Nature

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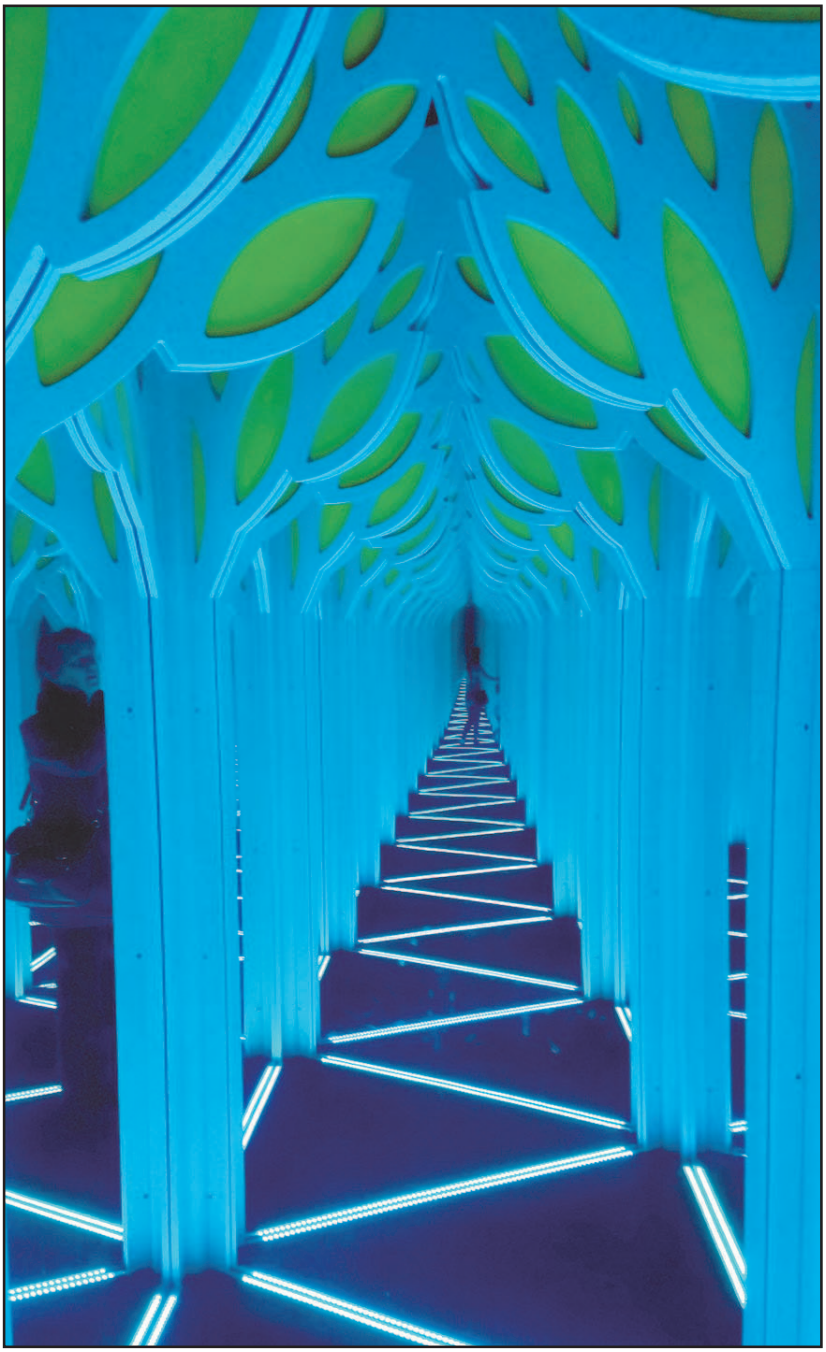

Some patterns, at first glance, appear irregular or random but may be just the opposite – as in a fractal pattern, a pattern that emerges from repeating rules – a tree branch dividing into smaller branches, a useful pattern to fit a large surface area into small volumes. Fractal patterning of our skin gives it flexibility and allows us to stretch or allows the sea fan in a coral reef a way to capture light and food.

The bilateral symmetrical patterns of butterflies and insects suggest order and balance – but no pattern in Nature is perfect. Nature breaks her own rules. Though DaVinci's Vitruvian Man illustrates the body's ideal mathematical proportions, we are each evidence of thousands of variations. Sergei Rachmaninoff, born with exceptionally long, flexible fingers, hands that could reach well beyond an octave, composed pieces that no other pianist could play. With his extra-long torso and wide wingspan, Olympian Michael Phelps propelled himself through the water in ways his shorter-legged competition could only imagine.

Patterns display time, revealing Nature's clocks. Each ridge of a ram's horn records one year of life, but uneven growth – growing more quickly on the outside edge than on the inside – creates an uneven spiral that thrusts outward, a great defense mechanism against other rams. A tree's concentric growth rings record an even spiral of time.

We hear patterns – in a wonderful time-space conundrum, we listen to length. That is, the octave is built on proportions of lengths – of an air column or a string. We play one string, then cut the string in half by placing a finger on it, and the tone we hear from a string half as long is exactly twice as high. But again, that system of pattern is imperfect – so we adjust our hearing to a "tempered" musical scale reflecting the imperfections of the mathematical pattern. Johann Sebastian Bach, a master of musical tessellation, created one canon in which notes are played backwards and forwards at the same time.

We are fascinated by patterns because we are patterns. Thousands of patterns allow us to think – with the fractal branching neurons in our brain – and breathe with the tree-like branches of our bronchial tubes. We hear patterns in the ocean waves and in birdsong. We think in proportion and love patterns so we copy patterns in Nature. What else explains the fact that cultures thousands of miles apart, separated by centuries, produce similar patterns in architecture – from Greek temples to Russian minarets to spiral-shaped Olympic stadiums?

What can we learn from the patterns of Nature? Nature is rarely smooth, round or square, and loves repetition. In patterns we see the very habits of nature. Patterns in ourselves are not only worthy of notice – they teach us to go beyond seeing, to notice how simplicity creates complexity; how important proportion and ratio are – they both help us see relationships – between cells and between people. In our own patterns of relationship, do we practice valuable habits of creation, or do we "see" an old pattern in ourselves that we need to move beyond?

John Lubbock, in his book The Beauties of Nature and the Wonders of the World We Live In reminds us of the dicey nature of seeing: "What we do see depends mainly on what we look for…In the same field, the farmer will notice the crop, the geologists the fossils, botanists the flowers, artists the coloring, sportsmen the cover for the game. Though we may all look at the same things, it does not follow that we should see them."

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