

DRAFT PROTOCOL 01:  
TU DELFT LAB EXPERIMENT

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VARIUM: Visual Artifacts Interference Understanding and Modeling

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## I. RESEARCH QUESTION

This study aims to understand the influence of a set of artifacts on the quality of video, their relationship with the content and to determine the their impact on visual quality perception. The set of artifacts used in this study was chosen among those most perceptually relevant for digital video applications (e.g. blockiness, blurriness, packet-loss etc). The data collected from this experiment is expected to help in the design a video quality objective metric which takes into account visual attention and the strength of specific spatial and temporal artifacts.

## II. EXPERIMENTAL SETUP

For the experimental session, subjects are requested to score a set of test videos with different combinations of artifacts. The experiment is running in a room with constant illumination of approximately 70 lux. Each subject watches the stimuli (the video test sequences) on a 23 inches LED monitor of resolution  $1360 \times 768$ . The distance between the subject's eyes and the video monitor is 3 times the monitor screen's height.

Subjects are seated straight ahead of the monitor, centered at or slightly below the eye height for most subjects. A chinrest is used to guarantee a constant distance between the subject's eyes and the monitor. The room has a table, 2 chairs, the chinrest, 2 CPUs, 2 mouses, 2 keyboards , 2 monitors and a *SensoMotoric Instruments GmbH* Eye Tracker.

The eye-movements of the subjects are recorded (using the Eye-Tracker) as they watch all experimental stimuli and score their quality. The user interface for the experiment is implemented using the *Neurobehavioral Systems* software Presentation. It is expected a total of 25 observers from the Delft University of Technology.

### A. Video Database

The video database used in this experiment is generated from seven high-definition videos (original videos) with  $1280 \times 720$ , 50 fps and 10 seconds duration. It corresponds to a diverse content, as depicted in Figure 1 (Basketball, Romeo and Juliet, Park Run, Cactus, Park Joy, Barbecue and Into Trees). From the original videos several different degraded versions are generated (more details can be seen in the Subsection II B).



FIG. 1: First frame of the sequences included in Experiment.

## B. Artifacts

New versions of each original video are generated using different combinations of artifacts. To generate test sequences, we generate blockiness, blurriness and packet loss artifacts <sup>1</sup> and combine these artifacts at different proportions and strengths. In summary, the following parameters are used to generate the test sequences:

- 7 original videos Basketball, Romeo and Juliet, Park Run, Cactus, Park Joy, Barbecue and Into Trees;
- 4 different strengths of blockiness and blurriness: 0.2, 0.4, 0.6 and 0.8 <sup>2</sup>;
- 3 different packet loss ratios: 0.7%, 2.6% and 8.1% <sup>3</sup>.

Thus, the 41 combinations (blockiness, blurriness and packet loss)  $\times$  7 (original videos) + 7 original videos generate a total of 294 videos. Such, a large number of test videos makes it impossible to perform an experiment in a reasonable amount of time. Therefore, a reduction of the number of test sequences is achieved by selecting a subset of the original 294. In this process, we eliminated most of the sequences already used in the two previous experiment already performed. We also reduce the number of parameters considering the results of the previous experiments. In summary, to select the test sequences we considered the following:

1. Total time necessary to execute the overall experiment;
2. The results of two previous experiments show that the mean annoyance and the mean strength scores are not significantly different for packet loss ratios of 0.7 and 2.6 and for packet loss ratios of 2.6 and 8.1. Therefore, in this experiment we use only packet loss ratios of 0.7% and 8.1%.
3. Among the blockiness and blurriness strength values considered in the previous experiments, we chose only the strength 0.4 and 0.6, which were considered to be more representative of these artifacts.

Thus, taking into account these choices, it results into 19 combinations (Table I)  $\times$  7 (video versions) + 7 original videos = 140 videos. This is a reasonable number of sequences which makes it possible to run the experiment in the allocated time of 50 minutes.

## III. EXPERIMENTAL METHODOLOGY

During the experiment, the experimenter guides the subject through all sessions. The experiment is divided into calibration, free viewing, training (split in two parts), practice and a main experiment (split in three parts: two breaks and two equipment calibration in between):

- In the calibration, participants are requested to focus on different points spread over the monitor screen, and their eye fixations are recorded to calibrate the eye-tracking data.
- In free viewing session, participants are asked to freely look at seven high quality videos, as if they are watching TV at home.

