

AN AUTOMORPHIC READING OF THOMAS PYNCHON'S  
*Against the Day*  
(work in progress)

MICHAEL HARRIS, begun October 11, 2008

Pynchon, postmodern author, is commonly said to have a non-linear narrative style. No one seems to have taken seriously the possibility, to be explored in this essay, that his narrative style might in fact be *quadratic*.

Google gives no matches whatsoever for "quadratic narrative style,"<sup>1</sup> and this hypothesis — more precisely, that Pynchon's major books are structured by *conic sections*, at a rate of roughly one per book — sheds no light on the deeper import of his writing. Once you've seen the thesis, however, justifying it is as easy as falling off a log.

This "insight" came to me instead of a solution to another puzzle that has been troubling me since I started reading *Against the Day* last spring. The visibility of mathematics in this book is exceptional even for Pynchon. Two of the main characters are at least part-time mathematicians; Hilbert, Minkowski, and Gibbs make cameo appearances; several chapters are set in the Göttingen mathematics department; and among Pynchon's signature silly songs there is this romantic number:

Her idea of banter  
Likely isn't Cantor  
Nor is she apt to murmur low  
Axioms of Zermelo,  
She's been kissed by geniuses,  
Amateur Frobeniuses  
One by one in swank array,  
Bright as any Poincaré...

and so on in that vein.

It was when I came upon the word "automorphic" on p. 409

...Earth making its automorphic way round the sun again and yet again...

that I began to wonder what was going on... and then on p. 452 and 453, there it was again

periodic functions, and their generalized form, automorphic functions

as a prelude to a scholarly discussion of time travel:

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<sup>1</sup> On December 7, 2008, it gave one: see for yourself.

Time no longer 'passes,' with a linear velocity, but 'returns,' with an angular one. All is ruled by the Automorphic Dispensation. We are returned to ourselves eternally, or, if you like, timelessly.

Between the two mentions of "automorphic" is a scene reminiscent of Odysseus' voyage to the river Styx, in which one of the Chums of Chance crosses a recognizably non-Euclidean landscape:

...the more "respectable" parts of town... at each step were receding, it strangely seemed, disproportionately farther as the young men went on.

The puzzle was: was all this technical and, for the most part, legitimate mathematics a mere atmospheric accompaniment to the turn of the century's hesitant exploration of the relations between time, space, and light? So that reviewers could write, with Luc Sante in the *New York Review of Books*

My own eyelids drooped when the subject was mathematics, for example, but that is something I am profoundly ignorant about...

and still feel qualified to shower the book with unstinting praise? Or, for that matter, to write, like Louis Menand in *The New Yorker*

I can't do the math, but I think that the idea behind "Against the Day" is something like this...[continuing with an elaboration of what I just wrote above]

but concluding in disappointment that "Pynchon must have set out to make his readers dizzy and, in the process, become a little dizzy himself."

Or was all this mathematics there for a reason integral to the structure of the book, inaccessible to "profoundly ignorant" reviewers who "can't do the math?" Perhaps I was missing a cryptic message intended for people familiar with the word "automorphic" — for people like me, in other words...

I'd better stop here to reassure the reader that I have not lost my marbles. Paranoia is one of Pynchon's favorite topoi, and although it's pretty clear that this is very much a self-referential paranoia, as when in *The Crying of Lot 49* the secret network of communication Oedipa Maas believes may have been created for her benefit was indeed created by the author himself, Pynchon's reclusiveness combined with his choice of theme must make the interpretation of his books a magnet for all sorts of cranks as well as genuine paranoids. So I repeat that what impels me to write is not the belief that I have somehow seen into "the bright, flowerlike heart of a perfect hyper-hyperboloid," to quote a passage from the last page of *Against the Day* to which I will soon return but that here can stand for the book itself or the entirety of Pynchon's work. Whatever I've seen is just something I can't help noticing, meaningless or not.

Returning to my narrative, it was not reassuring to discover that Christophe Claro, who recently translated *Against the Day* into French to considerable acclaim in the literate press, chose to render automorphic "automorphique," as in "fonctions

automorphiques," instead of the correct term "automorphe," although he was supposedly indirectly in touch with Pynchon himself (cf. <http://quarterlyconversation.com/the-christophe-claro-interview>). If Pynchon uses mathematics as background music, the imprecise translation makes no difference; but if it serves a structural purpose, then the choice of word may be very important.

