RAN ORTNER

Untitled, 2012
84 x 108 in.

courtesy: Ran Ortner studios

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Outré Banks of the Mind

outré |o͞o'trā| adjective. Unusual and startling, violating convention or propriety: "in 1975 the suggestion was considered outré—today it is orthodox." ORIGIN French, literally "exceeded," past participle of *outrer* (see *outrage*).

I'm standing on a pier fifty feet above the Atlantic. Ocean to the left and right, forward, back and below. I'm wearing a light blue hat, like a bejeweled swim cap. A heavy black cable snakes down my back like a ponytail. I look like an extra in an Esther Williams swim troupe who wandered into Woody Allen's *Sleeper.*

Water fills the light, the sound, the air, and my mind. Waves steadily arrive under the pier, crashing to the beach and suspending their salt mist and negative ions which I rhythmically inhale with pleasure. It smells like summer to me.

I'm a human lab rat. The cap is the nerve center of a mobile electro-encephalogram (EEG) unit. I'm just trying it on for size. The cap is not yet recording anything, but soon sixty-eight electrodes plugged into my head will measure my every neurological up and down. The sum effect of the cap, the grandeur of nature, our imaginations, and the academic and experiential gravitas of those with me is one of beautiful absurdity. A somewhat ridiculous high-tech costume masking some seriously interesting—you might even say revolutionary—scientific potential.

An unlikely agglomeration of talent—neuroscientists, big wave surfers, psychologists, educators, seafood experts, veterans, marketers, realtors, conservationists, evolutionary biologists, filmmakers and writers—have schooled up on Jennette's Pier on the Outer Banks of North Carolina to consider the science behind our emotional connection to water. It's about time we figured out how the words dopamine and amygdala meld with the words ocean and wave.

The Outer Banks, or OBX, are the long, narrow strips of mostly sand separating the Atlantic from the sounds, and from the mainland of North Carolina behind that. The Outer Banks are a sandbar, really. Gordon Jones, a realtor for twenty-two years who knows these edgy dunes as well as anyone, calls them a "speed bump" for the Atlantic hurricanes, squalls, and relentless waves that batter her banks. As a result the beaches—literally, the entire place—are inching incrementally westward, grain by grain.

Living on the Outer Banks requires a certain tenacity, but there is a powerful and unmistakable draw to this place. The twin phalanxes of cars coming and going that queue up every summer Saturday and the two hundred percent premium tacked on to the most sought-after homes in the "front row," directly adjacent to the beaches, are ample evidence of the draw.

My hunch, as I stand there on the pier, is that hidden beneath the surface of the water we will find massive, yet to be quantified, but irrefutable cognitive benefits. I believe the ocean irresistibly affects our minds. It is a force that for millennia has drawn people all across our watery planet to camp out on windswept bumps of sand like the Outer Banks.

A set of questions and hypotheses has begun to flow from the consilience of neuroscience and water studies and the sharing of personal—sometimes intimate—experiences. It is a conversation I call "Blue Mind."

* * *

This was my first intimation of Blue Mind. These moments enthralled and disturbed me. Late nights in the racks of neuroscience journals failed to provide satisfactory answers to my questions.

In 1987, I was a nineteen-year-old biology student at DePauw University, a small liberal arts college in Greencastle, Indiana. On a late summer day, I received a message from Reverend Lamar, the University Chaplain. In his office, he explained that a local nursing home had a special patient the nurses thought might benefit from guitar lessons. DePauw, founded 175 years ago in the Methodist tradition, is known for its community service. Students learn that to be whole one must give generously to those in need. I agreed to the challenge.

I was a quiet, introverted teenager. Barbara was a terrible guitar player. She had lost most of her memory in a car wreck fifteen years before, when she was a university music student, herself just nineteen years old.

I stammered and had a disabling fear of public speaking and performance. I preferred diving in the quiet rock quarries of southern Indiana and the company of my dog and guitar. In a carpeted corner of the institutional lounge, we started in on the standard folk classics of her teens: Dylan; Simon and Garfunkel; Peter, Paul, and Mary. Simple chords, clear lyrics, nothing too demanding. Our Wednesday guitar lessons continued for eight months.

