

## Experimental Methodology

Before the subject arrives:

- 1) Turn on computers and login
  - a) Presentation PC: no pw, just login for user “Judith”
  - b) iView PC: UN = iView\_X; PW = iView\_X
- 2) Initiate applications
  - a) Presentation PC:
    - i) select the “VARIUM” folder on the desktop, and open it
    - ii) **Annoyance task:** run the “packet\_error\_annoyance.sce” file
    - iii) **Strength task:** run the “packet\_error\_strength.sce” file
    - iv) **Backup option:** open the “presentation” program, select the appropriate scenario file from there, and run it pressing the green arrow button
  - b) iView PC:
    - i) run the “iView\_X” application (icon is on desktop)
    - ii) start the eye-tracker by clicking in the middle of the eye-viewer window

After the subject arrives:

1. Sit the subject in the chair, centered in front of the video monitor. The subject should be adjusted backward or forward to get a distance of 3.5 times the height of the picture in the video monitor screen. The most comfortable position for the subject tends to be leaning forward slightly with forearms or elbows on the table. The distance from the monitor to the subject’s eyes is important during the presentation. The subject should be instructed not to lean backward.
2. Ask the subject to enter his/her name in the computer. In case of spelling errors, the backspace key does not work. The key “=” can be used instead.
3. Instruct the subject on the structure of the experiment: “The experiment is divided in 5 sessions: equipment calibration, free viewing, training, practice trials, and main experimental session. At the beginning of each session, I will briefly explain what you are required to do at each stage.” (same text appearing on the presentation screen)
4. Eye-Tracking calibration: A screen will appear asking the subject to wait while you adjust the camera and try to capture the pupil. Adjust the system to the more stable settings. Remember to:
  1. Tick the “focus” and “iris” boxes
  2. Play with the “pupil” and “CR” thresholds until the two crosses on the screen are not jumpy anymore. White cross correspond to the pupil tracking, black cross corresponds to the eye reflection tracking.

- When you are finished, instruct the subject to advance (left-click). Then instruct him/her to follow the black squares in the screen. Press the space bar to start the calibration.
5. **Free viewing:** “At this stage, you will be asked to watch a series of seven (7) videos. All videos have 10 seconds.”
  6. [Play 7 original videos]
  7. “This study is concerned with **defects or impairments in video images** and their effect on human viewers. We are not concerned with the content of the videos. We are interested in **whether or not you see any defects or impairments in the videos that we will show**, and if so, **how annoying (strong) the defect is.**”
  8. **Training session:** “Here is how you will determine the **annoyance/strength** value. I am about to show you a set of **sample clips**. The sample clips include two sets of videos. The first set has five high quality videos. There may be some impairment in the high quality clips.”
  9. [4 high quality videos are shown]
  10. “This will give you an idea of the range of image quality that you will be seeing. You are to assign an annoyance value of **10 to the most annoying** video among the sample clips. If the annoyance value of a defect in the experiment is half of the worst sample clip, give it a 50; if it is 1/10<sup>th</sup> as bad, give it a 10. If the defect did not annoy you at all, call it zero. I will show you the sample clips now.”
  11. [4 low quality videos are shown]
  12. “**Did you see any defects? Remember that the most annoying defect that you have seen is to have a value of 10.**”
  13. **Practice Trials:** “Before we start the experiment, you will have 5 **practice trials** to be sure that you understand the task. You will be asked to perform the exact same tasks you will perform in the main experiment. You will respond in these trials just like you will in the main experiment. We will not use the data from the practice trials, so don’t be concerned if you make a mistake here. If you have any questions or concerns, ask the experimenter at any time. ”
  14. “You will be presented with one video clip on each trial. Each clip will last 10 seconds and will be played **twice**. After the clip is played, questions will appear on the monitor. The same questions will be asked after every trial. Do not spend a lot of time thinking about your responses. We want to know your initial impressions.”

15. **Annoyance Task:** “You will be asked to estimate the **annoyance** of defects or impairments in the video. The defects can be found in any region of video and at any time during the clip. After the clip is played, you will be asked “Did you see any defect or impairment?””

“If you did **not** see a defect, answer NO. Then, Left-click to see the next the video.”

“For those clips in which you do detect a defect or impairment, answer YES. You will be then asked to indicate the annoyance of the defect you saw using a scale with values ranging from 0 and 10 will appear. You are to assign an annoyance value of 10 to the most annoying video. If the annoyance value of a defect in the experiment is half of the worst sample clip, give it a 5; if it is 1/10th as bad, give it a 1. If the defect did not annoy you at all, call it zero. You should enter the scores using the mouse to click on the desired value. After you finished entering your choice of number, Left-click to see the next the video.”

16. **Strength task:** You will be asked to estimate the **strength** of defects or impairments in the video. The defects can be found in any region of video and at any time during the clip. After the clip is played, a scale between 0 and 10 will appear.

“You are to assign a strength value of 10 to defects as strong as the strongest defects seen among all the sample clips. If the strength of the defect in the experiment is half of the worst sample clip, give it a 5; if it is 1/10<sup>th</sup> as bad, give it a 1.”

“You should enter the scores using the mouse to click on the desired value. After you finished entering your choice of number, Left-click to see the next the video.”

17. [5 practice trials are performed]

18. “Do you have any questions?”

19. “You can take a break at any time by entering your answers for the most recent video, but waiting to Left-click until you are ready to go on. You should stop if you are confused about what to do, if you realize you have entered data incorrectly, or if you need a break. You cannot stop the video from playing or go back and fix the data from a previous clip afterwards. So if something goes wrong, watch the video and then **tell the experimenter**. We will go back and fix it later.”

20. “The questions will come up on the computer screen, but you should not need to look over at it every time. The questions will not change. Each experimental

- session takes approximately 20 minutes to complete, if you do not take any breaks.”
21. “Do you have any questions?”
  22. “At the end of the experiment I will ask a few questions. Start the experiment by Left-clicking. ”
  23. [session 1: 46 videos]
    - At the end of the first session, eye tracking data should be saved automatically. Always double check : if the timer in the iView interface is still active (red), then press the “save” button (the one with the floppy) and save the eye-tracking data under the filename *<observer\_name>\_S1.idf*
  24. After the 1<sup>st</sup> session the observer can take a short break (during the break, take care that the presentation pc does not go in standby/the screensaver does not turn on. When the subject is ready, he/she can left-click to continue to session 2. Calibration has to be performed again
  25. Eye-Tracking calibration for session 2: A screen will appear asking the subject to wait while you adjust the camera and try to capture the pupil. Adjust the system to the more stable settings. Remember to:
    1. Tick the “focus” and “iris” boxes
    2. Play with the “pupil” and “CR” thresholds until the two crosses on the screen are not jumpy anymore. White cross correspond to the pupil tracking, black cross corresponds to the eye reflection tracking.When you are finished, instruct the subject to advance (left-click). Then instruct him/her to follow the black squares in the screen. Press the space bar to start the calibration.
  26. [session 2: 45 videos]
  27. At the end of session 2, check again whether the eye-tracking data were saved. if the timer in the iView interface is still active (red), then press the “save” button (the one with the floppy) and save the eye-tracking data under the filename *<observer\_name>\_S2.idf*
  28. [At the end of the experiment, ask the following questions and write down the answers:]
    - Describe the defects you saw.
    - What made a defect the most annoying for you?
    - In your opinion, was the annoyance of the defect affected by the video content?