

Neal Stephenson's Past, Present, and Future

The author of the widely praised Baroque Cycle on science, markets, and post-9/11 America
by Mike Godwin

If you met the novelist Neal Stephenson a decade ago, you would have encountered a slight, unassuming grad-student type whose soft-spoken demeanor gave no obvious indication that he had written the manic apotheosis of cyberpunk science fiction (now Crash which computer viruses start invading hacker minds). It wasn't his debut—he'd published two earlier novels in the 1980s—but the book was such a hit that it put his name on the science fiction map in a way the earlier efforts had not.

Meet Stephenson today, and you'll meet a well-muscled, shaven-headed, bearded fellow who's just published a highly acclaimed, massively popular 1000-page novel set mostly in the 17th century. Talk to him, though, and you still hear the rigorously humble guy of 10 years ago. Read that trilogy—Quicksilver, The Confusion, and The System of the World collectively called The Baroque Cycle—and you'll have the uncanny sense that you're reading some new kind of science fiction. Actually, with every Stephenson book—Snow Crash you feel that you're reading some new kind of science fiction, regardless of the nominal set and settings of the story.

The three parts of The Baroque Cycle were published at six-month intervals in 2003 and 2004; they feature historical figures ranging from Newton and Leibniz to Louis and a very young Benjamin Franklin, bound up in a narrative with the fictional ancestors of the characters in Stephenson's similarly huge, cryptology-focused Cryptonomicon. Like Cryptonomicon, the trilogy has attracted praise from mainstream critics as well as Stephenson's science fiction fan base. The Village Voice calls the series "a work of idiosyncratic beauty whose plots boast tangled, borderless threads." It says it is "a far more impressive literary endeavour than most so-called 'serious' fiction." Even a mixed review of Quicksilver in The Washington Post describes it as "often brilliant and occasionally astonishing."

Stephenson has a substantial libertarian following as well, and not merely because the decentralized, post-statist social systems he describes in Snow Crash and The Diamond Age (1995) are so radically different from modern government. The Baroque Cycle, among other things, a close look at the rise of science, the market, and the nation-state, themes close to any classical liberal's heart. Reading it means reading three long, encyclopedic books and maybe spending half a year in an earlier century. It's not the kind of thing the average reader takes on lightly. But once you find you have a taste for Stephenson's broad range of obsessive interests, his fine ear for period and modern English prose and speech, and his gift for making the improbably comic seem eminently human, the question no longer is whether you'll read his books—it's when.

Q: In The Baroque Cycle we see two different kinds of nation-states at war with each other: traditional monarchies vs. the modern mercantile state. Some readers see political themes in Snow Crash, The Diamond Age, and Cryptonomicon—e.g., that traditional governmental institutions have collapsed or mutated into some less central form. Is this something you see as inevitable?

I can understand that if you are the sort of person who spends a lot of time thinking about government and commerce, then by reading Snow Crash, The Diamond Age, Cryptonomicon, and The Baroque Cycle through that lens, and by squinting, holding the books at funny angles, and jiggling them around, you might be able to perceive some sort of common theme. But it is a stretch. The themes you mention are so vast and so common to all societies and periods of history that I would find it difficult to write a novel that did not touch on them in some way.

In general I try to avoid the easy, the glib, and the oversimplified in my books. I don't always succeed, but that is my goal. A way to approach that goal is to try to see things through the eyes of reasonably well-wrought characters. So, if I'm writing a book set years ago, when the old medieval system of titled nobility is losing ground to a new power system based on international trade, then I try to get inside the heads of people who lived in those days and see things their way. Similarly, if I am writing something set in a high-tech world where the nation-state seems to be losing ground as compared to other sorts of entities, such as megacorporations or traditional cultural groups, I'm going to do my best to reflect that. It is the sort of thing that intelligent people think about from time to time, and it would seem stilted to portray otherwise intelligent and self-aware characters who never think about such topics.

Much of what has gone on since 1991 not only here but in other places, like the Netherlands, looks to me like a reversal of the trends of the previous couple of decades. Government is getting more powerful, and its (perceived) usefulness and relevance to the average person is more obvious than it was 16 years ago.

Q: *Snow Crash* is almost a parody of a libertarian future. Do you think the anarchy-group-based societies you outline in that book are on their way? Do you see that as a warning note, or a natural state we're progressing toward?

