

miles wide" formed by the outer reaches of the sun's magnetic fields.

Packed with absorbing insights and written in an accessible voice, this volume features more than sixty illustrations and halftones that effectively translate these scientific discoveries into simple, visual terms.

Impey is an astronomy professor at the University of Arizona who has written several books on the cosmos, and Henry is an English professor at California State University who authored a book on Virginia Woolf and the discourse of science and astronomy. Their diverse references—ranging from the caves at Lascaux and Pythagoras to Einstein, Carl Sagan, quantum mechanics, and, yes, even Virginia Woolf—enliven and enrich this engaging and beautifully crafted book.

KRISTEN RABE

Identically Different: Why We Can Change Our Genes

Tim Spector

The Overlook Press

Hardcover \$26.95 (352pp)

978-1-4683-0660-6

With British humor, this professor cites cutting-edge twin studies to investigate causes of differences.

The nature vs. nurture pendulum has swung toward genetic predetermination in recent years, with much-hyped searches for (and often, announcements of) gay genes, obesity genes, alcoholism genes, and more. Tim Spector's book *Identically Different* looks to set the record straight by explaining science's current understanding of the roles of environment, genetics, and a third hybrid factor, epigenetics.

Spector is about as well qualified on these topics as any author could be—he's a professor of genetic epidemiology who set up the TwinsUK register in 1995, which continues to provide valuable data on genetic heredity. He's also been quoted often in the media and has appeared in television documentaries.

The title, *Identically Different*, mainly refers to Spector's studies and numerous examples involving identical twins. The book is filled with fascinating, often mystifying, real-life cases of twins separated at birth who exhibit strikingly similar or dissimilar characteristics later in life, or twins raised in seemingly similar environments who differ radically as adults. In each case, Spector probes into the genetic and environmental causes of these differences.

Aside from bringing readers up to the cutting edge of scientific knowledge on these subjects, Spector does an excellent job explaining epigenetics (the influence of environment on genome modifications, and how and when genes are expressed). Here, too, Spector has amazing examples at hand, including illustrating how

the diet of a mother can impact the health and physical makeup of not just her children but also her children's children.

Epigenetics explains much of what's missing in the genes vs. environment debate, but Spector carefully parses just how much is yet unknown. In a chapter discussing talent, he challenges the "genetics" argument that Kenyans and Ethiopians make better long-distance runners and suggests that motivation, not purely physical attributes, seems to be the primary factor in determining athletic and intellectual success. Then, in an admission to how complex these matters are, he concludes that "the key motivation factor is again likely to be a mix of genes and environment." The book's subtitle, *Why We Can Change Our Genes*, is clarified when Spector explains that not only is true genetic predetermination rare but that the choices we make today can indeed affect not just our own genes but those of future generations.

The book is broken into concise chapters with titles like "The happiness gene," "The parenting gene," and "The fat gene," written with occasional bits of British humor that mostly hit the mark. Spector's interesting examples may have readers noticing finger lengths (tied to testosterone exposure in the womb) and checking the plastic bottles they drink from (exposure to BPA, a chemical in many plastics, has been tied to a host of health problems). *Identically Different* cuts to the heart of what makes us the way we are.

PETER DABBENE

Lousy Sex: Creating Self in an Infectious World

Gerald N. Callahan

University Press of Colorado

Hardcover \$19.95 (172pp)

978-1-60732-232-0

Who are we really? Callahan attempts some answers to the age-old question by making the science understandable to the rest of us.

How do we define "self?" For immunologist Gerald N. Callahan, self can be defined by the bacteria that have a hand in defining who we are and where we come from.

For thousands of years, philosophers have pondered what constitutes self. There are a variety of definitions and theories, but perhaps the most intriguing way of looking at self is from the microbiologist's point of view. Self can simply be defined as that part that you don't consume. The bacteria and actions of your body attempt and generally succeed in consuming any foreign invaders, but they tend to leave the self alone. From that point of view, Callahan takes the reader on a fascinating trip defining and clarifying how people, wood lice, clown

fish, and various other forms procreate and create their own concept of self.

Rather like Mary Roach, Callahan has a knack for writing about scientific topics for the general reader. He peppers his ideas with often very personal stories that add depth and emotion to the points he is illustrating. A car accident that he and his wife had runs parallel to the story of Laika, the dog sent up in the first Russian space capsule, illustrating how cold and heartless science can be without concern for living creatures. The reader meets Lisa May, a true chimeric hermaphrodite. Through her story, we see how hormones and gender play into our sense of who we are.

Much of the science is very accessible in this book. Callahan goes out of his way to clarify and explain any terminology or concept that may be confusing for the reader, yet one never feels being patronized. To add to the appeal, Callahan's sense of humor comes through. In the chapter about Beethoven, auditory hallucinations, and syphilis, he tells the story of his uncle Henry, who contracted the syphilitic bacterium from a French prostitute during WWI. "And it wasn't bacteria that sent Henry off to war. That was Woodrow Wilson. Who knows what was infecting him."

As proven in his other works, Callahan is a genuine storyteller who seamlessly combines scientific concepts with everyday life, giving his readers fascinating knowledge in an eminently readable book.

LYNN EVARTS

• SELF-HELP

Freedom from Your Inner Critic: A Self-Therapy Approach

Jay Earley

Bonnie Weiss

Sounds True

Softcover \$16.95 (240pp)

978-1-60407-942-5

By making seemingly abstract concepts concrete, two psychologists offer a self-therapeutic method for quieting one's most harmful self-doubts.

At one time or another, virtually everyone has dealt with an internal voice that undermines self-confidence or even the ability to function. In this comprehensive self-help guide, psychologist Jay Earley and psychotherapist Bonnie Weiss offer specific strategies and tactics designed to blunt the negative damage caused by this voice, which they label the "Inner Critic."

In a logical fashion, the authors provide a full discussion of the Inner Critic, detailing seven specific types of critics that people might have, including "The Perfectionist,"