Perceptual Optics — 5. “Casting” Perspective Images to 3D.

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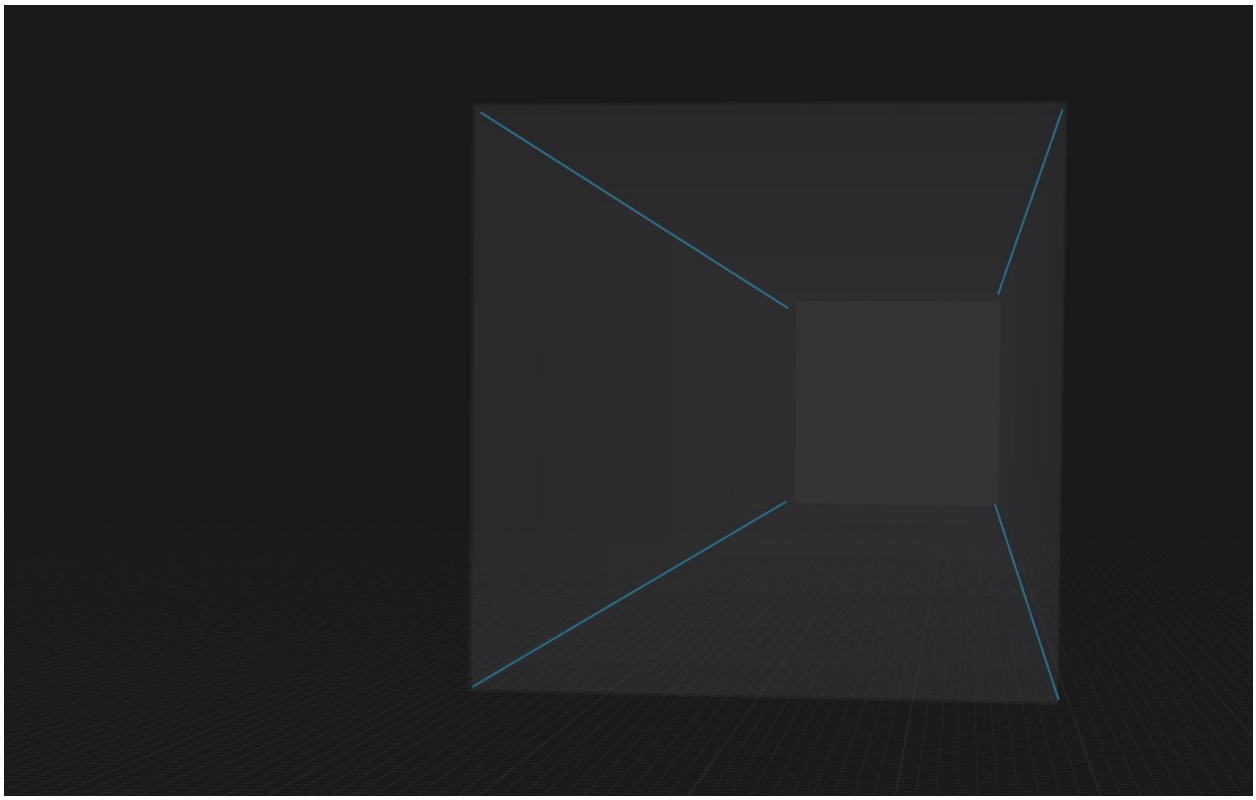
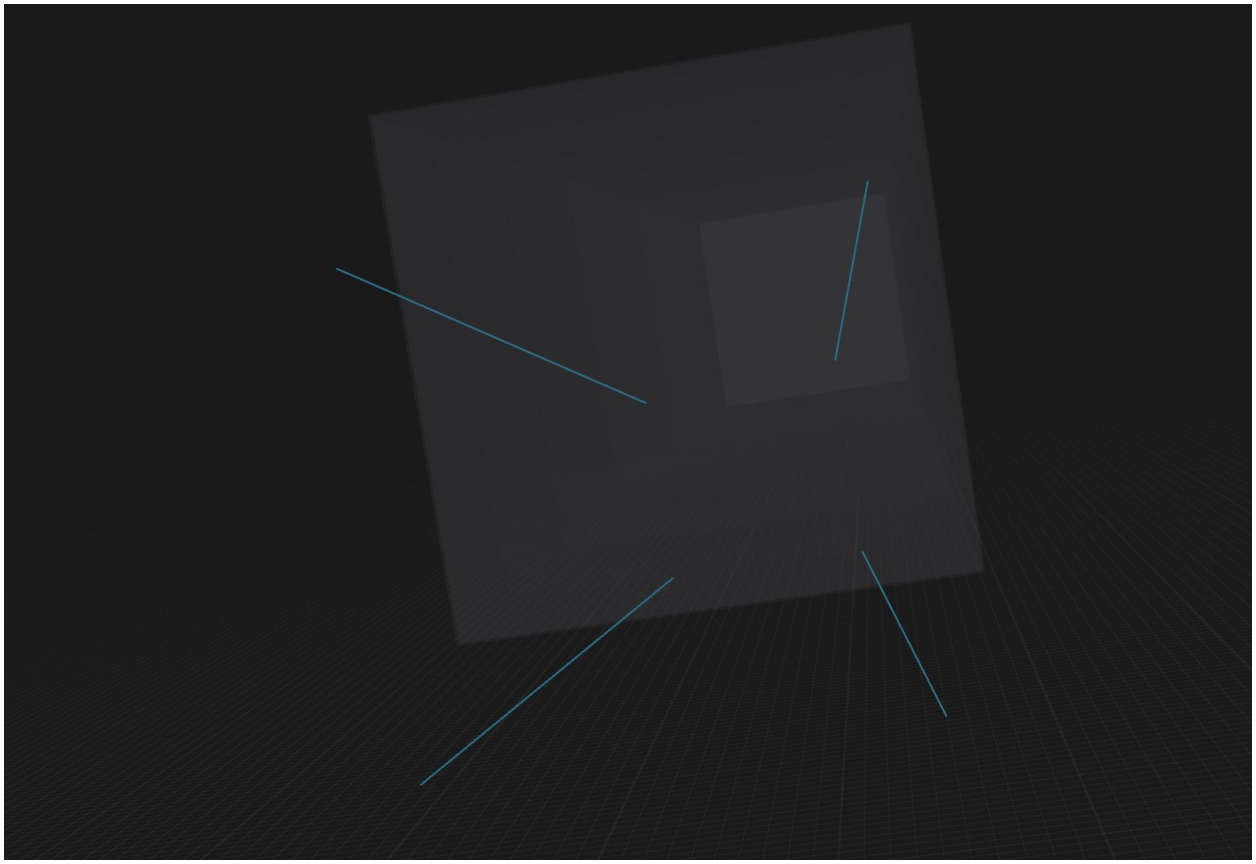
We reach a point now where we enter speculative territory. The study of consciousness requires us to go places where no one has any certainty yet. We will never understand visual perception if we do not admit and look into the unknown areas. When we discussed perspective images in the last lesson, we noted that consciousness uses perspective, not orthographic, images. Both of these are 2D images, although perspective images let you deduce more depth details. But fundamentally, the perspective image is still just 2D. If a computer were to look at the perspective image, it would see no depth at all, and would see the wall-ceiling lines going down the hallway as completely within an x-y plane, not, as they are in reality, angled partly into the depth of space.

