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CAROL KAESUK YOON

NAMING NATURE: THE CLASH BETWEEN INSTINCT AND SCIENCE

I was raised on the milk of science. Both my parents were working scientists. On rainy Saturdays I played with my father's laboratory mice on the living room floor or chatted with my mother as she tinkered in the federally funded laboratory they had set up in our basement. Before I hit puberty, before I knew the power of love or sex or good hair, I had become well versed in the power of various statistical techniques (chi-square was our family favorite). I married a scientist, most of my friends are scientists, I became one myself, and I've spent most of the last two decades writing for the *New York Times* about the amazing and wonderful new findings that scientists have come up with.

So, not surprisingly, when I set out some years ago to write a book about the ordering and naming of the living world, the practice known as taxonomy, I intended to write about how this work was carried out by the real experts: scientists. I took it as a given that any other ways that people might order life—in so far as they differed from science—were wrong. People, I knew, should defer always to science in the ordering and naming of life, as they typically do.

So imagine my surprise when I began to see that science was neither the best nor the only valid way to order and name the living world. Instead, I realized that the ordering and naming of life was and always had been, at its heart, something much more democratic, subversive to the dominion of science even, and much more interesting. Reclaiming the ordering and naming of life from science, I began to realize, might be the key to ending humanity's rapidly growing disconnection from the wild life all around us.

The trouble first began when I started looking into the ways in which other cultures ordered the living world, something with which I was, at the time, entirely unfamiliar. I had thought it might be amusing to include, along with scientific orderings of life, some of the curious orderings created by other people. I found it instantly intriguing to see just how confused—that is, how different from science—people were on the point of how to order life. There was an anthropological study that showed that some

New Guinea tribesmen, despite being excellent naturalists, classified a giant bird as a mammal. Another study described how Filipino headhunters appeared to conceive of orchids as human body parts, explaining to a bewildered anthropologist that here grow the thumbs, there the elbows.

But to my surprise, all was not disorder and chaos; quite the contrary. Not only did all peoples order life, but anthropologists, I soon realized, had found that, beneath the great variety in ordering and naming, there were deep undergirding similarities as well. That is, people around the world ordered the life around them in very similar, even stereotyped ways, regardless of where they lived, what language they spoke, or which animals and plants they were ordering. People, it turned out, unconsciously followed a strict set of rules, universally creating a hierarchical ordering of living things based on how living things appear, that is, on similarities and dissimilarities in how they look, smell, sound, and act—the same sort of taxonomy that professional scientific taxonomists have ever been after. The countless varieties of folk taxonomies were, at their base, variations on a single theme, being that same basic, effortlessly perceived natural order that people everywhere see.

Things got even more interesting when I learned that psychologists had been studying the ordering of life by children, including infants, for years. What they had shown quite clearly was that these youngsters were ordering the living world—and quite skillfully—even before they could walk or talk. Without realizing it, we actually expect everyone, babies included, to have a kind of savant-like fluency with the ordering of life. That is why we are not surprised at the very surprising fact that a toddler can recognize what the entity “dog” or “cat” is, after seeing just a few of the beasts. When you think about it, there are many kinds of dogs, in many shapes and sizes, and it is not that simple to describe how in a glance one can distinguish them from all the other furry four-legged creatures like cats, cows, or goats. Nor are we surprised that a child or anyone else can recognize a tiger, even if it is a strange albino white, even if it has mutated to have two heads or been mutilated to have only three legs. How do we know so much based on so very little? For we do know astonishingly much about the living world without effort or thought. Knowing what an organism is—in particular, where it lies in the great natural order—does indeed come surprisingly easily to all of us, so easily as to fit neatly into our

subconscious. And lastly, children appeared not only to be very adept at this but also to be drawn early and deeply to learning the ordering of life, the names and groupings and organization of living things.

Still other psychologists had actually identified groups of brain-damaged patients who suffered the unlikely illness of being unable to order and name living things. And oddly enough, many of these people have suffered damage in the same part of the brain, leading some scientists to hypothesize that there might be an actual place, a physical location in our gray matter where the ability to order and name the living world resides.

Taxonomy, the envisioning and perception of the natural order, it seemed, might be much more than what it has been reduced to today—an abstract laboratory science. The classification of the living world began to take on the look of something instinctual, something that, like hope, would spring eternal, in every newborn child. It might be one of the essential and, at least early in life, irrepressible functions of being a human being, of being alive.

There's a German word that I think captures this universal view of the living world, this perceived natural order that we all share. It is the *umwelt* (pronounced OOM-velt). Literally it means “the environment” or “the world around,” but scientists studying animal behavior have used it to evoke something much more specific. For these biologists, the *umwelt* signifies the perceived world, the world sensed by an animal, a view idiosyncratic to each species, fueled by its particular sensory and cognitive powers and limited by its deficits. Most of us aren't familiar with the term, but we are more than familiar with the idea. We know that our dogs live in a universe painted not in colors, which they cannot see, but in smells. Bees, with their multifaceted eyes, see ultraviolet light that is invisible to the human eye. But not only dogs and bees have *umwelts*, all animals do, even humans. We might call it reality, but it is indeed an *umwelt*, an idiosyncratic sensory picture of the living world around us. And I believe it is the *umwelt*—this shared perceived world—that gives us our stereotyped, hard-wired way of perceiving the order in living things.

