



Jinal Jignesh Shah

Mentor - Prof. Vivek Kant
Module - Visual Ergonomics

Assignment 1
Exploring Orbison Illusion

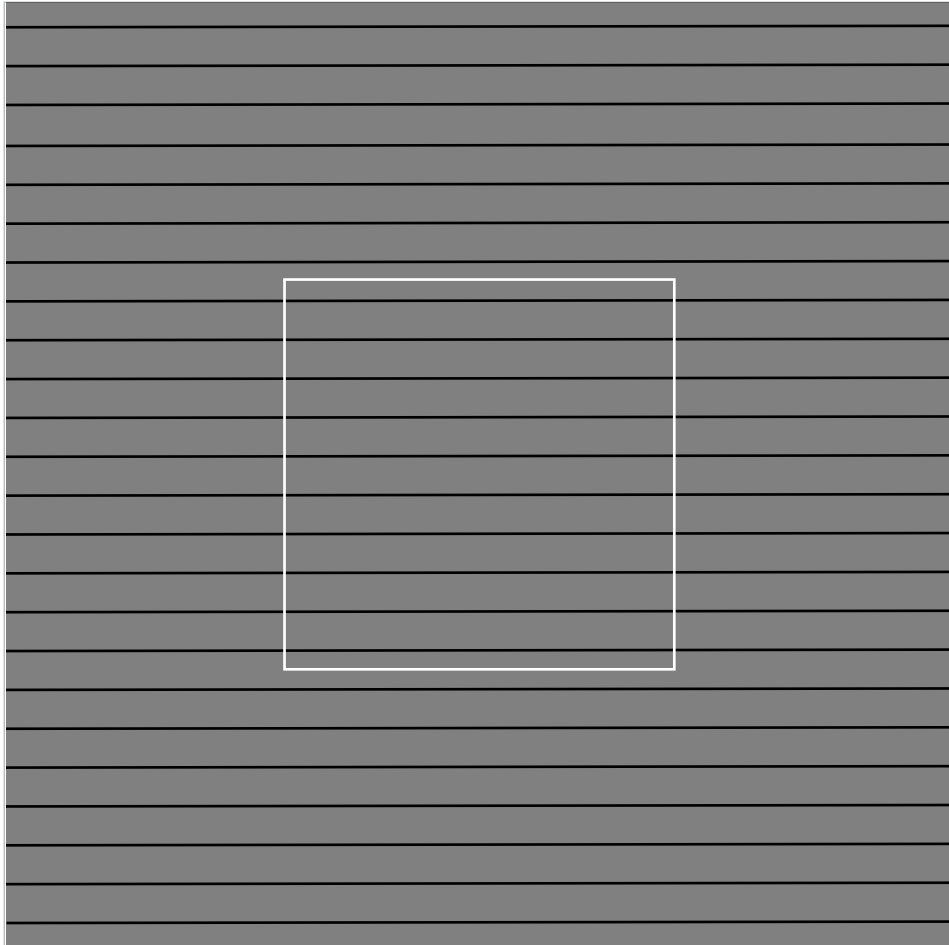
Orbison Illusion

The Orbison illusion is an optical illusion first described by **American psychologist William Orbison in 1939**.

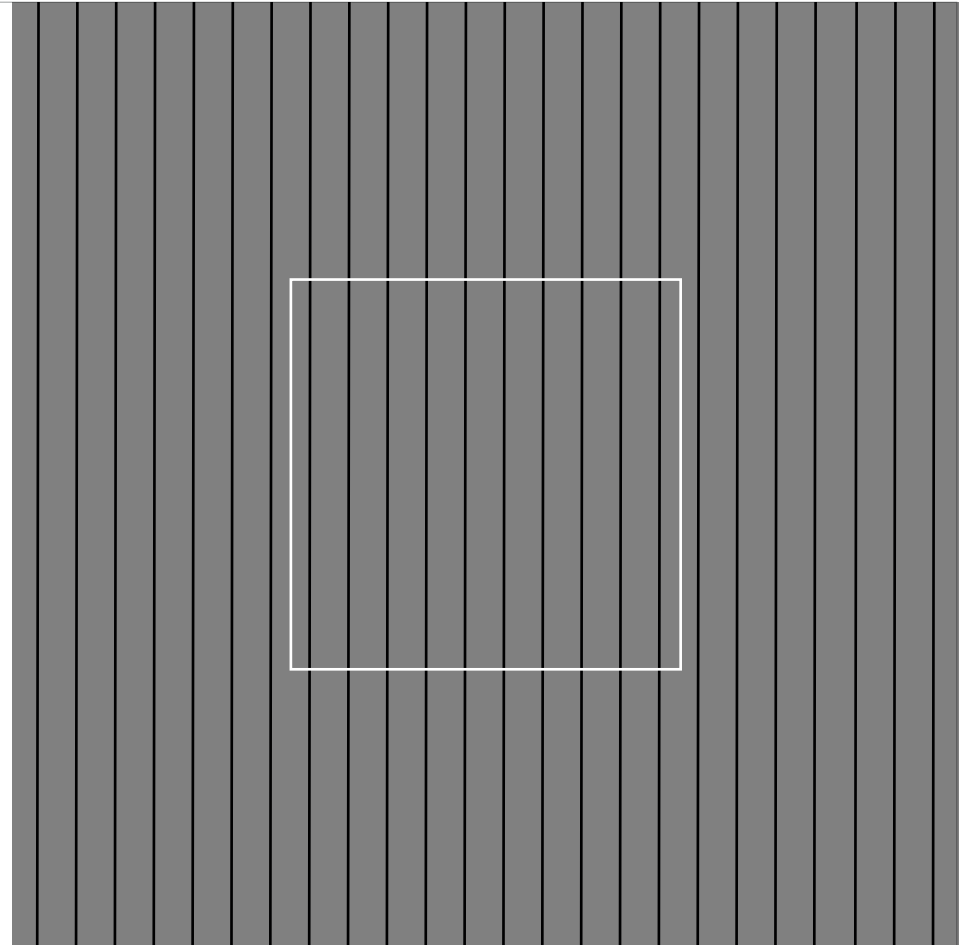
The illusion consists of a two dimensional figure, such as a circle or square, superimposed over a background of radial lines or concentric circles.

The result is an optical illusion in which both the figure and the rectangle which contains it appear distorted; in particular, squares appear slightly bulged, circles appear elliptical, and the containing rectangle appears tilted.

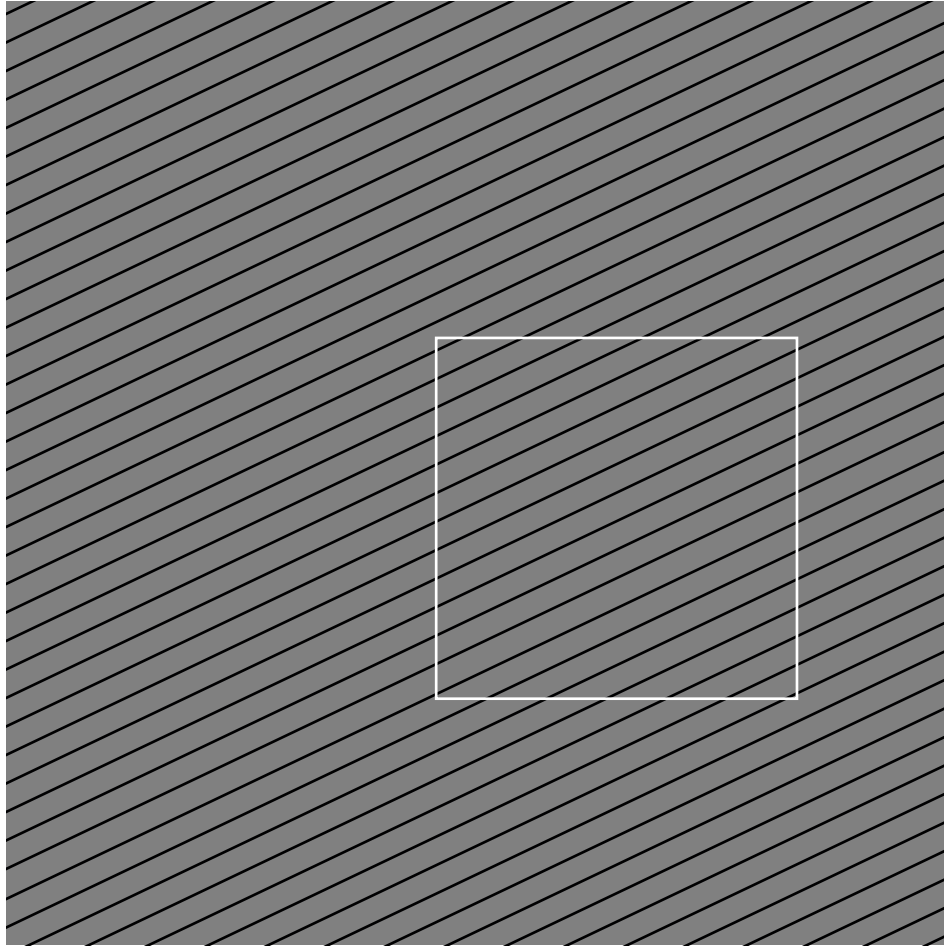
In simplicity, it's a misperception of shape when a simple geometrical figure is overlaid on a pattern of concentric circles or radiating lines the geometrical figure appears to be distorted.



