Project two also uses the Method of Adjustment to find a difference threshold.  In this project the method of Adjustment is applied to the T illusion.  This illusion again demonstrates how our perception of visual phenomena can be influenced by the position of stimuli in relation to each other.  As in project 1 you are to do 20 trials of the T illusion.  After each trial you are to click the Show Results button and record the percentage shown. Unlike Project 1, the percentage result shown is not a difference but the actual percentage length of the vertical line compared to the horizontal line.   After you have recorded the 20 percentages, add them up and get the total,  then divide the total by 20.   This number is the average percentage length of your adjusted vertical line compared to the horizontal line.  Now you have one extra step to do.  Take your average vertical line percentage and subtract it from 100%.  That result is your difference threshold expressed as a percentage difference between the length of the horizontal and vertical lines.  In other words the illusion caused you to see the lines as equal in length when they were actually xx% different.

Use your results to write up your project using the sample project (found on the course shell) as a guide.  Your write up will be similar to project 1 except that the illusion used is different.  Be sure to read about the T illusion above the Project 2 description.

About the Vertical-horizontal illusion

https://en.wikipedia.org/wiki/Vertical–horizontal\_illusion

<https://michaelbach.de/ot/sze-tIllusion/index.html>

Sample project

**Introduction**

In this lab, the method of adjustment was used to test the susceptibility of the horizontal-vertical illusion.Wundt invented this psychophysical method in 1868 in an effort to calculate a participant’s absolute and difference thresholds. The horizontal-vertical illusion (also known as the T illusion) is one of the most popular and accepted ways of demonstrating how visual stimuli can affect our perception of both thresholds. It was created by Johann Oppel and was first published in 1855. Although no one has completely explained this illusion, many believe that it is the result of “misapplied size constancy”. Also, humans usually read from left to right (or right to left) and perhaps we’re used to processing the horizontal quicker than the vertical, causing inaccurate interpretations in tests like these.

**Method**

Participant: A 28 year old male student, enrolled in Sensation and Perception, PSY3310 at Troy University. No preconceived knowledge was brought to the test. The test was done in ambient light conditions.

Materials: A Virtual Lab Manual CD-ROM, 8th Edition, by E. Bruce Goldstein was used. The software was operated on a computer operating on a Windows 7 operating system.

Procedure:Two line stimuli were presented. One line, blue in color was horizontally, and one, red in color, was presented vertically. The vertical line acted as the constant, and remained the same length through each of the tests. The horizontal line grew larger or smaller depending on the input of the participant, relayed by a slide bar underneath the lines. The participant was instructed to attempt to visually estimate the size of the vertical line, using the slider to adjust the horizontal line until it was the same length. A result button was pressed after the estimated measurement was accomplished, and the amount the participant was off by was displayed. This test was repeated for 20 trials. The mean for all differences was calculated. Because some repetitions began with a horizontal line that was larger than the vertical (requiring me to adjust it smaller), and some repetitions began with a horizontal line that was smaller than the vertical line (requiring me to adjust it larger), I also noted the difference in results, and subsequently calculated the means in those subcategories as well.

**Results**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Trial Number | Horizontal length/Estimated Vertical length | Actual Vertical length | Error Rate (+=Over, -under) | L= Adjusted line started larger  S=Adjusted line started off smaller |
| 1 | 104 | 122 | -18 | S |
| 2 | 119 | 116 | +3 | L |
| 3 | 104 | 107 | -3 | L |
| 4 | 111 | 120 | -9 | S |
| 5 | 96 | 112 | -16 | S |
| 6 | 115 | 117 | -2 | L |
| 7 | 108 | 113 | -5 | L |
| 8 | 105 | 107 | -2 | L |
| 9 | 102 | 124 | -22 | S |
| 10 | 94 | 102 | -8 | S |
| 11 | 105 | 108 | -3 | L |
| 12 | 107 | 127 | -20 | S |
| 13 | 108 | 127 | -19 | S |
| 14 | 120 | 109 | +11 | S |
| 15 | 92 | 104 | -12 | S |
| 16 | 111 | 123 | -12 | S |
| 17 | 99 | 115 | -16 | S |
| 18 | 104 | 112 | -8 | S |
| 19 | 107 | 122 | -15 | S |
| 20 | 97 | 106 | -9 | S |
|  | Mean S: 13.92 | Mean for L: 3 | Overall Mean: 9.25 |  |

**Discussion**

Results indicate that my difference threshold for the test was 9.25. What I found curious is that when the horizontal line began larger than the vertical line, I was a lot more accurate. In fact, my difference threshold lowered my nearly 11 points, when compared the threshold of the trials where it started out smaller. I was curious about this, and noticed that when I made the line larger, my gaze glanced from left to right, but when I made the line smaller, it went from right to left. If my idea about the processing of the horizontal quicker than the vertical because of reading habits is true, then this may be because of the effect. I could have been more accurate was because I do not read from right to left, therefore my brain took more time to process the information, resulting in a more accurate result. The only way to test this would be to give the tests to literate participants, in specific regions of the world who read from left to right, compared to ones who read right to left, and ones who read from top to bottom.

