Deception in landscape photography.

I was standing before the Callanish stone circle on the Isle of Lewis, watching the dark imposing rain clouds move towards me. The approaching storm blocked out the light, and the inky black curtain of clouds acted as backdrop to the scene. The sun that had been previously bathing me in bright light was transformed to a spotlight that shone across the landscape, creating dramatic differences in light and shade on the stone monoliths.

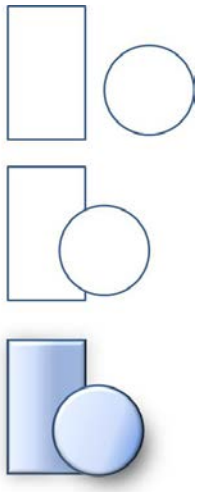
What I have described is a beautiful event that is enjoyed by any audience within this natural theatre, but as a photographer I also appreciate the chiaroscuro effects created by the dramatic lighting to enhance the illusion of depth. When an image is captured on the camera film or sensor and viewed on the LCD screen or print, many of the critical visual cues for depth perception are lost. Sometimes, if the image is left with little depth information, the composition appears confused or unresolved. Conversely, removal of depth cues can also create interesting ambiguity in an image, or impart a picture book feel to a scene.

Being sensitive to the qualities of an image that are lost or transformed by conversion to a flat plane will enable a photographer to engage more fully during the image making process and make more powerful images.

Humans perceive the distance between objects and the 3D quality of the landscape by exploiting binocular vision, using subtle movements of the head and observing the way that objects move in relation to their environment. Most of this perception results from the effects of parallax which enables the brain to examine how the space relationship of objects change with the observers position. Thankfully for the artist and photographer, there are many other visual cues that inform the brain that space and distance exist. These cues are so powerful that they still create the illusion of space and depth within a static scene observed on a flat surface, where in reality none exists.

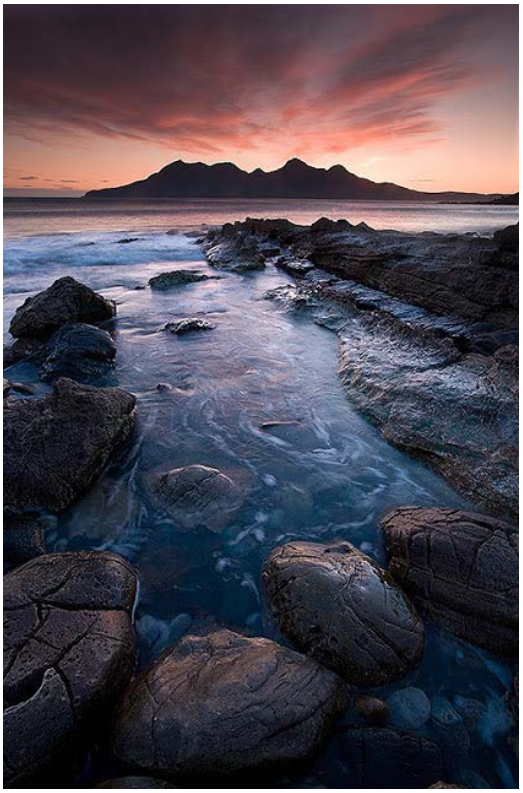
Essentially, a photographer must deceive the viewer and exploit visual cues that suggest there is 3D world to be explored.

If you look at my monochrome photograph of the Callanish stones, the 3D quality of the monoliths is reinforced by the modelling effect of the directional light, the dark shadows, powerfully indicate volume and depth. The brain is hard-wired to understand and make sense of the 3D world using perspective and other visual cues. We can see this hard wired behaviour at work when playing tricks on the brain with cleverly constructed visual experiments. The brain did not develop to interpret space on flat surfaces, but nethertheless, we can use many of the visual cues that enable the brain to understand its 3D world, to enhance perception of depth on a 2D plane.



