

# Quicksilver Annotations

## v Baroque Cycle (Neal Stephenson)

Why Baroque? Because it is set in the Baroque, and it IS baroque. Why Cycle? Because I am trying to avoid the T-word (“trilogy”). In my mind this work is something like 7 or 8 connected novels. These have been lumped together into three volumes because it is more convenient from a publishing standpoint, but they could just as well have been put all together in a single immense volume or separated into 7 or 8 separate volumes. So to slap the word “trilogy” on it would be to saddle it with a designation that is essentially bogus.

Having said that, I know everyone’s going to call it a trilogy anyway.

## vii To the woman upstairs (Jeremy Bornstein)

The author’s office is in the basement of his home, and this dedication is to his wife.

## ix Many other scholarly works (Jeremy Bornstein)

It might be nice to create a Quicksilver Reference Bibliography to list some of the scholarly works that are mentioned by the author here.

I will do this when things calm down a little bit, but it might not happen for a couple of weeks. Neal Stephenson 10:56, 6 Oct 2003 (PDT)

## xiii Invocation (Neal Stephenson)

This poem has nothing to do with the book’s subject matter. It is a very old tradition to invoke the Muse. I think it is a way for the author to express his or her sense of utter helplessness at the hands of whatever circumstances, humors, moods, or what-have-you make it possible for writing to take place. The Muse theory is very old but makes as much sense as any more modern explanation, and so I thought it wouldn’t hurt, and might help.

## 1 Those who assume hypotheses... (Neal Stephenson)

Cotes probably intended this as a way of bashing Leibniz. Newton said “I do not frame hypotheses” (hypothesis non fingo) at least partly as a way of explaining why he did not address the underlying nature of gravity and of force in his work. Leibniz and others saw this as a flaw and were not shy about framing hypotheses of their own. Cotes is saying here that Leibniz’s work is nothing more than an “ingenious romance.”

The word “romance,” among other things, is a synonym for “novel” and so this quote may also be read as a play on words, telling the reader something about the romance that they are about to read. This romance (The Baroque Cycle) assumes hypotheses as a first principle, i.e. it is based on some fictitious imaginings of the author. So it is not a history, but merely a “romance” which I hope at least some readers will find “ingenious.”

The purpose of this and other annotations made on this site by the author is to assist those who are curious in teasing apart what is purely fictitious from what is based in historical evidence.

## 3 Jack Ketch (Neal Stephenson)

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Note: Links internal to Metaweb are formatted like this and external links are formatted [like this]

A general-purpose moniker applied to any executioner.

### 3 ...dollop of hills... (Neal Stephenson)

Boston had a completely different shape in those days from what it has now; its current topography and shoreline are the result of massive regrading and backfilling projects. Consult Walter Muir Whitehill's "Boston, a Topographical History" for more.

### 5 ...the last one... (Neal Stephenson)

The last hanging of a supposed witch in New England occurred at around this time, so he's not far off.

### 6 Cartesian number-line (Neal Stephenson)

Descartes pioneered the use of number-lines as a way of measuring positions in space, and also crossed them at various angles to handle two-dimensional space, but the now-universal practice of crossing them at right angles to form an orthogonal coordinate system appears to have originated elsewhere—so "Cartesian coordinates" is a misnomer (see the Descartes entry in Dictionary of Scientific Biography). Julian Barbour credits Leibniz with inventing "Cartesian" coordinates, however the idea is sufficiently obvious that others may have come up with it independently. Other sources have credited Leibniz with first using the term "ordinate" to denote one of the axes, though this word was in use, to mean related but different things, long before Leibniz was born. This is a fascinating topic, but it is murky enough that I have avoided making a big deal out of it in the novel.

### 8 Barker (Neal Stephenson)

This is a fictitious sect that I invented, so there is no point in going and looking for more information about them. There were plenty of real ones, such as Diggers, Levellers, Ranters, [Quakers], etc.

### 9 Charing Cross (Neal Stephenson)

The decapitation took place on the side of the Banqueting House that faces north, in the direction of Charing Cross. In today's London, the place called Charing Cross is separated from the Banqueting House by a chunk of Whitehall about a quarter of a mile long, and so it seems wrong to say that the event took place in Charing Cross. However, at the time, Charing Cross was a broader piece of territory. More importantly, it was the only piece of territory from which an ordinary person might have been able to get a glimpse of the beheading of the King. So for Enoch to say this is a little bit imprecise, but within the normal limits of imprecision that people employ in conversation.

### 9 Restoration (Jeremy Bornstein)

This term (also known as "Stuart Restoration" or "English Restoration") refers to the restoration of the British monarchy in 1660, with the ascension to the throne of Charles II. He was the eldest son of the previous monarch, Charles I, who had been beheaded in 1649 for treason—the only British monarch to have been so treated.

In the time between kings, known unsurprisingly as "the Interregnum", England was ruled by Oliver Cromwell as "Lord Protector," and briefly by Cromwell's son Richard Cromwell.

Further investigation into the Stuart Restoration is likely to be rewarding for the amateur student of history. The Wikipedia entry on the English Restoration is a good place to start.

### 11 Hypothesis of Vortices (Neal Stephenson)

Descartes and others, including (for a while) Leibniz sought to explain the orbits of planets by means of vortices in the aether. It seems nutty to us, but was preferable to them, on metaphysical grounds, to the notion of action at a distance, which is a bit troublesome even today. The comment quoted here is from Newton.

**15 Daniel Waterhouse (Neal Stephenson)**

Waterhouse is a reasonably common English name. The Waterhouses, both here and in *Cryptonomicon*, are totally fictitious and bear no relationship whatsoever to any real people named Waterhouse anywhere in the world. Daniel Waterhouse has one or two things in common with a John Wickins who was Newton's roommate at Cambridge, but beyond that he is completely fictitious (as are the other Waterhouses) and there is no point trying to search historical documents for anyone of that name.

**16 Massachusetts Bay Colony Institute of Technologickal Arts (Neal Stephenson)**

This is totally fictitious. Nothing like it ever existed. It is one of the "hypotheses" upon which the "romance" is founded (see Stephenson:Neal:Quicksilver:1:Those who assume hypotheses...).

Yet isn't it a bit coincidental that its name could be shortened to Massachusetts Institute of Technology? Of course the real MIT wasn't founded until the mid 1800's.

[<http://web.mit.edu/facts/mission.html>]

**16 Massachusetts Bay Colony Institute of Technologickal Arts (Patrick Tufts)**

The Massachusetts Bay Colony Institute of Technologickal Arts is not entirely unlike the modern-day Massachusetts Institute of Technology. MIT, however, was incorporated much later (1861). Future archaeologists will undoubtedly discover the ruins of Dr. Waterhouse's cabin near a steam tunnel running beneath the Infinite Corridor.

**18 ...heard by their future Queen... (Chris Swingley)**

The Act of Settlement in 1701 set Sophia of Hanover (a Protestant) as the next in the line of succession after Queen Anne in order to prevent James III (a Catholic) from becoming King. They spoke German, and the eventual successor to Queen Anne, George I, never even learned English.

