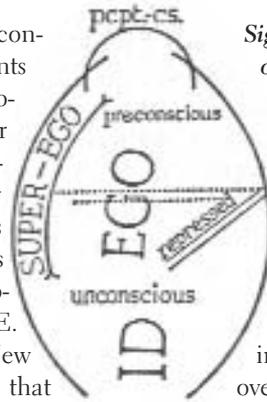


motivated.” Some patients can’t consciously remember particular events that occurred after certain memory-encoding structures of their brains were damaged, yet their behavior is clearly influenced by those events. “Neuroscientists have also identified unconscious memory systems that mediate emotional learning.” In 1996, Joseph E. LeDoux, a neuroscientist at New York University, demonstrated that under the conscious cortex exists “a neuronal pathway” that lets current events trigger unconscious memories of emotionally potent past events, causing seemingly irrational conscious responses, such as “Men with beards make me uneasy.” Freud’s claim that humans actively repress unwelcome information also has been gaining support from case studies.

Of course, some things Freud said are not panning out. “Modern neuroscientists do not accept Freud’s classification of human instinctual life as a simple dichotomy between sexuality and aggression,” Solms notes. “Instead, through studies of lesions and the ef-



Sigmund Freud drew his final model of the mind (left) in 1933, but some researchers believe that the brain’s physical structures correspond to many of the psychologist’s divisions.

fects of drugs and artificial stimulation on the brain, they have identified at least four basic mammalian instinctual circuits, some of which overlap.” The “seeking” circuit, which motivates the pursuit of pleasure and is regulated by the neurotransmitter dopamine, “bears a remarkable resemblance to the Freudian ‘libido.’” It might also be “the primary generator of dreams”—a possibility currently under investigation.

However, Hobson, a professor of psychiatry at Harvard Medical School, says that Freud’s defenders are doing a little dreaming themselves. Scientific investigations show that “major aspects of Freud’s thinking” were probably wrong. “Psychoanalysis is in big trouble and no amount of neurobiological tinkering can fix it.”

Future Fish

“The Bluewater Revolution” by Charles C. Mann, in *Wired* (May 2004), 520 Third St., 3rd fl., San Francisco, Calif. 94107–1815.

The world’s appetite for fish is growing so fast that the catch will have to increase nearly 50 percent by 2020 to meet rising demand. Yet almost 30 percent of the world’s fish stocks are “overfished” or nearing extinction. The futuristic solution: robotic fish-farming in the open seas.

“Already, a third of the annual global fish harvest comes from farms, both on land and in shallow water just offshore,” writes Mann, a *Wired* contributing writer. “But today’s methods won’t be able to produce the volume of fish needed for tomorrow—they’re too dirty, costly, and politically unpopular” (because the farms spoil waterfront views).

Nine miles off the New Hampshire coast is a fish farm on the open ocean, an experiment run by the University of New Hampshire. A metal cylinder crammed with electronics and extending 10 feet above the surface of the

Atlantic is “the antenna, eyes, and brain of a sprawling apparatus suspended [below] like a huge aquatic insect, its legs of thick steel chain tethered to the ocean floor. The creature’s body is a group of three cages,” inside of which swim multitudes of halibut, haddock, and cod.

Similar experiments are underway in other countries. “In the future, ocean ranches will be everywhere, except they’ll be vastly bigger and fully automated—and mobile,” Mann predicts. “Launched with lab-bred baby fish, these enormous motorized pens will hitch months-long rides on ocean currents and arrive at their destinations filled with mature animals, fattened and ready for market.”

It’s not all clear sailing ahead. Obstacles include a “paltry” federal research budget (\$780,000 this year), legal questions about such ocean-roaming objects, and environmentalists worried about the risk of genetic

pollution from the interbreeding of escaped farmed fish and wild fish.

Like the Green Revolution of the 1960s and 1970s, this oceanic one “will probably have

some negative environmental effects,” says Mann. “But it will also feed countless millions—and possibly stop humankind from plundering the seas bare.”

ARTS & LETTERS

Confessions of a Flower Picker

“Remaking a Norton Anthology” by Jahan Ramazani in *Virginia Quarterly Review* (Spring 2004), 1 West Range, P.O. Box 400223, Charlottesville, Va. 22904-4223.

The intense demands of literary scholarship can often dull the pleasures many of us associate with literature. Such was the sad case for Ramazani, a professor at the University of Virginia, when he was offered the chance to edit a new edition of *The Norton Anthology of Modern Poetry*—the book that delivers *the* poetic canon to tens of thousands of college English students each year. Ramazani was to write overarching introductions, copious footnotes, and the nearly 200 headnotes that outline each poet’s particular literary-historical context, distinctive formal attributes, and biography. Above all, he was to select “the best poems written in English in the last century from across the world.” Faced with this gargantuan task, he turned “pallid.”

He started by reading and rereading the previous edition, which had appeared in 1988. Were the poems still relevant? Imaginative? “Formally skillful? Historically and socially responsive?” Were they too American? Too British? Too postcolo-

nial? After months of deliberation, Ramazani had created a “grand anthological structure—its proportions carefully balanced and calibrated.”

Then he was told to cut \$40,000 worth of permissions costs from his \$500,000 budget. His artful structure gave way to a spreadsheet and a new question: “Should I dump one overpriced poem and buy 10 at a discount?” Even after these reckonings, questions persisted. Which “Nat”—King Cole, Adderley, or Turner—was Amiri Baraka referring to in his poem about Thelonious Monk? Only the poet could answer.

Two years later, in 2003, the anthology—195 poets, 1,596 poems—was ready. Ramazani had excised nearly half of the previous edition and added an entire second volume to make room for additional long poems and essays. He had even changed half the title to *Modern and Contemporary* to highlight the expanded selection of more recent poems. Ramazani had reconceptualized the canon. Though

EXCERPT

Tips for Writers

I was recently asked what it takes to become a writer. Three things, I answered: First, one must cultivate incompetence at almost every other form of profitable work. This must be accompanied, second, by a haughty contempt for all the forms of work that one has established one cannot do. To these two must be joined, third, the nuttiness to believe that other people can be made to care about your opinions and views and be charmed by the way you state them. Incompetence, contempt, lunacy—once you have these in place, you are set to go.

—Joseph Epstein, author of *Fabulous Small Jews* and other books, in *Commentary* (April 2004)