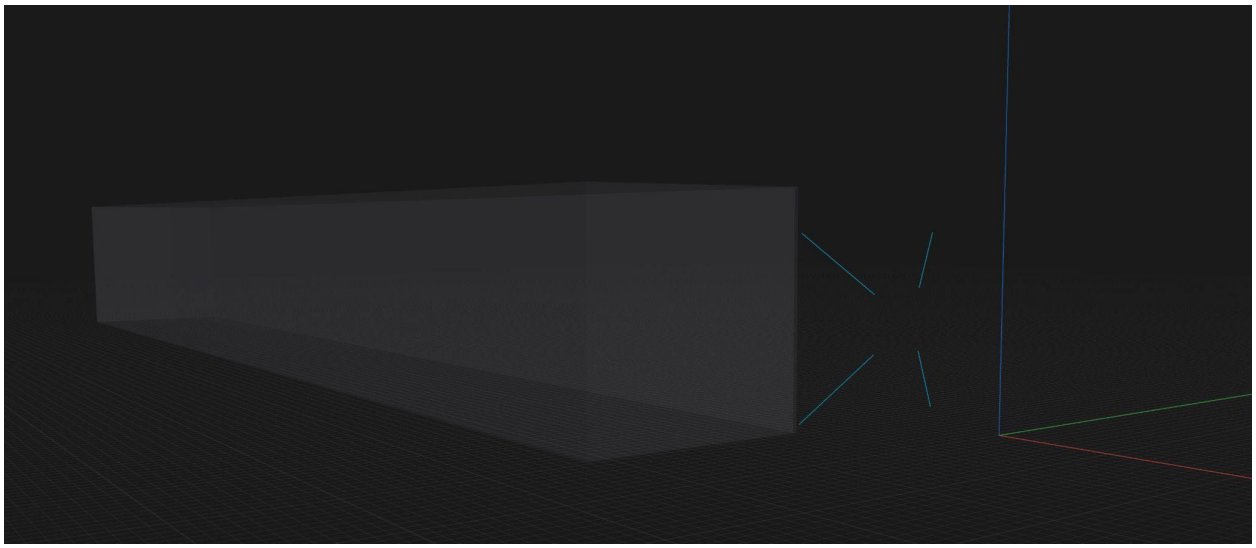
In the first image, it appears that maybe the computer understands the 3D vector orientation of the blue wall-ceiling and wall-floor lines of the hallway.