**20 A harder question (Jeremy Bornstein)**

It seems as if this cryptic comment by Enoch Root must be a clue as to his true nature. This comment makes it sound like he's a time traveller to me, although other passages just seem to indicate that he has just lived an extraordinarily long time. (Of course, both are possible.)

**21 John Comstock and Thomas More Anglesey (Neal Stephenson)**

These names are both factitious and the characters both fictional. Don't bother Googling them. John Comstock has a few things in common with John Evelyn (an early Royal Society figure and author of a great Diary) and a few other things in common with the Earl of Clarendon. Thomas More Anglesey is not based that directly on any historical figures, but stands in for a lot of Francophilic crypto-Catholic courtiers who were thick on the ground in those days.

**22 Monsieur Le Febure (Neal Stephenson)**

Monsieur Le Febure was for real, but I don't know much about him, so most of what appears concerning him in this book is made up.

**22 John Wilkins...Cryptonomicon (Neal Stephenson)**

Follow the John Wilkins link to find some non-Metaweb biographies and other information about the real Wilkins. His relevance to the Baroque Cycle is as follows: in 1641 he published a book called *Mercury*, which has been described by David Kahn, in "The Codebreakers," as the first English-language work on *cryptology*. The Baroque Cycle and my novel *Cryptonomicon* are both set in a slightly different alternate universe in which Wilkins's treatise was called *Cryptonomicon*. And just to make things a little more confusing, in the real world is an Internet document called *Cyphernomicon*, by Tim May, which predates my work by many years!

**25 Clarke (Neal Stephenson)**

Clarke really existed, and Newton really lived with him. The account here is mostly fictionalized but stiffened here and there with historical evidence. See Richard Westfall's "Never at Rest.", ISBN 0521274354.

**26 Cha, or chai, or the, or tay(Sorenson)**

The first trade advertisement was actually the first advertisement of a new commodity, tea. The following advertisement appeared in the *Mercurius Polilicus*, No. 435, September 30, 1658, three years after Enoch brewed his tea in Grantham.

"That excellent and by all Physitians approved China Drink, called by the Chineans Tcha, by other nations Tay, alias Tee, is sold at the Sultanness Head, a cophee-house in Sweetings Rents, by the Royal Exchange, London."

**29 ...rub his prisoner's face... (Neal Stephenson)**

Here as in many other places, the approach taken is to present a fictionalized and somewhat impressionistic account of a more or less genuine historical event. The fight and the nose-rubbing are described in Westfall's "Never at Rest," pp. 59-60 of my trade paperback edition. He traces the story to Keynes who got it from Newton's relative and early biographer Conduitt. It has been much written about and discussed, as have several other elements of the tale I am re-telling in these pages. I single this one passage out for annotation because at least one early reader has gotten the idea, from the way I wrote it, that the other boy's face was terribly mutilated. This was not the case in the historical incident and is not supposed to be the case here. Newton is a pre-adolescent boy, and can only inflict so much damage on a larger child (who is, after all, fully conscious, and fighting back) during the few moments that he has before Justice arrives in the form of the Schoolmaster. From the fact that his only punishment is a few cane-whacks and some after-school cleanup work, we may infer that the other boy was not badly hurt. As anyone who has been in a schoolyard fight knows, facial cuts bleed all out of proportion to their actual severity and look much more alarming simply because they are on the face. The victim has a bloody nose and some abrasions but his "wrecked face" will no longer look wrecked once he has splashed some water on it. The other boys are shocked, not because some real mutilation is taking place, but because they have never seen anyone with Newton's level of intensity before.

**36 No linear indexing system (Edward Vielmetti)**

Waterhouse's system for organizing his notecards appears to prefigure Ranganathan's faceted classification or "colon classification" system. Both allow for composite classifications to be built up out of a product of simpler categories, and allow for an infinite number of possible results (as long as there's space on the card or spine of the book).

**43 Fellow Armenian (Jeremy Bornstein)**

Reference is made to a cryptographic or steganographic method in wide use by Armenians. Is there any factual basis for this, or is it purely fictional?

**43 Demolishing the cathedral (Jeremy Bornstein)**

For an explanation of why the cathedral was being demolished, see page 270.

**64 Mrs. Goose (Neal Stephenson)**

There was a Mrs. Goose in Boston. Her gravestone stands in the Granary Burying Ground. It is by no means clear that she is THE Mrs. Goose responsible for the Mother Goose stories. Other people, who lived earlier, seem to have a claim on that honor.

[<http://www.blackmask.com/books81c/mtgsp.htm>] is a decent overview of the Mother Goose story. -Aaron Headly

**69 well-trimmed ship (Neal Stephenson)**

Now that we are on board a ship with Daniel, it's as good a place as any to mention that this is not a Ship Novel. I was tempted to make it one, but bated because I knew at some level that to plunge into that lore would make the book twice as long even as it already was. Instead I have tried to put in enough Ship stuff that the novel will hold water, as it were, but left detailed Ship content to the many excellent novelists who specialize in that sort of thing.

Related entries

Sail Trim

#### 69 lascars (Jeremy Bornstein)

Here, "lascar" means [a sailor of East Indian origin].

#### 71 eyeball experiments (Brett Kuehner)

Something similar is described in one of Isaac Newton's notebooks, experiments 58 and 59, where Newton writes, "I tooke a bodkine gh & put it betwixt my eye & [the] bone as neare to [the] backside of my eye as I could"

You can find more (including a diagram from the notebook) at:

[[http://www.lib.cam.ac.uk/Exhibitions/Footprints\\_of\\_the\\_Lion/private\\_scholar.html](http://www.lib.cam.ac.uk/Exhibitions/Footprints_of_the_Lion/private_scholar.html)]

#### 74 wheel by which the ship is steered (Neal Stephenson)

Actually most ships of this day probably didn't have wheels, because it was a relatively recent innovation; but as we'll see in future volumes, *Minerva* is ahead of its time in some respects.

#### 75 sundial synchronization (Bill Seitz)

"had to make a little cross-tick at the place the gnomon's shadow stood when Trinity's bell (always just a bit out of synchronization with the King's) rang each of the day's hours"

How did the Trinity's bell-ringer decide when to ring? Why was this different from when the King's (College?) bell was rung?

Any consistent errors in the Trinity bell timing would throw off Newton's curves one way; occasional errors would result in bumps.

In a sense, the Trinity bell was the instrument through which the sun's shadow was perceived. That seems like a crude assumption to accept, esp from someone who stuck a needle into his eye socket to test its instrumental workings...

Related thought: distinguishing TimeAsABasisForSynchronizedAction vs ElapsedTimeAsABasisForCalculatingRates

Here's a good webpage with images of Newton's sundial as well as a java app that attempts to reproduce it [<http://www.quns.cam.ac.uk/Queens/Images/sundial.html>]

#### 78 Isaac Barrow (Neal Stephenson)

As Huygens, Barrow, Newton, and Hooke have all now been mentioned, this is as good a place as any to exhort people to buy the book "Huygens and Barrow, Newton & Hooke: Pioneers in mathematical analysis and catastrophe theory from evolvents to quasicrystals" ISBN 3-7643-2383-3, ISBN 0-8176-2383-3 by V.I. Arnol'd. Unfortunately for me I did not discover this remarkable little volume until after 99% of the Baroque Cycle had been written. Thanks to Henry Cohn for bringing it to my attention.