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<sup>1</sup> These artifacts have been used in previous experiments of this project.

<sup>2</sup> These blockiness and blurriness strengths have been used in previous experiments of this project.

<sup>3</sup> These packet loss ratio have been used in previous experiments of this project.

Combination	Packet-Loss	Blocky	Blurry
1	0.0	0.6	0.0
2	0.0	0.0	0.6
3	8.1	0.0	0.0
4	0.7	0.0	0.4
5	8.1	0.0	0.4
6	0.7	0.0	0.6
7	8.1	0.0	0.6
8	0.7	0.4	0.0
9	8.1	0.4	0.0
10	0.7	0.4	0.4
11	8.1	0.4	0.4
12	0.7	0.4	0.6
13	8.1	0.4	0.6
14	0.7	0.6	0.0
15	8.1	0.6	0.0
16	0.7	0.6	0.4
17	8.1	0.6	0.4
18	0.7	0.6	0.6
19	8.1	0.6	0.6

TABLE I: Combinations of the packet loss ratio (0.7 and 8.1) with blockiness and blurriness (strengths 0.4 and 0.6) artifacts.

- In the training, participants are showed all four high quality videos. Then the user is showed the videos with the strongest defect derived from each of the four high quality videos. The intent of this stage is to familiarize the test subjects with the endpoints of the annoyance scale and to clarify the experimental task.
- In the practice stage, participants run through a limited number of practice trials of the experiment. The practice trials gives the subject a chance to work through the data entry procedure and shake out last minute questions or concerns. The initial responses may also be somewhat erratic. The practice stage allows the test subject responses to stabilize. No data is collected during this task.
- The main experiment is split into 3 parts. In all parts, the participants are asked to estimate the annoyance of defects or impairments in the test sequence. After each sequence, the subject is asked: "Did you perceive any impairments or defects in the video?", prompting for a "yes" or "no" answer. Then participants are asked to perform the annoyance task consisting of giving a numerical judgment of how annoying the detected impairment is. At the end of each session, a break is given. The break does not have a time limit, but it is expected that the participants take a break of around 5 – 10 minutes. Once the participants are ready to continue, he/she is instructed to begin the next session and the calibration task is repeated. Once the calibration task is finished, the participants rate the remaining videos, and so on. When the experiment is finished, he/she may leave the room. A more detailed explanation about the experiment itself can be given to the participants, if asked.

# Video lists used in the Experiment

## ORIGINAL VIDEO LIST

Video	Packet-Loss	Blocky	Blurry
blkblr_v1_1280 × 720_0	0.0	0.0	0.0
blkblr_v7_1280 × 720_0	0.0	0.0	0.0
blkblr_v8_1280 × 720_0	0.0	0.0	0.0
blkblr_v9_1280 × 720_0	0.0	0.0	0.0
blkblr_v10_1280 × 720_0	0.0	0.0	0.0
blkblr_v11_1280 × 720_0	0.0	0.0	0.0
blkblr_v12_1280 × 720_0	0.0	0.0	0.0

TABLE II: Original video list used during Free-viewing session.

## TRAINING VIDEO LIST

Video	Packet-Loss	Blocky	Blurry
blkblr_v2_1280 × 720_0	0.0	0.0	0.0
blkblr_v3_1280 × 720_0	0.0	0.0	0.0
blkblr_v4_1280 × 720_0	0.0	0.0	0.0
blkblr_v5_1280 × 720_0	0.0	0.0	0.0

TABLE III: Original video list used during Training session.

Video	Packet-Loss	Blocky	Blurry
blkblr_v2_1280 × 720_3	0.0	0.0	0.6
blkblr_v3_1280 × 720_15	0.0	0.6	0.6
blkblr_v4_1280 × 720_12	0.0	0.6	0.0
blkblr_v6_I12_PckErr3	8.1	0.0	0.0

TABLE IV: Degraded video list used during Training session.

## PRACTICE TRIAL LIST

Video	Packet-Loss	Blocky	Blurry
blkblr_v2_1280 × 720_15	0.0	0.6	0.6
blkblr_v4_1280 × 720_10	0.0	0.4	0.4
blkblr_v5_I12_8_PckErr3	8.1	0.4	0.0
blkblr_v6_1280 × 720_0	0.0	0.0	0.0

TABLE V: Video list used during Practice Trial session.