But the *umwelt* is more than just a facility for doing the science of taxonomy. For countless millennia, the *umwelt* was humanity's best and most intimate connection to

everything that lives. Yet, today, most of us have forgotten that a natural order even exists. Why? Because we modern-day citizens of the world have abandoned our *umwelt*, that ancient vision of an order of life, without even realizing it. We have something else to determine what our vision of life should be, what the reality of the living world is, something else to which we routinely hand over the power to say what is and is not. So what is it that now rules over our vision of life? Science.

Our deference to science and mistrust of ourselves is the reason for a number of phenomena, including the ever-increasing number of interpretive centers. We need to have life—the life right before our eyes—interpreted for us, because we have reached a point where we believe we really can't see, hear, or understand it by ourselves. In fact, we've reached a point in the process, the exact point where I was when I began my book (*Naming Nature*, published by W.W. Norton, 2009), where we don't even remember that there is any valid way, other than science, to determine what a living thing is or is not.

Most of us, whatever our profession, our class, our race, wherever we live, in cities or small towns, in long-inhabited rural countrysides or newly built suburban developments, are profoundly disconnected from the living world. Whatever language we speak, we have nearly lost the language of life. We are so unfamiliar with the ordering of life, so removed from it, that we have quite literally lost the words for the living world. We walk down the street past what many of us know no more specifically than “trees” and “bushes.” “Flowers” bloom and “bugs” pester or frighten.

But if our modern *umwelt* is largely devoid of a vision of order in the living world, what exactly is in there? Here's a hint: What can we easily recognize? Of what can we order and name hundreds upon hundreds? For most of us, the answer is branded merchandise, all things buyable. I believe that the *umwelts* of most modern-day humans are, in fact, stuffed to the gills with various kinds of distinctive-looking, -smelling, -tasting, -sounding, and -feeling—that is, differently packaged, branded, and logo-covered—products.

Today, we effortlessly perceive an order among the many different kinds of human-made, purchasable items. Instead of sorting living things by size, shape, color, smell, and sound, we sort merchandise, obsessed and immersed as we are in a world of

products. And we end up armed with an excellent taxonomy of goods. That is why we are so masterful at sorting the Gulden's mustard from the Grey Poupon, the Ford from the BMW, the Adidas from the Nike, at a glance. Even when faced with products that are nearly identical in shape, in their packaging, like cereal, each in the same rectangular cardboard box, we prove ourselves to be phenomenally skilled at homing in on our favorites, on shelves stuffed with other similar boxes, quickly sorting through the many color schemes and logos to find the one we want.

Without even realizing it, we have traded a view of ourselves as living beings in a living world for a view of ourselves as consumers in a landscape of merchandise. We have unwittingly traded a facility with living things for a savantlike brand expertise, exchanging the language of the living world—the names of real plants and real animals—for a vocabulary of Tony the Tigers and Geico geckos. The world we live in, our simple reality, is the world of purchasable items. We have, without even trying, absolutely gotten what we've paid for. You might need a naturalist interpreter to help you make sense of things as you walk through the local forest, but you would never need such assistance when wandering through the mall.

Not surprisingly, we are also simultaneously trading the actual world of living things for a world filled instead with human-made products, with factories to build them, with stores to sell them, with homes to fill them with. While we've been busy shopping and the world's diversity of human-made things has been increasing, the world's wealth of living things has been dwindling.

So, here we sit, with our merchandise-clogged *umwelts*, smack dab in the middle of the sixth great mass extinction of life on earth. It is a die-off of species estimated to be more rapid than any ever seen in the history of the planet, one with the potential to be bigger and more powerful than the one that did in the dinosaurs and so many other forms of life now unknown. In North America, since the Pilgrims pulled up in the *Mayflower* and disembarked into a New World, more than 600 kinds of living things are known to have gone extinct, and likely many more that no one even knows about. We ran off the passenger pigeon, the Eastern elk, the Texas red wolf, the Badlands bighorn sheep, the sea mink, the heath hen, the Carolina parakeet, and the California grizzly, to name just a

few. Even though this happened in our backyards, it is hard to feel, let alone care about, these grand-scale losses when our perception of life has become so stymied, so stunted and numb.

There are so many reasons we've been able to reach this point, this biodiversity crisis, but more than one traces right back to the *umwelt*. Stuffed today as it is with logos, the *umwelt* has actually become part of the problem, one of the key engines driving a process of brand recognition, admiration, and accelerating acquisition of thing after thing. The *umwelt*, once the guardian of a vision of life, has been subverted to the point where it is actually helping to drive the conversion of what's left of the wild world into packages on the shelf at the minimall. But a mass extinction, in which so many species of things—blazing beacons, from gorgeous wildflowers to impressive carnivores—can disappear without anyone even noticing is about more than a misplaced desire for stuff. A mass extinction that worries us hardly at all is only possible because we have discarded the view of the living world we once regularly cherished, studied, and dwelt in.

There is good reason to hope that we can reclaim our *umwelt*. Life persists, exists, intrudes, exudes, creeps, and pokes up everywhere. And our *umwelt*—if given a break from priced and tagged items—is ours to use, to soak up a full, rich view of that living world. It may need a bit of retraining, off Gucci and Versace, off Macs and PCs, off Eddie Bauer and Banana Republic, Hummers and Fords and VW, and onto living things. We will need to learn enough to teach our babies better; but hope does and should spring eternal. We have another chance, another eager learner of living things each time a new little human appears, reliably keen to begin understanding the living world and feeding its hungry *umwelt*.