#### 86 Ashkenazi (Jeremy Bornstein)

The Ashkenazim (adjective form Ashkenazi) are one of the two major Jewish ethnic groups. Ashkenazi Jews

are generally of Eastern European descent. [This article] is a good place to get started for more information.

#### 91 Atlantic is striped with currents (Chris Swingley)

The existence of warm and cold bands of ocean water was first recorded in 1612 by Lescarbot: “I have found something remarkable upon which a natural philosopher should meditate.” The use of the thermometer as an instrument of navigation is credited to Ben Franklin in 1775 and Charles Blagden in 1782. Franklin carried out rigorous ocean temperature experiments on many of his ocean voyages and produced a reasonably accurate chart of the Gulf Stream with his cousin and Nantucket whaling captain Timothy Folger (1770).

At the point when Waterhouse is making these measurements, several studies of ocean currents had been published, and measuring ocean temperature would have been part of a very preliminary investigation.

For more information, consult:

[Ben Franklin and the Gulf Stream]

[Benjamin Franklin and the Gulf Stream]

Henry Stommel. 1950. “The Gulf Stream: A Brief History of the Ideas Concerning Its Cause”. The Scientific Monthly LXX(4): 242-253.

#### 92 The page ends abruptly. (Scott Elkin)

Is this page supposed to end abruptly?

The next chapter is titled “The Plague Year”...think sudden flashback.

It’s intended to be read continuously from the bottom of p. 92 to the top of 93, hence: “all of a sudden it’s The Plague Year.” Unfortunately the footnote breaks it up a bit. Neal Stephenson 14:46, 12 Oct 2003 (PDT)

The top paragraph triggered a flashback.

Herman Melville wrote “Moby Dick” as an allegory displaying various representations of entrapment and imprisonment. These delineated man’s place in the universe. Like the Minerva – in “Quicksilver” – we’ve a strong spiritual element as the Pequod represents all mankind adrift on God’s sea, beset by dangers on all sides and constantly tested for spiritual strength.

It’s been nearly 30 years – but I’d swear my AP English teacher stated the Pequod meant “The Family of Man.”

Moby Dick link ([<http://www.worldwideschool.org/library/books/lit/adventure/mobydick/chap0.html>])

It may be unrelated, but I thought Pequod was an archaic spelling of the indigenous New England tribe called the **Pequot**. I actually have Pequot ancestry. The meaning of Pequot in this context is “The Destroyers” due to their war like nature. Given Ahab’s obsession with destroying the Moby Dick, it might make more sense thematically. I couldn’t say positively what Melville’s intent was.

I’ll admit to being old – but I am a nerd. Captain van Hoek is making me think of James Barrie’s **Captain Hook**. I quote:

“... In dress he somewhat aped the attire associated with the name of Charles II, having heard it said in some earlier period of his career that he bore a strange resemblance to the ill-fated Stuarts; and in his mouth he had a holder of his own contrivance which enabled him to smoke two cigars at once. But undoubtedly the grimmest part of him was his iron claw. ...”

Note who Hook was bosun to ... at least we’ve not seen Cap’n Crunch yet ...

Captain Hook link ([http://en.wikipedia.org/wiki/Captain\\_Hook](http://en.wikipedia.org/wiki/Captain_Hook))

#### 94 found God (Neal Stephenson)

Cromwell apparently did undergo a religious conversion along these lines. I have inserted the fictitious Drake

Waterhouse into the historical narrative at this point.

#### 112 at Epsom (Neal Stephenson)

Wilkins did spend much of the Plague Year at a nobleman's Epsom estate, working with Hooke and others. The real name of the estate was Durdans and the real name of the nobleman was the Earl of Berkeley. To create the fictional character of John Comstock, I have freely adapted elements from the lives of several English noblemen of the time, including Berkeley, John Evelyn, and Edward Hyde, the Earl of Clarendon.

#### 114 Hooke approaches (Neal Stephenson)

By this point Hooke's *Micrographia* had been published, but just barely (1685). Most of what we see Hooke working on and thinking about here comes from *Micrographia*, as if he were writing the book while at Epsom.

#### 124 Word arrived that Fermat had died (T Whalen)

...leaving behind a theorem or two that needed proving.

This is a probably an oblique allusion to Fermat's Last Theorem, which went unproven until the late 20th century, or perhaps to Fermat's "Little" Theorem, which Gottfried Wilhelm von Leibniz claimed to have proven before 1683.

Fermat's last theorem reads as follows:

$$x^n + y^n = z^n \text{ has no non-zero integer solutions for } x, y \text{ and } z \text{ when } n > 2$$

Fermat had this proof written in the margins of one of his books. Next to it, he had written "I have discovered a truly remarkable proof which this margin is too small to contain." Convenient. This sort of thing was however common in Fermat's writing. He often sketched proofs and then wrote them out. Standards of proof varied much at the time, also, so it's not clear he had a proof to modern standards, even if he thought he had one. But, notably, ALL of Fermat's claims of having a proof, often doubted at the time, turned out to be true.

Star Trek fans will note that Picard would attempt proofs of Fermat's Last Theorem as a hobby. Conventional wisdom at the time the early episodes were written was that the theorem would likely remain unproven in the 24th century. Episodes of Star Trek that were written after Prof. Wiles offered his proof in 1993 stated that Picard was merely looking for a better proof.

Since Wiles' proof runs to several hundred pages of mathematics that did not exist in Fermat's time, it is not possible they found the same proof.

It should be noted that this reference in *Quicksilver* is historically inaccurate, since the Last Theorem wasn't known to the world until 1670, when Fermat's son published his notes to the *Arithmetica*. At the time of the action in the book (and of Fermat's death), said theorem had not been divulged yet. Therefore, the reference is basically a wink to the present day reader (not that there's anything wrong with that).

External links [Wikipedia - Fermat's last theorem](#) [Wikipedia - Fermat's little theorem](#)

#### 124 Punishments (Neal Stephenson)

This is a straight quote from Wilkins's Essay.

#### 128 Fly stuck to quill (Neal Stephenson)

In answer to a question posed by [Mr. Edward Rothstein] in the 20 Sept. 2003 edition of the [New York Times]: Hooke did indeed conduct this experiment. It is described on pp. 172-173 of *Micrographia*, in a chapter entitled *Observ. XXXVIII. Of the Structure and motion of the Wings of Flies*.

#### 142 symmetry of snowflakes (Jeremy Bornstein)

See the [Snowcrystals.com FAQ] for information about the symmetry of snowflakes.

#### 146 the western horizon (Armaced)

“Daniel found that he was walking directly towards a blazing planet, a few degrees above the western horizon, which could only be Venus. ... The dawn was making the fields shimmer pink and green.”

If it was dawn, shouldn't Venus be in the eastern sky, near the sun?

