

Dreams of Scientists

The July release of the blockbuster movie, *Inception*, had the positive effect of stimulating most media outlets to offer dream-related feature stories. My local newspaper, the *San Francisco Chronicle*, had a lead story entitled “The Islands in Their Minds,” about the dreams of biologists studying the fragile ecology of the Farallones, a small group of islands located in the Pacific Ocean twenty-seven miles west of San Francisco. It turns out scientists studying the Farallones have been keeping a daily dream log for more than twenty years. I was amazed (and pleased) to see two pages from this log, headed “Island Dreams,” reproduced on the front page of the morning paper!

Many of the dreams recorded by these researchers are anxiety dreams, reflecting concerns about the future of the fragile island ecosystem. For example, in one nightmare hordes of children and dogs swarm over the island, “smashing eggs and running over nests, burrows and dens” of endangered species. Russ Bradley, one of the Farallone researchers, said, “We call them ‘island invasion dreams.’ We all have them.” This echoes the author’s striking observation that the dreams recorded in the Farallones log tend to be “eerily similar”—as one might expect, given the common fears and concerns, as well as waking experiences, shared by the scientists, most of whom live for ten weeks at a time on the isolated islands.

In the days following the publication of this article, I heard an unusual number of comments and discussions about it. Eventually I realized that what had captured people’s attention was that it was *scientists* who were having these dreams.

Why did so many people find this surprising? I think it was the result of two inaccurate but stereotypical views, one of dreams, the other of scientists. The view of dreams is a lingering vestige of Freud’s theory of the unconscious as a seething pool of repressed wishes and desires. In this view, dreams are doubly “irrational,” for they not only arise from a pre-rational source, but are rendered even more bizarre by the subsequent work of the censoring mind that disguises their disturbing content. The view of scientists is that because they are trained to think “rationally,” they are not likely to take dreams seriously. Hence the surprising discovery was that the scientists on the Farallones regard dreams highly enough to keep an ongoing record of them.

The *Chronicle* article did not do as much as it might have to dispel these views. Other than the anxious “island invasion” nightmares, the only other dreams cited were chosen for their “healthy dose of the absurd,” like the one in which the biologists were playing hockey with the cormorants on one of the islands, cheered on by a crowd of drunken elephant seals. This

shows that scientists are human beings, and experience the same kinds of anxieties and bizarre imagery in their dreams as the rest of us. What’s missing is the way in which dreaming can help them *in their scientific work*.

The historical record holds many examples of scientific discoveries and breakthroughs that came in dreams. Some are quite well-known, such as Kekulé’s insight that the structure of the benzene molecule is a ring rather than a chain, or Elias Howe’s solution to the design of the sewing machine needle. Others are less known but just as striking. For example, in her book *The Committee of Sleep*, Deirdre Barrett recounts the story of biologist Margie Profet, who, at a time when menstruation was viewed as an inefficient, poorly-designed process, dreamed of its possible biological function (to help remove invading bacteria)—and was inspired to do the research that proved the dream was right.

In India, I met a man in the petrochemical industry who’d organized a weekly lunch-time dream sharing group for scientists and engineers, and had documented over seventy cases of dreams that led to practical solutions to the problems they were grappling with in their work. Why should this be surprising? We now know, thanks to brain imaging technologies, that much of what goes on during sleep is a continuation—under radically different biochemical conditions—of the same thoughts and concerns that preoccupy us in our waking lives. Scientists will dream about the questions



they are exploring in their waking work, and the dream, with its looser boundaries and more vivid imaginal and associative abilities, will offer an opportunity to “step outside the box” and find fresh ways to look at the problem.

Even mathematics, that most abstract and logical discipline, has its own history of dream solutions and discoveries. Perhaps the most striking example is the great Indian mathematician, Ramanujan. Ramanujan said that he owed all his mathematical discoveries to the Hindu goddess Namagiri, who came to him in his dreams and showed him mathematical equations.

Though she didn’t cite examples like these, Carolyn Jones, to her credit, interviewed several dream researchers before writing her article for the *Chronicle*. One of them, Liza Solomonova, a graduate student at the University of Montreal, told her that “dreams can be a way for new ideas and breakthroughs to form. While asleep, the brain can sort information in new ways, giving the dreamer new understanding upon waking.”

This is as true for scientists as it is for the rest of us.

A handwritten signature in black ink that reads "Richard Russo".