

Vision Science II Lab
Lab 7 – Illusions

ILLUSION WORKS

On the Vision Science II web page, go to the heading for Lab 7 and click on “Illusions Works web site.” Select “Advanced Level,” then “Interactive Demonstrations” to experience many fascinating visual illusions. Enjoy the illusion and try to understand why they occur. You can read about them in the attached notes. Be sure to look down to the bottom of each page to find additional examples.

- Impossible figures and objects (Triangle, Trident, Staircase)
- Ambiguous images (Figure/Ground, Perceptual)
- Motion ambiguity (Shadow & ball, Barber pole, Breathing Square, Ouchi, Spinner)

For the Show & Ball, first watch the ball sliding back and forth across the table, noting it's apparent location. Then click on each of the shadow options to see how the appearance changes.

For the Barber pole, click on the different options and notice how the appearance changes.

Likewise on the Breathing square, adjust the slider, and click on the green square to change the obstructions to see how it affect the perception.

- Distortion illusions (Size constancy, Twisted cord, Café wall, Frazer Spiral)

For the Size constancy illusion, measure the sizes of the foreground and background figures to objectively compare their sizes.

For the Twisted cord and Café wall illusions, vary the optional settings and see how the illusion changes.

In the Frazier spiral, trace one of the circles all they way around to verify that they are really circles and not spirals.

- Funny places (Ames room, Anit-gravity houses, Plank illusion)

Allow time for the Plank illusion video to load. It is one of the best examples of a size-constancy illusion. You should understand how it works.

- Afterimages (Black & white, Color, Motion, Hermann grid, Scintillating Grid, Filling in)

The motion after image is one of the most amazing illusions. Stare at the rotating spiral for about 1 minute, the quick shift your gaze and look at someone's face or the back of you hand.

- Color and Shadow (Shadow illusion, Shape from shading)

Read and follow the instructions for the Shadow illusion. Shape from shading is good, but the video doesn't play on some computers. Find a computer on which it works and watch it.

- Facial illusions (Presidential illusion)

MOTION PERCEPTION

From the Vision Science II web page, go to George Mather's motion perception page for demonstrations of the kinetic depth effect, biological motion and shadow motion. You should study the explanations about motion perception on your own.

From the Vision Science II web page, go to the Joy of Visual Perception web site to see, under “Fun Things in Vision,” a nice demonstration of apparent motion (the Phi phenomenon). Explore the other links from those pages.