**Group discussion:** **Being an experimenter**

* Make a list of attributes that a good experimenter should have. Which ones are essential, which only nice-to-have?
  + Essential
    - Clear language (verbal and non-verbal)
    - Organized, stay on task
    - Well practiced protocol (to minimize bumps in the road)
    - Observant
    - Consideration of the participants (f.eks. using as little unnecessary time as possible)
    - Situational awareness
  + Nice-to-have
    - Adjustable in personality
    - Quick troubleshooter
    - A lot of practice
* I assume you have had an intro to ethics (also with an online course, right?). Remind yourself which aspects matter most and why.
  + Informed consent
  + Confidentiality of research participants’ data
  + Their rights to withdraw their consent
  + Participants should not be harmed in any way
* Discuss what ethical concerns behavioral studies like those we mostly target in this course have, also in comparison to (1) neuroimaging, (2) patient studies, (3) studies with children, and (4) observation studies.
  + Awareness of the potential risk of the outcomes of the experiment (withhold of information)
    - Have experts that can be contacted (e.g. neuroimaging)
  + Behavioral manipulation
  + W
* When done, make a draft for a consent form that includes relevant aspects pertaining to all / most studies. For inspiration, you can use the ‘Cognition and Behavior Lab’ website and also read up on what AU has to say about research integrity (on their website):

**STATEMENT OF**

**INFORMED CONSENT**

**Project title:** Grasping Motion

**Statement from the subject:**

I have received written and oral information and I know enough about the purpose, method, benefits and disadvantages of saying yes to participating.

Among other things, I have received and read the following documents:

· \_Information sheet about experiment specific for the method at hand\_

· Document ”Information for subjects”

I know that participation is voluntary and that I can always withdraw my consent without losing my current or future rights to treatment.

I consent to participate in the research project, and have received a copy of this consent form as well as a copy of the written information about the project for your own use.

Name of subject: Date: Signature: Do you want to be informed about the results of the project?: Yes

**Statement from the person providing the information:**

I declare that the subject has received oral and written information about the experiment. In my opinion, sufficient information has been provided for a decision to be made

The name of the person who provided the information:

Date: Signature:

**INFORMATION**

**FOR SUBJECTS**

**Project name:** Grasping Motion

**The purpose of the experiment** is to investigate the grasping of an object in relation to intentional movements.

**In the main experimental task**, you and a randomly assigned partner will simultaneously produce auditory- motor rhythms by moving your fingers rhythmically around ring-shaped touch-sensor (similar to a standard computer pad). The location of your finger on the sensor will be sonified (turned into sound), and your goal will be to synchronize the sounds that you produce with those produced by your partner. You will be trained on the task in the lab, and will perform a short test of how well you learn the relationship between touch locations on the sensor and the sounds that they produce.

**The duration of the experiment is** 10-15 minutes, and it takes an additional approx. 5 minutes to prepare the measurements, and another approx.

**De-identified data collected during the experiment** will be shared with collaborators, and on public repositories after publication. To ensure that shared data cannot in any way be linked to participants, your data files will be saved with a random alphanumeric code, and original file timestamps changed prior to any data sharing. Moreover, all personal data collected for the purposes of your reimbursement will be destroyed immediately after data collection is complete.

**All participation is voluntary and one's participation can be interrupted at any time,** even when the trial is in progress, without any consequences for you.

**Your participation contributes to science** by helping to uncover fundamental knowledge about how the brain contributes to social coordination.

## **Reimbursement**

You will receive DKK 300 in inconvenience allowance for participating in the experiment scan. This allowance is B-taxable and is reported to the tax administration.

## **Criteria for being able to participate**

To be able to participate, you must:

* Be between 18 and 45 years old
* Be right-handed
* Possess normal or corrected-normal vision

## **Data protection**

Aarhus University has appointed a data protection consultant to help ensure that all data handled in accordance with the Data Protection Regulation (GDPR). This can be contacted at dpo@au.dk if questions arise.

**Responsible for the project  
Contact person and responsible for the project:**

Ida Elmose Brøcker

Associate Professor at Cognitive Kinematics Lab CKL ###SQRTT XO XO :-P

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**Group discussion: Movement tracking and analysis**

* What are differences and similarities between mouse-tracking (in the form we have used it) and motion-tracking?
  + Differences
    - More degrees of freedom in motion-tracking (6 vs 2)
    - Motion representation - mouse tracking is a transparent, where as motion lab is a direct observation
    - Mouse Tracking: more prone to non-representational measurements
    - motion-tracking can be used to track the movement of multiple objects simultaneously, while mouse-tracking can only track the movement of one object at a time
    - Different measures: mouse tracking
    - Different analysis
    - Motion lab has more limitations to reality
    - Mouse tracking is location independent, and cheaper
    - Mouse tracking is faster
    - Mouse-tracking is a form of indirect observation where the user is not aware of the actions being tracked. Motion-tracking is a form of direct observation where the user is aware.
    - Mouse-tracking does not lead to motion sickness
  + Similarities
    - Both are continuous measures
    - Both provide a measure of reaction time
    - Both can be used to study how people interact with objects
    - Both can be used to track changes in movement over time
* Many studies on intention / intention recognition use grasping as an example. Try to think of other actions that – might – be differently performed depending on the non-basic goal.
  + Pointing
  + Push
  + Pull
  + Pinch
  + Slap
  + Hit
  + Lift
  + Press
  + Squeeze
  + Balance
  + Avoid
  + Destroy
  + Body language
* Thinking ahead to tomorrow: Why do most movement data need to be filtered? What are potential problems with setting the same filter to all participants? Why would we still like to do that?
  + Noise, that might not be interesting for the research question asked.
  + Like to do that: standardize the data
  + filter participant variability from the population level

**Group discussion: Extra inspiration about using the Motion Lab**

* Discuss possible experiments that need motion tracking or, at least, could benefit from it.
  + Sally and Anne task
  + A not B task
  + Anything related to embodiment :-)
* Think of some of the effects we discussed (e.g. from the Rosenbaum paper of Lecture 1) and think about how to turn that into an interesting experiment in the Motion Lab.
  + Fitts law
  + Signal detection theory
  + Hidden attraction effect, dual-system model
  + Gesture mismatch
    - Kids calculating
    - “When the body knows”
  + Microstructures of decisions
  + Multisensory processing
    - Taste
  + Virtual reality
  + Corporation
  + Parameter remapping effect
  + Synesthesia
    - How does mental representation affect behavior?
* Challenge level: When you’re done, you’re welcome to think about additional things you’d like to know or try in the Motion Lab during Day 2 tomorrow. This could be learning more about calibration, practicalities, Matlab integration, or even trying out another small effect of your liking. Further inspiration might come from checking out their website https://www.qualisys.com/ (no, I do not get anything for promoting them J).
  + Python integration, how to?
  + Video analysis

**Starting on your exam project: Finding common interest groups**

* Use the time today to find an interesting topic and start working out the idea. You can choose to replicate an existing mouse-tracking task, adapt an existing pure-RT decision making task, or completely design your own new experiment. Today is for creativity!
* Spend time discussing with others what ideas you have. That helps inspire everyone and might lead you to form a group of 2 or 3 students working together on the exam project.