It is possible to break the part of your brain that lets you see which way is up, rotating your perception of the visual world — allow me to explain!

INTRO

Environmental tilt, or tortopia, occurs when your visual field spins. Everything that you can see rotates such that the direction that used to be upwards is no longer at the top. The most common form is a full 180 degree rotation, such that the floor and the ceiling have effectively switched places, so that your upper-left visual field now appears on the bottom-right. However, rotations of a lesser degree also occur, such as in this case published in 1983.

For a 30-year-old woman, unusual visual disturbances became a daily challenge, particularly marked by a clockwise tilting of her visual field, sometimes nearly to 90°. Most notably, twice while driving, these symptoms struck, causing her to swerve and pull over to the road's shoulder. These brief episodes, lasting just seconds each, led researchers to suspect migraines as the culprit (Ropper, 1983, case 4)

Tortopia occurs because of discrepancies between three perceptual systems that your body uses in order to figure out where you and the objects around you are located in space. They are vision, proprioception, and your vestibular senses.

Vision is a sense with which you are likely already familiar, but did you know that because of the design of your eyeball, your brain is constantly required to flip

and fill in information after light enters your pupils? Basically, your brain has to make adjustments on the fly to incoming visual information, which is part of the reason that environmental tilt is possible.

Proprioception is your sense of your body's position in space. It uses receptors all over the body in the muscles, skin, and so on, in order to gather information about the position of your body.

And finally, your vestibular senses create your perception of balance. They sense head movements as well as gravitational pull using intricate inner ear systems. Malfunctions here can distort our perception of up and down, and when that perception is in disagreement with your visual and/or proprioceptive systems, the result may be tortopia. But, your systems usually resolve the disagreement within a matter of seconds or minutes.

Some strategies that people have used to try and restore their regular visual orientation during a bout of tortopia are (1) closing and reopening their eyes, (2) repositioning their body, including waving their hand in front of their face, and (3) gripping or viewing fixed objects with known orientations in order to find the direction of up. In every case that I've read, the tilt is temporary, although it often happens more than once.

If you do experience tortopia, I recommend asking a doctor to take a look, because it may be a sign of a serious issue such as a tumor, stroke, or multiple

sclerosis. It is truly remarkable that watching your world turn upside down, literally, is one of the ways that your brain can break.

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