## VIDEO LIST OF MAIN EXPERIMENT

Combination	Packet-Loss	Blocky	Blurry	Combination	Packet-Loss	Blocky	Blurry
blkblr_v1_1280 × 720_0	0.0	0.0	0.0	blkblr_v7_I12_10_PckErr1	0.7	0.4	0.4
blkblr_v1_1280 × 720_3	0.0	0.0	0.6	blkblr_v7_I12_10_PckErr3	8.1	0.4	0.4
blkblr_v1_1280 × 720_12	0.0	0.6	0.0	blkblr_v7_I12_11_PckErr1	0.7	0.4	0.6
blkblr_v1_I12_0_PckErr3	8.1	0.0	0.0	blkblr_v7_I12_11_PckErr3	8.1	0.4	0.6
blkblr_v1_I12_2_PckErr1	0.7	0.0	0.4	blkblr_v7_I12_12_PckErr1	0.7	0.6	0.0
blkblr_v1_I12_2_PckErr3	8.1	0.0	0.4	blkblr_v7_I12_12_PckErr3	8.1	0.6	0.0
blkblr_v1_I12_3_PckErr1	0.7	0.0	0.6	blkblr_v7_I12_14_PckErr1	0.7	0.6	0.4
blkblr_v1_I12_3_PckErr3	8.1	0.0	0.6	blkblr_v7_I12_14_PckErr3	8.1	0.6	0.4
blkblr_v1_I12_8_PckErr1	0.7	0.4	0.0	blkblr_v7_I12_15_PckErr1	0.7	0.6	0.6
blkblr_v1_I12_8_PckErr3	8.1	0.4	0.0	blkblr_v7_I12_15_PckErr3	8.1	0.6	0.6
blkblr_v1_I12_10_PckErr1	0.7	0.4	0.4	blkblr_v8_1280 × 720_0	0.0	0.0	0.0
blkblr_v1_I12_10_PckErr3	8.1	0.4	0.4	blkblr_v8_1280 × 720_3	0.0	0.0	0.6
blkblr_v1_I12_11_PckErr1	0.7	0.4	0.6	blkblr_v8_1280 × 720_12	0.0	0.6	0.0
blkblr_v1_I12_11_PckErr3	8.1	0.4	0.6	blkblr_v8_I12_0_PckErr3	8.1	0.0	0.0
blkblr_v1_I12_12_PckErr1	0.7	0.6	0.0	blkblr_v8_I12_2_PckErr1	0.7	0.0	0.4
blkblr_v1_I12_12_PckErr3	8.1	0.6	0.0	blkblr_v8_I12_2_PckErr3	8.1	0.0	0.4
blkblr_v1_I12_14_PckErr1	0.7	0.6	0.4	blkblr_v8_I12_3_PckErr1	0.7	0.0	0.6
blkblr_v1_I12_14_PckErr3	8.1	0.6	0.4	blkblr_v8_I12_3_PckErr3	8.1	0.0	0.6
blkblr_v1_I12_15_PckErr1	0.7	0.6	0.6	blkblr_v8_I12_8_PckErr1	0.7	0.4	0.0
blkblr_v1_I12_15_PckErr3	8.1	0.6	0.6	blkblr_v8_I12_8_PckErr3	8.1	0.4	0.0
blkblr_v7_1280 × 720_0	0.0	0.0	0.0	blkblr_v8_I12_10_PckErr1	0.7	0.4	0.4
blkblr_v7_1280 × 720_3	0.0	0.0	0.6	blkblr_v8_I12_10_PckErr3	8.1	0.4	0.4
blkblr_v7_1280 × 720_12	0.0	0.6	0.0	blkblr_v8_I12_11_PckErr1	0.7	0.4	0.6
blkblr_v7_I12_0_PckErr3	8.1	0.0	0.0	blkblr_v8_I12_11_PckErr3	8.1	0.4	0.6
blkblr_v7_I12_2_PckErr1	0.7	0.0	0.4	blkblr_v8_I12_12_PckErr1	0.7	0.6	0.0
blkblr_v7_I12_2_PckErr3	8.1	0.0	0.4	blkblr_v8_I12_12_PckErr3	8.1	0.6	0.0
blkblr_v7_I12_3_PckErr1	0.7	0.0	0.6	blkblr_v8_I12_14_PckErr1	0.7	0.6	0.4
blkblr_v7_I12_3_PckErr3	8.1	0.0	0.6	blkblr_v8_I12_14_PckErr3	8.1	0.6	0.4
blkblr_v7_I12_8_PckErr1	0.7	0.4	0.0	blkblr_v8_I12_15_PckErr1	0.7	0.6	0.6
blkblr_v7_I12_8_PckErr3	8.1	0.4	0.0	blkblr_v8_I12_15_PckErr3	8.1	0.6	0.6