I dreamed up the *Snow Crash* world 15 years ago as a thought experiment, and I tweaked it to be as funny and outrageous and graphic novel-like as I could make it. Such a world wouldn't be stable unless each little "burbclave" had the ability to defend itself from all external threats. This is not plausible, barring some huge advances in defensive technology. So I think that if I were seriously to address your question, "Do you see that as a warning note, or a natural state. . . ?," I would be guilty of taking myself a little bit too seriously.

Speaking as an observer who has many friends with libertarian instincts, I would point out that terrorism is a much more formidable opponent of political liberty than government. Government acts almost as a recruiting station for libertarians. Anyone who pays taxes or has to fill out government paperwork develops libertarian impulses almost as a knee-jerk reaction. But terrorism acts as a recruiting station for statists. So it looks to me as though we are headed for a triangular system in which libertarians and statists and terrorists interact with each other in a way that I'm afraid might turn out to be quite stable.

Q: You gave a speech at the Computers, Freedom, and Privacy Conference a few years back in which you suggested that the focus on issues like encryption was too narrow, and that we should give more attention to what theologian Walter Wink calls "domination systems." This surprised some of the attendees, partly because it reached outside the usual privacy/free speech issue set and partly because, hey, you were citing a theologian. What brought you to Walter Wink, and what other light do you think theologians can shed on our approaches to government?

This probably won't do anything to endear me or Wink to the typical reader, but I was made aware of him by a Jesuit priest of leftist tendencies who had been reading his stuff.

It's almost always a disaster when a novelist decides to become political. So let me just make a few observations here on a human level—which is within my comfort zone as a novelist—and leave it at that.

It's clear that the body politic is subject to power disorders. By this I mean events where some person or group suddenly concentrates a lot of power and abuses it. Power disorders frequently come as a surprise, and cause a lot of damage. This has been true since the beginning of human history. Exactly how and why power disorders occur is poorly understood.

We are in a position akin to that of early physicians who could see that people were getting sick but couldn't do anything about it, because they didn't understand the underlying causes. They knew of a few tricks that seemed to work. For example, nailing up plague houses tended to limit the spread of plague. But even the smart doctors tended to fall under the sway of pet theories that were wrong, such as the idea that diseases were caused by imbalanced

humors or bad air. Once that happened, they ignored evidence that contradicted their theory. They became so invested in that theory that they treated any new ideas as threats. But from time to time you'd see someone like John Snow, who would point out, "Look, everyone who draws water from Well X is getting cholera." Then he went and removed the pump handle from Well X and people stopped getting cholera. They still didn't understand germ theory, but they were getting closer.

We can make a loose analogy to the way that people have addressed the problem of power disorders. We don't really understand them. We know that there are a couple of tricks that seem to help, such as the rule of law and separation of powers. Beyond that, people tend to fall under the sway of this or that pet theory. And so you'll get perfectly intelligent people saying, "All of our problems would be solved if only the workers controlled the means of production," or what have you. Once they've settled on a totalizing political theory, they see everything through that lens and are hostile to other notions.

Wink's interpretation of the New Testament is that Jesus was not a pacifist milksop but (among other things) was encouraging people to resist the dominant power system of the era, that being the Roman Empire. Mind you, Wink is no fan of violence either, and he devotes a lot of ink to attacking what he calls the Myth of Redemptive Violence, which he sees as a meme by which domination systems are perpetuated. But he is clearly all in favor of people standing up against oppressive power systems of all stripes.

Carrying that forward to the present day, Wink takes a general interest in people in various places who are getting the shaft. He develops an empirical science of shaftology, if you will. (Of course he doesn't call it shaftology; that's just my name for it.) He goes all over the world and looks at different kinds of people who are obviously getting the shaft, be they blacks in apartheid South Africa, South American peasants, or residents of inner-city neighborhoods dominated by gangs. He looks for connections among all of these situations and in this way develops the idea of domination systems. It's not germ theory and modern antibiotics, but it is, at the very least, a kind of epidemiology of power disorders. And even people who can't stomach the religious content of his work might take a few cues from this epidemiological, as opposed to theoretical/ideological, approach.