#### 150 Newton at Woolsthorpe (Neal Stephenson)

The things that Newton is shown working on and thinking about in this chapter tally pretty well with history. What is different, of course, is the insertion of the fictional character Daniel Waterhouse, who gets to observe and (a little) participate.

#### 160 Regents Firewall (Simon)

Confusing moment arose as this section was read. What historical basis is there to have the Defender of The Faith being involved in the desperate, explosive efforts to save sections of London from fire?

Perhaps this was a moment of whimsy, as the image of the King personally blowing up a dissident cleric is amusing in its way.

No, there is a historical basis for it somewhere, which I unfortunately do not have time to track down just now, as I am embroiled in promotional activities. It is too weird for me to have made up. In a few weeks I'll try to figure out where I got this and post the source. NealStephenson 20:51, 10 Oct 2003 (PDT)

#### 161 Blunderbuss (Professor Bikey Bike)

A blunderbuss is an ancient and primitive sort of pistol. The short-barreled, large bore flintlock gun derives its name from the old Dutch words *donder* (thunder) and *bus* (gun). The widely flaring muzzle was designed to scatter shot at close range, making it a weapon of choice for home defense, as well as buccaneering and pirating. The British Sea Service (1790-1815) issued them as standard equipment since they could be shoulder fired or rail-mounted as a swivel gun. Quotations Some may well ask what a blunderbuss was. Indeed, this very question, it is said, was put to the Four Wise Clerks of Oxenford, and after thought they replied: ‘A blunderbuss is a short gun with a large bore firing many balls or slugs, and capable of doing execution within a limited range without exact aim. (Now superseded in civilised countries by other firearms.)’ J.R.R. Tolkein –Farmer Giles of Ham (Tolkein is here quoting the Oxford English Dictionary.)

##### References

[<http://www.loc.gov/exhibits/lewisandclark/preview.html>]

[<http://www.historylives.com/citizensoldiers.htm>]

Startled to see this definition, and I have to say that I think gentlemen of the 17th and 18th Centuries would be as well.

There is certainly such a thing as a “blunderbuss pistol” (at least to modern collectors), but the word is typically used to refer to a short shoulder-arm, not a one-handed firearm.

As for the flaring muzzle being designed to scatter shot; perhaps... but any short barrel could accomplish that well enough. What the funnel-like belled muzzle did, that no other design could, was facilitate rapid reloading (which was, of course, then done from the muzzle end) on a bucking coach-seat or rolling deck. Getting loose powder and shot in something like measured amounts into a narrow orifice and tamped into place was difficult enough even on steady ground in stressful situations. Doing so in unmeasured amounts could constitute a greater threat than the intended target.

#### 166 Schooners (Neal Stephenson)



“Schooners” The word “schooner” appears to have been coined in New England in 1713. By using it Dappa is showing off what a hip guy he is.

#### 166 Strange information (Neal Stephenson)

This phrase “strange information” was employed by me in *Cryptonomicon* as homage to Suzanne Vega. It has somewhat taken on a life of its own, and crops up in several places in *Quicksilver*. She invented it, not me.

#### 166 Teach (Neal Stephenson)

Blackbeard is mostly known as a pirate along the North Carolina coast who was most active a few years later (circa 1717). But pirates were obviously quite mobile. Teach was not unknown in Boston and it’s plausible to put him here in 1713.

“... Teach soon began to increase his reputation once again by creating his well-known Blackbeard persona. He knew that if he looked frightening then ships might surrender to him sooner. He let his hair grow and started a beard that would almost cover his face. He twisted his long hair and beard in pigtales and he was known to tie colored ribbons on the ends. During battle he put lit slow burning hemp cord under his hat near his ears that would smoke and envelop him in a cloud. To add to his menacing appearance he also wore several pistols (as much as six) along with his knives and cutlass at his waist. He himself created the name “Blackbeard” and soon his frightful image was well known. While in battle the opposing crew often surrendered at the mere sight of him in a rage, some even called him the Devil-incarnate. Obviously Teach’s Blackbeard persona worked! The fear his new image created had the psychological effect he wanted. ...”  
([<http://tinpan.fortunecity.com/lennon/897/teach.html>])

Blackbeard is known to have buried treasure on Gardiner’s Island, in Eastern Long Island Sound, some 100 miles from Boston (or so). When captured, Blackbeard returned 24 casks of treasure to the Governors of the Massachusetts Bay Colony. As recently as the US Civil War, a Captain John Merrill was seen with pieces of 8 he’d claimed were buried on Pilot Island (now Tavern Island) in Norwalk, CT.

#### 170 CABAL (Neal Stephenson)

Charles II really did have a CABAL and it really was an acronym for the names of the leading figures (though the word “cabal” is, of course much older). I have changed the names and the people and their roles to suit the requirements of this book.

#### 176 Black Velvet (Scott Elkin)

What is the history behind gluing black velvet to a face?

#### 181 In the House of Monsieur Le Febure (Neal Stephenson)

It is well attested that Newton devoted a lot of time to Alchemy and met frequently with fellow-Alchemists. The details are quite obscure; that is, there’s really no telling whom he met with and when. Here I am building a story that is fictitious but not too implausible. There was a Monsieur Lefebure (spellings vary) and there were many Alchemists at the court of Charles II, including the King himself. Here I am positing that a young Newton might have been drawn into such circles.

#### 182 Ned Ward (Neal Stephenson)

This is one of a series of satirical sketches that Ward wrote about various clubs of London. He calls this one the “Vertuoso’s Club” but it is obviously the Royal Society.

#### 183 Meeting of the Society (Neal Stephenson)

These approximately three pages are a mixture of fictional material (basically anything to do with Waterhouse, Gunfleet, or Stephenson:Neal:Quicksilver:Upnor) with fragments culled from the records of real Royal Society meetings of this era.

**195 Comstock House (Neal Stephenson)**

There were at the time at least three great family compounds situated along Piccadilly near its intersection with St. James's Street. One of these belonged to the Earl of Clarendon, who is one of several contemporary figures from whom John Comstock is freely adapted. The only one that still exists today is Burlington House, which is now the Royal Academy.

**197 Knott Bolstrood (Neal Stephenson)**

This turn in the career of the fictitious Knott Bolstrood, as well as other things that happen to him later, were loosely suggested by events in the life of Shaftesbury.

**197 Knott Bolstrood (Jeremy Bornstein)**

The footnote tells us that the king gave **Bolstrood** the title Lord Penistone so that he would be unable to write his name without writing "penis." This childish humor seems consistent with the behavior of Charles II but I have been unable to discover if he actually did grant this title to anyone nonfictional.

**215 The dog shit in the boat (Neal Stephenson)**

A well-known anecdote told by Pepys, who witnessed it.

**222 The sun becomes an oval (John B.)**

I think more needs to be said about the illusion that the sun, and the easier-to-observe moon, have a different size or shape when viewed at the horizon. It is not true that atmospheric refraction plays the most significant role (of course it plays some). While the sun and moon do become ovals at the horizon, more noticeable is their change in apparent size, which is often attributed to atmospheric distortion.