Black lines on Grey Bg with White Square overlay.
No illusion to be seen

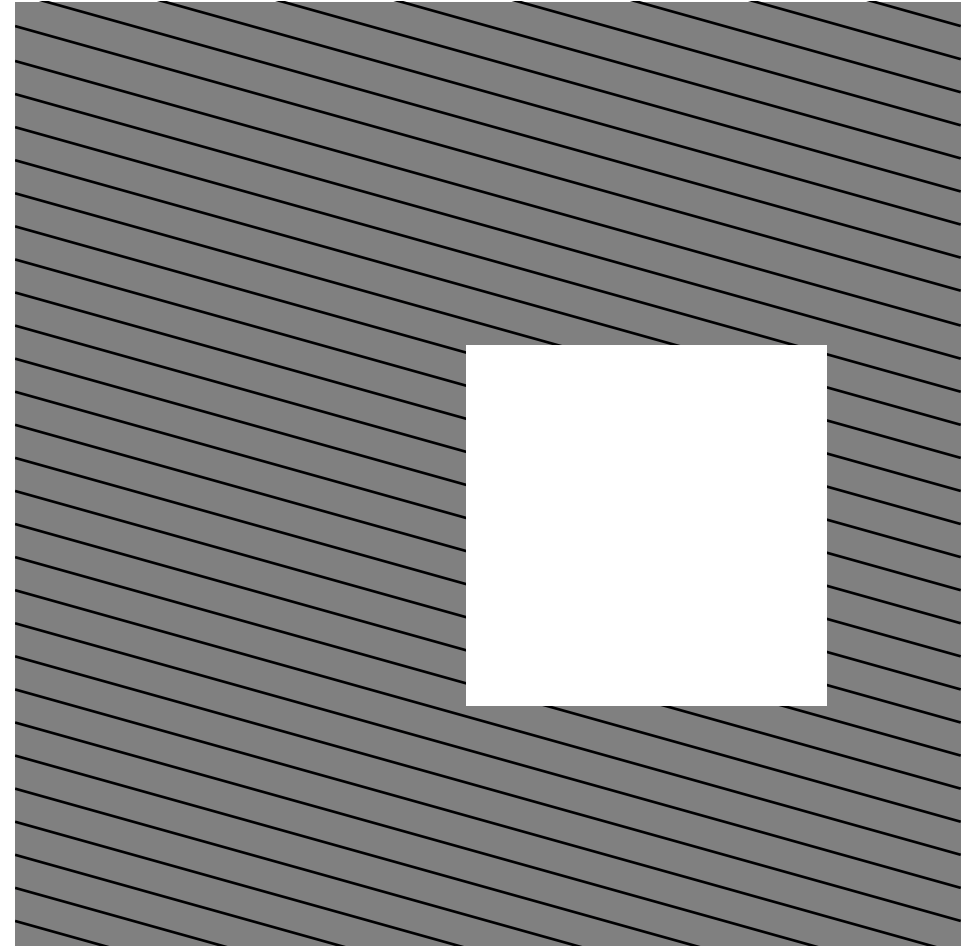


Black lines on Grey Bg with White Square overlay.
No illusion to be seen



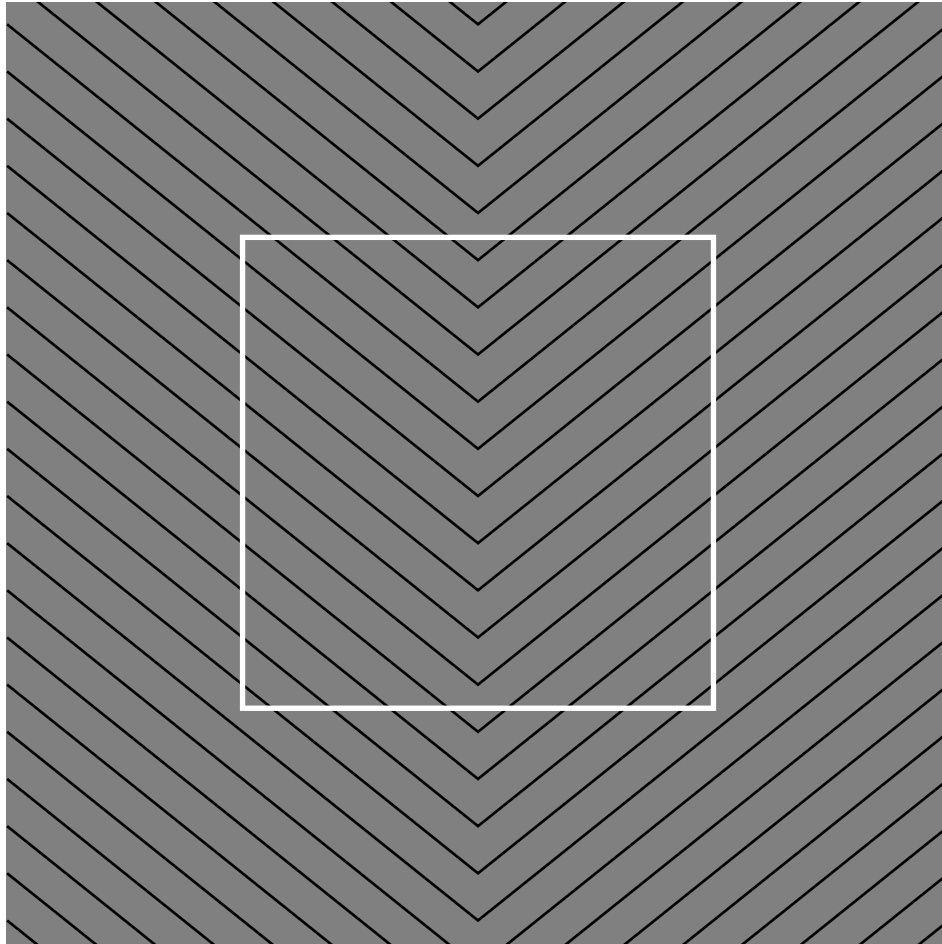
Lines become a bit dense and the orientation is changed at an angle.

The White square seems to be a bit tilted to the right at the 1st glance.



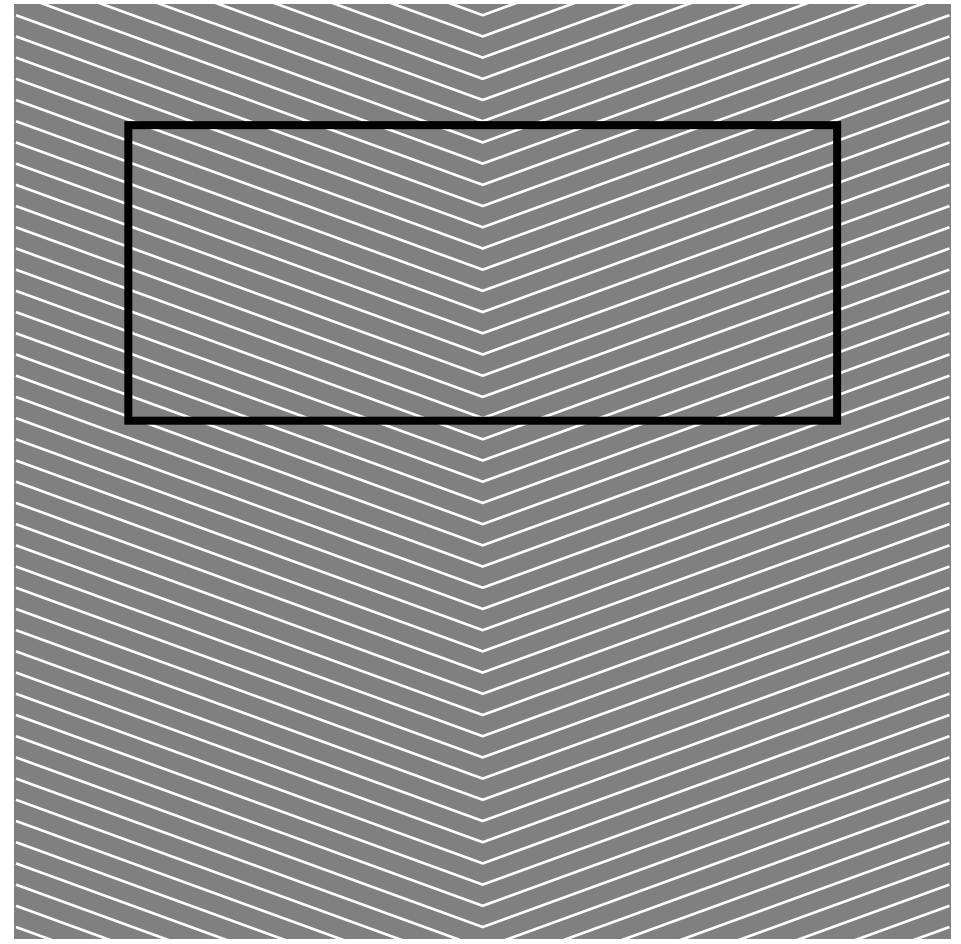
Lines are reflected at an opposite angle and the square of the same size is filled with a white mass.