Combination	Packet-Loss	Blocky	Blurry	Combination	Packet-Loss	Blocky	Blurry
blkblr_v9_1280 × 720_0	0.0	0.0	0.0	blkblr_v11_1280 × 720_0	0.0	0.0	0.0
blkblr_v9_1280 × 720_3	0.0	0.0	0.6	blkblr_v11_1280 × 720_3	0.0	0.0	0.6
blkblr_v9_1280 × 720_12	0.0	0.6	0.0	blkblr_v11_1280 × 720_12	0.0	0.6	0.0
blkblr_v9_I12.9_PckErr3	8.1	0.0	0.0	blkblr_v11_I12.0_PckErr3	8.1	0.0	0.0
blkblr_v9_I12.2_PckErr1	0.7	0.0	0.4	blkblr_v11_I12.2_PckErr1	0.7	0.0	0.4
blkblr_v9_I12.2_PckErr3	8.1	0.0	0.4	blkblr_v11_I12.2_PckErr3	8.1	0.0	0.4
blkblr_v9_I12.3_PckErr1	0.7	0.0	0.6	blkblr_v11_I12.3_PckErr1	0.7	0.0	0.6
blkblr_v9_I12.3_PckErr3	8.1	0.0	0.6	blkblr_v11_I12.3_PckErr3	8.1	0.0	0.6
blkblr_v9_I12.8_PckErr1	0.7	0.4	0.0	blkblr_v11_I12.8_PckErr1	0.7	0.4	0.0
blkblr_v9_I12.8_PckErr3	8.1	0.4	0.0	blkblr_v11_I12.8_PckErr3	8.1	0.4	0.0
blkblr_v9_I12.10_PckErr1	0.7	0.4	0.4	blkblr_v11_I12.10_PckErr1	0.7	0.4	0.4
blkblr_v9_I12.10_PckErr3	8.1	0.4	0.4	blkblr_v11_I12.10_PckErr3	8.1	0.4	0.4
blkblr_v9_I12.11_PckErr1	0.7	0.4	0.6	blkblr_v11_I12.11_PckErr1	0.7	0.4	0.6
blkblr_v9_I12.11_PckErr3	8.1	0.4	0.6	blkblr_v11_I12.11_PckErr3	8.1	0.4	0.6
blkblr_v9_I12.12_PckErr1	0.7	0.6	0.0	blkblr_v11_I12.12_PckErr1	0.7	0.6	0.0
blkblr_v9_I12.12_PckErr3	8.1	0.6	0.0	blkblr_v11_I12.12_PckErr3	8.1	0.6	0.0
blkblr_v9_I12.14_PckErr1	0.7	0.6	0.4	blkblr_v11_I12.14_PckErr1	0.7	0.6	0.4
blkblr_v9_I12.14_PckErr3	8.1	0.6	0.4	blkblr_v11_I12.14_PckErr3	8.1	0.6	0.4
blkblr_v9_I12.15_PckErr1	0.7	0.6	0.6	blkblr_v11_I12.15_PckErr1	0.7	0.6	0.6
blkblr_v9_I12.15_PckErr3	8.1	0.6	0.6	blkblr_v11_I12.15_PckErr3	8.1	0.6	0.6
blkblr_v10_1280 × 720_0	0.0	0.0	0.0	blkblr_v12_1280 × 720_0	0.0	0.0	0.0
blkblr_v10_1280 × 720_3	0.0	0.0	0.6	blkblr_v12_1280 × 720_3	0.0	0.0	0.6
blkblr_v10_1280 × 720_12	0.0	0.6	0.0	blkblr_v12_1280 × 720_12	0.0	0.6	0.0
blkblr_v10_I12.0_PckErr3	8.1	0.0	0.0	blkblr_v12_I12.0_PckErr3	8.1	0.0	0.0
blkblr_v10_I12.2_PckErr1	0.7	0.0	0.4	blkblr_v12_I12.2_PckErr1	0.7	0.0	0.4
blkblr_v10_I12.2_PckErr3	8.1	0.0	0.4	blkblr_v12_I12.2_PckErr3	8.1	0.0	0.4
blkblr_v10_I12.3_PckErr1	0.7	0.0	0.6	blkblr_v12_I12.3_PckErr1	0.7	0.0	0.6
blkblr_v10_I12.3_PckErr3	8.1	0.0	0.6	blkblr_v12_I12.3_PckErr3	8.1	0.0	0.6
blkblr_v10_I12.8_PckErr1	0.7	0.4	0.0	blkblr_v12_I12.8_PckErr1	0.7	0.4	0.0
blkblr_v10_I12.8_PckErr3	8.1	0.4	0.0	blkblr_v12_I12.8_PckErr3	8.1	0.4	0.0
blkblr_v10_I12.10_PckErr1	0.7	0.4	0.4	blkblr_v12_I12.10_PckErr1	0.7	0.4	0.4
blkblr_v10_I12.10_PckErr3	8.1	0.4	0.4	blkblr_v12_I12.10_PckErr3	8.1	0.4	0.4
blkblr_v10_I12.11_PckErr1	0.7	0.4	0.6	blkblr_v12_I12.11_PckErr1	0.7	0.4	0.6
blkblr_v10_I12.11_PckErr3	8.1	0.4	0.6	blkblr_v12_I12.11_PckErr3	8.1	0.4	0.6
blkblr_v10_I12.12_PckErr1	0.7	0.6	0.0	blkblr_v12_I12.12_PckErr1	0.7	0.6	0.0
blkblr_v10_I12.12_PckErr3	8.1	0.6	0.0	blkblr_v12_I12.12_PckErr3	8.1	0.6	0.0
blkblr_v10_I12.14_PckErr1	0.7	0.6	0.4	blkblr_v12_I12.14_PckErr1	0.7	0.6	0.4
blkblr_v10_I12.14_PckErr3	8.1	0.6	0.4	blkblr_v12_I12.14_PckErr3	8.1	0.6	0.4
blkblr_v10_I12.15_PckErr1	0.7	0.6	0.6	blkblr_v12_I12.15_PckErr1	0.7	0.6	0.6
blkblr_v10_I12.15_PckErr3	8.1	0.6	0.6	blkblr_v12_I12.15_PckErr3	8.1	0.6	0.6