This is a very involved issue, and the best explanations are to be found at [<http://www.lhup.edu/~dsimanek/3d/moonillu.htm>]

There are several optical illusions (especially the Ponzo Illusion) that are invoked to explain why the sun and moon appear to have different sizes at different places in the sky. Here is one explanation. The sky is a hemisphere above you, a perfect half of a sphere. And yet it is perceived as more of a bowl. The top of the sky seems less distant than the sky at the horizon. However, this is not so.

The moon at its zenith is (roughly) as far from an observer on earth as it is at the horizon. But as its position in the sky is apparently farther from earth, people perceive it as larger.

This explanation, though common, has holes. The so-called "Moon Illusion" seems to have as much to do with human perception as with actual amount of sky taken up.

**233 Chirurgeon (Jeremy Bornstein)**

As one may discover by attempting to pronounce this word, it is an archaic form of "surgeon".

**236 Once More Into the Breeches (Neal Stephenson)**

Readers who enjoy this can find much more in the same vein under the rubric of Restoration Plays.

**246 Apthorp—the second A (Neal Stephenson)**

Apthorp is fictional, but, like many of the other fictional characters in the book, representative of a certain type. Jeffreys really existed and by all accounts really was this noxious.

**253 What is to come? (Eric S. Raymond)**

When Tom the Vagabond says lewdly "What is to come? I have spied one candidate—" he is committing an anachronism. The verb "to come" as a term for for orgasm is a Victorian development, not well-attested

until the 1890s. In period, Tom might have used the verb “to spend”, but that would have ruined the play on words.

### 257 Jeova Sanctus Unus (Professorbikebike)

...many not signed “Isaac Newton” but “Jeova Sanctus Unus” which was the pseudonym Isaac used for Alchemy work.

True? False?

Whether or not he used this as a pseudonym or not, it would appear that he once constructed a virtual anagram for his name (Isaacus Neutonus) in terms of “God’s holy one” (Jeova sanctus unus). See the link below.

External links

[<http://www.djerassi.com/calculus/program.html>]

### 316 the first few terms of a series (jere7my tho?rpe)

We have now seen two generations of the Waterhouse family educated in the Leibniz series. The mathematical series that Leibniz sketches in the dirt for Daniel Waterhouse:

$$\frac{\pi}{4} = \frac{1}{1} - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15} + \frac{1}{17} \dots$$

is shown by Alan Turing to Lawrence Waterhouse on page 15 of Cryptonomicon, in a more compact (and modern) form:

$$\pi = 4 \sum_{n=0}^{\infty} \frac{(-1)^n}{2n+1}$$

### 343 Jack Ketch (The Shabby Sheik)

Jack Ketch is the default nickname for all English executioners. The name in this context is likely a slight anachronism, as the original namesake Jack Ketch isn’t recorded in the position until 1678, remaining the Public Hangman of London until 1686. He remains renowned in the annals of capital punishment for being profoundly bad at his profession. Sir Charles Lyttelton reports that in the (ultimately successful) attempt to behead Lord William Russell, Ketch “gave him 3 blows, besides sawing wth ye ax, before he cut his head of.” Even worse was the final end of the Duke of Monmouth after Sedgemoor, who took five blows and some improvised knife-work before his caput was finally kaput.

### 367 Imp of the Perverse (Neal Stephenson)

Edgar Allen Poe wrote a piece called the Imp of the Perverse in the 19th Century, and so to put the phrase in Bob’s (or Jack’s) mouth in 1683 is likely an anachronism. But I don’t know whether Poe actually coined the phrase, or picked it up from the vernacular. If the latter, then it might have been in use in 1683 or earlier.

### 397 J'ai besoin... (Jeremy Bornstein)

Translating French to English, the bottom of this page reads:

“I need a jug,” Jack offered. Eliza was amused. “Jack, we’re in Bohemia! Why are you speaking French?” “There are some in that cellar over there, sir,” said the peasant. “Thanks.” “You’re welcome, sir.”

### 370 Qwghlm (Neal Stephenson)

Almost all readers are content to interpret Qwghlm as a wholly fictitious and fanciful invention, which is correct. From time to time someone will get it into their head that it is a veiled description of some real place, and so let me just state here flat-out that it is not meant that way at all. It is made-up.

It is a pair of islands situated off the northwestern coast of Britain. Inner Qwghlm is linked to the mainland by a sandspit near the town of Utter Maurby (which is an Anglicized rendering of the Qwghlmian name, Gttr Mnhrbgh). Outer Qwghlm lies twenty miles offshore and is difficult to reach because of the reefs that surround it, and because of the vicious currents—it lies in the middle of a persistent flow of Arctic water, analogous to the Gulf Stream, except that where the Gulf Stream is warm and brings anomalously balmy weather, the flow that bathes Outer Qwghlm is icy cold and gives the island a climate much chillier than one might expect from its latitude.

The Qwghlmian language is unrelated to any of the other tongues spoken in Northwestern Europe. It employs several sounds that cannot really be pronounced by one who was not born and raised speaking the language. The word Qwghlm begins with a tongue-click and ends with a swallowing noise. English people who attempt to duplicate this frequently come out with something that sounds like TAG'em. Though this really does not sound anything like the correct pronunciation, Qwghlmians who hear it from the mouth of an Englishman will usually understand that their interlocutor is trying to say the name of their island, and more or less hide their disdain.

Sounds a bit like those island in that fabulous Powell, Pressburger movie from 1945, "I Know Shere I'm Going", with Wendy Hiller. I've seen it three times since I first read Cryptonomicon.

### 383 Merry madrigal tunes (Jeffrey Radcliffe)

It is likely that Jack is singing a madrigal, a popular form of music in the 17th century, in English. The typical English madrigal tends to have a line of text followed by a string of nonsense syllables, usually "fa la la," (for example. the Christmas tune Deck The Halls) regardless of subject matter.

Continental madrigals tended to be just as fanciful, albeit a bit less light-hearted, and in 1683 were in the process of evolving into what is now Opera.

### 391 Haiduks (Professorbikeybike)

Serbs and Greeks never really accepted the Turkish invasion, and thus, those that chose to actively resist, were labeled haiduks, or outlaws. Haiduks were arguably not outlaws, as the law they broke were Turkish law, not their own. Haiduks would run ambushes on invading Turkish caravans, often with popular support from Serbian villagers.

It is interesting to note that George Washington Hayduke, the character in Edward Abbey's novel The Monkey Wrench Gang, most likely got his name from the haiduks.

### 391 Watered steel-blade (Neal Stephenson)

The poem is from the Arabian Nights, the translation is that of Sir Richard Francis Burton.

### 398 ...Frenchman wears those sabots (Professorbikeybike)

Note: this isn't the first appearance of the term sabot.

A bit of etymology:

While a sabot is nearly a wooden shoe, to sabotage something is quite different. The word sabotage originally referred to damage done to machinery by sabots.

Another note: The good N. Stephenson explains this little bit of etymology on p. 444

### 400 Winston Churchill (Neal Stephenson)

Obviously not he of 20th Century fame, however there really was a Winston Churchill at this time, and most of what is said about him in this novel tallies reasonably well with such historical material is available. Most of that comes from his namesake's six-volume biography of Marlborough (Winston Churchill's son John) which is very much an axe-grinder and so might be looked at askance by other historians.

