Work schedule Noise Strike

1. Change the paradigm, from swipe response to key press – reaches
   1. ~~Write a matlab function that measures how long a key has been pressed and held down. To test the function, display the key-down time on the screen~~
   2. Get mean key-down-to-screen reach times, test 2-3 lab members in a simple paradigm that asks to reach out and touch a point on the screen as soon as it appears. Get the reaction time for different points on the screen.
   3. ~~Use the key-down function as “fixation” condition in the current experimental script.~~
   4. Adjust the timing in the script to match the reach times
   5. ~~Extra change in paradigm: change the flight trajectory of the attacker into a straight line.~~
   6. Add a new error condition: key released, but no touch response on screen
   7. Make list: which times do you need for your sanity checks?
2. Modelling – the ideal observer
   1. ~~Get d’ values for 3 different observer strategies~~

*The “mean” decision strategy yields the highest performance in means of d’, the other two strategies perform equally well.*

* 1. Model the behaviour in terms of a drift diffusion model with certainty about hit/no-hit as drift parameter

*Challenge: quantify certainty, could either be given by the known proportion of the goal or the probability of a response. If the probability is defined as the latter - new data can decrease certainty if shown on the opposite side of the attacker*

* 1. Plug the drift decision into a reaction time model – add afferent and efferent delays.

(Keep in mind: this model should be fitted to both the hand and the eye movement data). Find a mathematical model!

* 1. Formulate the model in terms of a certainty update

1. Adding the eye tracker
   1. Add eye tracking to the paradigm. The eye movements are unconstrained, but they should fixate the attacker at the beginning of each trial.
   2. Make sure that eye tracking data and reaches can be related to each other. Visualize the timing of eye movement onset and reach onset in each trial, make summary statistics.
   3. Describe the eye movement data – do you see the same pattern as fooken et al? Why? Why not?
   4. Decide on a measure you want to use to determine the decision time in eye movements, maybe the onset of the targeting saccade? Write a convincing argument.
2. Modelling – hand and eye integration
   1. What are your predictions about the data? What do they mean for reaction time, d’, the effect of a stimulus at each point in time?
   2. Define a measure for the “infomativeness” off each stimuli (e.g. to what extend does the newly presented information decrease uncertainty)
   3. How does the informativeness of the stimuli influence the hand and eye movement data.
   4. Build a model that captures your predicitions
3. Piloting
   1. Test 3 lab members
4. Preregistration
   1. Write a summary of what you have done so far
   2. Define the number of subjects you want to test
   3. Write down your predictions
   4. Write the rest of the work schedule
5. Test