Some days it was agonizing work. We would play into dark dead ends. Our hour together would drag with poorly formed thunky chords and start-overs. Other days, a song—or a simple melodic phrase—would open a door into her memory and she would come alive. John Denver, in particular, caused knobs to turn and long-locked memories to flow. On those days we spoke more than we played. Music brought back images, names, stories, and other music. The nurses smiled.

"All my memories, gathered 'round her. Miner's lady, stranger to blue water."

This was my first intimation of Blue Mind. These moments enthralled and disturbed me. Late nights in the racks of neuroscience journals failed to provide satisfactory answers to my questions. The requisite formaldehyde-infused dissections in my anatomy courses paled in comparison to the wonder of Barbara's living brain. I began to cherish Wednesday afternoons, strumming my guitar in time with hers and trying to find keys to unlock her memories. In the process, slaking my nostalgia for acoustic three-chord simplicity and swimming holes.

* * *

These words from e. e. cummings haunt me:

it's always ourselves we find in the sea

The words connect me to a dozen emotions, a hundred places, a thousand memories, and to the color blue. I prefer to read the lines last to first. The preceding ten words of the poem are:

for whatever we lose (like a you or a me)

And the ten words just before that are:

as small as a world and as large as alone

I read them backward and forward, and backward again. I read them that way to myself, to my daughters, to strangers, and to students.

I don't know if e. e. cummings meant it that way, but I like to imagine he did; or, at least, that it didn't matter to him which way you read them as he wrote them at his desk, seaside, planning the forward and the backward and the forward again permutations of his paean to the sea.

Have you ever lost a you? Did it happen at the sea? I've lost several *me's*. So *many me's*, I've lost count. I used to know the number; it was at least ten. They've mostly been lost in the sea, but one time I lost a *me* at the bottom of a water-filled quarry. There must be many *me's* lost in the water. With a backlog of *me's*-in-waiting, yet to be lost.

Sometimes, the *me's* or the *you's* lost in the ocean will return. Those lost to rivers have to travel to the sea where one can search for them. Successful searching often requires a guide—a young scientist, perhaps.

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August 13, 1996. Martin Arce, a thick-handed lobsterman, and I watched Adelita, a loggerhead sea turtle, swim under and away from our small skiff bobbing in the immense Pacific offshore Baja California in Mexico. We stared out across the expanse of blue before us and thought maybe, perhaps, possibly these turtles aren't born in Baja at all. Maybe they migrate here only to return home again—somewhere. We gazed at the horizon. Somewhere out there, across the vast Pacific, was Japan and the nearest known loggerhead nesting beaches, a mere 7,000 miles west.

Genetic evidence suggested the possibility of epic ocean-spanning migrations by sea turtles, but, in the face of the vastness of the Pacific Ocean, the hypothesis was revolutionary at the time. Too revolutionary, I guess. Unfathomable. Absurd even, but also loaded with scientific potential, as the best hypotheses usually are.

I was a doctoral student in wildlife ecology and evolutionary biology at the University of Arizona. Debate was rife among scientists about the origins of endangered loggerhead sea turtles swimming along the Pacific coast of the Americas. As most school kids will tell you, the first and perhaps most impressive thing you learn about sea turtles is that they return to the same beaches where they were hatched to nest as adults. With not one single loggerhead nesting beach anywhere on the shores of the eastern Pacific, many questions were unanswered.

Martin and I had attached a small box to Adelita's back. It contained a transmitter. Twentieth-century technology glued to a one-hundred-million-year-old body plan. Each day the box relayed her location to us via satellites linked to a base station in France. Each day we studied the data and then uploaded it to the Internet. Each day tiny dots aligned on a map, surrounded by nothing but blue. Soon, other people took note. Then more. Schoolkids, scientists, and turtle lovers the world over were watching Adelita's progress.

Alone, but not alone, Adelita stroked on through the deepest, wildest, most humanless expanse of our blue planet.

People would write to me to talk about Adelita:

"Hi J., this is Meghan and I was just wondering if you are as excited about this as I am?"

