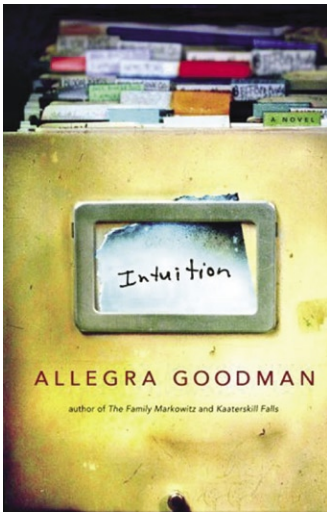


Intuition
Dial Press, 2006
385 pages
$13.00

Novelists, playwrights, and poets are increasingly attracted by scientific themes—C. P. Snow's lament about the "Two Cultures" notwithstanding—but attempts at authentic literary portrayals of scientific practice are still rare. Perhaps this is not so surprising; after all, how easy is it to construct a gripping tale out of cleaning glassware and tending to lab rats? In light of the central and pervasive role of science in contemporary society, though, it would be nice to see more authors taking on that challenge. (See the website LabLit.com, which is "dedicated to real laboratory culture and to the portrayal and perceptions of that culture—science, scientists and labs—in fiction, the media and across popular culture.")

Allegra Goodman's novel *Intuition* is a significant recent contribution to this genre. It tells the story of a research group led by two senior scientists, Sandy Glass and Marion Mendelssohn, at the fictional Philpott Institute in Cambridge, Massachusetts, and consisting of a number of postdocs (among whom Cliff and Robin play the most important dramatic roles) and technicians. Goodman spent a good deal of time talking with and observing researchers at the Whitehead Institute, and it shows: the book does a good job of depicting the quotidian routine of a research lab, the small triumphs and frustrations its members regularly encounter, and the relationships and interactions between them.

Furthermore, Goodman does her best to portray all her characters as "real people" (as opposed to the myth of impersonal scientific researchers) with multiple motivations. I found this aspect much less successful, but that is largely a matter of personal literary taste. I do not care to be *told*, rather than *shown*, what the characters are like, and how we are supposed to think about them. From the very beginning I repeatedly encountered passages—for example, that Marion is "fearsome, implacable, dark eyes glowering" while Sandy is "always cheerful, brimming with the irrepressible joy of his own intelligence"—that made my heart sink. But those who do not object to this style will probably find the book an enjoyable and entertaining read.

The plot is also entertaining, as well as timely and interesting. It concerns a case of possible fraud: Cliff has discovered a viral treatment which appears to make tumors disappear in mice; urged on by aggressive Sandy, the group goes public at an early stage, attracting intense worldwide interest; but Robin, who is assigned to drop her own work and follow up on Cliff's, cannot reproduce his findings. She begins to suspect dishonesty, eventually taking her concerns outside the lab, and a major brouhaha erupts.

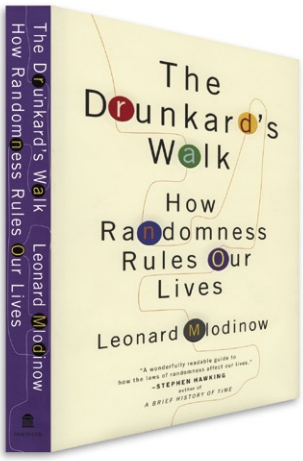
Goodman appropriately tries to highlight the ambiguities inherent in such conflicts, but her effort is problematic, for two main reasons. First, almost no scientific details are provided (for which the author, not a scientist, can certainly be partially excused); it is never clear just what is under dispute. The obvious question is whether or not Cliff deliberately cheated; but since Goodman writes from an omniscient point of view, and puts us inside his head throughout, it is hard to see that this *is* an open question (shades of Agatha Christie's *The Murder of Roger Ackroyd*?). Unless one deliberately suspends close consideration, this narrative line does not hold together at all well.

A much more serious problem with the plot arises from the evolution of the public controversy, which proceeds roughly as follows: after getting no sympathy from coworkers and colleagues, Robin goes to a disgruntled ex-member of the Glass/Mendelssohn group, who passes her suspicions along to two self-anointed fraudbusters at the "Office for Research Integrity in Science" of the NIH, who launch a full-blown investigation that attracts the attention of a powerful, abrasive Congressman, who summons the group to a hearing. . . .

Does this begin to sound familiar? It should: these developments (and many others) closely track those of the Imanishi-Kari/O'Toole conflict from the 1980s, well documented by former

Caltech historian of science Dan Kevles in his 1998 book *The Baltimore Case*. Borrowing from real life is, of course, common practice, but the book contains the usual disclaimer: "Any resemblance to actual persons, living or dead, events, or locales, is entirely coincidental." Expecting us to believe *that* is asking far too much of coincidence; nor is there any mention of any precedent or sources in the acknowledgments. It is ironic, and more than a little disappointing, that in exploring the subject of intellectual misconduct, the author might be charged with having committed a pretty good dose of it on her own part. □—*JL*

Jay A. Labinger is a Faculty Associate in Chemistry and an occasional book reviewer for E&S.



