# September wishlist remaining items:

**Experimenter Control and View**

-for Conditions 3 and 4: move display of aperture a bit up if possible (was at bottom of screen and partly covered), If possible also display X and Z values

Done

RZ: Thanks! Visibility is much better! Could we please also have 4 digits for the aperture? I think this could help us to be slightly more precise. Could you please also add the Z-values? This could help us to place the poles approx. symmetrically away from 0.

done

-last practice trial did not have the walking back screen? (not sure if this was just random)

At the end of an experiment block (including the practice block) the participant sees a screen telling them to advise the experimenter when they are ready to continue to the next block. I condensed the wording slightly.

RZ: This is great. In addition it is however still confusing, because this screen does not appear until the files are saved. Could we please have a final screen at the end of practice and at the end of each block (before saving starts?) which could be the same as for all other trials “Return to the start line. Wait for experimenter to tell you to turn”.

All fixed. Experimenter gets told “saving data..”, and participant gets instructions prior to save commencing, so no black screen while saving data.

The practice trials

-Could we please have it so participants walk back to starting line and only when they are across the starting line back facing the wall can the experimenter press space to move the poles (this would ensure that participants always go all the way back and experimenter does not accidently move poles too early), something similar for non-VR version, next aperture only appears once they are back at that line (perhaps could also have it so the experiment does not start if they are not near the starting line? E.g., the screen “Tell experiment when you are ready” does not move to next if not near starting line)

The screen where the participant returns to the starting line and nothing proceeds until the experimenter presses space will stay on screen until both the experimenter presses space, AND the right hand controller is within 10cm of the starting position. (I chose the right hand controller, because if I chose the head, it wouldn’t work in the non-VR version because the participant wouldn’t be wearing the HMD.

RZ: Great, this works really well! In addition could we display the information for the next trial for on the experimenter screen only after space is pressed? This is not absolutely necessary but would help with experimenter control/flow.

I think I changed this, need to test. I cant test at home without the vive.

-After the calibration, could we please have an instruction for experimenter “Calibration finished”/and participant “Calibration is done you can now put your hands back down”?

I put in a screen for the participant to view to tell them to put their hands down. The experimenter will need to hit space to proceed to this screen, and again to proceed past this screen. However, the experimenter needs to actively decide (and hit space) that the calibration has worked. On the experimenter screen they will get info regarding he calibration, whether something hasn’t worked, and what body parts have been bound. The experiment will need to look at this info, and, if the calibration seems to be ok, they can hit space to continue. If not, they need to make adjustments and then press C again to try calibration again.

RZ: This additional screen did not appear for the participant?

Argh, fixed. The experimenter has to hit space to continue to tell the experiment the calibration worked, but this space was also triggering advancement from the post-calibration screen for the participant. I’ve put in a 1 second delay, so the participant has to view the post calibration screen for at least 1 second before the experiment can register another press of the space.

**Data file**

-could we please safe the aperture for each trial in one data column as well next to shoulder, hip width and pole details?

Aperture is already saved for each trial? Now added shoulder and hip separately. A asterisk on the column label indicates whether hip or shoulder was used for body width measurement for calculating the aperture from the intended Aperture2Body ratio.

RZ: The asterisk always seem to be on hip although the shoulder was used?

Fixed

Sorry, I actually meant to say having another column with the intended Aperture2Body ratio (values 0.9 to 2) for each trial (this will especially help us with the real pole conditions – where the actual ratios will be slightly off). Could we please also display the Aperture2Body ratio for each trial on the experimenter screen next to the pole aperture?

Done

-I think you said that it is not feasible to save data after each trial? I think we should stick with the blocks, alternatively could experimenter press a button to save data in case participant does not finish all trials? (not super important, just if easy to do)

IF you hit backspace at any time during the experiment, it will dump all data currently in the buffer to a file called PartialDataDump.csv, and then quit the application.

R.Z.: This sounds great, but we could not find this file. Where is it saved?

Should be saved in the parent directory where the executable is, and where the experiment subfolders are created.

**Eye-distance**

-Could you find an App we could easily use to adjust for each participant?