TABLE VI: Degraded videos used during main experiment session.

# Instructions showed during the experiment

## **1<sup>st</sup> Instruction:**

*Please type in your name and press return*

## **2<sup>nd</sup> Instruction:**

*Welcome! Thank you for participating in this experiment. The experiment is divided in 5 sessions:*

- (1) Equipment Calibration,*
- (2) Free Viewing,*
- (3) Training,*
- (4) Practice Trials,*
- (5) Main Experimental Session.*

*At the beginning of each session, I will briefly explain what you are required to do at each stage. Left-click to continue.*

## **3<sup>rd</sup> Instruction:**

*The distance from the monitor to your eyes is very important during the presentation.*

*Please put your head on the CHIN-REST in front of you. Try not to lean backward.*

*Left-click to continue*

## **4<sup>th</sup> Instruction:**

- (1) CALIBRATION SESSION*

*Please, wait for a few seconds while I adjust the system.*

*When the system is ready, I will ask you to continue.*

*Left-click to continue*

## **5<sup>th</sup> Instruction:**

- (1) CALIBRATION SESSION*

*You are going to see a series of small black SQUARES on the screen.*

*At each screen, one black square will appear at a different position.*

*Please, keep your eyes fixated on each of these squares.*

*Left-click to continue*

## **6<sup>th</sup> Instruction:**

- (1) CALIBRATION SESSION Thank you! The calibration is now complete.*

*Left-click to continue*

## **7<sup>th</sup> Instruction:**

- (2) FREE VIEWING SESSION You are now going to watch a series of 7 videos.*

*Please, watch them as if you were at home watching TV.*

*Whenever you are ready to start, please left-click to continue.*

## **8<sup>th</sup> Instruction:**

- (3) TRAINING SESSION*

*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 defect is.*

*Left-click to continue*

## **9<sup>th</sup> Instruction:**

- (3) TRAINING SESSION*



Here is how you will determine the annoyance value. I am about to show you a set of sample clips. The sample clips include two sets of videos. The first set has 4 high quality videos. Left-click to play the set of high quality videos.

