

where else is frequently a foolish enterprise. In the end, he convincingly demonstrates that no single factor created the New York Miracle—not Bratton, not Maple, not even Giuliani. The 1990s were simply a time when a number of trends happened to merge all at once. Karmen's answer seems right, though hardly satisfying—or even especially useful for the future. That's critical, because New York may be in for another tough ride: Even as the NYPD is basking in the glow of its success, Karmen notes, the murder rate is going up again.

Chromosome Clips

By Steve Olson

COULD A JOURNALIST WORKING entirely from news accounts write an effective history of the war in Vietnam before the fall of Saigon? That's the kind of task Kevin Davies has set himself in *Cracking the Genome: Inside the Race to Unlock Human DNA*. For the past 12 years, an international consortium has been methodically deriving the sequence of the 3 billion nucleotides that make up the human genome. The pace of sequencing picked up appreciably a few years ago when a U.S. company, Celera Genomics, vowed to do the job much faster, partly as a way to secure commercial rights to valuable genetic information.

Neither sequencing effort is finished. A hyped-up news conference last summer to celebrate the "completion" of the sequencing had more to do with politics, patenting, and the stock market than with science. Celera and the international genome project are both still filling in gaps and correcting errors. Given the difficulties that are anticipated in the final stages of sequencing, it will probably be necessary at some point to declare victory and walk away.

Davies does an excellent job of summarizing the last dozen years of genetics news. He has read everything he possibly can about James Watson, the co-discoverer with Francis Crick of the structure of DNA and the first director of the U.S. government's genome program; Francis Collins, a former University of Michigan researcher who took over the genome program in 1993; and Craig Venter, a researcher who left the National

Institutes of Health to found first the privately funded Institute for Genomic Research and later Celera. Davies must have filing cabinets full of articles about the competition between the government and Celera, and the potential uses of sequence data. Unfortunately, the book reads more like a fantastically detailed clip job than like a coherent story.

Davies tries to put events in context but is prone to rampant overenthusiasm. Sequencing the genome is alternately described as a "staggering achievement," "the defining moment in the evolution of mankind," "the greatest adventure of modern science," and "the sacred birthright of humanity." It is compared to the invention of the wheel, the realization that the Earth goes around the sun, the Apollo moon landings, and finally understanding "the language of God" (to which I replied, in the margins of my copy of the book, "Not my God").

Actually, the sequencing of the human genome hasn't been any of these things. It has been a classic case of bureaucratic science, the ultimate piece of grind-it-out biology. Deriving the sequence has not been an act of inspired creativity, like Einstein's development of relativity theory, or even Watson and Crick's discovery of the structure of DNA in 1953. If the human genome hadn't been more or less sequenced last year, it would have been sequenced this year, or next year. As soon as the tools needed to do the job became available, it had to be done.

In that respect, Collins, Watson, and Venter come across more as bureaucrats than as scientists. Their job has been to marshal the troops and spin the press, with an occasional stop by the lab to see how things are going. Davies could have written a book of bureaucratic intrigue, full of oversized egos and scheming subordinates. Instead, he has chosen to focus tightly on the science.

The most interesting part of the story has been Craig Venter's contribution to the sequencing effort, and Davies covers this material well. Venter realized in the early 1990s that the approach being taken by the government was much too conservative. He had several very good ideas about how to do things differently. Fortunately, he was able to

find financial backers with pockets deep enough to implement his ideas. And, even more fortunately, his ideas worked.

In the process, Venter was forced to move from the public sector to the private sector, where he had no choice but to try to make money from his work. That raised the ire of his former colleagues, though they would have done exactly the same thing if their positions had been reversed. Venter returned their criticism with scorn,

and the science press, usually relegated to colorless stories of receptors and clinical trials, egged on everyone in the conflict to get the best copy possible.

I began this book thinking it would go well beyond what has been reported in the press. As Davies tells us in the very first paragraph, he was the inaugural editor of *Nature Genetics*, an offshoot of the prestigious British science journal *Nature*. He knows the people he's writing about and has published some of their important papers. He should have been able to call them and ask them whatever he wanted. He appears, however, to have written the book having rarely left the library. All this information in a single document is useful, but one gets the sense of an opportunity missed.