The Drunkard's Walk: How Randomness Rules Our Lives

Pantheon Books, 2008

252 pages

$24.95

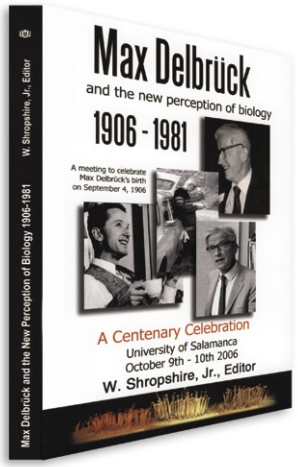
According to the cliché, the only certainty in life is uncertainty. But while tragic accidents, lucky breaks, and close calls often determine the difference between success and failure—or even life and death—our fates aren't just the result of rolling the dice. At least so says Leonard Mlodinow, a lecturer in statistics and computation and neural systems and author of *The Drunkard's Walk: How Randomness Rules Our Lives.* His new book argues that by understanding the profound role of randomness in our daily lives, we can not only make better decisions and acquire a deeper perspective of the world, but also recognize that in many cases, the power to control our destinies is still within our grasp.

The title is taken from a mathematical description of random motion—such as the random path of an air molecule traveling across a room—and, as Mlodinow notes, serves as a metaphor for our meandering lives. *The Drunkard's Walk* is a highly readable tour of probability and statistics, taking us on a narrative path that isn't random, but deliberate and illuminating. Mlodinow shows how we frequently misjudge randomness—underestimating the significance of randomness in business and sports, and seeing patterns where there are none. The history of how mathematicians developed the tools to understand probability and statistics over the last several hundred years forms the narrative backbone, serving as a springboard for introducing basic mathematical concepts. The book, however, is at its best when discussing statistics with contemporary examples, such as the O. J. Simpson trial, psychology experiments, and baseball.

Laced with humor and chock-full of anecdotes and examples, *The Drunkard's Walk* makes statistics clear and entertaining, and challenges us to think more critically. Mlodinow writes, for example, about inherent errors in political polling and standardized tests. And while engrossed in stories of lottery-winners and girls named Florida, the reader learns about Pascal's triangle and Bayesian statistics while hardly realizing it.

In the more speculative and final chapter, Mlodinow argues that chance plays as big a role—if not the biggest—in determining our individual successes as talent, citing the lucky breaks that sparked the careers of Bruce Willis and Bill Gates. For the rest of us floundering around the middle of the bell curve, the recognition that the successful aren't necessarily the best lends some hope. Just as throwing the dice more often improves the chances of winning at the craps table, persistence in life increases the probability of success, Mlodinow says. The moral is another well-worn message: despite the inherent ups and downs of life, we should never give up. □—*MW*

Books (cont'd)



Max Delbrück and the New Perception of Biology

AuthorHouse, 2007

279 pages

$15.49

Max Delbrück (1906–1981) was a founding figure of molecular biology, sharing the 1969 Nobel Prize in Physiology or Medicine for his work on gene replication. A physicist by training who began his career in the lab of Lise Meitner, he became interested in genes in the 1930s and had already made important contributions before becoming a Caltech professor in 1947; he remained on the faculty here for the rest of his life. This book collects the reminiscences given at a celebration at the University of Salamanca in honor of his centenary year—one of three such; for an account of the Caltech one, see *E&S*, 2007, No. 1. The editor, Walter Shropshire Jr., was a research fellow in biology at Caltech from 1957 to 1959. □—*DS*

Letters

I very much enjoyed your article about the late David Elliot. I was an undergraduate at Tech in the 1963–67 time period, and had the great good fortune to be able to take history courses from both Elliot and Huttenback, and English courses from Peter Fay (and I learned to write for news from your predecessor).

The courses about the British Imperial experience in India were absolute gems, taught by people who had been part of the Raj and understood it from both the point of view of historians and participants.

My favorite experience was a class meeting at the Huttenback's home—he was at that point the Master of Student Houses as well as a history professor—and one of the students asked the Huttenbacks and Elliot what it was actually like to live for a number of years in India at that time. Mrs. Huttenback's eyes narrowed ever so slightly, and then she smiled and gently asked, "Do you know that there are seven different kinds of amoebic dysentery?"

BTW, I was an unlikely Caltech student. My father had been professor of California history at City College of San Francisco, and my mother was an English teacher. . . .

Thanks again for your article. Keep up the good work!

Robert D. Parker (BS '67)

Caltech and JPL have left an indelible imprint on the historical record. Among the outstanding faculty are many who have reached beyond their original fields in academe, and pursued new horizons with vision and courage. My father, Fritz Zwicky, was a pioneer in the field of astronomy and astrophysics, pronouncing the amazing theory of Dark Matter in the 1930s. It is not widely known that his efforts also extended to jet propulsion. While serving as research director at Aerojet Engineering Corporation (1943–1949), he helped develop the JATO motors referred to in your article ["From Rockets to Spacecraft: Making JPL a Place for Planetary Science," by Eric M. Conway, *E&S* 2007, No. 4]. He also holds important patents in jet propulsion, including for ramjets and hydrojets.

The enclosed photograph shows him receiving the Presidential Medal of Freedom, given to him at the Aerojet offices in Azusa on September 21, 1949, for his wartime efforts. Dan A. Kimball, Undersecretary of the Navy for Air, is pinning the medal on his lapel while Brigadier General T. C. Chapman of the U.S. Air Force assists. The citation reads, in part, "As Technical Representative, United States Strategic Air Forces in Europe, he contributed immeasurably to Air Technical Intelligence. His initiative, remarkable linguistic abilities, broad knowledge of physics and chemistry as pertains to the art of rocketry—together with an outstanding ability to exploit a foreign technology in rockets, guided missiles and associated equipment for further utilization by the United States, made his services most valuable to our war effort."

Barbarina Zwicky

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