The White square seems to be a bit tilted to the left this time but the effect is lesser than the pervious one. Lines do may or may not influence the illusion of the tilt, as many other factors make the effect show.



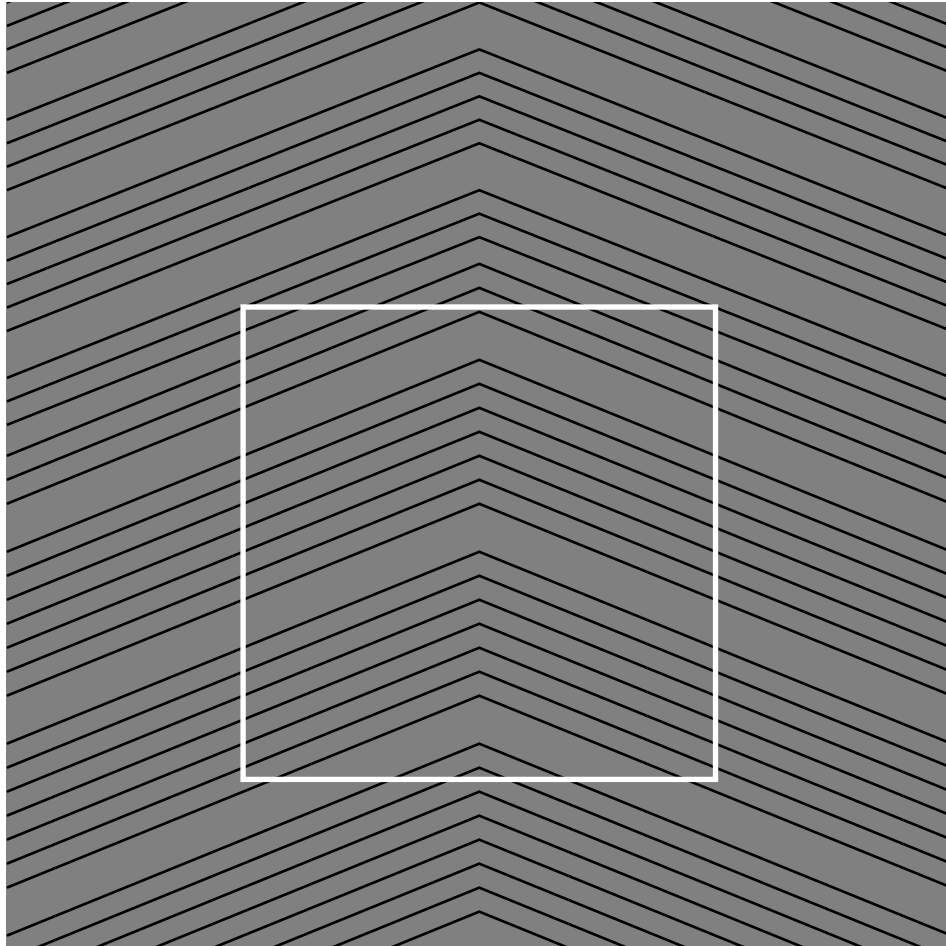
Lines from 2 directions merge at a vertex and repetition is done. White square border overlay.

The illusion makes it feel as if the square is stretched from the centre and pulled down from left and right.



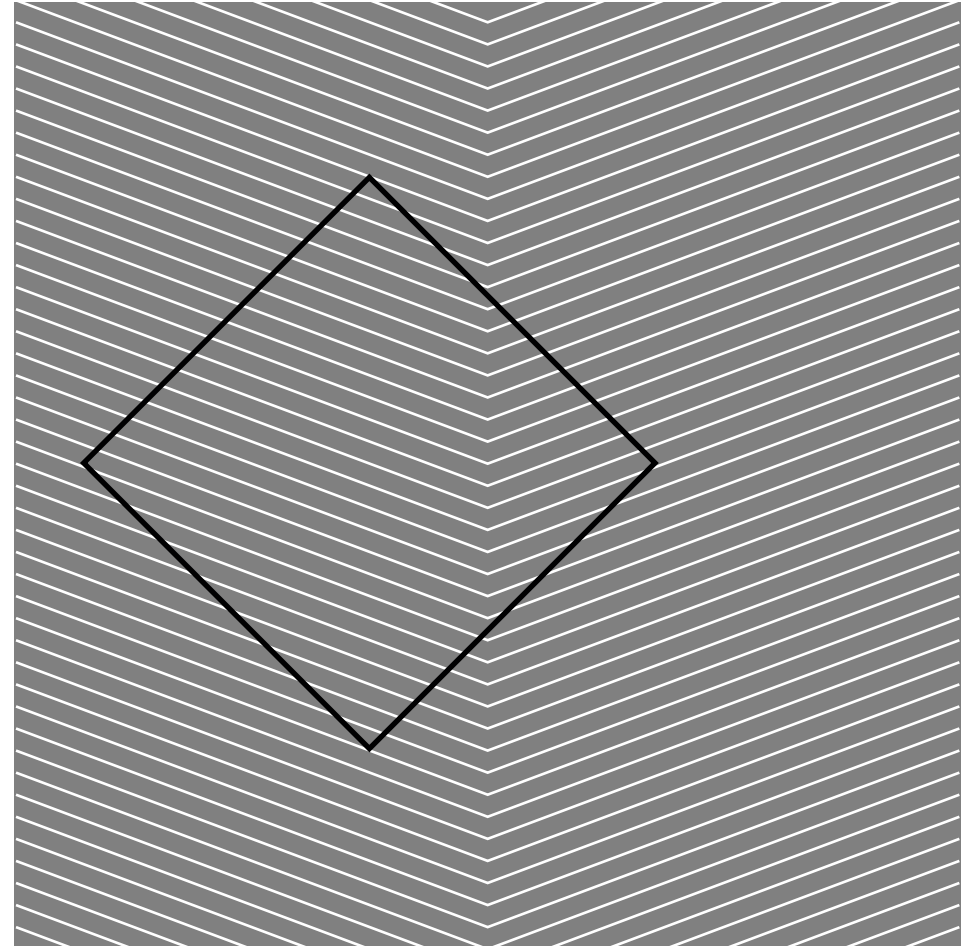
Lines from 2 directions merge at a vertex and repetition is done. Black square border overlay.

The illusion makes it feel as if the square is stretched from the centre and pulled down from left and right.
The more elongated the 2d image, better the illusion.



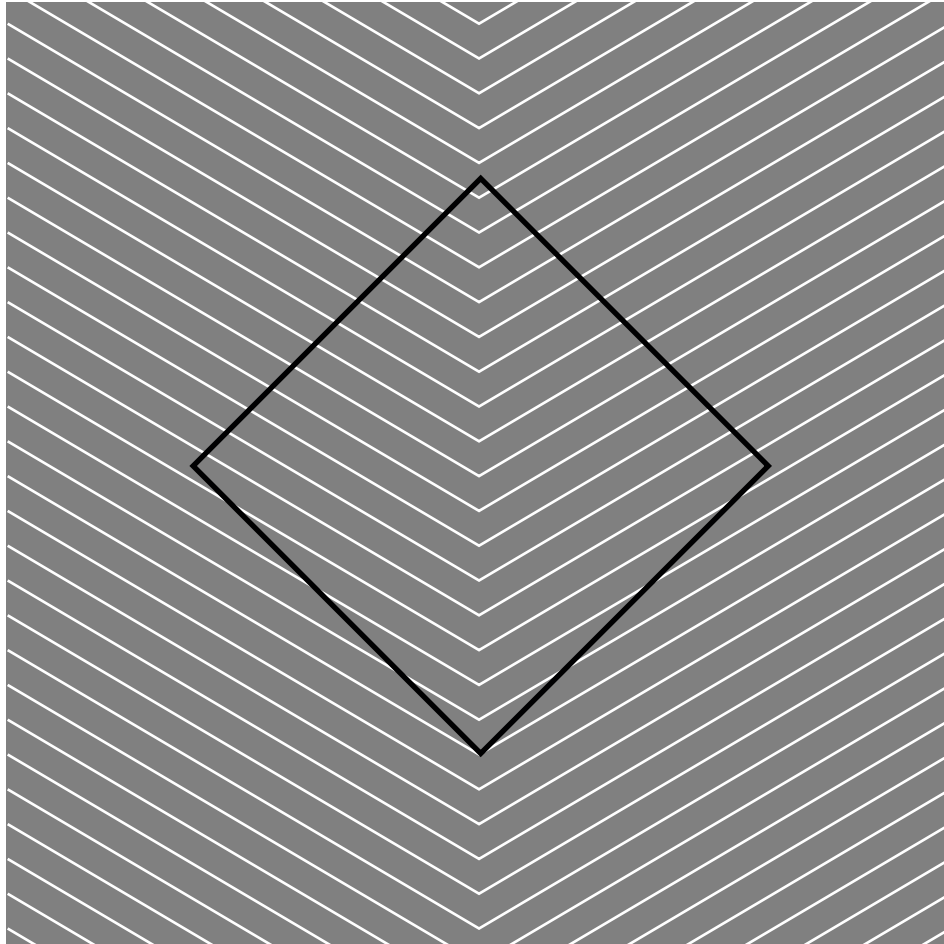
Lines from 2 directions merge at a vertex and repetition is done. White square border overlay.