But as I rotate around, I see the computer did not understand at all, because it is in fact just a 2D perspective image, so how would it have understood depth?



Finally, as I continue to rotate, I see exactly how 2D every line on a seemingly 3D perspective is!



So, this just proves that even though our retinas capture perspective images that we think look 3D enough, if there weren't depth info for every pixel, we would not have the 3D experience of consciousness that we obviously do have (unlike computers).

So, the question is, how does the brain “cast” pixels to certain depths so as to create an understanding of 3D from the warped perspective images that are all we know?

At a bare minimum, there must be understanding of the proper depth for every pixel. But to really make it pop, it may have to utilize a ring order of which pixel when to show the depth relationship between pixels.

Just as an old cathode ray style TV had to shoot electrons across in a row, then down a row, down a row, etc., until the whole screen was complete; so also consciousness may have to refresh the 3D screen by painting in various orderly routines. One such proposed routine of refreshing is the ring which is able to 3D rotate in perceptual space, and which occurs roughly 2-12 Hz. Much of vision obviously appears to be refreshed faster than this, and there may be a faster 40+ Hz ring or some other method of order for going around to each pixel and updating, but following an order that helps to reveal the held understanding of what depth each pixel is at, so as to reveal you are refreshing a 3D scene.

Another method may be refreshing by 3D “skins” of the boundaries between skin and air, or table and air, or ground and air. The pixels of those skins would be refreshed in a sudden burst to draw attention to the form. Pixels of the translucent backs of items could also be fired at the same time to show knowledge of the back side form of items.

Another seemingly outlandish proposition is that the rings could be all there is (perception/consciousness wise), occurring at 2-12 Hz, and at 4-6 stops along the ring, a “star cluster” is placed over a short duration of time, the patterning contained therein sufficient to “understand” a little backwards and forwards in time the short segment of visual 3D movie intended from that star cluster stop to the next star cluster.

Another possibility is that 3D “zigs and zags” in the ring encode the details for the colors and locations of voxels of consciousness.

At the end of the day, everything around you is the perceptual world. The grass, the roads, other people, your bed, your body — it is all a fabrication of your brain. You’ve never seen the physical world, although the perceptual model is extremely accurate, so you have a good idea of what it is like in form. The real world probably isn’t even at the same location as the perceptual world, for the perceptual world is a “meaning world” that is understood from the codes of neurons, in distinction to the physical world that has actual space and actual matter.

If you take an anesthetic, you will see that everything (your body included) dissolves away. That’s because those things are all a story of meaning told by the brain to guide it. You do have a physical body, it’s just not your perceptual body that your brain paints all the time. There is a real physical world out there, just not the one that you’re always looking at.