



3D passive unrealities

Description

3D is moving in. Nintendo has released its [3DS](#) hand-held game system: â??no need for special glasses.â?• *Titanic* is being [retro-fitted](#) as a 3D movie. 3D cinema reminds me, if I ever needed reminding, of the symmetries of the human body, and hence of our whole perceptual apparatus (ie all the senses). Philosopher Mark Johnson emphasises the primary importance of the axis of the human body about which our world is balanced. Left-right, bipolarity, opposites, equals, dichotomies, equilibrium: our perceptual, linguistic and cognitive life is saturated with references to bilateral



This symmetry is no less evident than in the fact that

animals have two eyes. Eyes are crucial in the story of evolution. Darwin used the physiology of the eye to anticipate peopleâ??s objections to his theory of natural selection.

Can we believe that natural selection could produce, on the one hand, an organ of trifling importance, such as the tail of a giraffe, which serves as a fly-flapper, and, on the other hand, an organ so wonderful as the eye?

The theory of evolution depends on small incremental changes providing some survival advantage across species populations. Whatâ??s the point of a creature having something like half an eye, and how is another animal with a bit more than half an eye able to out-survive it?

The evolution of binocular vision provides a good example of how incremental advantage works. In biological terms bilateral symmetry is relatively economical to produce and reproduce. An eye on either side of the body is better than one central eye. Two such eyes provide the possibility for panoramic vision, as is the case for many bird species. For animals that are inclined to jump around in trees (primates), and nocturnal animals (eg possums and owls), there are advantages if the field of view of the two eyes overlap.

The near complete overlap of the field of vision of humans, nocturnal animals and beasts of prey means that the animal sees two slightly different views (from two eye positions) of the same scene. There's a geometrical logic to the differences between these two images which provides cues as to the distance of objects from the viewer: the distance to a branch, prey or a foe. There's also the potential for the scene to appear brighter, sharper and carry greater contrast (Heesy, 2007). In certain environments the greater the incremental overlap, in conjunction with an ability to adjust the convergence of the lines of sight of the two eyes, and the more forward-facing the eyes, the greater the chances of judging the distance of a branch or getting a meal.

So we sit in 3D cinemas as tree-swinging primates or birds of prey, but fixed binocularly to flickering light patterns across a flat screen. There is much that is missing from the experience, not least the ability to move our heads from side-to-side so that we can see around objects. There are also the constraints of fixed focal depth, and the lack of convergence, ie the eyes will always look straight ahead even if the screen stereopsis presents an object as just a couple of metres away. In the cinema, for the 3D effect to be convincing, we have to be sitting down, passive, inert, aligned, and oblivious to the artifice.

Given these constraints we couldn't survive in a world of fake 3D. But as for all images, that is part of the appeal of 3D cinema, not its resemblance to being there, but its passively absorbed *unreality*.

I'm reminded of my early experience with ViewMaster stereoscopic slides. You would insert a cardboard disk around which were positioned 14 images. Through the viewfinder you would experience 7 miniature 3D tableaux, rigid mountain scenes that wouldn't yield to any amount of shaking. Nor was it anything like being there, but all the more entertaining because of it.

References

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Footnote

Critics of evolution ask how could such a complicated organ as the eye with so many parts evolve incrementally? What is the point of a creature having half an eye? In several books defending the theory of evolution the biologist Richard Dawkins traces the logic of eye evolution as an incremental

process: specialised skin cells that detect changes in light value provide a survival advantage over no light sensitivity at all, light gets concentrated by a pinhole opening across a curved light sensitive surface, a lens-shaped translucent membrane is better than a pinhole, clearer vision is better than slightly blurry vision, etc.

Category

1. Body

Tags

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2. Darwin
3. Dawkins
4. depth
5. eye
6. stereopsis
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Author

rcoyne99

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