**424 Chinese fortune-teller (Jeremy Bornstein)**

The fortuneteller is using the I Ching, an ancient Chinese system of divination and philosophy.

**427 Fuggers and Hacklhebers (Neal Stephenson)**

The Fuggers were a real family, the Hacklhebers are a fictitious creation.

**427 Potosi in Peru (Neal Stephenson)**

Today it is in Bolivia, but in those days Bolivia did not exist (it is named after Simon Bolivar 1783-1830) and it was all part of a thing called Peru, much bigger than the country called Peru today.

**442 arsch-leders (Jeremy Bornstein)**

Once you know that "arsch-leders" translates as "leather ass" (or something like that, anyway) then it really is pretty self-explanatory.

More precisely it means "ass-leather". This is nothing much more than a piece of tough leather apron (worn backwards) to protect one's bottom while working in mines.

Apparently this was also used in mines that had chutes down to the actual mine faces, thus enabling miners to go down literally in seconds. In Germany there is at least one historical mine open to tourists where you can try yourself (2003 link, site in German:

[<http://www.erlebnisbergwerk.com/sites/abenteuer.shtml>] ).

There is also a rite of initiation tradition of emptying your glass of Schnaps, and then "jumping over the arschleder" ("Ledersprung"), right into your new profession. This tradition has been transferred onto other settings too, apparently the rite of passage into some austrian student brotherhood borrows from this tradition as well.

Nowadays other people find uses for this handy garment, like high-power kite flyers. (2003 link, site in German, picture of an arschleder here:

[<http://www.drachenwerkstatt.de/adat/12615.php>])

Of course you can find Arschleder on Ebay as well.

There is, by the way, no such word as "Arschleders". The German plural is the same as the singular. One Arschleder, two Arschleder, a ton of Arschleder.

Tim from Germany: I've inherited an Arschleder from my grandpa who worked in the Ruhr area mines, so it could be said, that Arschleder were used in the second half of the 20th century too.

**449 wedges-and-sledgehammers trick (Professorbikebike)**

Question: What is 'the old wedges-and-sledgehammers trick'?

Answer: Unless somebody else knows better, or more specifically\*, I will hazard a guess. By the fact that the witch cannot stand, it is implied that some sort of brutal damage is done to the legs and feet with wedges and sledgehammers, most likely to extract a confession.

Additional Information I believe the reference would be to the use of the "iron boot", described here:

[[http://www.pinn.net/~sunshine/gage/inquis/c\\_reform.htm](http://www.pinn.net/~sunshine/gage/inquis/c_reform.htm)]

Simply put, the legs are secured in an iron boot, and wedges are hammered thereinto, crushing the bones.

**450 Walpurgisnacht (Jeremy Bornstein)**

Walpurgisnacht is a witches' festival celebrated on the night of April 30. Apparently the location of its original celebrations is right where we are in this chapter, in Germany's Harz mountains. Six months from Halloween, Walpurgisnacht is also a celebration to drive out evil spirits.

Related articles

<http://www.wikipedia.org/wiki/Walpurgisnacht>

[<http://www.serve.com/shee/germusa/walpurgi.htm>]

**460** that bloke in the myth (Jeremy Bornstein)

This is a reference to Theseus, who trailed a thread out behind him as he explored the Labyrinth of Crete. Don't be too impressed with Theseus though, it was Ariadne's idea.

**463** L'Emmerdeur (Jeremy Bornstein)

The French term "L'Emmerdeur," which in the novel refers to Jack Shaftoe, is difficult to translate precisely. The literal reading is something like "The guy who covers stuff in shit," but it's more like a curse of admiration in this case.

There is a panoply of French epithets based on "merde," a somewhat vulgar term for fecal matter which by itself corresponds to the English "shit." Its usage in French curses, however, is more like the English "fuck." Screaming "emmerdeur!" at someone is more or less equivalent to screaming "fucker!"

More specifically, could be translated as "trouble maker" ! –User:Romney Grenon

**476** Damplatz (Neville Kuyt)

This part of Amsterdam was in fact known as the "Damplein"; it is still there, and many kinds of commerce still take place on and near it, though their nature has changed to accomodate our modern tastes...

**487** old musketeer hat (Quillman)

Didn't he lose his musketeer hat after being chased into the mine by the witches?

**512** Ambassadorial standoff (Neal Stephenson)

Though this particular instance is fictitious, this sort of standoff was known to occur in capitals like the Hague where foreign delegations were always going to and fro in narrow streets. In some cases the host had to resolve such a dispute by removing a railing or otherwise devising some way for one delegation to back down without a loss of face.

**513** d'Avaux (Neal Stephenson)

D'Avaux was a real historical figure, but just about everything he is described as doing in the Baroque Cycle, is fictitious. Accordingly to the (mostly anti-French) sources I was reading, he was an accomplished intriguer; which is to say that he served his King very effectively.

**517** Sluys (Neal Stephenson)

Sluys is fictitious. However, he is representative of a whole class of mostly Amsterdam-based merchants who were dependent on foreign trade, largely with France, and who were hostile to William.

**518** Ultima Ratio Regum (Jeremy Bornstein)

Note the correspondence between this inscription on a cannon and the gun called Reason in Snow Crash.

**520** Spij (Sander van Malssen)

Modern-day travelers to the Hague who wish to retrace our heroes' footsteps should know that the canal referred to here is called Spui in modern spelling, or Spuij in somewhat older spelling, or Spuy in the most

probable spelling of the times in which this story takes place. I sincerely regret to report that, despite the vagaries of Dutch spelling of the time, Spij is not an acceptable spelling for this canal's name in any period of time whatsoever.

Modern-day travelers to the Hague who wish to literally retrace our heroes' footsteps should be warned that it is on no account advisable to try and skate over the Spui these days as it was filled in about a 100 years ago and is now populated by trams. It is important to know in this context that trams in the Netherlands are not subject to any legal speed limits.

**533** nerf du boeuf (jere7my tho7rpe)

"Nerf de boeuf" is the French term for "bull's pizzle" – a whip or club made from the dried and tanned penis of a bull. It also happens to be the name of a gambling card game.

References

[Non-Asian weapons, fencing and fighting methods], a marvelous list of fighting implements

[pizzle] dictionary.com

[The Phallus Palace: Sigurdur Hjartarson's Icelandic penis museum caters to travelers with a penchant for the unusual] Time magazine

**536** O wha-at the Hell was on God's mind... (Jeremy Bornstein)

One presumes that this elaborate musical number is a product of Jack's syphilis-based madness.

**552** Duc d'Arcachon (Neal Stephenson)

This entire family (de Lavardac/d'Arcachon) is fictitious. People who are familiar with the history of France in the era of Louis XIV will, I hope, find this family and their exploits fairly plausible, and representative of a whole class of old-line hereditary nobles.

**552** master-stroke (Jeremy Bornstein)

This is similar to the system of Tokugawa-era Japan (1600's or so) in which daimyos (clan leaders) were forced to live alternate years in the capital city, and alternate years in their own territories. At any given time, only half the daimyos were in their home territories. This had the effect of making rebellion more difficult not only because coordination became more difficult, but because of the increased expense of maintaining two residences.