Q: The Baroque Cycle suggests that there are sometimes great explosions of creativity, followed by that creative energy's recombining and eventual crystallization into new forms—social, technological, political. Are we seeing a similar degree of explosive progress in the modern U.S.?

The success of the U.S. has not come from one consistent cause, as far as I can make out. Instead the U.S. will find a way to succeed for a few decades based on one thing, then, when that peters out, move on to another. Sometimes there is trouble during the transitions. So, in the early-to-mid-19th century, it was all about expansion westward and a colossal growth in population. After the Civil War, it was about exploitation of the world's richest resource base: iron, steel, coal, the railways, and later oil.

For much of the 20th century it was about science and technology. The heyday was the Second World War, when we had not just the Manhattan Project but also the Radiation Lab at MIT and a large cryptology industry all cooking along at the same time. The war led into the nuclear arms race and the space race, which led in turn to the revolution in electronics, computers, the Internet, etc. If the emblematic figures of earlier eras were the pioneer with his Kentucky rifle, or the Gilded Age plutocrat, then for the era from 1940 to 2000 it was the engineer, the geek, the scientist. It's no coincidence that this era is also when science fiction has flourished, and in which the whole idea of the Future became current. After all, if you're living in a technocratic society, it seems perfectly reasonable to try to predict the future by extrapolating trends in science and engineering.

It is quite obvious to me that the U.S. is turning away from all of this. It has been the case for quite a while that the cultural left distrusted geeks and their works; the depiction of technical sorts in popular culture has been overwhelmingly negative for at least a generation

now. More recently, the cultural right has apparently decided that it doesn't care for some of what scientists have to say. So the technical class is caught in a pincer between these two wings of the so-called culture war. Of course the broad mass of people don't belong to one wing or the other. But science is all about diligence, hard sustained work over long stretches of time, sweating the details, and abstract thinking, none of which is really being fostered by mainstream culture.

Since our prosperity and our military security for the last three or four generations have been rooted in science and technology, it would therefore seem that we're coming to the end of one era and about to move into another. Whether it's going to be better or worse is difficult for me to say. The obvious guess would be "worse." If I really wanted to turn this into a jeremiad, I could hold forth on that for a while. But as mentioned before, this country has always found a new way to move forward and be prosperous. So maybe we'll get lucky again. In the meantime, efforts to predict the future by extrapolating trends in the world of science and technology are apt to feel a lot less compelling than they might have in

Q: Is The Baroque Cycle science fiction?

Labels such as science fiction are most useful when employed for marketing purposes, i.e., to help readers find books that they are likely to enjoy reading. With that in mind, I'd say that people who know and love science fiction will recognize these books as coming out of that tradition. So the science fiction label is useful for them as a marketing term. However, non-S.F. readers are also reading and enjoying these books, and I seem to have a new crop of readers who aren't even aware that I am known as an S.F. writer. So it would be an error to be too strict or literal-minded about application of the science fiction label.

Q: To some of your longstanding readers, it may be a bit of a jolt to find themselves in the 17th- and 18th-century settings of this new trilogy. Is there any clear line connecting your earlier novels to your most recent ones?

The progression from my earlier S.F. works set in the future to The Baroque Cycle is easy to explain:

- The earlier books like Snow Crash and The Diamond Age actually had a lot of historical content in them.
- Obviously, I was paying a lot of attention to information technology.
- Historical novels, such as alternate histories, are common in the S.F. world.
- The Second World War has been, and continues to be, fertile ground for novelists and other artists.
- Taking into account all of the above, it was reasonable, verging on obvious, to write a historical S.F. novel about the origins of information technology in the Second World War (Cryptonomicon). That book also ended up having a lot to do with money.
- As I was working on Cryptonomicon, I became aware that a) Leibniz had done a lot of work with information technology and b) Newton had done a lot of work on money, and of course I already knew that c) Leibniz and Newton hated each other and had a philosophical war. When I began to study the period of time in which these two men lived I discovered that d) it was a fascinating epoch in many, many ways. So again, it became reasonable, verging on obvious, to write something about that topic. But the complexity of the era was such that I didn't think I could tell the story I wanted to tell in a single book. And yet the excitement and splendor of the times were such that I hoped I might be able to sustain a reasonably interesting narrative over a large number of pages.

