Comparative Media Arts Journal
Original Paper

The Wing as a Wand

Bryan Shawn Wang, Sandy Feinstein, and Samantha Kavky

Abstract

It's not that one can't find joy and wonder in an earwig, or a bluegill, or a pigeon. But it requires a different kind of examination, simultaneously more careful and less focused, to see these creatures as objects of beauty and worth rather than something to squash, or fillet, or shoot. For centuries, naturalists observed, took notes, and made pictures—they saw nature through the lenses of both science and art. Until they didn't. In 1981, the physicist Richard Feynman spoke about his "artist friend" who held up a flower and said, "I as an artist can see how beautiful this is, but you as a scientist take this all apart, and it becomes a dull thing." Feynman then argued that understanding the flower's inner structure and processes "only adds to the excitement, the mystery, and the awe." Recently, in other words, scientists and artists have been seeing things very differently. But, perhaps, by alternating or overlapping or otherwise integrating those divergent lenses, we may more clearly and creatively perceive the world and conjure a future better than what we might now imagine—for instance, through the enchantment of a bird observed; disenchantment as we dissect, deconstruct, and devour it and dismantle its ecological network; and reenchantment through representations of the nature outside and within ourselves.

Keywords: nature, birds, seeing, memory, transformation

Bryan's Notes

Thursday, February 25, 2021, Penn State Berks (40.3599840220802, -75.97050036126524)

Walking from Franco (humanities) to Luerssen (sciences). Mid-40s and sunny, lovely weather for this date, for this locale. Campus is desolate: remote learning & distancing remain the rule. Beasts is in person, however. This afternoon, Sandy taught on Francis Bacon's idols of the mind, his argument for a scientific method. Also harangued the students about their proposals that weren't.

Across the field where ordinarily rugby players would scrum, a sudden commotion. My surprise quickly becomes wariness becomes unease. A large form, fifty, sixty yards away, descends with startling velocity, tears past the stand of trees bordering the field.

The trees are bare and will remain so for weeks, still resting from their photosynthetic labor. On Monday, my intro bio students and I will discuss a 2012 report of a reconstruction of Joseph Priestley's bell jar experiment. In place of the mouse trapped in a bottle with a sprig of mint, a willing human subject in an oxygen-depleted enclosure surrounded by 247 C_3 and C_4 plants. The subject survived. Plants help the Earth breathe.

The trees have no leaves to conceal the dormitories beyond. After class today, a Beasts student showed us a picture of a great horned owl perched on a branch outside his window. I was pleased he was able to identify it, even if it was staring him right in the face.

Now I'm watching a bald eagle drive off a pair of smaller birds—a couple of crows? They've fled before I can ID them, before I notice them, really. I'm no ornithologist, not even a backyard birder. The eagle, however, I see, the bright white head and deep brown body and wings with a span wider than the height of a car, an SUV, some NBA players.

When we first met in a classroom this semester, one of our students wore a Raptors jersey. Perhaps inadvertently semiotic, but no matter. In Beasts, we're always on the lookout for connections.

The full course title: "From Beast Books to Resurrecting Dinosaurs." Sandy and I proposed the course four years ago, developed it for the university curriculum, and have taught it together for the past three years. We examine the work of Western thinkers—philosophers and naturalists, poets and medieval clerics, Linnaeus, Mendel, Watson and Crick—how they've described and explained biodiversity through literature and science. We see how synthetic biologists today want to engineer new genetic codes, resurrect extinct species, create new forms of life. But we don't directly discuss, not yet at least, humanity's role in diminishing biodiversity, or sustaining it.

When she was in the fifth grade, my daughter wrote a research report on eagles and how DDT, habitat loss, and lead shot had threatened their survival. The subsequent banning of the pesticide, listing of the species as endangered. How the eagles were making a comeback.

When I was in middle school or maybe a little younger, I once made a kite out of a paper

bag. My brother held it as I ran across the yard with the string. He let it go, and the kite hovered, danced for a few seconds in the breeze. Then it took, and I felt both the tug on the spool and the lift of excitement as the kite pulled away.

Haliaeetus leucocephalus. A mouthful for most undergraduates, even those who have read Isidore of Seville's *Etymologiae*, or studied the phylogeny of reptiles, seen fossils of *Archeopteryx*, understand the evidence suggesting that the evolutionary lineage stemming most directly from what we think of as dinosaurs ends, at least today, with birds.

The eagle shoots off. It's over the park across the street from campus and gaining altitude at an incredible rate. It joins another form in the sky. They're too high for my middle-age eyes to see clearly, but I'm certain it's another eagle. They begin to circle, tracing a grand unhurried orbit around some center known only to them, heedless of all that is or isn't happening below.