**559** Hotel d'Arcachon (Neal Stephenson)

In the time and place of this novel, the word "Hotel" means something different from what it means today.

Today, it means a commercial establishment where people can pay for temporary lodging.

In Paris in 1685, it meant a private residential compound owned and occupied by a noble family; basically, it is their power base in the capital.

**576** rotten fish (Neal Stephenson)

This is one of those too-weird-to-make-up things. It seems that the duc de Vendome really did dine on rotten fish, and died of it.

**578** over the horizon (Jeremy Bornstein)

Although it does not seem that many (any?) Raskolniks were Aleuts, the correspondences between Yevgeny and Raven are worth noticing.

**588** cancaniers (Jeremy Bornstein)

A cancanier is a gossip.

**598** If you are going to tap me on the shoulder (Jeremy Bornstein)

I really like the way the author does this sort of thing—neither salacious nor prissy, just explicit enough so that you know what’s going on, and funny.

**613** the previous twelve years (Neal Stephenson)

The account of English history 1673-1685 given in this and following pages is faithful in its general outlines to what really happened, but many of the names mentioned, viz., Daniel Waterhouse, John Comstock, Thomas More Anglesey, Knott and Gomer Bolstrood, Upnor, Sheerness, Roger Comstock and Sir Richard Apthorp, are fictional characters. Events such as the Popish Plot, the urban renewal project around St. James’s and Piccadilly, Exclusion, the founding of the Whigs, etc. really happened.

**614** Knott had attempted to indict Nell Gwyn (Neal Stephenson)

It would be a mistake to say that the fictional character of Knott Bolstrood in this book is based upon Anthony Ashley Cooper, 1st Earl of Shaftesbury, because Bolstrood is very different in many ways from Shaftesbury. However, in real life Shaftesbury was a member of Charles II’s CABAL who eventually got on the King’s wrong side and indicted Nell Gwyn and fled to Holland where he died. All of these things are also said of Knott Bolstrood in the book.

**622** Drs. Hammond and Griffin (Neal Stephenson)

Drs. Hammond and Griffin are fictional.

**622** Sizar (Quillman)

Sizar defined:

[<http://dictionary.reference.com/search?q=sizar>]

**631** Feversham (Neal Stephenson)

Feversham is real; he is too strange a character to invent.

**638** comte de Beziers (Neal Stephenson)

This character is fictional but representative of a type that was apparently common at Versailles in those days.

**641** Wilkins cypher (Neal Stephenson)

Starting on p. 88 of his book Mercury, Wilkins explains a **steganographic** cypher based on what we would identify as binary numbers. The key to this cryptosystem is the use of two different handwritten alphabets, denoted (somewhat confusingly) the “a” alphabet and the “b” alphabet. I will call them the 0 alphabet and the 1 alphabet instead, or else this description will be difficult to make sense of. The letters of both alphabets look more or less normal, and are easily readable, but a letter “m” from the 0 alphabet is distinguishable from a letter “m” from the 1 alphabet, and the same is true of all of the other letters. The sender writes a normal-looking message, but groups the letters of the ciphertext into blocks of five, and within each block of five, chooses each letter from either the 0 alphabet or the 1 alphabet. The recipient, upon scrutinising the individual letters, can translate the message into a sequence of five-digit binary numbers. These can then be converted to letters of the alphabet, yielding the plaintext message, which is only one fifth as long as the ciphertext message.

Leibniz had an interest in binary numbers and was aware of Wilkins and his work. Here I am supposing that Leibniz invented a more powerful variant of Wilkins’s cypher in which the five-digit binary numbers are further encrypted by adding to each one another binary number, which therefore serves as a key. The key is passed on in the plaintext message by means of a reference to one of the hexagrams of the I Ching (another one of Leibniz’s real-life interests).



This cryptosystem is fictional, and as far as I know, nothing like it ever existed in the real world.

**646** Oyonnax and Ozoir (Neal Stephenson)

Fictitious. More concerning these and their ancestry in the next volume.

**647** Boullaye and Beber (Neal Stephenson)

This seems to be a real story, though the involvement of the bastard son of the duc d’Arcachon is, of course, fictitious.

**652** Edouard de Gex (Neal Stephenson)

As might be inferred from the fact that he’s described as a cousin of the fictitious duchesse d’Oyonnax, Edouard de Gex is a fictitious character.

**660** What of Newton? (Neal Stephenson)

What is presented in this chapter is a fictionalized account of how Newton came to write *Principia Mathematica*. The historical truth can be found in many books, notably Westfall’s *Never at Rest*. A quick way of summarizing it is that in this novel, the fictional characters Roger Comstock and Daniel Waterhouse are shown playing roles that are very loosely analogous to what Edmund Halley did in real life.

**660** Elixir Vitae and usquebaugh (jere7my tho?rpe)

Elixir Vitae is the ultimate goal of alchemists and the imputed contents of the Philosopher’s Stone, capable of granting eternal life and transmuting base metals into gold. Literally translated, it means “elixir [potion] of life”.

Usquebaugh is whisky (from Gaelic, “uisge beatha”). Literally translated, it means “water of life”.

Roger was making a cross-language pun: i.e., Daniel accused Isaac of drinking the elixir of life, so Roger pointed out that Daniel had himself been drinking the water of life.

**673** I have met the Duke of Monmouth... (Jeremy Bornstein)

This is a reference to a famous comment made by Lloyd Bentsen to Dan Quayle in the Vice-Presidential debates of 1988:

Quayle: I have as much experience in the Congress as Jack Kennedy did when he sought the presidency.  
Bentsen: I served with Jack Kennedy. I knew Jack Kennedy. Jack Kennedy was a friend of mine. Senator, you’re no Jack Kennedy. [This article] has a little more background.

**674** LIBRI I. CONICORUM APOLLONII (Neal Stephenson)

This is from a 1655 edition of Apollonius of Perga, but in the original these illustrations do not all appear together in a block like this. Alvy Ray Smith created this graphic by propping the book up in a window with the sun shining on it and taking pictures of several different illustrations with a really good digital camera, then cleaning up and recombining the images digitally to produce what you see here.

**688** Theologians? Sorcerers? (Neal Stephenson)

This account may be justly criticized for making Newton seem a little wacky. In future volumes we will see more of Newton’s side of the story and get a more balanced view of all this. In modern critical parlance, Daniel Waterhouse is an “unreliable narrator.” We are seeing everything here through Daniel’s eyes, but his eyes are clouded by his hostility towards Alchemy, and so the picture drawn here is biased and melodramatic.

**688** hypotheses non fingo (Steven Horst)

The date at which the book has Newton come forward with “hypotheses non fingo” may be anachronistic.

This phrase first appeared in the general scholia of the second edition of the *Principia*; and as I understand it, it reflected a good deal of agonizing over what to think about “forces” between editions.

This is, I think, an enduring problem in the interpretation of laws, and lives on in another form in the realist/empiricist debate in philosophy of science.

What is it that a law expresses?

