

## Reading Through *Against the Day*

Arie Altena

It was the connection between mathematics and time that led me back to Thomas Pynchon. Googling the subject of time I was repeatedly referred to the theory of quantum gravity, but the search engine also kept displaying links to the nineteenth-century Irish mathematician Sir William Rowan Hamilton (1805–65), especially his paper 'Algebra Considered as the Science of Pure Time', or, more correctly 'Theory of Conjugate Functions, or Algebraic Couples; with a Preliminary and Elementary Essay on Algebra as the Science of Pure Time'.<sup>1</sup>

Sir William Rowan Hamilton is the inventor of quaternions. It's a famous anecdote from the history of mathematics:

Hamilton was looking for ways of extending complex numbers (which can be viewed as points on a 2-dimensional plane) to higher spatial dimensions. He failed to find a useful 3-dimensional system, but in working with four dimensions he created quaternions. According to Hamilton, on 16 October 1843 he was out walking along the Royal Canal in Dublin with his wife when the solution in the form of the equation  $i^2 = j^2 = k^2 = ijk = -1$  suddenly occurred to him; Hamilton promptly carved this equation using his penknife into the side of the nearby Broom Bridge, for fear he would forget it.<sup>2</sup>

Quaternions – I knew the term from Thomas Pynchon's novel *Against the Day* (2006), which is also where I had previously read about Hamilton. Among the many subjects *Against the Day* (2006) deals with are the developments in mathematics and physics around 1900, just before Einstein's Special Theory of Relativity and the first formulations of quantum mechanics that would revolutionise our ideas of time and space. *Against the Day* anticipates these developments by referring to the struggle

between the new mathematical theory of quaternions and the equally new theory of vector analysis at the end of the nineteenth century. The famous Michelson-Morley experiment from 1887 also features in the book – this was the experiment that should have proven the existence of the ether as the medium through which light travels. It failed to do so. Instead it became one of the strongest proofs against the existence of ether, and provided evidence that Einstein's Special Theory of Relativity was correct.

*Against the Day* elaborates in the form of a novel on some of the implications for the conception of time, space and light that the scientific developments around the turn of the century seemed to entail, and which people at the time were beginning to phantasise about. It was the period when H.G. Wells' novel, *The Time Machine* (1895), became immensely popular. All of this is related in a characteristic Pynchonian way with an eternally youthful crew of the sometimes invisible airship, Inconvenience (the Chums of Chance), a 'subdesertine frigate' for voyaging beneath desert sand, a cast of cowboys, criminal capitalists, mad inventors, shamans, clairvoyants, terrorists, beautiful women, drug abusers, and many clichés and stock figures from popular literature.

In his review 'Do the Math, Thomas Pynchon Returns', which was published in *The New Yorker* on 27 November 2006, the literary critic Louis Menand stated:

I think that the idea behind *Against the Day* is something like this: An enormous technological leap occurred in the decades around 1900. This advance was fired by some mixed-up combination of abstract mathematical speculation, capitalist greed, global geopolitical power struggle, and sheer mysticism. We know (roughly) how it all turned out, but if we had been living in those years it would have been impossible to sort out the fantastical possibilities from the plausible ones. Maybe we

could split time and be in two places at once, or travel backward and forward at will, or maintain parallel lives in parallel universes. It turns out (so far) that we can't. But we did split the atom – an achievement that must once have seemed equally far-fetched. *Against the Day* is a kind of inventory of the possibilities inherent in a particular moment in the history of the imagination.<sup>3</sup>

As a way of 'Travelling Time', an index to the subject 'time' in Thomas Pynchon's *Against the Day* is spread throughout this book.<sup>4</sup>

1. Sir William Rowan Hamilton, 'Theory of Conjugate Functions, or Algebraic Couples; with a Preliminary and Elementary Essay on Algebra as the Science of Pure Time', in *Transactions of the Royal Irish Academy*, vol. 17, part 1 (1837), pp. 293–422.

2. Quoted from [http://en.wikipedia.org/wiki/William\\_Rowan\\_Hamilton](http://en.wikipedia.org/wiki/William_Rowan_Hamilton) (accessed 31 December 2011).

3. Louis Menand: 'Do the Math, Thomas Pynchon Returns', in *The New Yorker*, 27 November 2006.

4. The indispensable PynchonWiki at <http://pynchonwiki.com> of course provided a first start for an index on 'time'. I checked all the entries and added to it.