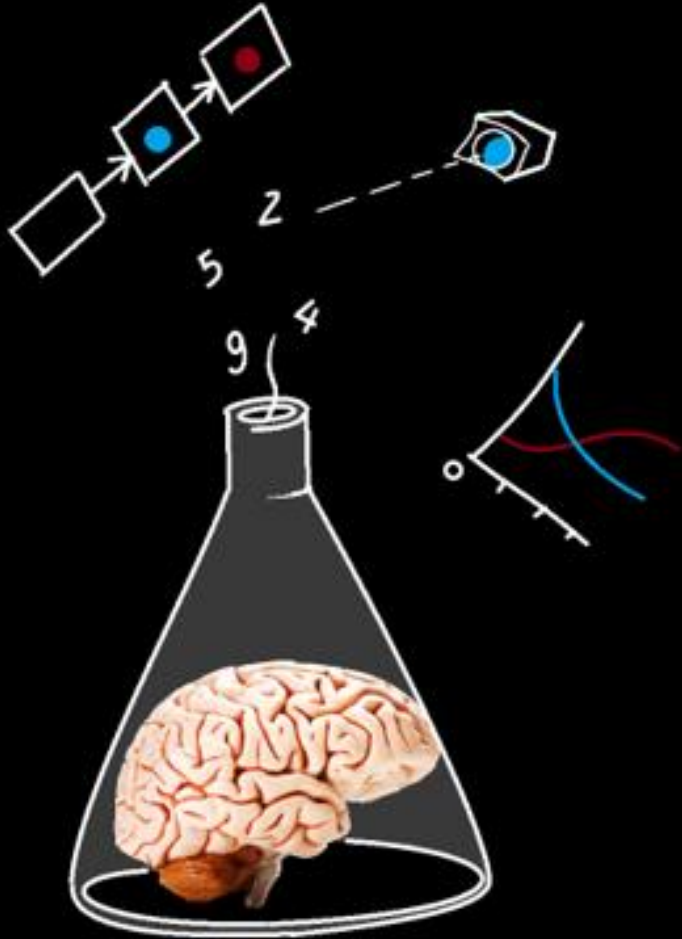


# Cognitive Psychology and its Applications

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# Today

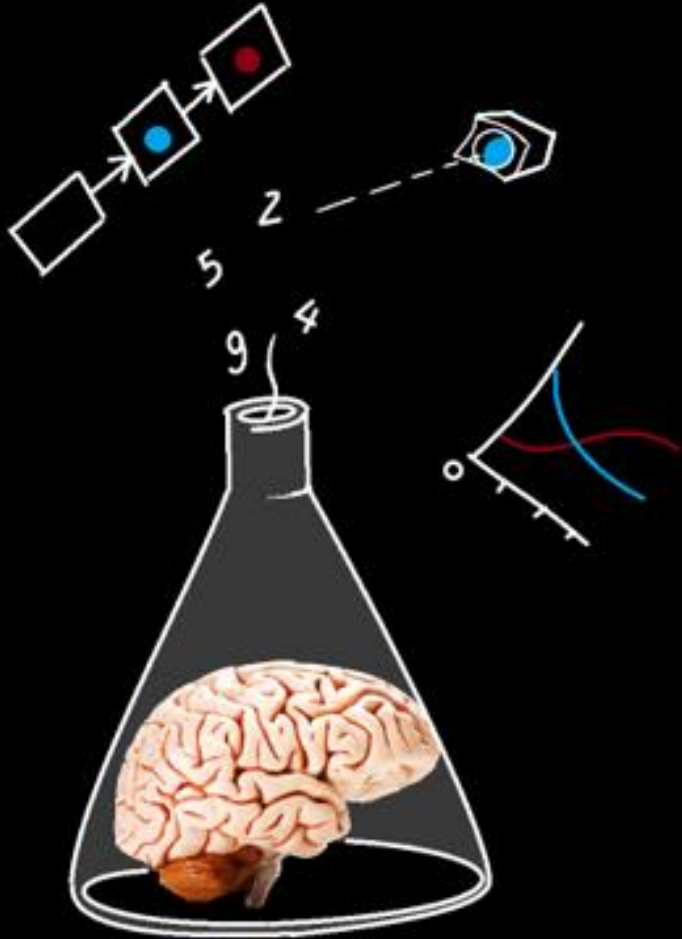
## Practicalities:

- Location, Study materials, Canvas
- Schedule
- Examination

Course objectives

Research topics

A little research exercise

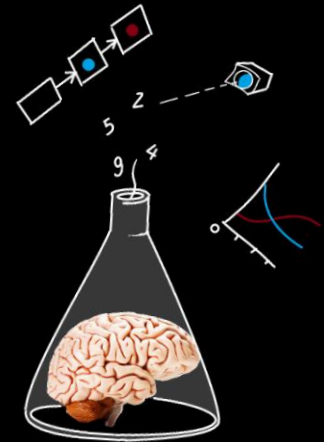


# About myself

2012: Bachelor's degree in Utrecht  
Liberal Arts & Sciences

2014: Master's at the VU  
Cognitive Neuroscience

2015–2018: PhD in Marseille  
Researching reading

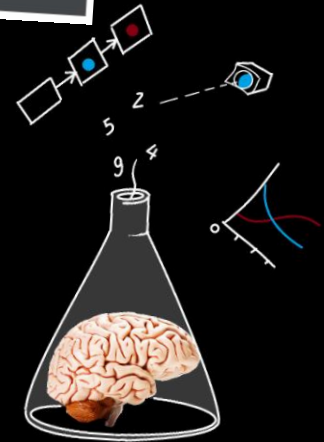


# Practicalities

Monday 11:00 → HG10A00

Thursday 15:30 → HG02A00

Study materials: *An introduction to human factors engineering (Wickens et al.)*  
+ *Canvas material*