As a graduate student, I learned to see proteins and DNA, very small things, using the technique of X-ray crystallography. If we see something, we can understand something about how it works. Before we discuss molecular models and protein engineering, my biochemistry students look at Leonardo da Vinci's *Codex on the Flight of Birds*, his observations and drawings of the creatures, his designs for flying machines. We see the robot that Stanford researchers recently developed after measuring the kinematics of wing flexion and extension in a pigeon. We who are grounded remain both ignorant and inspired.

I let my kite play in the wind for what felt like hours. My brother and I watched it and imagined friends and neighbors marveling at our mastery. We imagined our names in the Guinness Book of World Records. We imagined ourselves tethered to the kite, soaring above the town, the state, the planet. The free end of the string slipped free of the spool with a whispered sigh, too quick for my grasp. A few moments later, the kite vanished.

Two weeks ago, Sandy and I asked the Beasts students to participate in the Great Backyard Bird Count. And then create something that represented what they observed or experienced. An engineering student wrote a poem referencing crows in Greek myth, Viking legend, Aesop's fables, his own notes. A computer science major who had "barely paid attention to birds for years" created a digital map of her sightings, including temporal as well as spatial dimensions. A biochemistry student watched his feeder and remarked that birdwatching was more fun than he'd imagined it would be, evoking "the same feeling that stargazing does." He

submitted an exquisite drawing of the head of a mourning dove: where its pupil might have been, the reflection of a human eye.

I participated in the bird count with my wife and two friends. We saw song sparrows, robins, a northern mockingbird, a hermit thrush. A Carolina chickadee, cardinals, blue jays, red-bellied and pileated woodpeckers. I used binoculars and the Merlin ID app, mostly to confirm what my friends already had identified by sight and experience. Like me, they wouldn't consider themselves naturalists, but when they were young, they'd gone to school together, learned from the same seventh-grade science teacher. Over the course of his career, that teacher must have fledged thousands of birdwatchers. He recently died while hunting on his property. He fell from a tree stand.

We saw mallards, Canada geese, great blue herons. But no eagles. My friends would travel for miles and miles to see an eagle.

Bryan Shawn Wang, *Resurrecting Dinosaurs*, 2021, digital collage. Individual images by Markéta Machová (*Archeopteryx lithographica*), Gordon Johnson (eagle skeleton), and Gerhard G. (bald eagle) from pixabay.com.

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Sandy's Notes

3/2/21, 8:40 a.m., 27º, where Heather almost meets Sunshine.

Reading, Pennsylvania

Snow crusty with overnight freeze.

Black Capped Chickadee alights. Takes sharp left turn. Returns to lower perch. One seed. On half-dead tree behind feeder. Moves branch to branch until on long thin gray limb. Species? Then inside bole. Waits.

Female Cardinal on patio roof. Swoops down to standing green feeder. Conical red beak re-forms around single seed.

House Finch, tail facing. White wing bars. Takes off for hanging feeder. Second House Finch, red head tint, takes its place.

15 minutes of looking out the window, between bites on oats, without glasses. The shapes outside, across the table, less defined, softer. After a swallow, the glasses re-placed, and the Cardinal and I steady our sights. She has all day to grab seeds. I notice the male when I return to the kitchen twenty minutes later. He is not calling her. She is not following him, even with her eyes. If she had chicks, they are long fledged. There is no biological clock of which she is aware. If she feathers a nest, fine. If not, she will have more time to scout. To flit from overhang to tree to seeds.

The House Finch does not know it is common. Or non-native to the east. Introduced. An interloper. It doesn't care. There are seeds.

The Chickadee doesn't seem to notice Cardinals and Finches are bigger. It swoops down to a perch when it's hungry. It doesn't know it makes me smile.

I have a list. It's not of birds. But of warnings. It cuts off the idle stares at dying trees and impervious birds that stop for a moment on a dark rotting branch and on the pale gray shoots that appear alive. But that is not something they register. They just alight. There.

In my bathroom, I have a picture, watercolor and ink, I bought from the artist on a street

in Bulgaria. The date on the painting is 1995. It's the only writing I'm sure I can read. The artist signed with his initials, which I didn't wonder at—I, too, sign with my initials. But now I don't know his name. I know his sign. The title is clearer. I think I can read it, but the only word I am sure of is the preposition "с," or "with," after which the word could be "mnogo" ("much"). I taught English in Bulgaria for a year, and three years later I was invited back for my students' graduation. This was my souvenir. I assumed the picture was of "Leda and the Swan." The bird doesn't look like a swan. It barely looks like a bird. It doesn't look like a God either. Or a rape. They are both naked. They are beak to mouth. They are staring at one another.

