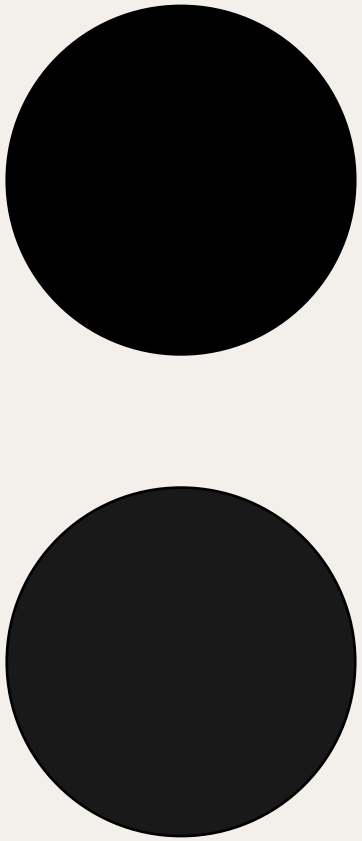
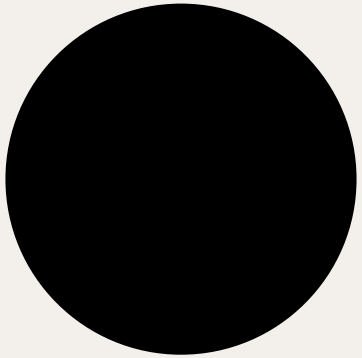
What Makes a *Difference*?

A Brief Introduction to the Psychology of Differences



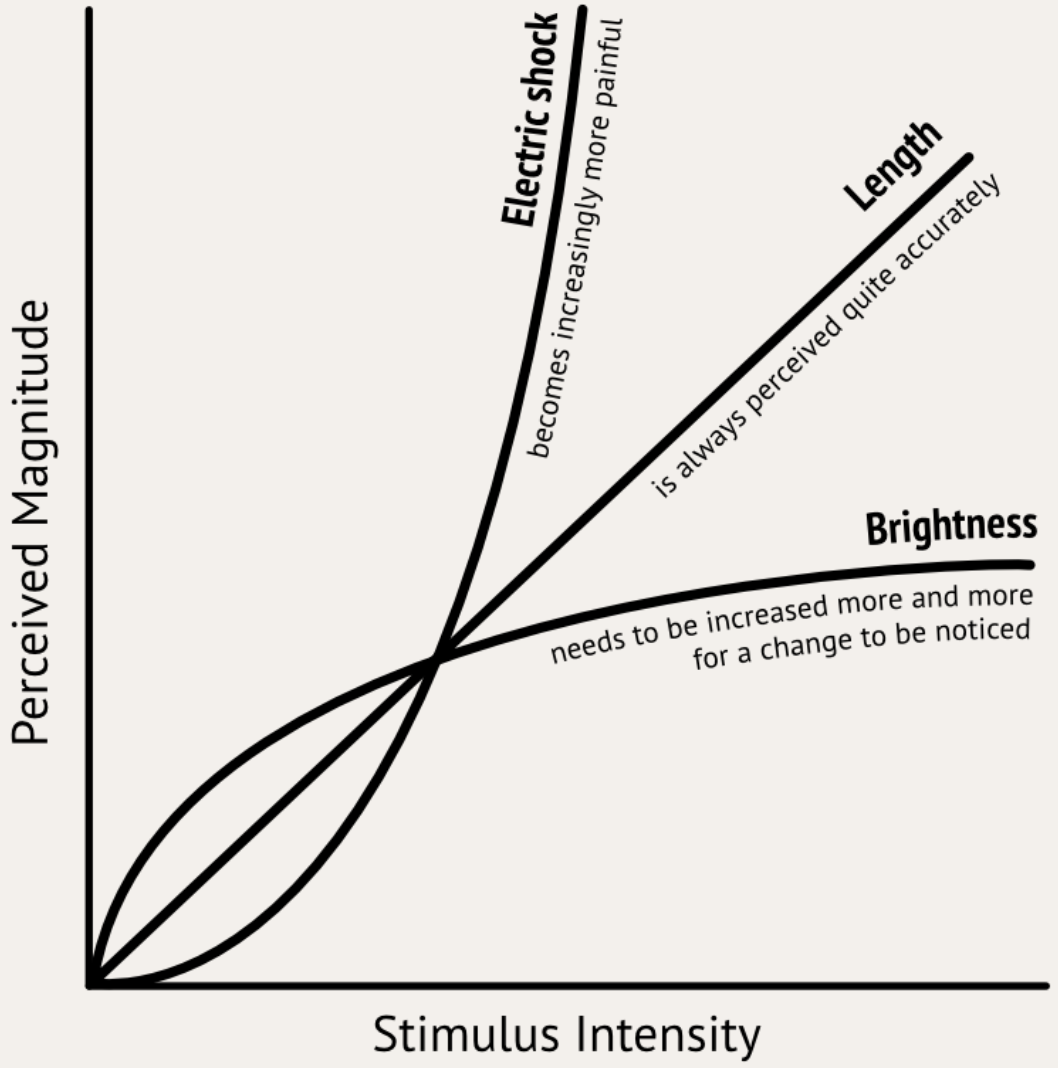
Can you spot
the *difference*?