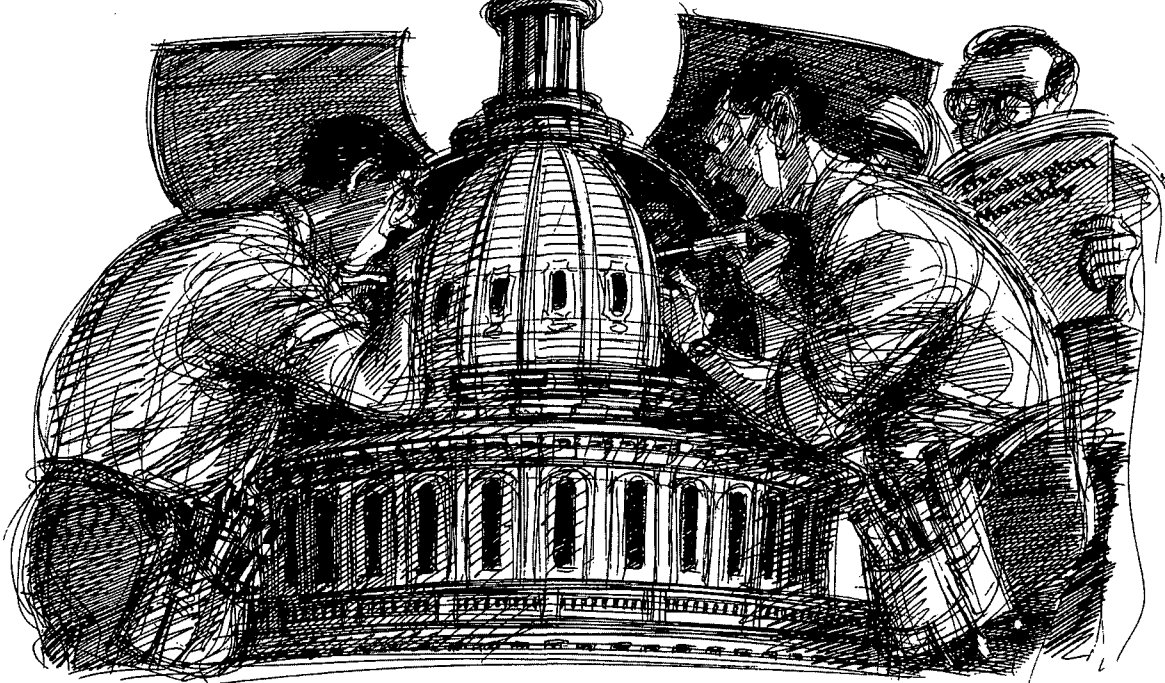
Sometimes the writing seems rushed, perhaps in an effort to keep the book as current as possible. Definitions, characterizations, and jokes get repeated. Especially grating is Davies's tendency to describe complicated people with one-term labels: irrepressible, heroic, intellectual, charming.

Still, Davies really does know his biology. His descriptions are clear and accurate. His judgements about what to include and what to exclude are sound. He has a good sense of how the pieces of his story fit together. Chapters that describe the sequencing effort are interspersed with chapters that tell how genetic data are being used, and all are full of information.

If you've been meaning to read all those stories about molecular biology and haven't gotten around to it, this is the perfect book to help you get up to date. But if you want an inside account of what will certainly be a milestone in science, I counsel patience. Davies' book

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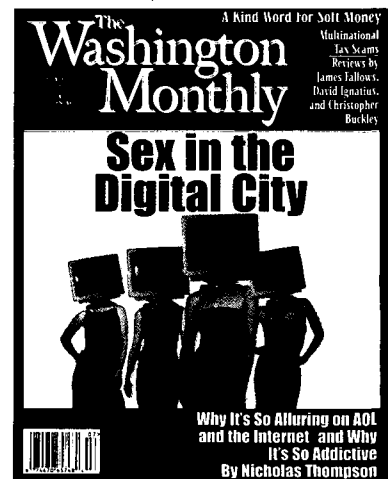
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STEVE OLSON *has written about science for The Atlantic Monthly, Science, and other magazines.*

Gettin' Lucky With Greenspan

By Noam Scheiber

THE OPENING CHAPTER OF BOB Woodward's *Maestro* is riveting stuff. It is October of 1987, barely two months into Alan Greenspan's tenure at the Federal Reserve, and the chairman is in Dallas for a routine speaking engagement. Concerned about the market's Monday-morning doldrums, Greenspan checks in with a local Fed official shortly after arriving. The official offers a perfunctory response—"down five oh eight"—in which Greenspan finds a measure of relief. Then the official clarifies: the market is not down 508 points. It's down 508 points.