BT, *Woman with Bird*, 1995, watercolor and ink. Collection of Sandy Feinstein. Translation, 2021, courtesy of former AUBG students Tenyu Boyadijiev, Tatiana Russler, Iordanka Yvancheva, Manol Peykov.

During college I took a course in printmaking. At the end of the semester, students exchanged prints with one another. I don't have any of my old prints; they were bad. I have no visual imagination. I loved the course, learning lithography and etching and wood cutting whose primary materials—stone, steel, wood—serve as bird perches, but also serve art. My teacher, Mr. Fuller, brought the materials and the matter back together.

James Fuller, *Untitled*, circa 1973, woodcut on paper. Collection of Sandy Feinstein.

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Sam's Notes

Sunday, March 7

Around 1:00 I went for a hike along Pickering Creek, near route 29, south of Phoenixville, with Oliver, Max, and Fisher (the dog). I brought along a copy of Peterson's field guide for *Eastern Birds*. I think we inherited the book from Oliver's mother, and I had never really looked at it, so here was a chance to put it to use.

I have to admit, I don't really like birds. Maybe because I saw Hitchcock's *The Birds* at too young of age, or because most of my experiences have been with aggressive types such as seagulls and pigeons. Ironically, I work on an artist who loved and identified with birds. This inconsistency has been pointed out to me on many occasions.

So, I took this task as a chance for redemption and to get on the right side of birds. The funny thing is, when I finally wanted to see birds, there were none to be found! Or even heard! "There were no birds flying overhead, there were no birds to fly." (Lewis Carroll)

The sounds of the nearby highway and the creek, not to mention our footsteps and chatter, pretty much drowned out any birdsong. Finally, I did hear something and tracked it to a bush. A sort of soft whistle. But I couldn't find it.

It wasn't until about 30 minutes into the hike that Oliver pointed up. Swooping around in circles was a large bird, obviously looking for prey. I forgot my phone, so both Max and Oliver took pictures for me. No wonder I couldn't find any small birds. This one was large, graceful, and looked serious. Oliver labeled the bird a Turkey Vulture. I brought out the trusty Peterson's and looked it up. Honestly, I have no idea if the picture in the book matches the bird in the sky, but I could see a light gray pattern on the wing feathers, so it seemed like a match. That was pretty much the high point of the outing in terms of bird spotting.

Although later we did see a shadow flit by, and then saw a hawk of some type, and then something none of us had seen before: a handful of feathers float down from the sky. Lesson for the day: predators are easier to spot than prey.

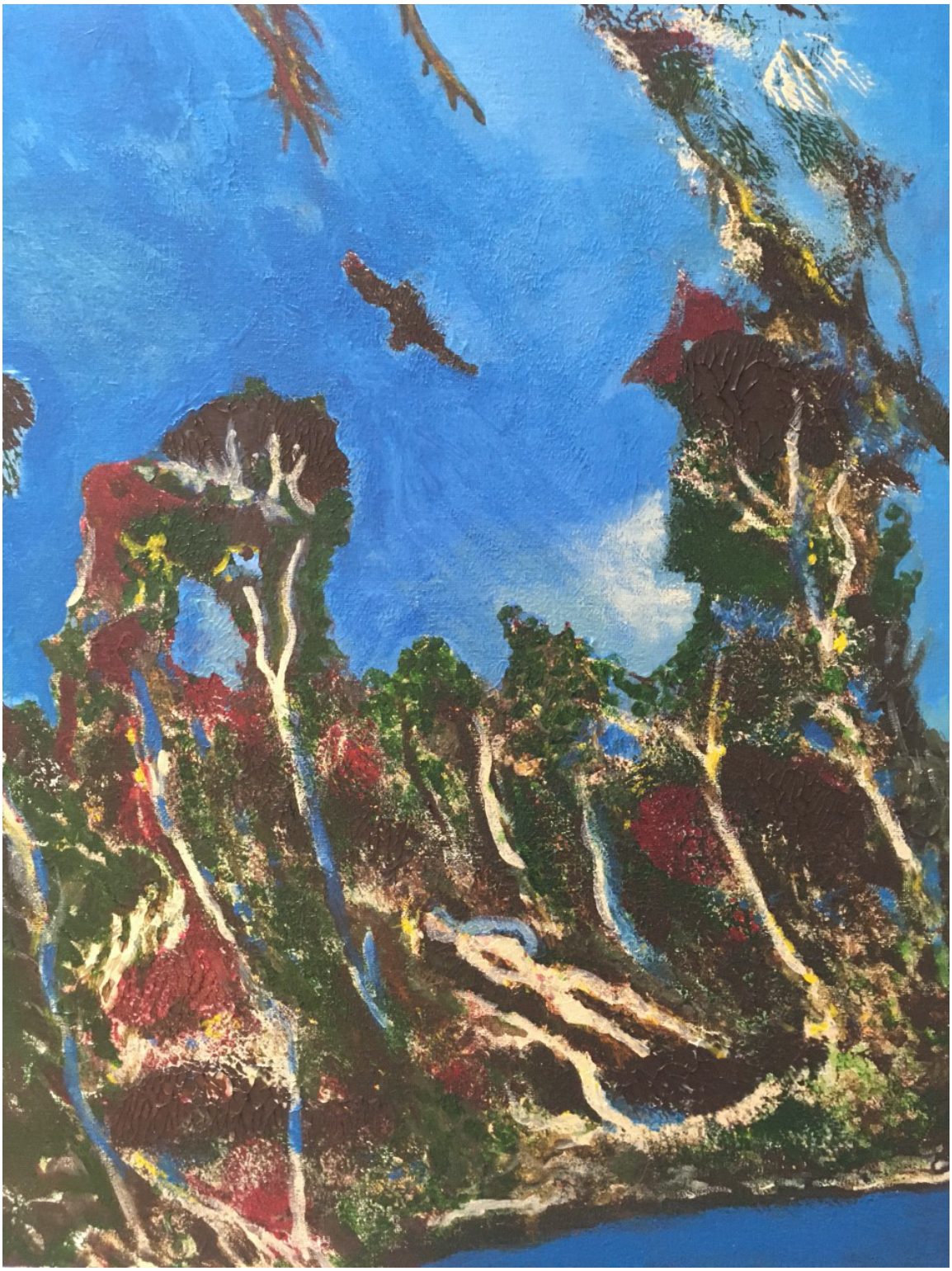
Before heading back we saw a confrontation between a herd of deer and a flock of Canadian Geese. I think a farmer had put out some food and the two groups were fighting over it.