==Is it a description of how all objects actually behave? (No – taken singly, and interpreted as universally quantified claims about objects and events laws, such as the gravitation laws, would be FALSE, as objects are really governed by a combination of forces and hence never behave as just one law says. Cf. Nancy Cartwright’s *HOW THE LAWS OF PHYSICS LIE*, 1983, Cambridge U.P.)

==Are laws idealized claims about actual behavior?

==Claims about how objects WOULD behave if only one force were at work? (No, because they say something about how objects behave even when multiple forces are at work too – they capture “real invariants”, if you will.)

==Well, then, do they really say something, not about kinematics but about FORCES? (Leibniz) If so, it sounds like one is committed to an ontology of forces. Not necessarily an awful idea, but then you have a science that is in the business of positing kinds of things that cannot be observed, and fattened your fundamental ontology in the bargain.

==Are they dispositions or capacities of objects? (Cartwright) Well, but what is a “disposition” or “capacity” – here you are back to something like positing essences.

I tend to see both Newton and Leibniz as being a bit ambivalent here. Newton, of course, DOES talk about forces (and does frame hypotheses, and even CALLS them hypotheses). The “hypotheses non fingo” quote – made a centerpiece of some Newtonian philosophers like Hume, and later picked up by the Behaviorists in psychology – is in the not-positing-unobservables camp. But he seems to favor views at other times that emphasize essential natures and even tends towards forms of vitalism, not only about plants and animals, but minerals. (Dobbs and Jacob’s *NEWTON AND THE CULTURE OF NEWTONIANISM* is good on this, though sadly out of print last time I checked.)

Leibniz also seems ambivalent to me. As a physicist, or perhaps a philosopher of physics, he rejects the fundamental-ness of the idea of extension in favor of making “force” fundamental. There is a way of interpreting this as a re-situating of mechanism rather than a rejection of it, as Leibniz the character in *QUICKSILVER* intimates. But the *Monadology* adopts this panpsychist gloss on “loci of force”, and (on metaphysical grounds based in an interpretation of the traditional definition of ‘substance’ as “that which exists independently”) concludes that monads cannot interact causally, which seems utterly incompatible with mechanism.

Likewise, both Newton and Leibniz employ God for part of the explanation: Newton appealing to special providence (sometimes to solve physical problems like why the planets stay in orbits more perfect than he thinks they should, given (a) gravitational interaction between planets and (b) the supposition of an ether which should cause friction), and Leibniz general providence (making it so the perceptions of the different monads line up to create the illusion of a shared world and agent causation on the part of monads).

#### **704 King’s Own Black Torrent Guards (Neal Stephenson)**

This regiment is fictitious, however it is true that several of the oldest British regiments, such as the Coldstream Guards, were founded during this era. I have tried to make the story of the King’s Own Black Torrent Guards plausible by patterning it after such real-world regiments.

#### **705 made a slave. (Neal Stephenson)**

This actually happened to a number of Taunton schoolgirls.

**707** Huygens's house (Neal Stephenson)

The house of the Huygens family stood where I have described it, but it no longer exists. A Dutch government ministry building now stands on the site.

**724** the Book is consumed by the flames (Neal Stephenson)

This must sound so ludicrous to modern readers that I feel compelled to make it clear that in 1686 the hangman really did burn, at the Exchange, a book relating the massacres of Huguenots in the Piedmont.

**735** Fall of Batavia (Neal Stephenson)

In 1687 the Amsterdam stock market really was moved by a false report of the Fall of Batavia. All I have done here is attributed it to Eliza.

**740** polder (Quillman)

Polder= land that would be under the sea without dikes and waterworks built by the Dutch.

**744** letters to William of Orange (Neal Stephenson)

Around this time it really did happen that a number of prominent Englishmen secretly sent letters to William of Orange soliciting his help in getting rid of James II. I have inserted Daniel into the story in the role of courier.

**747** A Swiss mathematician named Fatio (Neal Stephenson)

Fatio is a real historical figure. His movements and pastimes, as described in this novel, are generally close to historical fact, though of course the details of his interactions with characters in the book are fictional.

It really happened that a Count Fenil hatched a plot to kidnap William of Orange during one of William's sand-sailing expeditions on the Dutch coast and that the plot was divulged and stopped by Fatio.

However, in real life Fatio put a stop to it simply by warning the Dutch in a timely fashion—not by physically intervening as he does in the novel.

**772** Sghr (Jeremy Bornstein)

Qwghlm is a region of the British Isles composed of two islands. On this page, Eliza's letter names one as Sghr, leading me to wonder what native name the other island might have. I suspect that this information is contained in *Cryptonomicon*, but I could not find it in *Quicksilver*.

**811** Bonaventure Rossignol (Neal Stephenson)

Rossignol is a real historical figure, as was his father Antoine. Some information about them may be found in David Kahn's *The Codebreakers*. But I have not been able to discover much in the way of detail and so virtually everything about him in these books is fictional. They did, however, live in a chateau at Juvisy.

**826** crypto-embroidery (Neal Stephenson)

I made this up, but would not be at all surprised if someone had actually done it. It is prefigured, of course, in Madame Defarge's knitting in *Tale of Two Cities*, to which you can consider this an homage if you like.

My wife informs me that counted cross-stichers always overlap one way or another, and never switch. Anybody familiar with the craft would think Eliza a lousy stitcher, and would try to correct her bad habits.  
-Russ Nelson

**829** Eliza's journal entries (Neal Stephenson)

If these sometimes read like Victorian epistolary novels, and a little bit different from Eliza's usual style, consider that they are actually reconstructions of her encrypted notes written up by Rossignol. So we are

seeing things through one and perhaps two layers of “unreliable narrators.”

**839 Ernst von Pfung (Neal Stephenson)**

He is fictitious.

**850 Eleanor and Caroline (Neal Stephenson)**

These are real characters, and their biographies, as given in the novel, more or less tally with the historical account. However, this business of their getting caught up in the invasion of the Palatinate and ending up in the Hague as refugees is fictional. I think it is reasonably plausible though.

**855 banger (Jeremy Bornstein)**

“Banger” is a British term for a sausage.

**855 King of England in waterfront bar fight (Neal Stephenson)**

Apparently this is not far from what really happened. I have inserted Daniel Waterhouse and made up the details.

**860 Castle Upnor (Neal Stephenson)**

The castle is a real place and the description grounded in reality. The fictional part, here, is in linking it to Louis Anglesey, Earl of Upnor, who is a made-up character.

**864 Glorious Revolution...Moment It All Happened (Neal Stephenson)**

Mashed together into one evening here are a good many fictitious and real events, including the return of John Locke to England and the arrest of Jeffreys. Chalk it up to literary license.

**883 bhang (Quillman)**

bang: [<http://www.thefreedictionary.com/Bhang>] (hasheesh)

**886 cosh(Quillman)**

cosh: blackjack

[<http://www.thefreedictionary.com/cosh>]

**916 time time(Quillman)**

Something for the printers to correct? “There are some who die of shock, it is true, and perhaps that is why all of your friends wished to come and pass time time with you before I started.”

[ Fri Oct 31 08:00:31 AKST 2003 ]

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