

Weber's law and visual perception essay sample

[Psychology](#)



**ASSIGN
BUSTER**

Visual perception is one of our senses, having the ability to interpret information from our environment with the help of visible light. It allows us to judge relative position of targets or stimuli with accuracy. Judgment of size according to Weber's law says that smaller length calls for a smaller difference. The researcher asked the subject to assume a midpoint on 30 lines comprised of ten 2 inch lines, ten 4 inch line and ten 6 inch line. Then the researcher computed each mean error. The results support Weber's law on judgment size. 2 inch lines have lesser mean error than 6 inch line. 4 inch line has greater mean error than 2 inch line. Concluding from these results, there is a relationship between the Weber's law and visual perception of the subject. Introduction:

Perception is the identification, organization and interpretation of the information our senses gathered from the environment. Weber's law or Weber - Fechner law states that the change in a stimulus that will be just noticeable is a constant ratio of the original stimulus. In other words, it says that the size of the just noticeable difference (difference threshold) is a constant proportion of the stimulus value. The aim of this experiment is to determine if the Weber's law has any relationship to Visual perception. It was stated that a just noticeable change in the stimuli will be perceived by the subject as still the original stimuli. Meaning to say, that if there is only a slight difference on the stimuli, the result is little or no error. . Psychologist Richard Gregory argued that perception is a process that undergoes a top down processing. Perception is a process that involves making inferences about what we see and try to make a best guess. When the subject looked at the lines, he developed a perceptual hypothesis or guess on what is the

midpoint of each lines. He already had a prior knowledge of the length of lines. All the guess he made are almost correct. Law of comparative judgment by L. L. Thurstone is described as a model that is used to obtain measurements from comparing. Example of this is the comparison of perceived intensity of physical stimuli. Relating to this experiment, the subject made a comparative judgment on each stimulus.

Measuring, in his mind, the length of the line and assuming its midpoint. The subject's measurements represented how he perceived the objects, rather than being actually measured. Gestalt psychology states that the whole is greater than the sum of itself. Under it is the gestalt effect, a form-generating capability of our senses, particularly with human's ability in visual recognition of figures and whole forms instead of just a collection of simple lines and curves. The subject had to look at the lines as a whole to be able to assume its midpoint. Relating this law to the experiment, the alternative hypothesis states that as the length of line increases, the perceptual error also increases.

Methodology:

- a. Participant: A student from BSIOP 3-1 was asked to participate in this experiment.
 - b. Materials: Paper with 2, 4, 6 inch lines beginning at different starting positions from the edge. There are 10 lines for each category, all arrange in random so that the same length does not appear successively.
 - c. Procedures: The subject was asked to lightly mark with a ball pen what appears to be the midpoint of each line. A sheet of paper was used to cover
- <https://assignbuster.com/webbers-law-and-visual-perception-essay-sample/>

the lines so that only one line will be seen. When all 30 midpoints have been estimated, the researcher then measured each line with a ruler to the nearest 1/16 inch and mark the actual midpoint. The researcher then recorded the amount of error for each of the line and the direction. If the assumed midpoint was made before the actual midpoint, a minus error was written, if it was after the actual midpoint, a plus error was put. After this the Mean 1 of each category was computed. The errors was added overlooking its sign. Mean 2 was also presented. This time, the signs were taken into account.

Discussion:

Based on mean 1, we can say that the alternative hypothesis " as the length of line increases the mean error also increases" is accepted. As you can see, 2 inch line has only a mean error of 0. 63, 4 inch line has a mean error of 1. 7 and 6 inch line has 3. 26 mean error. We can clearly see that the mean error ascends as the line length gets longer.

References:

Levi, Dennis M., Klein, Stanley A., and Yap, Yen Lee. (1987). " Weber's law" for position: Unconfounding The Role of Separation and Eccentricity. Vol 28, No. 5, pp. 597 - 603. Great Britain. Smeets, Jeroen B. J., and Brenner, Eli.

Grasping Weber's law. McLeod, Sam. (2007). Visual Perception Theory.

Vasquez-Espinosa, R. E., and Connors, Richard W. (1982). The Law of Comparative Judgement: Theory and Implementation Appendix: