PPP PROTOCOL

Setup

- Couple the syringe pump to the computer via RS232 to serial port (if using the Prolific USB-to-Serial Comm Port adapter, the correct drivers must be installed and the RS232 cable must be coupled to the 'IN' port on the pump)
- Check that the syringe pump is working: type 'pump = pumpSetup' to open communication with the pump and then then type 'pumpInf(pump,2)' to deliver 2mL as a test
- Ensure syringes are cleaned before filling with liquid
- Attach the PVC tubes to the ends of the syringes, and couple them together using the plastic joiner
- Ensure a new, clean mouthpiece is attached to the end of the tube
- MATLAB version 2012 and below will not work with this script! Please use 2013b or later
- Start MATLAB, add PPP folder to path
- Start the task by typing 'PPP' followed by the participant number, and the session ('1' if the first time, '2' if this is a restart of a recovered data file)
- Setup the EEG system and the ActiView recording software
- Create a new recording file, set the references and sampling rate, and make sure it is ready to record

Participant setup

- Give the participant the PLS, CF and instructions to read
- Double check that teh participant doesn't have dietary restrictions
- Give them a brief verbal explanation of the task, and some information about ECG, GSR and eyeblink rate
- Ask the participant to remove their watch and phone
- Remind participant that pump will still make a sound for the no reward condition
- If necessary, load the program for a dummy trial to let them see what it looks like
- Emphasise that the task is long, but remaining focused is important (there will be frequent breaks so that they don't have to maintain attention for too long a period of time)
- Emphasise that the participants should not count, and that after repeated trials they should be able to get a 'feel' for how long the durations are
- Emphasise that there are two types of questions in the task (thirst and pleasantness). Explain what each one means and to pay attention to which

question they are answering, as they are not always presented in the same order
- Give the participant the mouthpiece, explain that they can use it as they wish (whatever is most comfortable) but that they shouldn't bite it too hard (it can splinter) and that they must not suck on the mouthpeice
- Prior to beginning the task, demonstrate how juice is delivered a couple of times until the tubes are cleared of air and the participant is receiving proper flow and is comfortable with the method of delivery

ECG setup

- For all electrode positions, make sure skin is clean (exfoliant paste and alcohol wipe)
- EX1 attached a centimetre under the middle of the right clavicle
- EX2 attached to left side of body, slightly above the third rib (counting from the bottom)
- CMS/DRL a centimetre under the left clavicle, three inches apart from each other (if possible)

GSR setup

- Each electrode on the first and second fingers of the left hand, in between the second and third joint
- GSR signals can be viewed under the 'Auxiliary Sensors' tab in ActiView

EOG setup

- EX3 attached to the lateral side of the left eye
- EX4 attached underneath the left eye

~MAKE SURE ACTIVIEW IS RECORDING AND THAT THE ECG, GSR AND EOG SIGNALS ARE CLEAN!~

Pump troubleshooting

If there are issues with the pump, there are a number of things to check first:

- Firstly check the connections to the computer, power point, and make sure the power is switched on (switch it off and then on)
- Check that the latch switch (dorsal facing knob) is not pointing right (this means that the pump is not latched to the driver and will not move)

Sometimes the pump will not work because it has stalled. To fix this, there are a number of things to try:

- Firstly, clear the pump connection by clearing the ‘pump’ variable and then clearing the connection by typing ‘delete(instrfindall)’
- Try reconnecting. If this doesn’t work, disconnect again and try either of the above tips before reconnecting again.

If this doesn’t resolve the issues, contact the main experimenter.