

2008

Seeing the bigger picture: an amblyopic advantage in the global integration of moving visual information?

Jeffery, H.

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The Plymouth Student Scientist

University of Plymouth

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Appendix A

Brief (Global Direction Task)

Dear Participant

Our study aims to investigate the way in which people with amblyopia (lazy eye) see the world compared to normals.

This is a test of visual perception. The purpose of this study is to measure perceptual judgements on the general direction of moving stimuli.

Firstly, to test your 3D vision you will be presented with a target pattern of randomly arranged arrow heads of differing sizes. You will then be shown a transparent plate which is printed with a background of a similar texture in four quadrants. Your task is to detect the target which you were first presented within one of the four. If you fail to detect the target correctly, you will be presented with 2 more plates of differing thicknesses.

Your second task involves judging the general direction of an arrangement of moving stimuli. A 9 x 9 grid of dots will be presented. The tendency of the dots to move in the same direction will be varied. At one extreme they will move together like a flock of birds. At the other extreme, each dot will move in its own direction. Usually, you will see something in between and it's your task to judge the average direction they move, either to the left or right, using the corresponding mouse button.

This task will last approximately 30 minutes.

You have the right to withdraw from the experiment at any time. Your results will be confidential and you will remain anonymous. You will be debriefed after the experiment.

If you have any questions please ask.

Thank you

Brief (Tilt Task)

Dear Participant

Our study aims to investigate the way in which people with amblyopia (lazy eye) see the world compared to normals.

This is a test of visual perception. The purpose of this study is to separately measure perceptual judgements on the general tilt of moving objects.

Firstly, you will be presented with a target pattern of randomly arranged arrow heads of differing sizes. You will then be shown a transparent plate which is printed with a background of a similar texture in four quadrants. Your task is

to detect the target which you were first presented within one of the four. If you fail to detect the target correctly, you will be presented with 2 more plates of differing thicknesses.

Your second task involves judging the general tilt of an arrangement of tilted stimuli. A 9 x 9 grid of striped, tilted patches will be presented. The tendency of the patches to tilt in the same direction will be varied. At one extreme they will tilt together in synchronicity. At the other extreme, each patch will tilt in its own direction. Usually, you will see something in between and it's your task to judge the average tilt direction, either to the left or right, using the corresponding mouse button.

This task will last approximately 30 minutes.

You have the right to withdraw from the experiment at anytime. Your results will be confidential and you will remain anonymous. You will be debriefed after the experiment.

If you have any questions please ask.

Thank you

Paper copy De-brief

You have now completed the experiment. The aim of the experiment was to measure whether participants with amblyopia (or lazy eye) make different perceptual judgements to normal participants. The first task tested for amblyopia by examining your stereo (3D) vision. In particular, relating to the second task, we are interested in finding evidence for an amblyopic advantage in tasks where a general motion judgement needs to be made, compared to normal participants. You were randomly assigned to either of two conditions testing for this.

You have the right to withdraw if you wish to. The data are confidential and anonymous. If you have any questions regarding the experiment, you can contact me using any of the following email addresses:
hannah.jeffery@students.plymouth.ac.uk

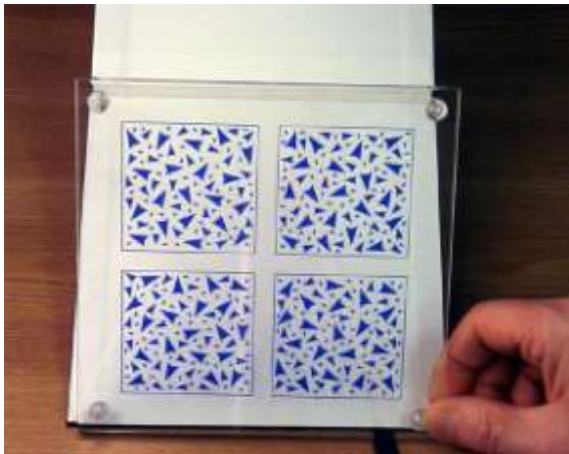
elena.bell@students.plymouth.ac.uk

laura.harris1@students.plymouth.ac.uk

Thank you for taking part in this experiment.

Appendix B

Example of the Frisby Stereotest (Near) in the correct position.

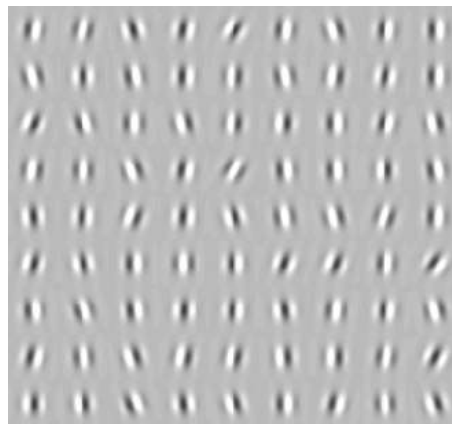
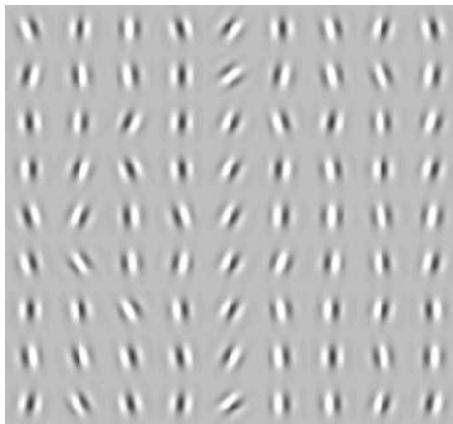


The target pattern of clustered arrowheads observers were asked to detect.



Appendix D

Examples of orientation task screen, presenting Gabor patches with varying degrees of noise.



Examples of motion-direction task screen, illustrating movement of dots with varying degrees of noise.

