­Data Collection Protocol [mc2]

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# Book the room

Book the experimental room with the days for data collection. You will need access to the baclab email account.

# Create a SignUpGenius ad

Go to [www.SignUpGenius.com](http://www.SignUpGenius.com" \t "_blank) and create a new event.

1. Title: Paid Experiment [mc].
2. Description:  
     
   The Brain & Consciousness Lab of Duke-NUS Graduate Medical School is conducting studies of human vision, attention and decision-making.

For this experiment, you need to respond via keyboard to visual objects presented on a computer screen. The experiment takes one hour, and the compensation is $15 per participation (depending on the time it takes). The experiment is conducted at Duke-NUS (8 College Road, near Outram Park MRT and SGH).

Criteria:

\* Aged 18-35 years old.

\* Normal or corrected-to-normal eyesight.

\* Not currently sick or recovering from sickness.

1. Pick a theme, and "Use my own custom image".
2. Dates and Times: Click on “Add time slots” below. The most convenient way is to use the "Days of the event" option:
   1. Start and end date should span the entire data collection period.
   2. Location: Duke-NUS (Outram Park MRT), 5th Floor
   3. Exclude days of the week when no data collection takes places.
   4. Time slot increment: Every 60 min.
3. Slots: Since only one subject can be tested in any one time, use "# $15/1hr experiment" with 1 in "Title of Slot" column. Press Continue.
4. In the Settings tab, uncheck the “Encourage my members…” Press Continue.
5. Select “Edit further” in the preview page, and remove unnecessary time slots (lunch times, non-data collection days, and time for appointments). This is best done when looking at the Google Docs calendar.
6. In the Preview, check the time slots, then Proceed to Invite and Publish. Publish without sending emails (“Take Live but Without Sending Out Emails”).
7. Copy the link to the newly created sign-up.

# Inform participants of the compensation scheme

For this study, we compensate for travel expenses (S$5), with S$10/hour. Only two sessions are allowed back-to-back. Conceivably, it is possible to do all four required sessions in a single day (with an hour or more in between), in which case, the total compensation for the day would be S$50 (S$25+25), i.e., S$10/hour \* 2 hours + S$10 for travel expenses. If the participant does all four sessions on different days, the compensation would be S$60 (S$20 is for travel expenses).

# Recruit

The baclab email account has an email list for recruitment, called “Email list”. Using Bcc (for privacy), send out an email to the list, specifying the compensation scheme and available slots.

On many occasions, the slots are filled quickly by internal participants.

If anyone replies with “unsubscribe”, exclude the person from the email list.

## Recruitment email template

SUBJECT LINE:

Vision Experiment [EXPCODE] - Recruitment

===

Hello,

You are receiving this email because you are part of the experimental recruitment email list for the Brain & Consciousness Laboratory at Duke-NUS. Please let me know if you would like to be excluded from it.

We are recruiting participants for 1-hr experiment where you need to respond via keyboard to visual objects presented on the screen. You can sign up for up to 2 slots (link below).

Details:

Venue: Duke-NUS Medical School (near Outram Park/SGH)

Reimbursement: ~15$/hr (see full details in the ad)

Dates: from FROMDATE to TODATE

Sign-up link: LINKHERE

Thank you very much in advance.

Best,

--Egor

## Filter out “bad” participants at recruitment stage

It is important to see if the participant is blacklisted or is habitually late. For that, search for the communication with them in the email (you will see if they are blacklisted), and the calendar (you will see if they are habitually late) using their phone number. Look out for lateness or any other red flags (e.g., “extreme impatience”).

# Use email templates for communication

Below are the email templates to use in response to participants' communications (or lack thereof). Sometimes, the subjects will sign up on the website, but neglect to send you the details. In this case, see "Details not provided". As soon as the details are provided ("Details provided"), end either of two confirmation emails, depending on whether the participants are "external" or "internal" (i.e., need directions or not). Attach an image of Duke-NUS main building and a small map (request them from me).