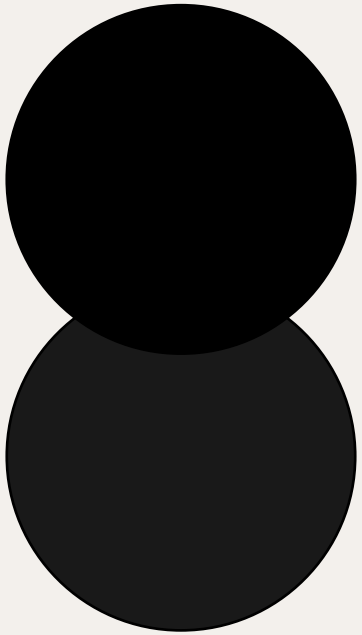


If you can’t, don’t worry! It just means that the difference is smaller than the **just noticeable difference**.

The just noticeable difference determines how much a stimulus has to be changed for it to be noticed and it can be different from person to person.

The just noticeable difference also depends on the type of stimulus and the point of comparison. This is known as **Steven's power law.**





Can you spot the difference now?

The circles are the same as before, but you should now be able to see that one of them is darker.

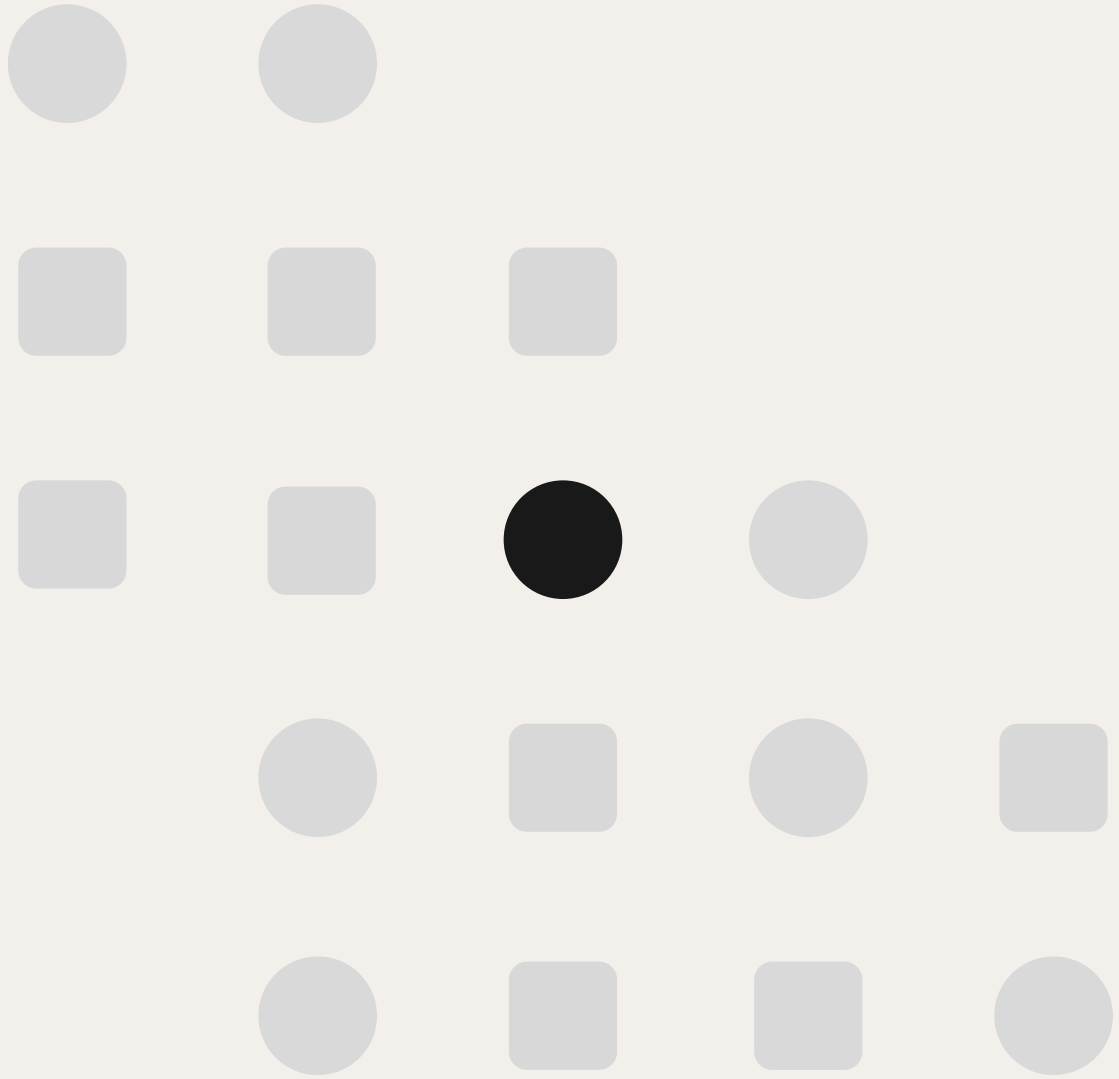
How is that possible? It is because you are getting help from a superpower of your brain: **edge detection.**

Edges make your neurons fire.

Edges are detected by specialized neurons in the primary visual cortex of your brain. These neurons care about nothing but edges and they make them “pop out”.

Brains *love* differences.

