

3 ORIGINALS

A first look at DNA, in a letter to a child. NICHOLAS WADE

3 BOOKS

Botox, obesity and body image. ABIGAIL ZUGER, M.D.



4 THE CONSUMER

Doubts about robotic hysterectomies. RONI CARYN RABIN

5 PERSONAL HEALTH

Rethinking drugs for pregnant women. JANE E. BRODY



ONLINE

Video and audio of owls, and Francis Crick's DNA letter. nytimes.com/science

Mediterranean diet answers. nytimes.com/well

SCIENCE | MEDICINE | TECHNOLOGY | HEALTH

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ScienceTimes

The New York Times

BASICS | NATALIE ANGIER

The Owl Comes Into Its Own

Beloved, majestic, ferocious (perhaps even wise), a bird sheds some of its mystery.

WASHINGTON — The day after a frigid, star-salted night spent tromping through the Alexandria woods with David Johnson of the Global Owl Project, and listening to the stridently mournful cries of wild barred owls that remained hidden from view, I stopped by the National Zoo around sunset to take visual measure of the birds I had heard.

The two barred, or *Strix varia*, owls were just rousing themselves in the outdoor enclosure, and they looked bigger and more shaggily majestic than I expected, with capes of densely layered cream-and-coffee plumage draped on their 17-inch frames and pompous, Elizabethan feather ruffs encircling their necks. Like any good royalty, they ignored me.

That is, until I pulled out my phone with the birdcall app and started playing the barred owl song. The female's languid eyes shot wide open. The male's head spun around in its socket by 180 of the 270 degrees an owl's head can swivel.

With the distinctive forward-facing gaze that can make owls seem as much human as bird, the barred pair stared at me. I played the call again, the male grew bored,

Puzzling out subtleties of behavior, biology and sensory prowess.

and I was about to put the phone away when suddenly the female — the larger of the two owls, as female birds of prey often are — pitched her body forward on her perch, lifted up her heavy, magnificent wings and belted out a full-throated retort to my recorded call.

After a brief pause, she hooted the eight-note sequence once more, at which point an astonished zoo-goer nearby burst into applause.

In the Western imagination, the owl surely vies with the penguin for the position of My Favorite Bird. "Everyone loves owls," said David J. Bohaska, a paleobiologist at the Smithsonian's National Museum of Natural History, who discovered one of the earliest owl fossils. "Even mammalogists love owls."

Owls are a staple of children's books and cultural kitsch — here wooing pussycats in pea-green boats and delivering mail to the Harry Potter crew, there raising a dubiously Wise eyebrow in the service of snack food. Yet for all this apparent familiarity, only lately have scientists begun to understand the birds in any detail, and to puzzle out the subtleties of behavior, biology and sensory prowess that set them apart from all other avian tribes.

Researchers have discovered, for example, that young barn owls can be impressively generous toward one another, regularly donating portions of their food to smaller, hungrier siblings — a display of altruism that is thought to be rare among nonhuman animals, and one that many a small human sibling might envy.

The scientists also discovered that barn owls express their needs and desires to each other through a complex, rule-based series of calls, trills, barks and hoots, a language the researchers are now seeking to decipher.

CONTINUED ON PAGE D6



Jonathan Slaght with a female Blakiston's fish owl near Amgu, in Russia, in 2008. The largest owl species, it is especially ferocious and nests outdoors in subzero temperatures.

NEWS ANALYSIS

Connecting the Neural Dots

By JOHN MARKOFF

In setting the nation on a course to map the active human brain, President Obama may have picked a challenge even more daunting than ending the war in Afghanistan or finding common ground with his Republican opponents.

In more than a century of scientific inquiry into the interwoven cells known as neurons that make up the brain, researchers acknowledge they are only beginning to scratch the surface of a scientific challenge that is certain to prove vastly more complicated than sequencing the human genome.

The Obama administration is hoping to announce as soon as next month its intention to assemble the pieces — and, even more challenging, the financing — for a

decade-long research project that will have the goal of building a comprehensive map of the brain's activity.

At present, scientists are a long way from doing so. Before they can even begin the process, they have to develop the tools to examine the brain. And before they develop tools that will work on humans, they must succeed in doing so in a number of simpler species — assuming that what they learn can even be applied to humans.

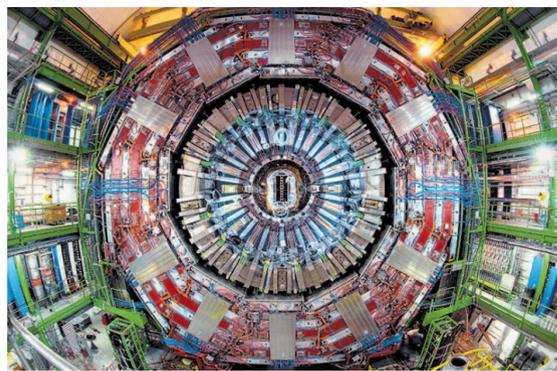
Besides the technological and scientific challenges, there are a host of issues involving storing the information researchers gather, and ethical concerns about what can be done with the data. Also highly uncertain is whether the science will advance quickly enough to meet the time frames being considered for what is being called the Brain Activity Map project.

A goal is set, but scientists are far from a map of the human brain.

Many neuroscientists are skeptical that a multiyear, multibillion dollar effort to unlock the brain's mysteries will succeed. "I believe the scientific paradigm underlying this mapping project is, at best, out of date and at worst, simply wrong," said Donald G. Stein, a neurologist at the Emory University School of Medicine in Atlanta. "The search for a road map of stable, neural pathways that can represent brain functions is futile."

The state of the art in animal research is to sample from roughly a thousand neu-

CONTINUED ON PAGE D6



Finding the Higgs

In a special issue next week, Dennis Overbye will tell the story of the search for the elusive particle.