**10<sup>th</sup> Instruction:**

(3) TRAINING SESSION

The second set has 4 degraded videos. They will give you an idea of the range of quality that you will be seeing. You are to assign an ANNOYANCE value of 10 to the most annoying video among the sample clips. Left-click to play the set of impaired videos

**11<sup>th</sup> Instruction:**

(3) TRAINING SESSION

Did you see any defects?

Remember that the most annoying defect that you have seen is to have a value of 10.

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.

Left-click to continue

**12<sup>th</sup> Instruction:**

(4) PRACTICE TRIAL SESSION

Before we start the experiment, you will have 4 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, feel free to ask me.

Left-click to continue

**13<sup>th</sup> Instruction:**

(4) PRACTICE TRIAL SESSION

You will be presented with one video clip on each trial.

Each clip will last 10 seconds and will be played once.

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.

Left-click to continue

**14<sup>th</sup> Instruction:**

(4) PRACTICE TRIAL SESSION

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 play the next clip.

Left-click to continue

**15<sup>th</sup> Instruction:**

(4) PRACTICE TRIAL SESSION

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.

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 LEFT-click on the desired value.*

*Left-click to continue*

**16<sup>th</sup> Instruction:**

(4) PRACTICE TRIAL SESSION

*After you finished entering your choice of number, Left-click to play the next video.*

*Do you have any questions?*

*Left-click to start PRACTICE TRIALS.*

**17<sup>th</sup> Instruction:**

*Did you perceive any impairments or defects in the video?*

**18<sup>th</sup> Instruction:**

(5) MAIN EXPERIMENT SESSION

*The experiment is divided in 3 parts. Each part should last approximately 15 minutes.*

*A break will be given after of each part of the experiment is finished.*

*If you need to take a small break at any time, enter your answers for the most recent video, but wait 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, tell me and I will go back and fix it later.*

*Left-click to continue*

**19<sup>th</sup> Instruction:**

(5) MAIN EXPERIMENT SESSION – PART I

*Do you have any questions?*

*Left-click to start PART I*

**20<sup>th</sup> Instruction:**

*Did you perceive any impairments or defects in the video?*

**21<sup>st</sup> Instruction:**

*This is the end of the first part of the experiment.*

*Please Left-click whenever you are ready to resume the experiment.*

**22<sup>nd</sup> Instruction:**

(1) CALIBRATION SESSION – PART II

*You are now going to perform the calibration session again.*

*Please, wait for a few seconds while the experimenter adjusts the system.*

*When the system is ready, the experimenter will ask you to continue.*

*Left-click to continue*

**23<sup>rd</sup> Instruction:**

(1) CALIBRATION SESSION – PART II

*You're now going to see a series of small black SQUARES on the screen.*

*At each screen, one black square will appear at a different position.*

*Please, keep your eyes fixated on each of these squares.*

*Left-click to continue*

**24<sup>th</sup> Instruction:**

*Thank you! The calibration is now complete.  
Left-click to start the Part II of the experiment.  
Left-click to continue*

**25<sup>th</sup> Instruction:**

*Did you perceive any impairments or defects in the video?*

**26<sup>st</sup> Instruction:**

*This is the end of the second part of the experiment.  
Please Left-click whenever you are ready to resume the experiment.*

**27<sup>nd</sup> Instruction:**

*(1) CALIBRATION SESSION – PART III  
You are now going to perform the calibration session again.  
Please, wait for a few seconds while the experimenter adjusts the system.  
When the system is ready, the experimenter will ask you to continue.  
Left-click to continue*

**28<sup>rd</sup> Instruction:**

*(1) CALIBRATION SESSION – PART III  
You're now going to see a series of small black SQUARES on the screen.  
At each screen, one black square will appear at a different position.  
Please, keep your eyes fixated on each of these squares.  
Left-click to continue*

**29<sup>th</sup> Instruction:**

*Thank you! The calibration is now complete.  
Left-click to start the Part III of the experiment.  
Left-click to continue*

**30<sup>th</sup> Instruction:**

*Did you perceive any impairments or defects in the video?*

**31<sup>st</sup> Instruction:**

*This is the end of the experiment.Thank you for participating!*