The illusion makes it feel as if the square is stretched from the bottom.



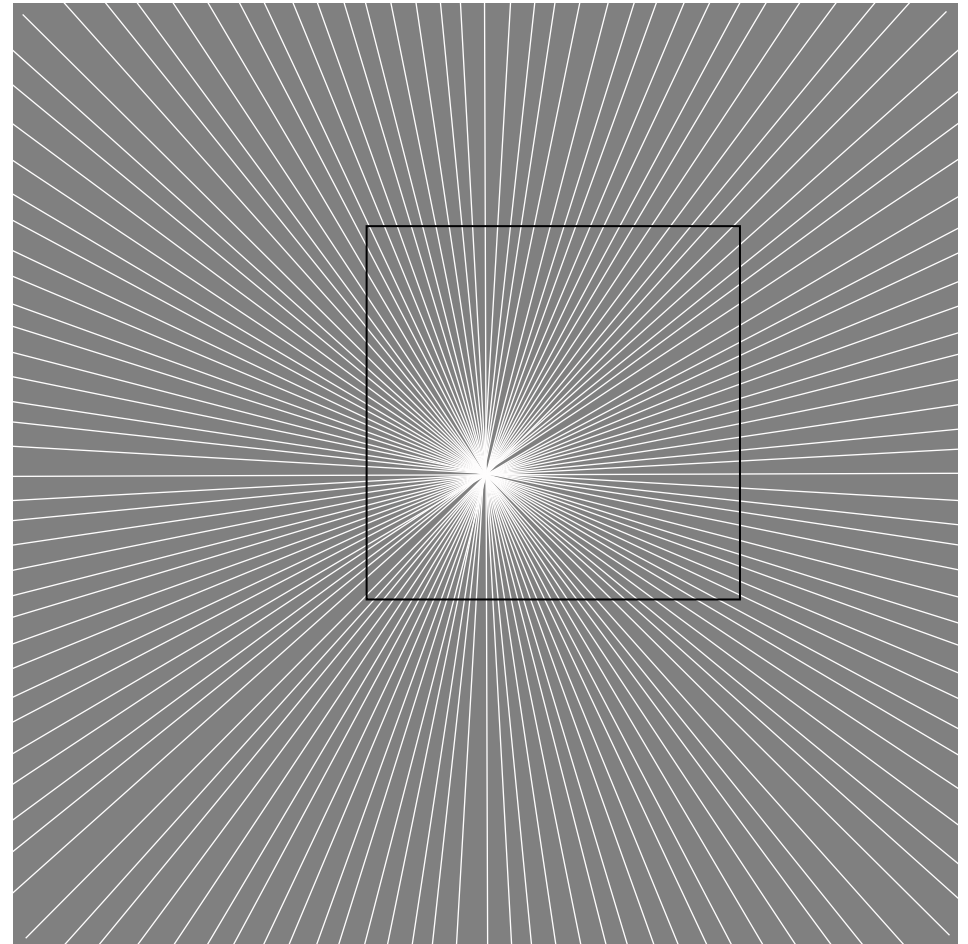
Lines from 2 directions merge at a vertex and repetition is done. Black square border overlay.

The illusion makes it feel as if the square is stretched from the right corner. Even if the black lines or white box colors are exchanged, the positioning and density of the lines keeps the illusion working.



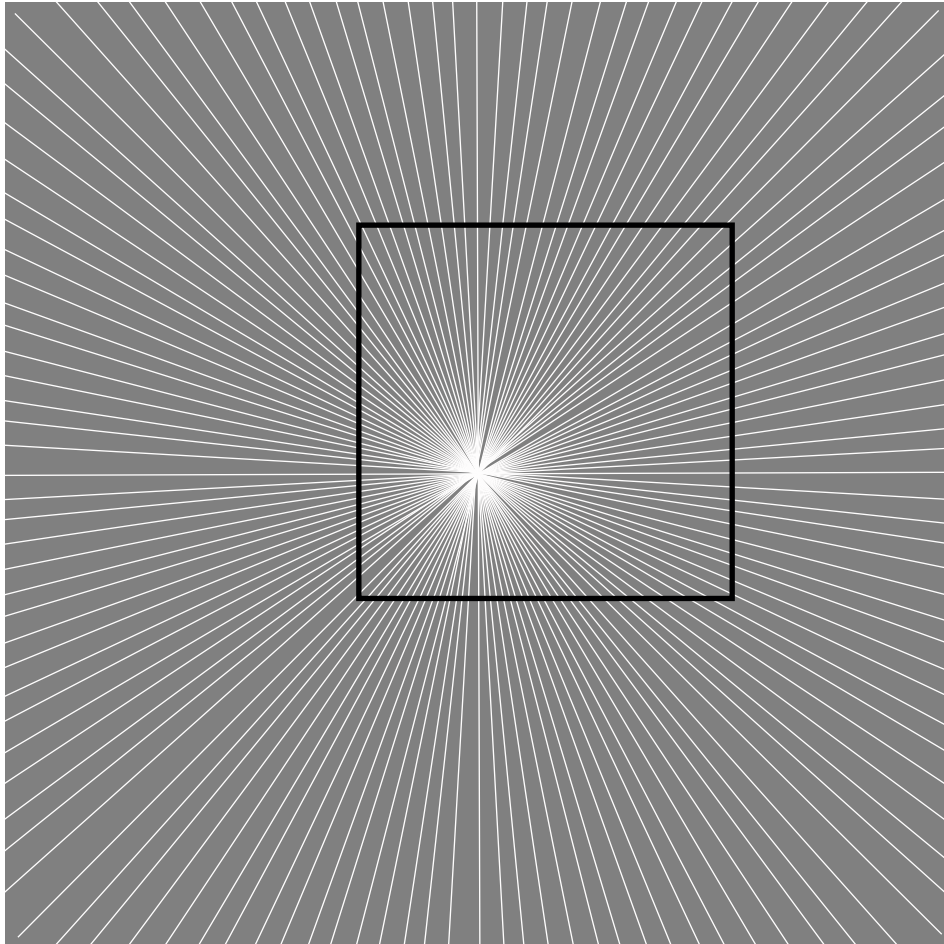
Lines from 2 directions merge at a vertex and repetition is done. Black square border overlay.

The illusion makes it feel as if the square is stretched from the the two corners. More than a square, it looks like a kite.



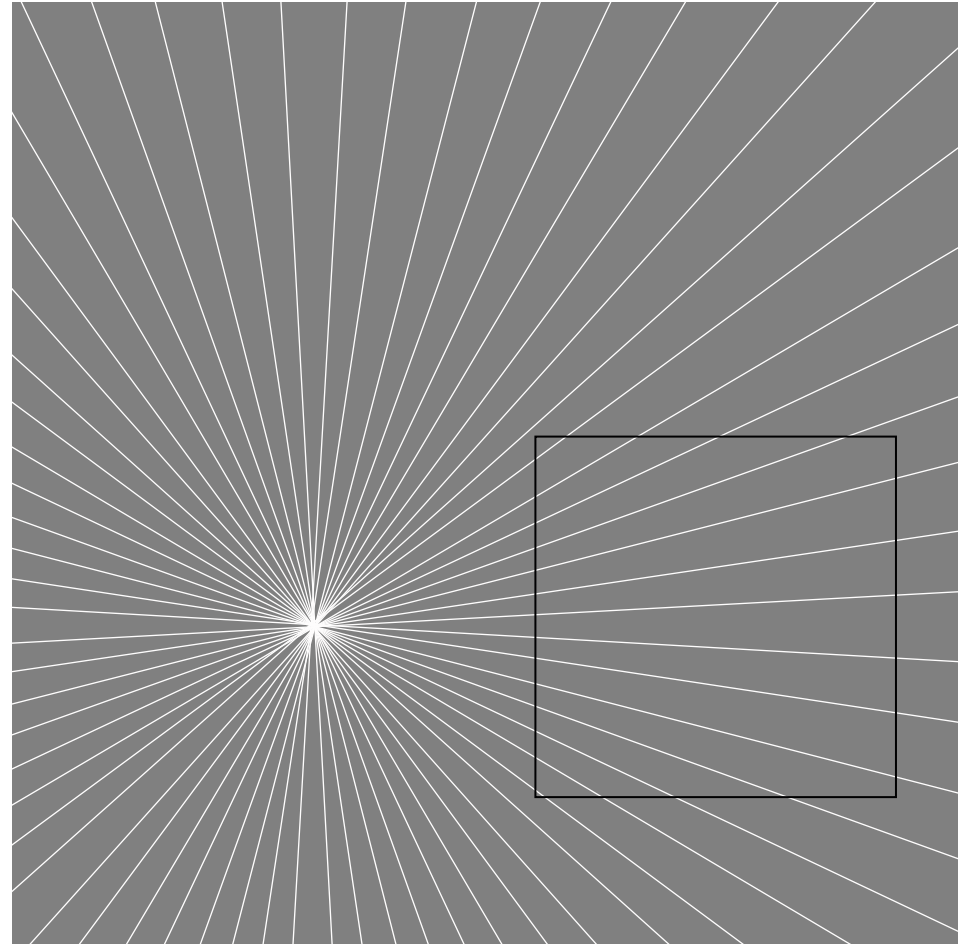
Multiple lines emerge from a point and Black square border overlay.

