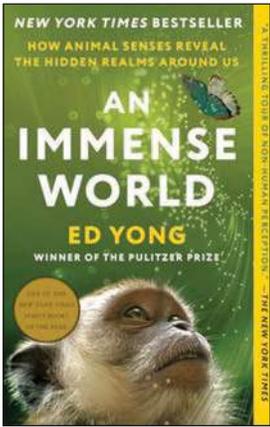


An Immense World by Ed Yong

Editor's Intro: In our quest to preserve open space in Newton, understanding the creatures of the animal world that inhabit these spaces is of great interest. In this book review of *An Immense World*, board member Pete Gilmore shows how echolocation is vital to many of our wildlife, and as one example, draws attention to his work as a leader of bird and nature walks in places like Cold Spring Park. To learn more about Ed Yong's work, visit the following website: <https://bit.ly/3WZPCMA>



An Immense World is a mind-opening book. Ed Yong has researched the scientific literature and presents material that stretches your imagination. It is full of descriptions of the senses of various animals. He encourages us to try to imagine what it is like to have the different experiences that various creatures have.

Take echolocation, for instance. We all know bats echolocate. How exactly do they use this to hunt prey moving fast and erratically, trying to avoid the bat? Some species of moths even have evolved sounds that “jam” the radar of the bats. Dolphins also echolocate and have the only type of sonar available to the U.S. Navy to locate mines buried deep in the seafloor. They can distinguish between objects underwater that are very similar. Dolphins are toothed whales, and other species of toothed whales also echolocate. A false killer whale, for example, could tell the difference between two hollow metal cylinders that differed in thickness only by the width of a hair. Sound waves go through flesh, unlike light waves; thus, dolphins can sense your skeleton and interior organs while you are in the water. They live in a different world than we do.

Certain human beings can also echolocate. Daniel Kish, for example, has been blind since early childhood. At about three or four years old, Dan dropped out of his bedroom window and took a tour of the neighborhood at night. At that time, he was echolocating objects around him, and he had been doing it instinctively from a very young age. Neighbors saw a very young child, a blind one, walking around their backyard in the darkness. They got him safely home. Now, he has been practicing this skill his entire life. He has founded a non-profit to teach other blind folks how to echolocate. Kish believes his skills are not an oddity but something that most humans can learn. He senses large objects and cars coming, but not small differences, like a curb along the sidewalk, so he also uses a cane.



Graphic courtesy Deposit Photos

The book's chapter on threatened sensescapes, “Save the Quiet, Preserve the Dark,” is especially relevant in Newton. I lead bird and nature walks in Cold Spring Park twice a year. Birds that used to breed there are not found there anymore. Neighbor and Brandeis University biologist Dan Perlman got a parabolic sound reflector to record sounds in nature, particularly bird songs. In Cold Spring Park, the volume of human-generated sounds is omnipresent, making it impossible for him to record bird songs with clarity and focus. Many people consider Cold Spring Park an oasis, away from human noise and traffic. However, it is incredibly noisy for the birds and animals that live there. Our noises interfere with birds hearing each other, the approach of predators, and the sounds of insects as potential meals. Our sounds interfere with courtship and defense of nesting territories. We will lessen some noise as we move towards hybrid and electric vehicles. We may not be able to do anything to reduce most of our noise, but being aware of it may lead to lessening it in chosen locations. Imagine the animals sleeping peacefully right before a fireworks display.

Then there is the matter of light. People in ancient cultures were in the presence of nightly displays of the stars. They have passed down to us the names of constellations and the signs of the zodiac. The night sky was a source of wonder for them. But in today's world, most of us are cut off from that wonder, except if we live far from our cities. It is quite a bit more severe for migrating birds, who are attracted to the lights of cities. Turning off lights in large buildings during migration is a start. Taking care of Nahanton, Kennard, and Cold Spring Parks requires more urgency when you realize that migrating birds will be attracted to the lights in town and have only those oases to find food when they land. This is when they are in the middle of a journey that stretches their bodies to the limits of possibility.

We have drastically reduced the biomass of insects near cities in Europe and North America. It is crucial to preserve natural, native areas in and around our cities. The insects left in these places are attracted to all kinds of public and private light at night. Bats are familiar with this and fatten around lights, attracting many insects. Just as our noises interfere

with the lives of birds, our lights interfere with the lives of insects. Remember when attendants at gas stations would scrape the bugs off the windshield of your car, particularly if you just pulled in off the highway? No more. We are good at upsetting the balance of the chain of life. The consequences are beginning to emerge, good and bad.

Of course, some of us are threatened by the insects that are left, and we spray them in a way that kills most of the insects on our property. No insects, no birds. Many of the plants

that are ornaments in our yards cannot be eaten by native insects. We are creating a world in which we will end up more uncomfortable than if we cared more for the richness of life we are given. Understanding other creatures' senses and the world they experience can help us care for them and benefit us in the long run. Ed Yong opens the window to understand the tremendous variety of life around us and to care for that life. ♦

✿ Pete Gilmore

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