Your brain does this a lot: It detects differences quickly and automatically and brings them to your attention.




Naturally, there are limits to this ability and if it fails, you will have to do the work yourself.
(Can you find the black circle now?)

Moreover, a difference
that would be obvious
....

when viewed
side by side
....

...can easily be hidden by a short gap.

This is called

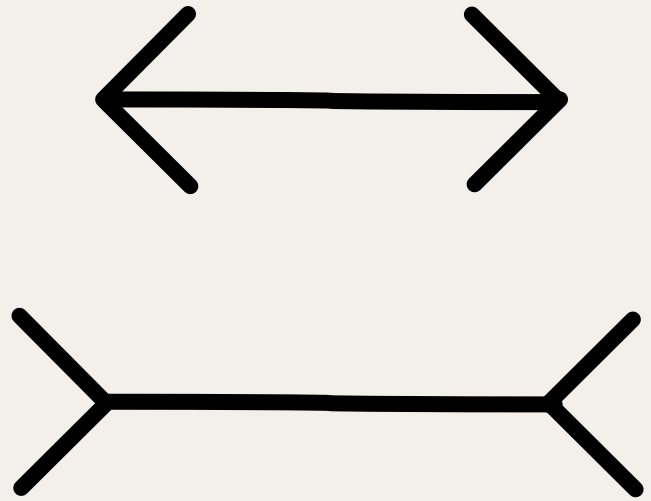
Change Blindness

Repetition in Disguise

Sometimes, your brain perceives differences when there are none.

The horizontal lines in the figure on the right are equally long. Yet, the one on top looks shorter.

Illusions like this can be so persistent that you have no choice but to accept that you cannot trust your eyes.



Framing

is another phenomenon where
two equal options are perceived
to be different by your brain.

Would you buy the disinfectant
that promises to kill 99% of germs?

Or the one that promises
that 1% of germs survive?

So here is the answer to the question

What makes a *Difference?*

It is your brain.