The illusion makes it feel as if the square is a little distorted because of the effect of the lines.



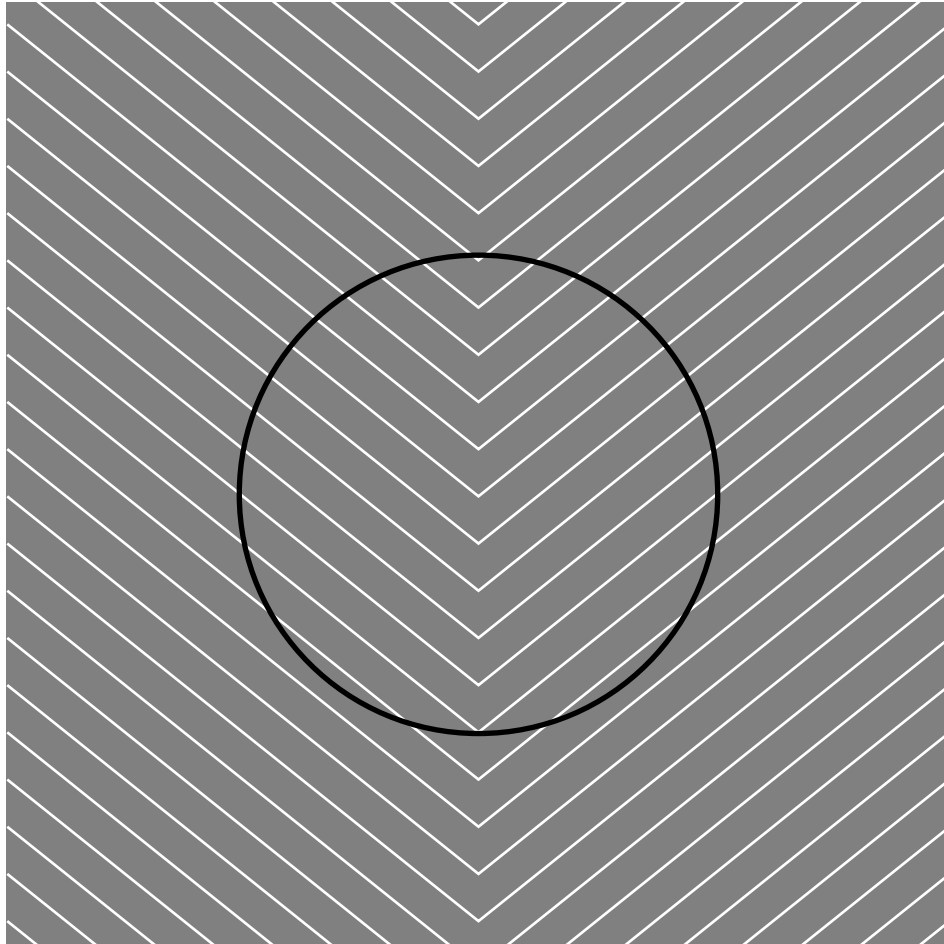
Multiple lines emerge from a point and Black square border overlay.

The illusion makes it feel as if the square is a little distorted because of the effect of the lines. But the same example has lesser illusion effect than the previous one due to change in the border thickness of the square.

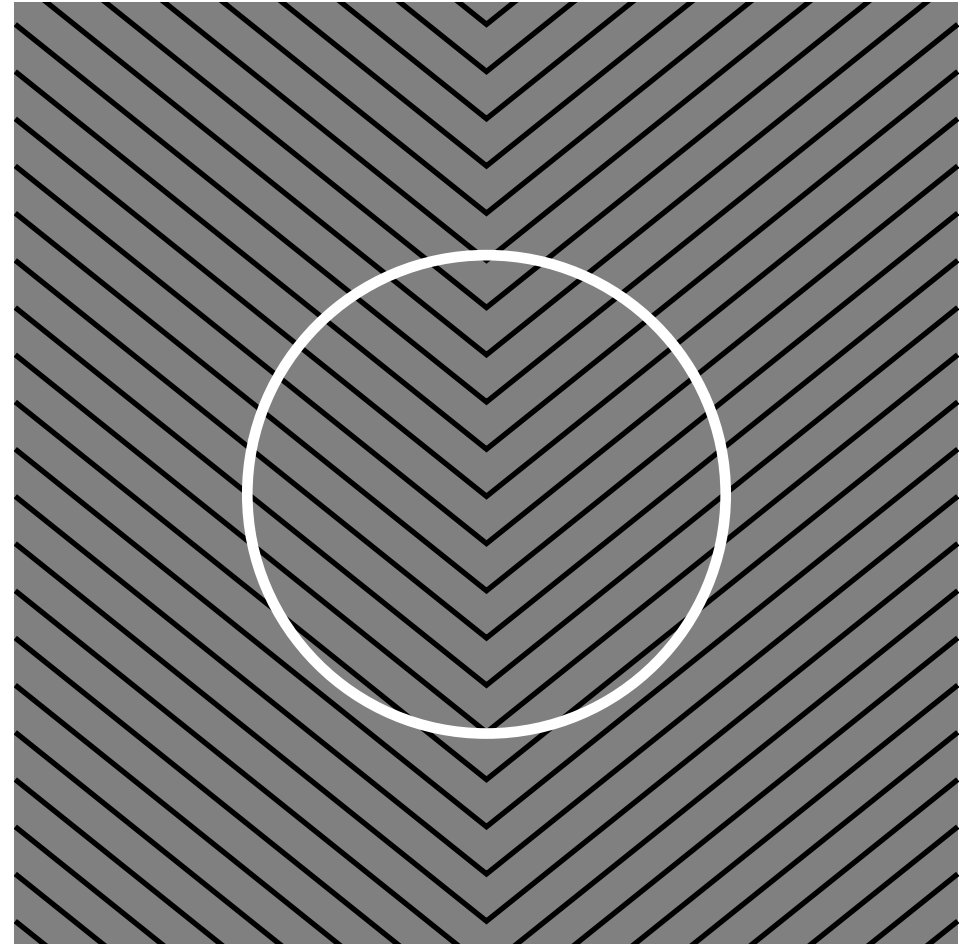


Multiple lines emerge from a point and Black square border overlay.

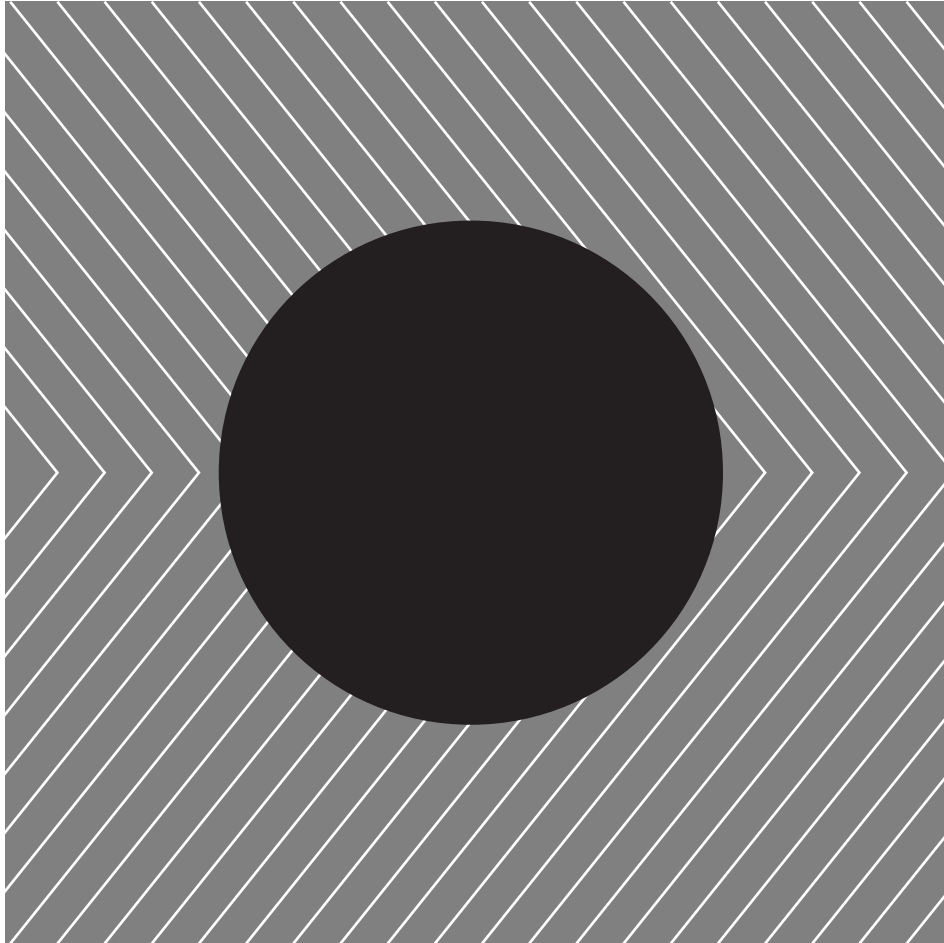
The illusion makes it feel as if the square is skewed or put into a perspective.



