, I'll just know when I get close"

Brain Nerd Explanation:

- Reliance on Egocentric Navigation
- Approaching from a different direction than before - memory sequence is from the wrong viewpoint
- Need allocentric understanding of relationships between features

Does how we navigate change based on the info available?



… Probably!

Training Tips: Next Level Visualization and Analysis

- Visualize the route from the angle you'd be going and from different angles
- Try visualizing with and without orienting your map to the direction of travel for practice with mental rotation
- Visualize yourself looking at the map and then into the terrain
- Visualize in real time
- Drawing your route after a race is a great way to practice switching between navigation types