Getting away with it

Intuition

Allegra Goodman

Dial Press, Random House, 2006

344 pp., hardcover, \$25.00

ISBN 0385336128

Reviewed by Clare Thomas

Woo-Suk Hwang and Jan Hendrik Schön; these researchers amazed the world first with their scientific breakthroughs and then with the revelation that they fabricated much of their data. And while Hwang and Schön were the most famous fraudsters of the past few years, the list of scientists alleged to have faked it in the pursuit of scientific success gets ever longer. There's plenty of drama to be found in the real-life examples of fraud in science, but the pressures to succeed and the environment that can tempt some researchers to stretch their data beyond the truth are now explored in fiction, in a novel by Allegra Goodman.

Her story takes place in the fictional Philpott Institute in Massachusetts in the US; a seemingly typical cancer-research lab headed by the ambitious and somewhat fast-and-loose oncologist Sandy Glass and the dedicated and talented Marion Mendelssohn. Their postdoc Cliff, after years of grind and soul-destroying failure, makes a sudden breakthrough: his so-called R7 virus is able to eradicate tumors from mice. The findings propel the lab from obscurity and engender a media frenzy, a *Nature* paper and a large NIH grant, but are the data all that they seem? Cliff's former girlfriend Robin, another postdoc in the lab, suspects not and sets out to try to prove it.

Goodman's greatest success with this book is the accuracy and vividness with which she perfectly captures the day-to-day details of the lab. Her descriptions are delightfully evocative: black mice, for example, are described as "little punks...jumping and flipping over constantly like dark socks in a laundromat"; the smell in the animal facility "like overripe granola." And Goodman's talent for conjuring extends to the characters with which she populates the lab: even the peripheral players—the other lab members, Nanette who runs the glass-washing facility—are convincing, compelling and sometimes uncannily recognizable.

Given the accuracy and attention to detail with which she evokes life in the lab, it's surprising that Goodman's research has been less rigorous in other areas. She strikes a faulty note when describing how Sandy Glass attempts to publicize his findings in the popular press prior to acceptance in *Nature*: few self-respecting scientists

would mount such a large-scale media campaign, writing press releases and giving interviews to popular magazines before the findings have been published in a peer-reviewed academic journal.

But this and other minor blunders can be forgiven and overlooked. There's a bigger disappointment in store. If you want to read this book, then read no further; I'm going to give the ending away.

As an ex-research scientist, I found Goodman's portrayal of the inner workings of lab life—the long hours and the commitment, the passion and the excitement, the peaks and troughs, the camaraderie and the conflict—very familiar, so after a short burst of amazement that a non-scientist had got so much so right, reading the book became a bit of a busman's holiday. What kept me reading was the prospect of discovering whether Robin was right and Cliff had indeed falsified his data. And if the R7 findings were fraudulent, what would the consequences be? What moral tale would Goodman spin for her readers?

It comes as no real surprise that Cliff eventually admits to manipulating his data. But what is surprising, and vaguely disappointing to those expecting a moral, are the consequences that Goodman weaves for Cliff and his mentors, Mendelssohn and Glass, who bear a large share of the responsibility. Perhaps only Glass gets his comeuppance: the final outcome of an external investigation into the veracity of the R7 findings exonerates the researchers, but the two lab heads know otherwise and are unable to continue working together. Glass therefore trades his dream of pioneering scientific breakthroughs for the higher salary and perhaps more comfortable life of a private consultant. But he does not retract the paper from *Nature* and Cliff gets another job at the NIH. And Goodman's fate for Mendelssohn is even more surprising: she emerges as a stronger scientist from the experience. She simply washes her hands of the affair, wishes to retract the paper (but doesn't), sacks Cliff, and then finds success with a new line of investigation, free from the distractions of Glass's ambition and hunger for glory.

Goodman's novel offers a realistic glimpse of life as a research scientist and will be intriguing reading for non-researchers, but as a scientist I found the message of the tale (or lack thereof) unsatisfying. Real-life examples have been more dramatic and have provided a stark warning to other researchers who might be tempted to stretch the truth: Hwang, for example, lost his post at Seoul National University and is undergoing an investigation into whether he criminally misused millions of dollars of state funds; other researchers who have fallen foul of the temptation to fabricate have been sacked and have vanished into obscurity.

But on second thoughts, Goodman has probably hit on a depressing truth. Hwang and Schön were extremes, and the extent of their fabrications was astonishing. It is impossible to believe that they could have imagined they would escape detection. Cliff, on the other hand, simply decided to omit some data to make his findings look better. So perhaps we can take a message from Goodman's tale. Perhaps such instances of fraud are common, difficult to prove and easy to get away with. Food for thought.

Clare Thomas is a Senior Editor at *Nature Medicine*