Depth of Illusion

How deep is your depth?

On Pinker's list of inherent intuitions is our 'spatial sense'. We recognize location as distinct from shape or colour because these aspects of the world are processed in separate areas of our brain. (Note 13 Visual pathways).

Obviously, we need to navigate in a three-dimensional world. Our sensory input from the two-dimensional retina in our eye needs to be supplemented by more information in order to enable us to build a virtual three-dimensional model of reality inside our minds. Thus, we believe that we see in three dimensions, but what we actually 'see' with our mind's eye is the content of the three-dimensional model of reality inside our own brain which we then call 'consciousness'. Apart from built-in cues to depth such as 'binocular disparity' and the feedback from the muscles which adjust the iris' lens, we also use learned cues such as: superposition, texture gradient, advancing and receding colour, size constancy, velocity gradient, colour saturation gradient and aerial quality perspective, as well as the most obvious - linear perspective. (Note 14 Natural order)

An image with no depth cues appears flat and uninteresting. We like stereograms and virtual reality and holograms, and action movies with rapid velocity gradients. (Note 15 Depth Cues)

Traditional paintings appear flat because they lack the different views from our left and right eyes (stereo vision). They also lack the difference in rate of movement between foreground and background objects that our brain interprets as differences in depth. The latter effect is overcome in film and video media and the former in virtual reality. These technological advances in the presentation of art

objects are extremely powerful. For example, Disneyland had to curtail their use of virtual reality when they were served with lawsuits after patrons had experienced accelerated virtual environments, and then drove off in their cars to have accidents. Of course, the real power of these new media rests in their ability to more effectively transmit cultural memes to mass audiences. (For a philosophical viewpoint on their effectiveness see Joseph Margolis – 'What, After All Is a Work of Art?).

One of the brightest new spots in the newly liberated Estonian cultural landscape is the activity of artists in film, video, multimedia, and art installations. This is to be expected since film became the dominant medium in the 20th Century, and we are now experiencing the emergence of 3D technologies. Later I will revisit why more complex technologies will always succeed the less complex. For the present I want to emphasize the fact that both our sense of colour and our perception of depth are structural phenomena inside our brain. What we think we observe as the external reality is only a model of reality and that model is a set of transient internal neuronal structures. It is a movie composed of a series of still frames playing inside our heads. (Note 16 Perception)

Regardless of which medium we use, when we incorporate aspects of colour and the many depth cues, we must remember that the perception of reality we think we see is already an abstraction inside our brain. But this abstract model inside our head is composed not only of the sensory input data, but also input from our biases, our body position, our learned valuation of similar inputs, the possible learned dispositions to the inputs, and our feelings about it all. For an artist it is necessary to consider what the viewer could possibly feel, not just what they see in your painting. Further and further abstracting your painting removes more and more of the input, especially iconic

cues, human relationship cues, etc. How about a tiny red dot on a black canvas the size of your wall? Could this be something popping out of a quantum field in empty space? How about not painting at all, (but only having the possibility of), anything (nothing) on a non-existent canvas? So how deep is your depth!

From a practical perspective, we intuitively understand how important our depth perception is to our survival. It doesn't matter if we are aware of the distance of a charging lion or how close we are to getting run over by a streetcar, at stake is physical survival --- our most basic instinct. When painting on a 2D substrate, we can make use of the same cues that our brain adds to the 2D image on the back retina of our eye to make us believe we are seeing in 3D. Thus, we can add these learned 3D cues such as linear perspective, superposition, advancing colour, size constancy, size gradients, and aerial quality to at least partially aid in the appearance of depth.