Lines from 2 directions merge at a vertex and repetition is done. Black circle border overlay.
The illusion makes it feel as if the circle is squished from the below.

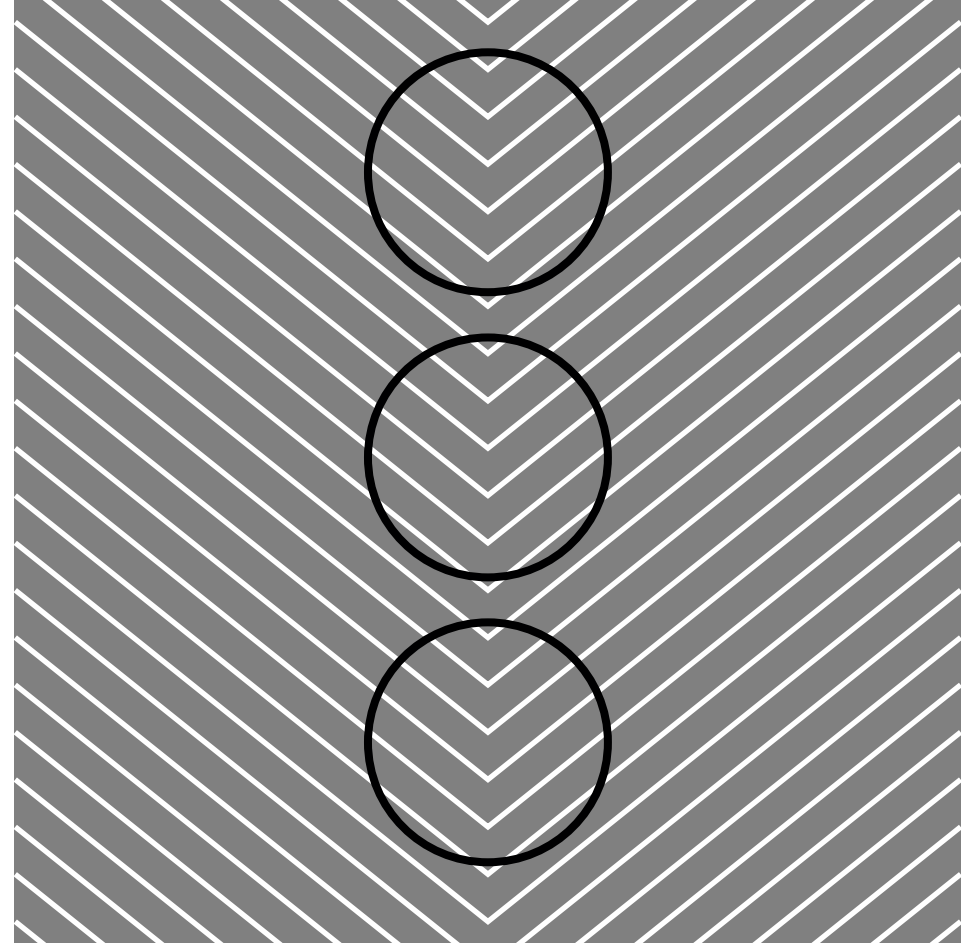


Lines from 2 directions merge at a vertex and repetition is done. Black circle border overlay.
Same example but with color and thickness of the circle changes.



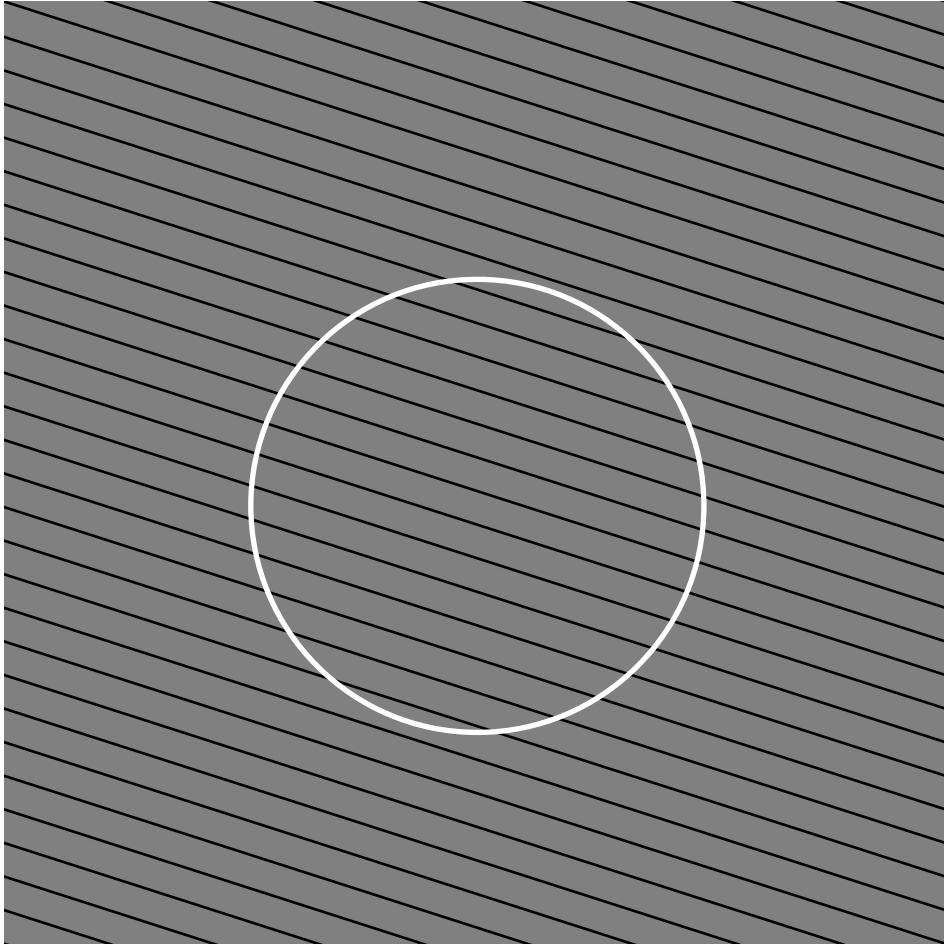
Lines from 2 directions merge at a vertex and repetition is done. Black circle overlay.

Same example but with a filled circle and illusions that it's squished in the right.

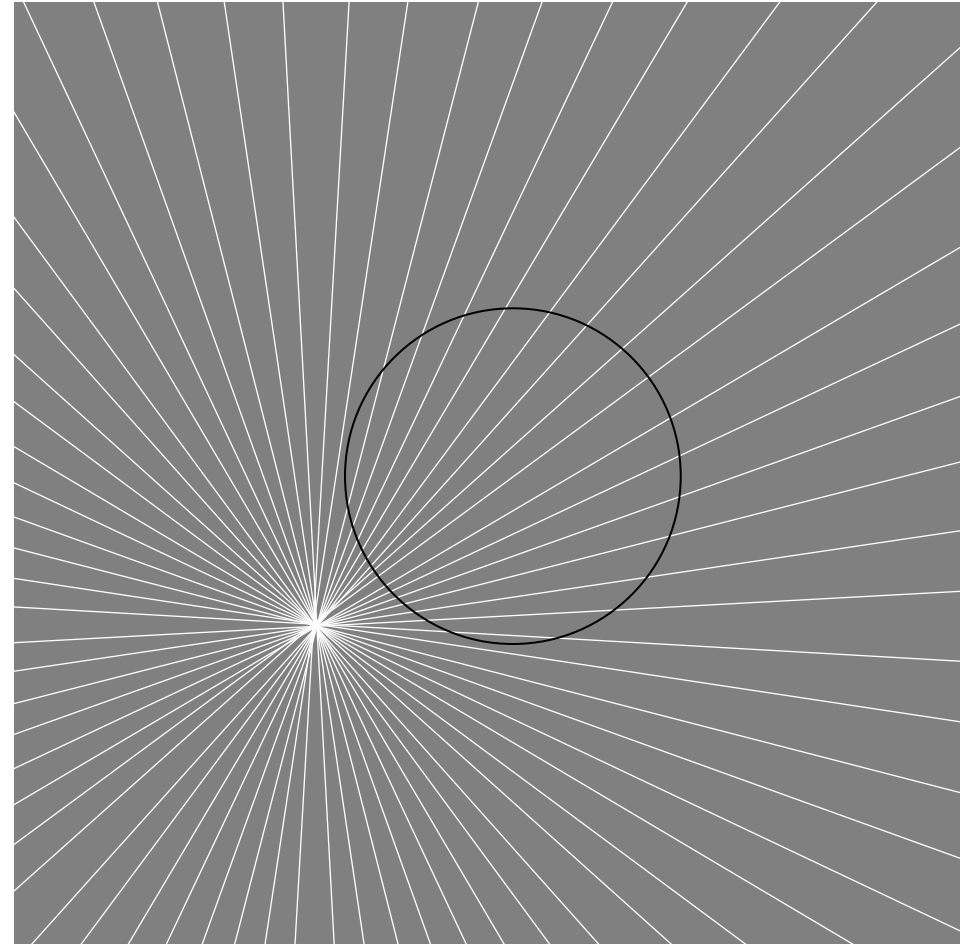


Lines from 2 directions merge at a vertex and repetition is done. Black circle overlay.