I can't solve the puzzle, but I can say that when you start looking you find an awful lot of hyperbolas in *Against the Day*. For example: the hyperbolic geometry to which I alluded in connection with automorphic functions; the "Automorphic Dispensation" which seems to be a "function... by which, almost as a by-product, ordinary Euclidean space is transformed to Lobachevskian" (p. 453); and that "perfect hyper-hyperboloid" that "only Miles" Blundell, the one character to have comprehended the meaning of space-time, "can see in its entirety." There are (hyperbolic) wave equations (and a whole family of Vibes) and the "noted Quaternionist V. Ganesh Rao of Calcutta University" who by rotating himself in an imaginary direction performs something "like reincarnation on a budget, without the element of karma to worry about." (pp. 130, 539)

Now I remember having understood Pynchon's *V.* as the convergence, V-like, of two narrative lines.<sup>2</sup> *Gravity's Rainbow*, obviously dominated by the image of the parabola, and full of explicit references to the shape such as

He had noted this parabola shape around on Autobahn overpasses, sports stadiums u.s.w. and thought it was the most contemporary thing he'd ever seen. Imagine his astonishment on finding that the parabola was also the shape of the path intended for the rocket through space. (p. 298)

taken from a list entitled "paraboloids" at [ThomasPynchon.com](http://ThomasPynchon.com), has also been compared to a parabola in its narrative structure, for instance by Salman Rushdie<sup>3</sup>. The obvious guess would be that *Mason & Dixon*, which I haven't read, was written under the sign of the ellipse. And sure enough, here's what Google brought home:

In a slowly rotating Loop, or if you like, Vortex, of eleven days, tangent to the Linear Path of what we imagine as Ordinary Time, but repeating itself,--- without end.

The main characters are Astronomers, there are orreries and orbits "as elegant as Kepler's," and then this vision, toward the end of the book, when the explorers are at the point of being turned back:

"In the Forest ... ev'ryone comes 'round in a Circle sooner or later. One day, your foot comes down in your own shit. There, as the Indians say, is the first Step upon the Trail to Wisdom."

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<sup>2</sup> So does Wikipedia: "The paths of Stencil and Profane through the novel form a sort of metaphorical V." See also the next note.

<sup>3</sup> In his 1990 review of *Vineland*, Rushdie wrote "His novel "V." was actually V-shaped, two narratives zeroing in on a point, and "Gravity's Rainbow" was the flight path of a V-2 rocket, a deadly parabola that could also be described as an inverted V."

At [www.lib.ncsu.edu/theses/available/etd-11142004-184614/unrestricted/etd.pdf](http://www.lib.ncsu.edu/theses/available/etd-11142004-184614/unrestricted/etd.pdf)

one reads "...critics are in disagreement over whether the dominant image is a parabola or a circle"

What I haven't done (apart from actually reading the book<sup>4</sup>) is to find a convincing argument that *Mason & Dixon* has an elliptical or even merely circular structure. You can find plenty of ellipses, not to mention circles, in all of Pynchon's novels, as well as the ellipses that look like this... For that matter you can find circles in practically every story ever recorded, starting with Gilgamesh. (Besides, what better literary representation of a double line than the border between Pennsylvania and Maryland, mapped by Mason AND Dixon?<sup>5</sup>) Nor have I figured out how or whether Pynchon's two other novels fit in this tableau of conic sections.

Determining how, if at all, *Against the Day's* narrative structure is hyperbolic would be more challenging, but here are some thoughts. As a hyperbola has two connected components — *bilocation?* — so one would expect *Against the Day* to have two non-overlapping narrative arcs. So it is suggestive that the Chums of Chance and the main characters of the Traverse family narrative never meet. The Chums open the novel with a landing of the airship *Inconvenience* and close it with the same airship returning to the sky, to "fly toward grace." The Traverses naturally spend much of their time underground in mines or tunnels or underwater in a submarine or, in one case, a torpedo. The two arcs do come very close in three successive chapters set in the Low Countries — in Oostende, to be precise, exactly in the middle of the book.