# Disclaimer

*New course design!*

Less focus on learning human factor principles; more focus on knowledge of the brain and designing applied cognitive science experiments



# Cognitive psychology: *what is it?*

# The study of the (human) brain and behavior

# Understanding brain and behavior in terms of its functions (cognitive processes):

- perception, attention, memory, motor control, executive functions



# Schedule

## 3 components:

- lectures
- workshops
- research

Date & time	Lecture	Workshop	Research
04-09 at 11:00	Introduction		Form groups
07-09	<i>No meeting.</i>		Allocation projects to groups & Brainstorm
11-09 at 11:00	From theory to prediction to experiment	Cats, dogs, & capybara's: Building an experiment in OpenSesame	Work on experimental design
14-09 at 15:30	Perception & Attention (book ch. 3, 4)		Decide on the Methods and program the experiment
18-09 at 11:00	Response time, accuracy, signal detection theory		
21-09 at 15:30	Eye-tracking and pupillometry	Pupillometry in OpenSesame	Write Methods section and start data collection
25-09 at 11:00	Memory & Decision-making (book ch. 5, 6)		
28-09 at 15:30		Linear mixed-effect models in <i>R</i>	Continue data collection and prepare data analysis
02-10 at 11:00	Interfaces (book ch. 7, 14)		Data analysis & write Results section of report
05-10 at 15:30	Multi-dimensional cognition: Reading		Hand in Methods and Results for feedback, prepare presentations, write Intro and Discussion sections
Week of 09-10 to 15-10	<i>No meetings.</i>		
16-10 at 11:00	<i>Presentations</i>		
19-10 at 15:30	Recap lecture, exam preparation		
25-10 at 08:30	Exam		
29-10 at 23:59	Deadline report (group) and Abstract (individually)		

# Examination

Exam (October 25<sup>th</sup>): 50%

Research project: 30%

Workshop assignments: 10%

Participation: 10%

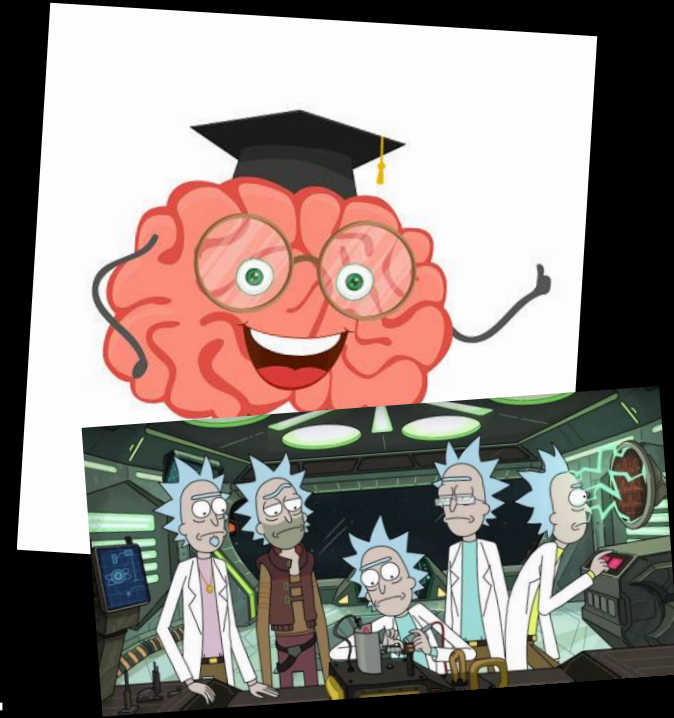
*On each component you have to score >5.4*



# Course objectives

- Become savvy on the brain and behavior
- Get experience with doing research (design and build experiments, collect and analyze data)
- Learn to translate theory into experiment
- Learn to report your science

Meaning: *you'll become an (applied) scientist*



# Research project

*In groups of ~5, you'll design, build, and carry out a study in a topic of your interest*

Various applied topics

OpenSesame software (Python-based)

Lab space available: MF building 4<sup>th</sup> floor



# Topics

- 1) Banknote design & Counterfeit detection
- 2) Reading & dyslexia
- 3) Beach flag design & safety
- 4) Horizontals vs. verticals in fashion
- 5) Intuitive roads
- 6) The least interfering halo
- 7) Salient teammates

In groups of 5:

*Brainstorm about an experiment for investigating either a role of **attention** or **memory***

Think about conditions  
Measures of interest  
Your predictions

Canvas

Post your idea on Discussion page  
before Sept 7<sup>th</sup>

This Thursday: *No meeting*

We'll form teams and you'll receive a  
briefing

For next week: **install OpenSesame**  
from [osdoc.cogsci.nl](http://osdoc.cogsci.nl)

In groups of 5:

*Brainstorm about an  
experiment for  
investigating either a role  
of **attention or memory***

**Think about conditions**  
**Measures of interest**  
**Your predictions**