At night, I couldn't sleep. I'd lie awake think-

You can see a simple truth in the eyes of quarry people, river people, and sea people. You can hear it in their voices. You can feel it in the way they dance with you. It has to do with the accumulated losing, searching, following, and finding of life.

ing about Adelita. Praying for her safety. Wondering what was beneath her and above her. Was she hungry? How did it feel to be going home after so many years? I became obsessed with checking my email for the latest position. I'd imagine members of our loosely connected club sitting in front of glowing blue screens all over the world, plotting, calculating, imagining, hoping, and dreaming about that vast blue space.

We tracked the sea turtle due west out of Baja making a steady twenty miles per day; a healthy walking gait for you or me. By January 1, she was just north of Hawaii. From there, she tracked west and ever so slightly north. Sure enough, she was headed straight for Japan.

Brie, an Internet follower, wrote, "What are you gonna to do when Adelita gets to Japan? I mean are you gonna send a team to get her?"

"I'm not really sure," I wrote back.

March 9, 1997. Barbara Garrison, an elementary school teacher in San Diego who was following Adelita's progress with her students, receiving my regular emails and thoughts, wrote this poem during the journey as the turtle neared the International Date Line, which bisects the Pacific:

Adelita sleeps.
Do you ever find yourself
thinking of her
in the middle of the day?

Sister of mercy
adrift in the world
her carapace around her
like a habit
following the liturgy of longitude
like the Stations of the Cross
the draw string of dream
gathering with each dive.

A sea shadow
cradled in the arms
of the great Turtle Mother.

The Virgin of Cobre guiding
through the dangerous sea
the black sand memory
of her natal beach
ringing her course
in peals of instinct.

Cartographer
explorer
world traveler
Adelita sleeps.

A Shinto priestess
leads the way
a goddess path
from Mexico
to the arribada
on a distant
Kyushu shore.

August 16, 1997. Three hundred and sixty-eight days and seven thousand miles after we lowered her into the Pacific, Adelita's signal finally went dark—her final location put her transmitter at the end of a fishing pier in Isohama, a village in northern Japan since washed away by the 2011 tsunami.

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You can see a simple truth in the eyes of quarry people, river people, and sea people. You can hear it in their voices. You can feel it in the way they dance with you. It has to do with the accumulated losing, searching, following, and finding of life. It is a state I call "Blue Mind."

Remarkably, the topic of the human brain's emotional interaction with water is a new frontier to science. Neuroscientists, including those that gathered on The Outer Banks, talk a lot about the physiological basis of flow, groove, and even chills—those peak moments when we feel we are one with the universe as a response to good work, play, or music. Neuroscientists say looking at the color blue doubles our creativity. They say that simply walking outside helps break apart bad habits and that being seaside can boost happiness and engender a sense of well-being. Practitioners have found that water-related activities such as kayaking, surfing, wildlife viewing, relaxed gazing, and sound bathing, the practice of simply listening in nature, can be applied therapeutically to mental disorders, post-traumatic stress, autism, and addiction.

At meetings like the one on Jennette's Pier neuroscientists are formulating bold new hypotheses about our "Blue Minds" suggesting transformative new ways for humans to relate to water, new possibilities for educating our children, and offering some solace to an increasingly stressed out society.

Facing out on the Atlantic, I believe them.

We are learning that the songs that water sings make our memories light up like Barbara's brain on John Denver. Nostalgia glows in the presence of water. By the ocean, along a river, or even from the bottom of an inundated quarry, we get a better view of the whole world, and of ourselves, and as a result we feel small but connected. Because we are small in the face of it and we are connected. From a million miles away, the Earth is but a blue marble. From a billion miles, we are just a pale blue dot; a speck in the collective consciousness of the universe.

It's far easier to appreciate the little blue marble we live on from the water's edge. Its waves of light and sound can make us feel both small and alone and yet exquisitely connected to the universe and everything in it. Like every little thing we do matters more than we could ever imagine.

J. is author of more than fifty scientific papers, book chapters, popular articles, and reports on sea turtle ecology and ocean conservation His efforts are featured in *National Geographic*, *Scientific American*, *Time*, *Newsweek*, *Outside* and other international media. He lives in Davenport, CA.