I guess the Geese count, although they are so ubiquitous now and such pests for runners and bikers and dog walkers, that I put them in the same category with seagulls and pigeons.

I think about the lesson: predators are easier to spot than prey. Recently I've been writing and researching about camouflage, surrealist landscapes and mimesis. The fallen tree in the foreground of my son's photograph resembles a recumbent body. This decides me. I will try my hand at decalcomania. I have been writing about the art of the surrealist, Max Ernst, for over twenty years and it's hard to believe that I've never tried to imitate one of his most signature methods. I did teach my son's first grade class once to make frottages, but aside from more decorative projects, I haven't really painted since I changed my major as an undergrad from studio art to art history. Decalcomania consists of squishing paint on canvas with another surface and then pulling the surfaces apart. The resulting colorful patterns offer suggestive textures and shapes as the foundation for an image. The sky is painted on top of the textured ground. Even though the method was devised to circumnavigate academic skill, it is still more difficult than I expected.

Surrealism and nature. The Surrealists aimed to re-enchant the world through a psychological connection between the subject and the environment. They created images through a process of psychic projection—child's play—watching clouds, rock formations, twisted tree roots, etc., and visually animating them, transforming them into people, animals, etc. The imagination re-envisions nature, nature reforms the imagination in a reciprocal mimesis.

Photograph by Max Kavky-Shell, March 7, 2021.



Samantha Kavky, *Predators Are Easier to Spot than Prey*, 2021, acrylic on canvas, 20" x 16".

About the Authors

The authors teach at Penn State University, Berks College.

Sandy Feinstein's work on visual images and literature overlapping with science includes articles on horses, alchemy and the manuscript illustrations of the *Splendor Solis* as well as beheading in Chrétien de Troye's *Lancelot*. Most recently, she has published creative non-fiction and creative scholarship with Bryan Shawn Wang in *Science-Based Vulnerability: Scientists and Poets #RESIST; CEA: The Critic*; and in *Angles: New Perspectives on the Anglophone World*.

Samantha Kavky teaches art history courses from the Renaissance to the present. In both teaching and research, she embraces an interdisciplinary approach exploring connections between history, the visual arts, psychology, anthropology, gender studies and the occult. Her recent articles include, "Surrealism, War and the Art of Camouflage," published in *The Space Between—Literature and Culture, 1914-1945* and "Max Ernst and the Second World War: Witches, Chimeras, and Totems," in *Monsters and Myths: Surrealism and War in the 1930s and 1940s.* Her current work explores surrealist landscape, the desert and ecology.

As a molecular biologist, Bryan Shawn Wang studied *in vitro* evolutionary methods. He has a long-standing interest in literature and has published fiction in *Washington Square Review*, *Valparaiso Fiction Review*, and *Kenyon Review Online*. His recent efforts to promote biodiversity conservation stem in part from teaching many semesters of general biology for undergraduates and co-teaching, with Sandy Feinstein, an honors general education course that features beasts of all stripes.