My project 1 assignment (showing you for example of how I want this project set up)

Muller -LyerIllussion

Heathermarie Moore

Troy University

**Introduction**

In this project, the experiment used method of adjustment to study the impact of the Muller-Lyer illusion (size constancy) to study my ability to match the length of two lines. This method is an optical illusion that involves the use of two lines that are of the same lengths but appear to portray different lengths. This particular method of research was founded in 1889 by Franz Carl Muller-Lyer. Muller lyer (1857-1916) was a famous German sociologist and psychiatrist and hence the method was named after him (Hesse, et al 2016). This method of experiment is vital to researchers who are interested in find out how the perceptual process of the brain works. In a bid to explain how this particular method works, three attempts have been focused on. The three include; conflicting cues, confusion and misapplied size constancy scaling. Size constancy in this context is the likelihood of a person perceiving an object to be of the same size. The object can be some distance away or it can be too close. It is like viewing a tall building in the city with the hand held out in front of the sky line. The hand seems to be bigger than the building yet in our mind, we already know that the building is a million times bigger than our hands (Feng, et al 2017).

**Method**

Participant: a 48 year old female scholar, enrolled in sensation and perception, PSY3310 at troy university-Montgomery. This test has based on Michael’s visual phenomena and optical illusions. Having history of mental illnesses in my family, I undertook this experiment as explained in the procedure section.

Materials: the materials used in this experiment include; 10th edition sensation and perception textbook by James R. brockmole and Bruce Goldstein. The experiment was conducted from the link; <https://michaelbach.de/ot/sze-muelue/index.html> running on windows 7 computer operating system.

**Procedure**

For the purpose of this experiment, a purple horizontal line with arrows on both ends and one in the middle was presented. According to the instructions, the participant was to drag the middle arrow and try to place it in the middle of the line. In other words, you are supposed to estimate the Centre of the line and place the arrow in the point where you think it dissects the line. After dragging the arrow to the position you perceive to be the Centre, press the “show result” to get the results of what you got in percentage. The heart beat goes up as the body releases adrenaline. For sure, this process is confusing. The results are generated depending on how close or far you are from estimating the Centre of the line. Since it is a requirement to obtain and record data. The table below shows the results of every trial conducted. According to instruction given, I repeated the trials for twenty times and obtained the mean by getting their total and dividing it by 20. I adhered to the instructions laid out for the purpose of this experiment.

**Results**

|  |  |
| --- | --- |
| Trial number | difference percentages% (-=under,+=over) |
| 1 | -2.6 |
| 2 | +2 |
| 3 | +7 |
| 4 | +5 |
| 5 | -1.2 |
| 6 | -1.1 |
| 7 | +9 |
| 8 | +11 |
| 9 | -7.5 |
| 10 | -5.2 |
| 11 | -3 |
| 12 | +6 |
| 13 | +2 |
| 14 | +2.1 |
| 15 | -11 |
| 16 | -7.2 |
| 17 | +10 |
| 18 | -3.1 |
| 19 | -2 |
| 20 | -1.1 |
|  | Total=9.1 |

To obtain percentage difference, I summed up the 20 difference percentages which totaled to 9.1 and then divided the results by 20. The answer is 0.455. That is 9.1/20=0.455.

**Discussion**

The results indicate that my mean was 9.1. What I found to be amazing in this experiment is the fact that I had to drag the middle arrow from any point and try to locate the center as fast as I could. The process became more interesting as turned to be more curious in checking the marks that I had scored in each trial. Immediately you get the marks for the previous trial, you record and without wasting time, you are on the next trial. It is a matter of relying on your instincts and see how smart you are in guessing (Axelrod, et al 2017). Getting to the point is not an easy thing. From the results recorded in the table, getting the right answer which is zero is not an easy task. This is because accuracy in such an experiment depends on one’s ability to read from top to bottom and left to light. In other words, some people can read very fast horizontally and others vertically. It took more time to process the trial. This research could have been more accurate if it involved more participants from different corners of the world to determine people’s habits in reading from left to right, top to bottom and right to left (Kopiske, et al 2017). There is a big difference when it comes to our ability to study objects from different angles and distances. Visual perception in this case is directly determined by size constancy. Size constancy depends on one’s ability to predict size objects looked from different dimension, angle and distance. I also noted that accuracy depends on one’s eyesight strength and also intelligence. It is worth to note that our minds process images depending on intelligence. Different people are talented in different areas when it comes to how they interpret images.

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