Q: One of the things you discover reading *The Baroque Cycle* is just how much of today's understanding of the world—not just the physical world, but the social and monetary worlds—derives from ideas that were current in the time of Newton and Leibniz. Was that a surprise to you when you were researching the period?

The initial surprise was that Leibniz had done so much computer-related work so early. I got that from George Dyson's *Darwin Among the Machines*. When I began to read about the period, I was surprised by the sophistication of the Amsterdam stock market and the complexity of the Lyonnaise financial system. But the greatest single surprise for me was the welter of ideas contained in [Robert] Hooke's *Micrographia*. Hooke talks about an incredibly wide range of topics in that volume.

One is how we ought to define thinking—what is intelligence? He cites the way that flies are drawn to the smell of meat, which seems like intelligent behavior. But then he cites the counterexample of a trap that kills an animal. To a primitive person who didn't know that the trap had been invented by a person, it might seem that the trap itself possessed intelligence and will. Of course, this isn't really the case; it's just a dumb mechanism reflecting the intelligence of him who created it. But, Hooke says, who are we to say that a fly isn't just a more complicated mechanism that is designed to fly toward the smell of meat? In which case it isn't being intelligent at all, only reflecting the intelligence of the Creator.

The final surprise I'll mention is that Leibniz's system of doing physics, which is based on fundamental units called monads, has got a few things in common with the modern notion of computational physics, or "it from bit." Furthermore, Leibniz's rejection of the concept of absolute space and time, which for a long time seemed a little bit loony to people, enjoyed a revival beginning with Ernst Mach.

One could argue that people like Leibniz and the others were able to come up with some good ideas because they weren't afraid to think metaphysically. In those days, metaphysics was still a respected discipline and considered as worthwhile as mathematics. It got the student kicked out of it through much of the 19th century and became a byword for mystical, obscurantist thinking, but in recent decades it has been rehabilitated somewhat.

At bottom, anyone who asks questions like "Why does the universe seem to obey laws?" or "Why does mathematics work so well in modeling the physical universe?" is engaging in metaphysics. People like Newton and Leibniz were as well-equipped for this kind of thinking as anyone today, and so it is interesting to read and think about their metaphysics. Seventeenth-century chemistry may have been rudimentary, and of only historical interest today, but 17th-century philosophy is highly developed and still interesting to read.

Q: *The Baroque Cycle* is an unusual work of fiction in that it includes an extensive bibliography. Were you pre-emptively answering critics who might not appreciate how much of these books was drawn from life?

I didn't anticipate (and so far have not seen) any such line of attack from critics and so made no effort to pre-empt it. It just seemed obvious to me that anyone who actually bothered to read *The Baroque Cycle* must have an interest in that era and might want to do some further reading, and so as long as I was killing trees I figured I'd try to save them some time and hassle by supplying a few pointers on where they might look.

Q: Your Newton and Leibniz (and the fictional Daniel Waterhouse) are remarkable characters because of their deep interest in almost everything around them. Are there modern figures who in your opinion show that range of interests?

To be interested in too many things is not conducive to professional advancement in the sciences today. You can't write a general Ph.D. dissertation. You have to pick something very specific. What does happen from time to time is that you'll have one scientist working on a very specific problem in one field, and another working on what seems to be an altogether different problem in another field, and somehow a spark will jump between them and they'll end up writing a joint paper.

Freeman Dyson and his son George Dyson are two people with extraordinarily broad scope. Beyond that, it is difficult to generalize. One encounters high-tech geeks, lawyers, ministers, businesspeople, soldiers, and construction workers who have made themselves extremely erudite by reading a lot of history, science, and philosophy. In an earlier era, people like these might have gravitated to the Royal Society, and indeed one of the many remarkable things about the early Royal Society was its ability to gather in such people, combined with its ability to identify and marginalize “enthusiasts” (cranks) while fostering the ones who had something to contribute. Modern-day scientific institutions tend to value specialization. But that is an unavoidable consequence of the advancement that has taken place in all sciences in the last 350 years.

Q: A critic once said of Thomas Pynchon that he was one of the few modern novelists for whom what the characters do for a living is more defining than what their emotional relationships are. It seems to me that you have that same focus. In *The Baroque Cycle*, the biggest romantic relationship in Daniel Waterhouse's life occurs mostly off stage, unless you count his difficult friendship with Isaac Newton.