## Template: Details not provided

Please send the following information for me to be able to confirm your appointment:

1. Full name:  
2. Gender:  
3. Contact no. (mobile preferred):  
4. Age:  
5. Vision: (Perfect vision / Glasses / Contact Lenses)  
6. Colour Blindness: (Yes/No)  
7. Handedness: (Right/Left)

8. Have you participated in our other behavioural experiments before?: (Yes / No)  
9. Would you like to be included in our lab's mailing list for future experiments?: (Yes / No)  
10. Do you study/work at Duke-NUS? (Yes / No)

Regards,

--Egor

## Template: Details provided – external *new* participants

Hi PARTICIPANTNAME,

Thank you for signing up for my experiment. This is to confirm your appointment on //2017 (-).

One experimental slot takes ~1hr. The experiment is held at Duke-NUS (the campus map attached). It is located near Outram Park MRT station, opposite Block 7 of Singapore General Hospital (SGH). You can get to Block 7 by following the signs within the hospital. Upon exiting Block 7, you should see Duke-NUS (orange building) on your left.

Please allow for extra 5 min before the experiment to get a visitor’s pass at the front desk of Level 1; then take lift to Level 5. Take right upon exiting the lift and wait for me in the sofa area. Please text me at 91210938 once you’ve arrived. Please note that we will be unable to compensate you in full if you are late, so your punctuality is much appreciated. Thank you.

Regards,

--Egor

## Template: Details provided – external *old* participants

Hi PARTICIPANTNAME,

Thank you for signing up for my experiment. This is to confirm your appointment on //2017 (-).

Please allow for extra 5 min before the experiment to get a visitor’s pass at the front desk of Level 1 of Duke-NUS; then take lift to Level 5. Take right upon exiting the lift and wait for me in the sofa area.

Please text me at 91210938 once you’ve arrived. Please note that we will be unable to compensate you in full if you are late, so your punctuality is much appreciated. Thank you.

Regards,

--Egor

## Template: Details provided – internal participants

Hi PARTICIPANT’SNAME,

Thanks for signing up, and see you TIMEHERE! Please text me at 91210938 once you're at Level 5.

Best,

--Egor

# Send out a reminder a day prior via SMS

Send a reminder to participants a day in advance of data collection via SMS, so that they have you in their phone contacts when they arrive the next day. Template:

Hi PARTICIPANTNAME, This is a reminder about your appointment tomorrow at TIMEHERE at Duke-NUS. Just text/call me at YOURPHONENUMBER when you get to the first floor lobby of the building. Let me know if you have any questions. --YOURNAME

# Label all email communications

You should have your own label in the Baclab email. Create one and label all the communications specific to your study under your name.

In addition to person-specific labels, there exist other labels. Please make full use of them, as it helps other people to decide whether:

* “awaiting reply” for when you are waiting for a reply from a given participant (e.g., when you are waiting for their information if they did not provide it initially);
* “confirmed” for when the participant provided all information and is scheduled to be tested;
* “blacklisted” for when the participant did not show up for the study and failed to send an email or text to that effect more than 30 min in advance or is late on more than one occasion;
* “cancelled” for when they do provide a notification that they no longer intend to participate in the study;
* “completed” for when they successfully completed the study.

The automated messages generated by SignUpGenius should be *moved* to your label. That way they don’t clog up the Inbox.

# Mark the study session on the calendar

As soon as you get an email for participation, put in the subject name and contact number (without spaces) on the Behroom calendar (see March 8, 2017 for an example of what it would look like).

A standard *confirmed* calendar session would look like this:

Egor Ananyev 91210938

# Assign condition sequence to the participant

Assign a sequence of the four conditions out of four potential sequences by entering it in your subject spreadsheet.

# Prepare the chinrest and stereoscope for the session

Make sure you have paper towels to place on the chinrest, and use wipes to disinfect the chinrest. Try fusion with experimental stimuli to make sure that it works for you (unless you suspect you’re too far off average). It might need to be readjusted when the next participant comes in, but it’s important to have decent settings to start with.