So long as steam VR is running (it will start running automatically when you run the experiment) you can do this:

Slowly start turning the knob on the side of the HMD, in one direction (not rapidly back and forth). After some time, a display will appear on the screen inside the HMD that shows the current setting of the inter-pupillary distance (IPD). For most people, it should be around 64-65mm. Once the display appears on the HMD, you can then adjust the knob as much as you like and it will show you the current distance. When you stop adjusting, the display will eventually disappear.

Unfortunately, the display of IPD only appears in the HMD, not on the laptop screen. However, if you hold the HMD just right, you can see the number displayed through the lenses of the HMD without completely putting the HMD on, so the experimenter can perform this adjustment immediately before putting the HMD on the participant without actually wearing the HMD themself. I recommend just measuring the participants actual IPD with a ruler held up to the eyes, resting on the bridge of the nose. Measure the distance between pupils while the participant looks straight ahead over your shoulder (the further away they look, the less eye convergence).

Note for Regine: We still need to try this

Note for Regine: We should also try calibrate the room ourselves

**New Wishlist Items (16th of October 2017)**

**Randomization Question**

We noticed that within one experimental block not all 12 apertures appear and some appear twice. Did you randomize the trial types across all 3 blocks? If yes, I think all ok.

Yes, I randomised across all the whole experiment, and after that divide into 3 blocks. So each block may have duplicates, and may not have all 12 apertures. I think I asked about this and you chose this. Easily changed if you’d like.

**VR Pole height problem – shoulder condition (Condition 2)**

We used the option 2: Preset value and then specified 2 in the next line: PoleHeightPresetValue: 2.0 (for 2 m). This however did not work and it seemed as if shoulder height or something a bit lower was used for poles in the VR shoulder condition (Condition 2).

I’m sure I saw a 2m pole height using the preset and a value of 2.0 last week. Could you send me the parameter file you used and any log file if you kept it from that experiment? Will test this when I come in. If you try and set a pole height value less than 0.1, then it will use a default value of 1.0, and should log a message saying it is doing this. Not misplaced a decimal point?

**Real Pole distance**

We noticed that compared to the displayed aperture the real poles were approx. 1.5 cm wider (Conditions 3 and 4). Could we please adjust/calibrate this?

There are some sources of error here.

1. The virtual poles are positioned on the floor with the same x and z coordinates as the tracker. The virtual pole y coordinate is set as the pole height divided by 2. Pole height does not vary with the tracker,s but is The pole is given the position x and z positions the same as the tracker, and a y position half of its height. Its height is set once during the tracker assignment calibration step, based on what you chose for the pole height (e.g. hip height, shoulder height, preset or tracker). The virtual poles always stay perfectly upright, and their y position is always constant at the height/2.
2. The displayed aperture is the distance between the virtual poles (i.e. sqrt((x1-x2)^2 + (y1-y2)^2+(z1-z2)^2)) – pole diameter.
3. Pole diameter is hardwired as 10cm.
4. Tracking error, unity scaling error.

So if the real poles aren’t perfectly upright, or are not exactly 10cm diameter, that will contribute error.

Instead of hardwiring the virtual pole diameter, I’ve now added a parameter for it: VirtualPoleDiameter (measured in metres, so 0.1=10cm). That way, you can tweak the virtual aperture and the reported aperture (which are identical) by adjusting the diameter of the virtual poles. Hopefully that will be enough to let you deal with any sources of error.

**First trial practice/each block**

When experimenter/program – participant gets instruction: “Return to start line. Wait for exp. to tell you to turn around.” This is somewhat confusing could we change this screen for all first trials only to: “Turn around and wait for experimenter to tell you to turn back.”?

Changed to:

Stand at start line.

Face the wall, looking away from the poles.

Await experimenter prompt before turning around.

**Instruction position**

The instruction is hard to read when using high poles (Condition 2) because they cover it. Could we please move everything up on the screen (perhaps slightly smaller font?)? Alternatively could present between the poles especially the first few screens – later is not so important anymore if poles are in the way.

I decided not to mess with the text. It already looked quite high (at least in unity) and smaller makes for less readable. Instead what I did, I set the starting pole positions to be further apart, and they retain this separation in practice trials too, which should afford a decent view of the screen for the intro stuff and the practice trials, and they only come closer together in the experiment proper.

**Program freeze**

-happened once and space button did not work anymore in middle of block 1 (perhaps we just keep monitoring)

When this happens, look to see if the log file says anything interesting.