There's a false dichotomy embedded in that. It's possible to have an emotional relationship with what you do for a living. And this is especially true when you work with other people, because naturally you form emotional relationships with those people, which get all tangled up with your relationship to the work itself.

Daniel Waterhouse has all sorts of emotional relationships with people. It is true that his romantic relationships with women play little overt role in the book. But he's got a quite complex web of relationships to his father and to the rest of his family, as well as to people like the Bolstroods, who are so close that they might as well be family. And over the course of the story he develops relationships with people like Wilkins, Hooke, Oldenburg, Newton, and Leibniz. The book is much more about those relationships than what Daniel does for a living. We actually see very little of what Daniel does for a living and much more of his interactions with these other people. The reason he is summoned back from Boston in the opening chapters of *Quicksilver* is precisely because he is known to have relationships with Newton and Leibniz that no one else has.

Q: In the last decade or two, there's been a surge of fiction set in the 16th century: Tremain's *Restoration Pears*, An Instance of the Fingerpost, *The Cavalier's Girl with a Pearl Earrings*, there something about the era that speaks with particular significance in the 21st century?

The glib answer would be that this is such a broad question that I could only answer it by writing a big fat trilogy set during this era. And if I try to answer this question discursively, that's what it's going to turn into. So I'll fall back on saying that it just feels interesting to me.

Here are a few specifics. The medieval is still very much alive and well during this period. People are carrying swords around. Military units have archers. Saracens snatch people from European beaches and carry them off to slavery. There are Alchemists and Cabalists. Great countries are ruled by kings who ride into battle wearing armor. Much of the human landscape—the cities and architecture—are medieval. And yet the modern world is present right next to all of this in the form of calculus, joint-stock companies, international financial systems, etc. This can't but be fascinating to a novelist.

Some older systems have reached a splendid apotheosis. Probably the most splendid is the court of Louis XIV at Versailles. Others mentioned include the Spanish Empire, the Mogul Empire, and the Ottoman Empire. Unfortunately it was not possible to explore all of these in very much detail in these books without making the cycle five times as long as it was already.

At the same time, with the benefit of hindsight we can see that all of those great systems were peaking and going into decline. The most conspicuous example, again, is Louis XIV's version of the French monarchy, which held together as long as he was there to run it. But he was one of a kind, and as soon as he died it all began to unravel and ceased to exist in a few decades.

Again with hindsight, we can see that the new structures and systems that supplanted the old ones were being established during this period. And they were being established in some unlikely places by some unlikely people. The role of persecuted religious minorities—Jews, Huguenots, Puritans, Armenians—is especially interesting here.

That's all to give some explanation of why the period is interesting to me. Of course, I can't speak for the other writers you have mentioned.

Q: In *The Baroque Cycle* with some exceptions, you stick to a modern, comic mode. Since it's clear from your parodic passages that you can do period voices when you want to, why did you choose to make the language so modern?

The *Three Musketeers* has a distinctly 19th-century flavor, even though it's set in the 17th century. Shakespeare's *Julius Caesar* reads like an Elizabethan play, not like an ancient Roman history. I'm hesitant to draw such comparisons because there is always the critic who jumps in with the cheap shot: "Oh, look, he's comparing himself to Shakespeare." So as a parenthetical aside to those who think that way, I'll stipulate that I'm not a Shakespeare or even a Dumas, but I am capable of learning from them.

I could have tried to write the entire *Baroque Cycle* in Jacobean English, but at some point I'd have had to ask myself, "Who am I kidding? Everyone knows this was written in the 21st century." The sensibility from which it's written is that of the high-tech modern world. To purge the whole cycle of all traces of modern English would have seemed forced and absurd. So I just wrote it in whatever language seemed best to get the story across, which in some places was modern-sounding English and in other places was period English.

Q: There are some mysteries in the trilogy that you don't fully explain.

Mysteries and unresolved questions are a part of real life, and so it's OK for them to exist in novels. As a matter of fact, I'm inclined to be a bit suspicious of any novel in which everything gets tidily resolved at the end. It doesn't feel right for me to do this. So I typically leave some things unresolved. It's not an oversight.

Contributing Editor Mike Godwin interviewed Stephenson, primarily via e-mail, in late fall.