# Meet the participant

Make sure you start monitoring for participants’ arrival at least 30 min prior to the start of the sessions, as some show up very early.

The external participants need to be met on 1st floor lobby (per communication). The internal participants can be met in the sofa area of the 5th floor.

# If the participant is late…

If the participant was late, and you couldn’t complete a session, such that a separate one needs to be scheduled, inform the participant that he or she will not be compensated the full amount. If the lateness is severe (more than 30 min), and the next session is scheduled to start soon, inform the participant that they might have to schedule another session.

When at all possible, avoid the domino effect, where you have the next participant wait for longer than 10 min just because the last one was late. Explain the situation to the late participant. If needed, coordinate with me to come up with an optimal solution.

# Have the participant sign the consent form

Seat the participant and have them go over and sign the consent form.

# Start PsychoPy2

Start PsychoPy2 and press “Not now” when notified of the new version. Make sure that you have opened the “mc2.py” script in your window. To start the program, press the green “run” button.

You will need to have either the threshold or main program running to project stereoscopic stimuli and make sure that the fusion is appropriate (see below).

You will need to have the task running to project stereoscopic stimuli and make sure that the fusion is appropriate (see below).

# Prepare the participant

## Adjust the seat height

First, make sure that the participant has adjusted their seat such that they are at the appropriate height to comfortably use the chinrest.

## Adjust the stereoscope

Start the experiment program and make sure they fuse comfortably at the instruction screen. Ask the following questions:

1. [With both eyes open:] Do you see a single circle with text in the middle?
2. When you close your left eye, does the full circle fit in the mirror?
3. Do you see any part of the circle sticks outside the mirror?
4. [Repeat for the right eye].

The images in the mirrors should look something like the image on the right (light-blue: mirrors, grey: the stimulus borders), i.e., closer to the nasal portion of the mirrors, but centered vertically.

If no to any of the above questions, you might need to readjust the stereoscope. The two ways in which it can be adjusted:

1. The mirrors can slide along the railing left or right (e.g., in case the subject has close-set or far-apart eyes).
2. The angle of the mirror can also be adjusted slightly with the upper knobs (horizontally) or lower knobs (vertically).

Make sure you don’t overdo either of these settings, and even if the participant reports being able to fuse now, make sure the settings are sensible by trying to fuse yourself using the new settings. If they’re completely off the whack, adjust to yourself again and repeat the questions + adjustment. Make sure the participant understand what they’re supposed to see (“A single circle with the text in the middle”).

# Give study-specific instructions

Go over the instructions with the participant.

Your task is to detect a small circular target appearing either to the left or right of the fixation cross. After each trial, you will see a question mark, which is when you need to indicate the target’s location. If you saw the target, indicate the side on which it appeared by pressing ‘left’ or ‘right’. If you didn’t see the target, press ‘down’, but if you have even a slight suspicion as to the target’s location, please indicate it.

Remember that you must maintain your eyes on the fixation cross at all times.

You will have a chance to change your mind if you pressed the wrong button. After you indicated your answer, press spacebar to confirm and continue to the next trial. The experiment is self-paced, so make sure to use this as a break whenever you need to rest.

I will inform you of your rough progression a quarter, half, and three quarters through the task. The main task will take approximately 40 minutes to complete.

[If this is the first session] We will start with a short practice that should take about 5 minutes and proceed to the main task.

# Run the program

## Run the threshold program

After the participant completed all four staircases, record all four staircase values in our participant spreadsheet (both R1 values and both R0 values for the two right-eye and two left-eye staircases, respectively). Average the two R1 values to get the right-eye threshold and the two R0 values to get the left-eye threshold. You can have the averages computed automatically for the recorded values. The dominant eye should have the lower average threshold.

If the two values for one eye are too far apart (e.g., -.5 and -1.5), the thresholding needs to be run again.

## Run the main task

The main task can be started using the same “mc2.py” script. In addition to the subject ID, the following input is needed:

1. You need to put in one of the four conditions, depending on the assigned sequence for a given participant and the current session. Put in the numerals from 1 to 4 after “bv3-”.
2. Dominance: 0=left, 1=right. I.e., “Is the person right-eye dominant.”
3. Session number (1-4).

There are many more staircases in the main task. Give approximate progress feedback based on the current reversals as well as the number of trials, the latter being more reliable.

# During the experiment

## Monitor their performance

Make sure the participant understands the task, especially in the beginning. Here is the example output:

curRevs: [6, 6, 6, 8]  
TRIAL CONTRAST mcBv targT targOri targDir targXoff  
#47 start=-2.0, cur=-1.20 0.01 0.5 0 -1 -28  
response: left

Of note are the following variables:

start: the starting contrast value of the staircase  
cur: the current contrast value of the staircase  
targXoff: whether the target is to the left (negative) or right (positive) of the fixation cross

The contrast values are from -2 to 0, -2 being invisible on the monitor (1%), and 0 being maximum contrast of the target (100%). The following scenarios should raise alarm and prompt asking the participant about his or her understanding of the task:

1. indicating visibility (left/right) when the contrast value is too low (e.g., -2);
2. failing to report the target’s location (down or incorrect location) when the contrast value is very high (e.g., 0).

In both such cases, it is important to ensure that the participant knows what the target looks like. It might be helpful to ask them to close the mask eye (i.e., right eye if they have right-eye dominance) to look at the target without the mask. After you make sure they are clear on the procedure, restart the task.

## Fill in the “experimenter” portions of the forms

Once the consent form is signed, the experiment has started, and the participant appears to do the task properly, use the time to write down the participant ID (sequentially for each study) along with the study ID (mc2-2) at the bottom of the page. Also start filling in the details for the compensation form to have it ready when the session is completed.

## Make sure the participant takes breaks

It’s crucial that the participant takes frequent breaks, especially if they look to be tired. If the participant has difficulties completing the task or staying awake, inform them that they might want to reschedule. Make sure to note such occurrence in the calendar.

## Inform the participant of their (rough) progress

The curRevs (the current number of reversals) in the output tells you the number of reversals completed out of ten. I.e., [0 0 0 0] is the start, [5 5 5 5] is roughly the middle, etc. But the better indicator is the number of trials it takes on average for participants to complete the test. For example, if the number of trials that it takes to complete the task on average is about 560 (for 36 staircases with 8 reversals), inform them of their progress every 140 trials (every quarter).

WARNING! Avoid the temptation to tell them “you’re almost done!” as they approach the end of the experiment. That might “wake them up”, which will deviate them from the threshold that they established through steady performance: they will suddenly detect dimmer targets, which will force them to take more time to reach the next reversal and potentially mess up the threshold calculations.

# Compensate the participant

You should not compensate out-of-pocket: make sure you have the appropriate funds for each day by coordinating with me prior to the data collection.

Always ask participants if they happen to have change for larger denominations (e.g., S$50), and spare the smaller notes for when they do not.

Have the participant initial the compensation form and make sure they have written all their details.

# Annotate calendar event after the session

It is crucial to document any red flags that occurred with a given participant such that they may either be given special consideration or excluded from mail list (blacklisted). This information helps anyone who is recruiting for his or her next study, including yourself.

If they cancel: (Egor Ananyev 91210938 – cancelled)

If they were late: (Egor Ananyev 91210938 ― 20 min late)

Any red flags, like participant’s impatience or agitation with the experiment, need to be marked in the calendar as well. You can consult me on blacklisting the participant if that happens.

# Archive and transfer data

If you have time before the next session, consider dealing with the data. Otherwise, deal with them at the end of the day.

There need to be three copies of each session’s data folder:

1. Local copy on your account (wherever it was initially saved).
2. A copy in the shared Dropbox folder.
3. A zipped archive saved on the server.

Rename the archive to correspond to the archive naming convention and record it in the logbook.

# Prepare for the next session

If you have another session to go, readjust the stereoscope to your own comfortable fusion (unless you suspect it’s too far off average), and wipe the chinrest with disinfectant wipes.