Measuring Distortions in Visual Illusions

This project involves measuring distortion in three geometric illusions: the Poggendorf Illusion, the Muller-Lyer Illusion, and the Ponzo Illusion.

Applet Java versions of these illusions are available on our class *website (requires appletviewer.exe or Java enabled browser to view; chrome no longer works, try Firefox)*:

Poggendorf

Muller-Lyer

Ponzo

For each of these illusions there are a number of factors (variables) upon which the size of the distortion might depend (e.g. see the reference angle selector in the Poggendorf applet). Many of these possible variables have been pre-programmed to allow the experimenter to change the values; and, after the student proposes a factor to test, selection of the variable values can be incorporated into the applet for testing.

For one of the three illusions, the student will:

- Research what might be responsible for the perceptual distortion and imagine what factors could be changed in the images to affect the illusory perception (hopefully among those that have been pre-programmed)
- Propose 2-3 variables upon which the size of the distortion might depend
- Select 3 values for each of these variables
- Using the applets have 10 classmates or friends make settings for these selections
- Compute the statistics of the measurements
- Analyze how the measured distortion depended on the factors chosen
- Report to the class on the results and interpretations.