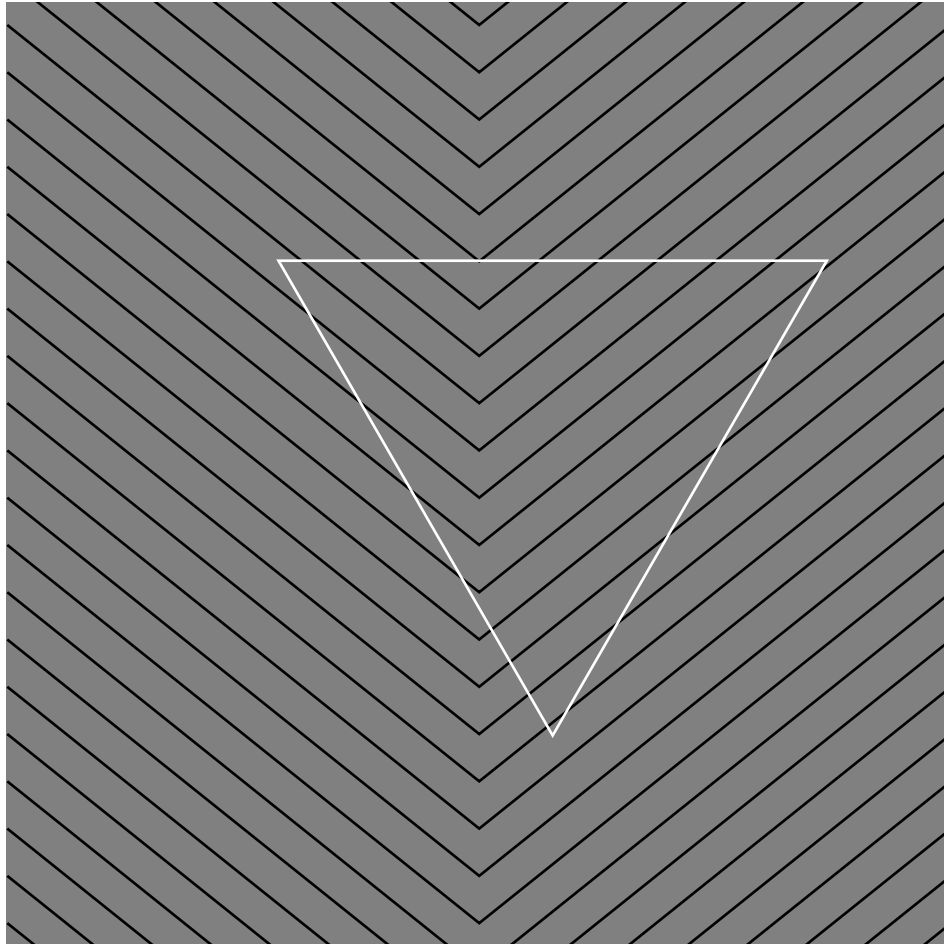
Same example but with a multiple circles and illusions that look like squished at the bottom.



Linear lines are in an angle with a white circle overlay.
The circle looks like its extended from two sides. This illusion makes us perceive a perfect circle as an oval or an elliptical figure.



Multiple lines emerge from a point and Black circle border overlay.
The illusion makes it feel as if the square is squished from the area that has many concentrated lines.



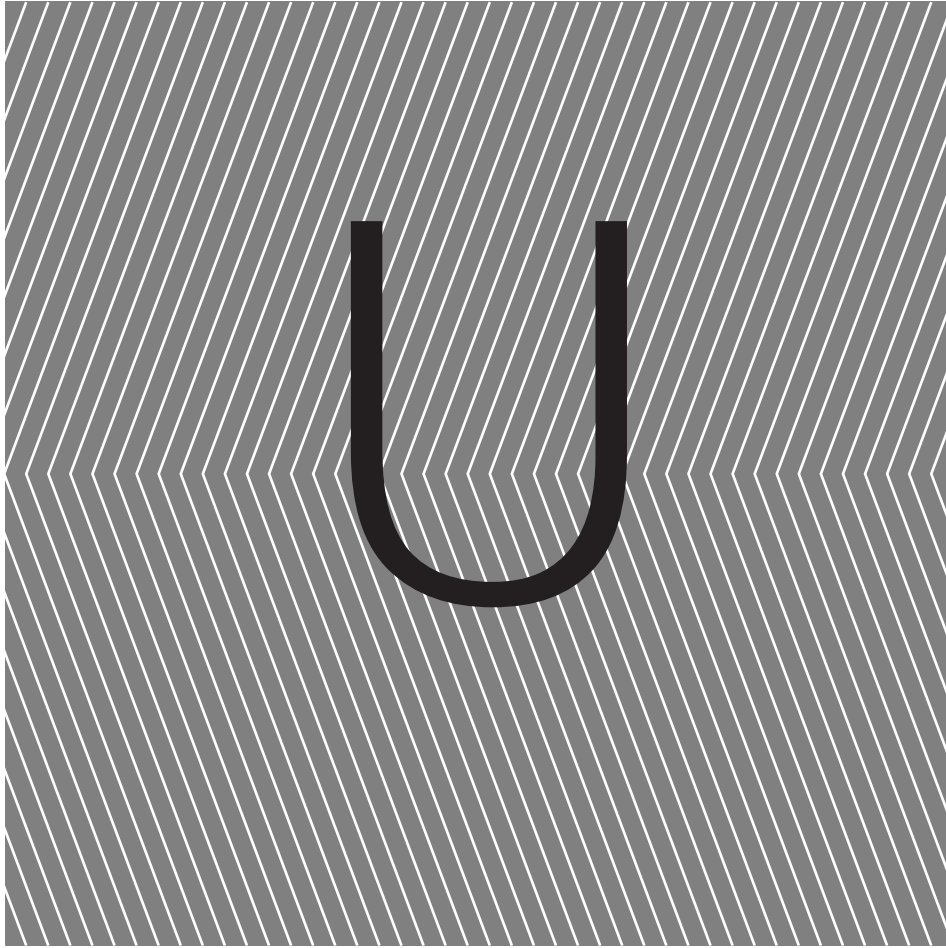
Lines from 2 directions merge at a vertex and repetition is done. White shaped image.

The triangle looks like one side of it is tapered.

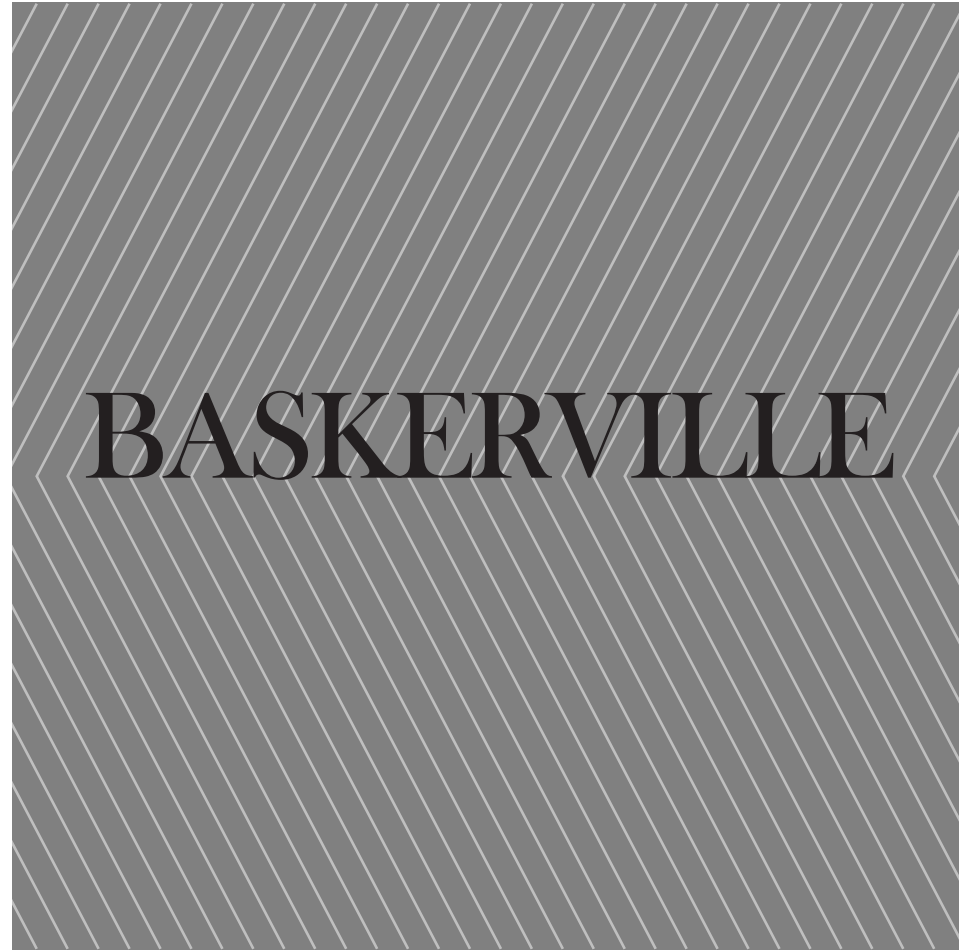


A single line is stretched at various points to make a repetitive pattern.

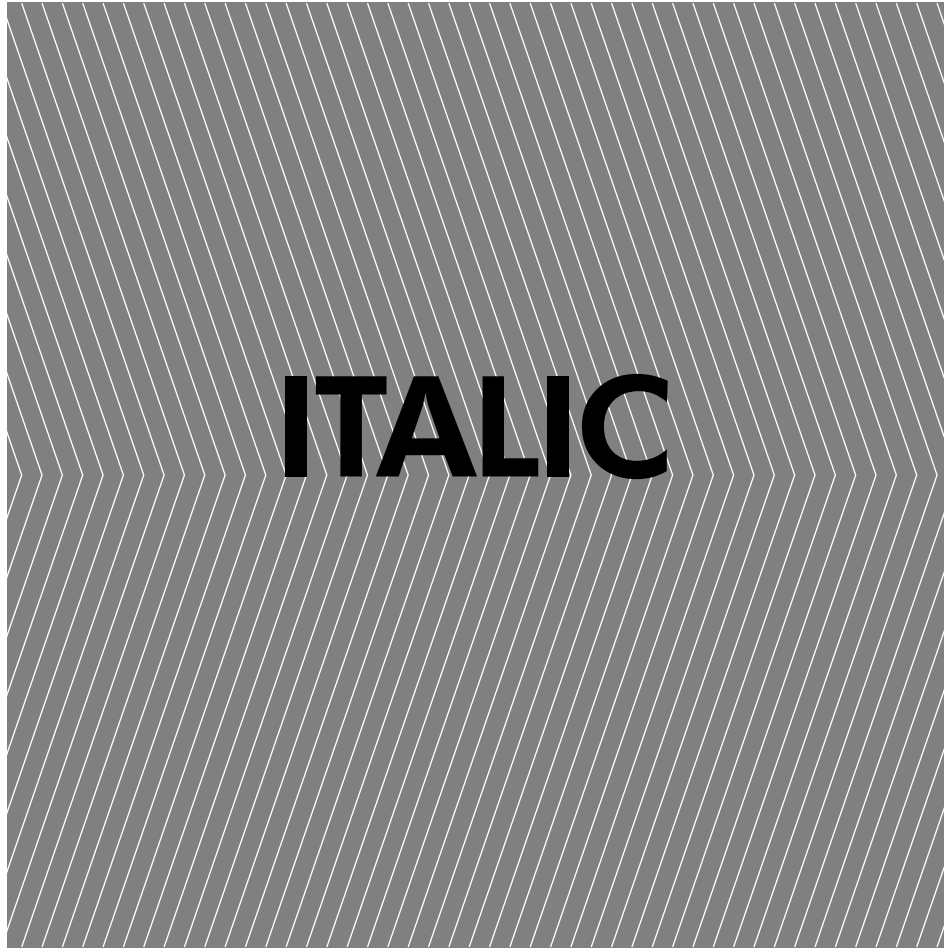
The triangle looks like it is distorted and is narrowing down in different corners.



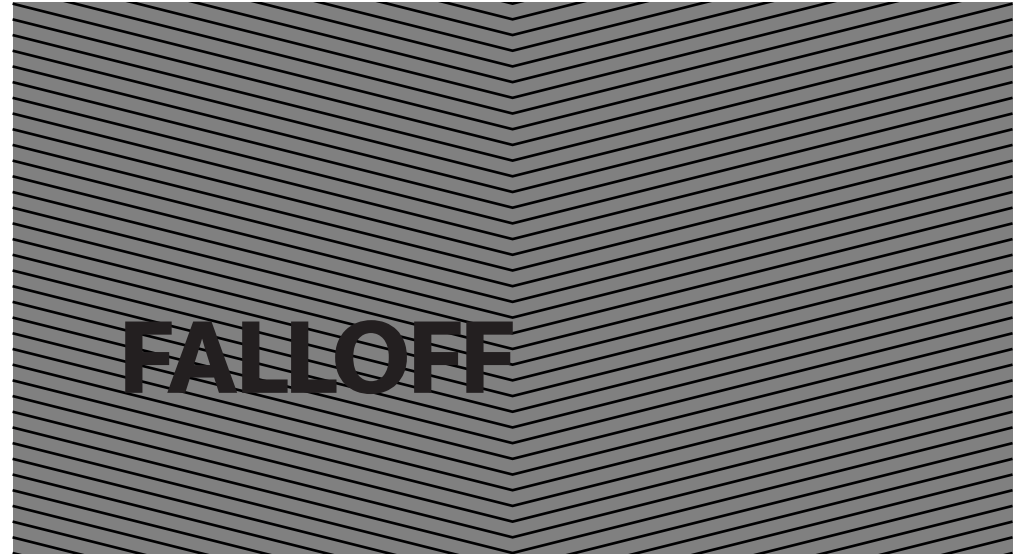
Here, the letter "U" looks like its been slanted a little.



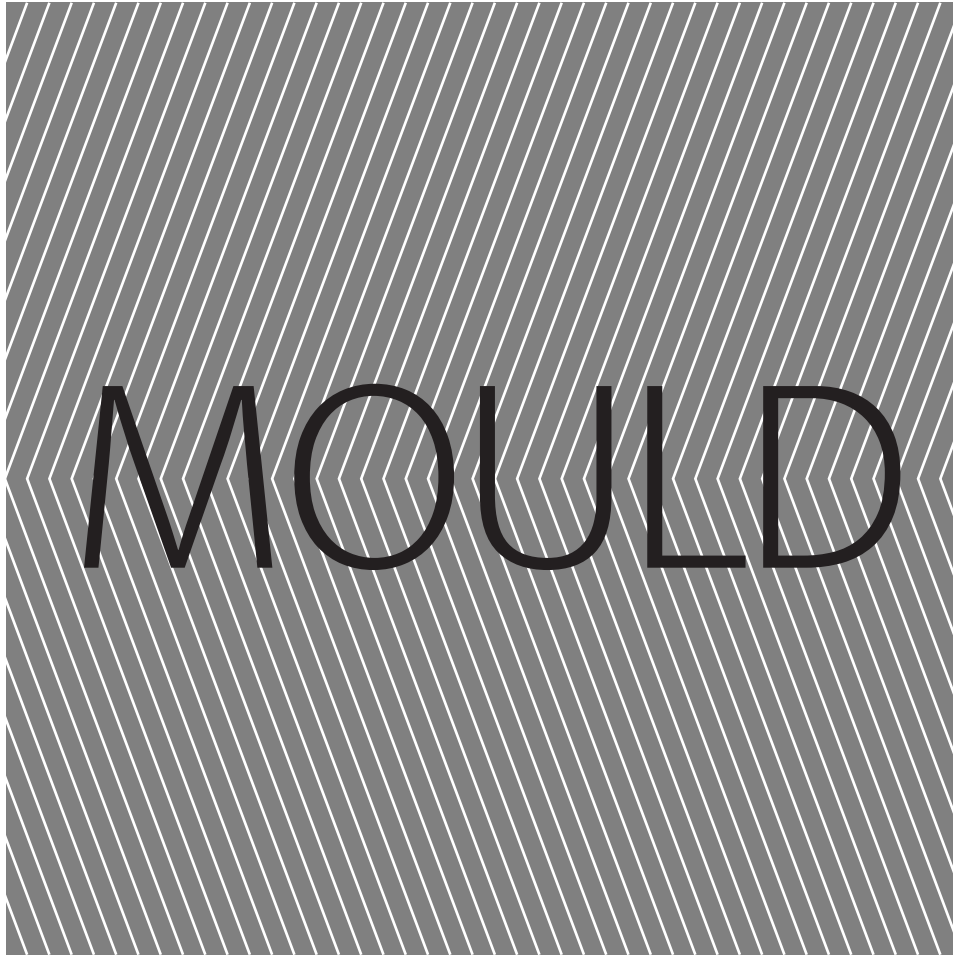
The letters are tilted to the right.



The word Italic looks Italic even in the regular versions.



The word looks tilted to the side.



Its a word instead of just letters.

My learnings

Till now I have observed that as long as there will be complex or dense pattern in the background, the 2D object in the front will be distorted slightly due to the background influence.

I tried experimenting with the elements color, sizes, background, borders, filled up space, position, density, direction and the type of lines. Multiple factors and Gestalt principles all come together for a single illusion.