It turns out Woodward has parachuted us right into Black Monday, the biggest one-day slide in stock market history. But not to worry. With panic swirling around him—White House Chief of Staff Howard Baker whimpering like an incontinent lap dog, New York Fed President William Corrigan spewing invectives ("Alan, you're it ... Goddammit, it's up to you!")—Greenspan not only saves the day, he does so with Bond-like panache. This, of course, is the genius of Alan Greenspan.

But it's worth considering exactly what Greenspan does here. As far as I can tell from Woodward's account, it's only two things: one, issue a one-sentence public statement that seems to calm the markets; and two, mastermind a last-ditch plan that would guarantee payments between financial institutions (a lapse in those payments could have unraveled the entire financial system). The first strikes me as a no-brainer—what else do you do if you're the Fed chairman?—even though the insiders Woodward later quotes call it "brilliant." The second turned out to be irrelevant. As it happened, the market reversed course when a handful of Wall

Street players bought \$60 million in futures contracts the following afternoon. To this day, Greenspan still doesn't know who organized it.

And this, in a nutshell, is the problem with *Maestro*. Where Woodward's Greenspan cuts an Olympian figure, the real Greenspan was just a bright guy with better-than-average instincts. He has no special insight into the world that was changing around him and, in the end, he simply benefited from favorable forces beyond his control. Woodward is right that the story of the Greenspan era is the story of 1987 writ large. He's just wrong about what happened in 1987.

Needless to say, someone intent on taking a critical view of Greenspan wouldn't suffer for lack of material. Take early 1994. Despite few indications of inflation as unemployment fell, signs we now recognize as the rumbling of a new economy, Greenspan's Fed clung to the same model that had informed central banking for years. The key to that model is what economists call the non-accelerating inflation rate of unemployment, the point beyond which further reductions in unemployment tend to trigger inflation, and beyond which central bankers tend to get interest-rate happy.

Of course, the funny thing about a new era is that you don't know it's new while you're in it. At least not right away. Given that ignorance, Greenspan did what any reasonable human being would do: He played by the rules he thought were in place.

Still, as time went on, unemployment continued to fall and inflation remained at bay. As Woodward tells it, this moved some to argue that the traditional model no longer applied, and that a continued drop in unemployment didn't necessarily spell trouble. Yet Greenspan was unconvinced. (In fact, he squeezed one proponent of this view out of the vice chairmanship of the Fed.) The Fed doubled interest rates between 1994 and 1996.

To be sure, that policy ultimately bought the Fed the credibility to lay off interest-rate hikes when it finally realized they weren't necessary. But it's tough to imagine Greenspan anticipat-

ing this benefit at the time. Yet Woodward not only praises Greenspan for the approach, he further credits it with what's known as a soft landing, essentially prolonging an expansion by slowing it down. It may have. But, if so,

there's no question Greenspan benefited from a bit of dumb luck along the way. Had this been an ordinary expansion rather than the product of a revolution in information technology,

the only thing Greenspan's interest rate hikes would have softened was Clinton's approval ratings. (George Bush is still convinced Greenspan cost him reelection by raising interest rates in 1991.)

Not that Woodward's account entirely misses the point. Perhaps no less important than Greenspan's Fed stewardship was his role as an economic adviser. And Woodward does readers a service by pointing out that it was Greenspan, along with Lloyd Bentsen and Robert Rubin, who gave Clinton the best piece of advice he received as president: Eliminate the deficit and Wall Street will reward you with lower long-term interest rates and subsequent economic growth.

That said, Woodward is ultimately the wrong man to write a definitive history of the Greenspan era. His treatment of economic issues, while nominally correct, betrays the sort of shallow understanding you'd get from a Texas governor in a presidential debate. Economic concepts get thrown around like names of obscure foreign leaders—often incorrectly, though these are, of course, forgivable offenses. Less forgivable are the deeper questions that go unresolved at best, and unraised at worst. (Is the Fed's only legitimate objective stable prices, or should it actively promote economic growth as well? Should the Fed have a long-term game plan or should it proceed blindly from one Federal Open Market Committee meeting to the next, as it seemed to under Greenspan?) And then there's the biggest question of all: Is it Greenspan we should thank for our historical economic success? On this question, Woodward altogether whiffs.

NOAM SCHEIBER *is a reporter at The New Republic.*

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