Cues that provide the illusion of depth have been exploited by painters and draftsmen for hundreds if not thousands of years. Renaissance artists such as Michelangelo and Mantegna were keenly aware of the various methods for indicating spatial depth. In addition to shading, the use of colour, focus, detail, perspective and relative size are all in the illusionists tool kit. Simply by partially obscuring an object by another has powerful effects on the illusion of its relative position in space. As you can see from my simple line drawing, you perceive that the rectangle is behind the circle but only when one object obscures another. When I add shading to the line drawing, this reinforces the illusion of depth and relative position even more strongly. Although immediately apparent to you, programming a computer to come to same conclusion requires extremely complex processing. Our neural networks that enable understanding of the 3D world are not hard wired and develop from birth onwards. The brain must be trained to detect edges of objects, infer depth and find patterns. The wiring that enables this learning process to occur is still beyond our comprehension.

The landscape is rich with visual cues and you can exploit objects or elements in the scene that indicate perspective and depth. Think beyond the obvious use of fence posts or train tracks and avoid the internal groan of the viewer who has become jaded from observing these clichéd images. The brain has a 'habit' to joining the dots, a characteristic that resulted with the description of the star constellations such as the Great Bear and Orion. In the same way, rocks in a landscape, separated in space, are connected by the brain and can form useful perspective lines to enhance a composition. Some elements work on a more subtle level than others and are strengthened when combined with other features in a landscape scene. The coastscape on the Isle of Eigg shown below, illustrates the use of perspective cues such as the line of boulders leading into the distance and the rocky outcrop extending into the sea.



But a word of warning for the photographer!

When objects or lines which are normally separated in a 3D space meet in the 2D plane, various unexpected and unwanted effects can occur. Horizon lines converging with lines in the foreground can make a composition look clumsy and unresolved, for example, the top of a fence post aligning with the horizon may create unwanted visual tension in a composition. Great attention has to be paid to these unwanted convergences or unnatural nodes of interaction. You can remove these distractions easily by careful attention to camera height and composition. Make sure that the visual elements that impart flow, rhythm and depth are at their

most powerful and take precedence by removal of competing and unwanted visual cues.

Colour has powerful effects on depth perception, warm colours are perceived as closer than cool hues, which indicate distant objects. The brain expects a gradual softening of the landscape into the distance and the cool colour hues are expected to be present near the horizon. These visual effects modulate depth perception just as powerfully on the 2D plane and can be sought out in the natural landscape where they are emphasized or accentuated by image processing. Sometimes the visual cues for depth are reduced, when the light is not directional, the sun obscured and a dull greyness fills the scene, you may often hear landscape photographer exclaim in despair, ‘’the light is too flat!’’.

Seek out natural phenomenon that enhance the 3D illusion or conversely seek out elements that increase ambiguity, create mystery and ask questions from the viewer about reality and space.

Many climatic changes can accentuate or decrease depth, mist and fog work beautifully to soften and confuse distances. Reflections create space and make objects appear where none are expected, once you understand the depth cues, exploit them to play with the brain and engage the viewer in visual questions. Here in my image of a red tree, the light was flat and the post processing enhanced the lack of depth to give a picture book effect to the scene. At the same time I utilised the lines of the brickwork more as decorative elements than perspective cues, with the image looking more surreal than natural. In my 'reflections of autumn' image posted below, you can see the ambiguity of space and reality, my intention was to create a surreal image that intrigues the viewer.

Enjoy the illusion of depth and be a deceiver, however you wish to exploit this 2D space!

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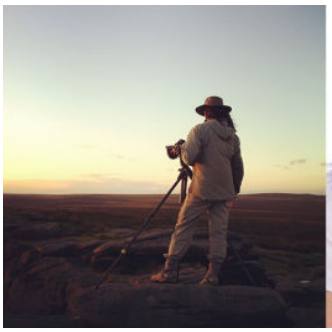
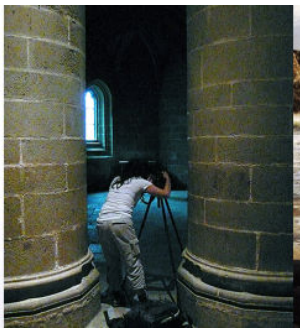
Jane Goodall combines a Senior Research Fellowship at Cambridge University with an established career in photography. Inspired by the natural landscape and captivated by the fleeting moments of changing light and tides she has been drawn to the British coast, regions that include Dorset, Cornwall, Northumbria and the Scottish islands. She has exhibited internationally and judges for the East Anglian Federation of photographers. Jane travels throughout the East Anglia region and beyond, to visit photographic societies and judge their work and give talks on her photography. Contact ***email***



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