The novel is filled out by a host of secondary characters who bounce or vibrate from one narrative strand to the other — mostly more or less mad scientists (Heino Vanderjuice, Merle Rideout, V. Ganesh Rao, Roswell Bounce) obsessed with time travel and quaternions, but also including the detective Lew Basnight and (at least tangentially) members of the Vibe clan. The plot is beginning to look like a hyperbola whose two arcs are joined by a sinusoidal curve, whose graph it would not surprise me to find in a mathematical analysis of double refraction in calcite (*Iceland spar*, title of the second part of the book).<sup>6</sup>

I leave these speculations to a later version of this text that I may never need to write. But let me insist again that the hypothesis would be no less frivolous if it turned out to be in some sense correct. Choosing to structure his successive novels by conic sections, if that is what Pynchon did may have been a private joke, just like the recurring trope of entropy in his work may be an elaborate reminder of C. P. Snow's comparison of ignorance of the second law of thermodynamics to not having read Shakespeare. Thanks largely to Pynchon,<sup>7</sup> it's hard to find a critic ignorant of the second law of thermodynamics, though if Sante and Menand are typical "don't know much trigonometry" is still a popular refrain among the literary elite. Or it may have been an arbitrary organizing principle, a disciplinary constraint to guarantee the non-linearity of his narratives. I'd guess a little of both.

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<sup>4</sup> but now, six weeks later, I have: see the addendum.

<sup>5</sup> But cf. Wikipedia: "...the line approximates a segment of a small circle upon the surface of the (also approximately) spherical Earth."

<sup>6</sup> For a bounceless graph, cf. Fig. 1, p. 1435, of D. D. BHAWALKAR, A. M. GONCHARENKOT and R. C. SMITH Propagation of Gaussian beams in anisotropic media, BRIT. J. APPL. PHYS., 1967, 1431-1441

<sup>7</sup> who chose the 25th anniversary of C. P. Snow's "Two Cultures" lectures for one of his rare departures from public silence: *Is it OK to be a Luddite?* *New York Times Book Review*, October 28, 1984.

One more thing, though. A projectile attaining and exceeding escape velocity will continue endlessly along a receding hyperbolic trajectory. At the end of the journey "it is no longer a matter of gravity [for the *Inconvenience*] — it is an acceptance of sky." There aren't any more conic sections, except for the most degenerate of all, the single point, which might designate a novel in which absolutely nothing happens. On the other hand, there's practically no limit to what Pynchon might do with cubic narrative structures...

ADDED DECEMBER 7, 2008

Of course I decided I had no choice but to read *Mason & Dixon*, bitterly regretting I had not done so ten years ago, and of course, unlike the book's eponymous heroes, finding what I was looking for, specifically ellipses of all shapes and sizes. The word "Ellipse," to start with, or rather to end with, since it occurs twice and rather superfluously in close succession in chapters 75 and 76.

*Mason & Dixon* comes closest of all Pynchon's novels to the traditional sense of closure. The account of the Mason-Dixon expedition is neatly sandwiched between introductory and concluding sections, as it is enclosed comfortably within the story told by the Rev<sup>d</sup> Cherrycoke's to his family circle, itself reflected in the thematically overdetermined "Mirror in an inscrib'd Frame" that appears on the novel's very second page. The main narrative is in turn studded like a Fruit-Cake with digressions: side trips to New York and Virginia, a tale of a Tub, a chapter devoted to the mechanical Duck's love story and another one on the fairy tale of the Court Astronomers Hsi and Ho... The *Ghastly Fop* episode that interrupts the novel without warning in chapters 53 and 54 looks like an exception: far from being self-contained, its unexpected fusion with Cherrycoke's narrative leads directly to this dialogue between Captain Zhang and Dixon:

"...*We* happen to be the principal Personae here, not you two! Nor has your Line any Primacy in this, being rather a Stage-Setting..."

"And Mason and I,—"

"Bystanders. Background. Stage-Managers of that perilous Flux,— little more."

"Eeh." Dixon thinks about it. "Well it's no worse than Copernicus, is it...?"

This blurring of multiple levels of fiction may be a pinnacle of novelistic self-referentiality, but it may also be a sly allusion to the simple geometric fact that an ellipse has not one but *two* foci...

In this sketch I set out to write down unquiet thoughts about automorphy in *Against the Day* that came to me only some time after I had put the book aside. Having turned my attention to *Mason & Dixon* with a Thesis to defend or discard, it's not surprising that my reading turned up a great deal more in the way of material. To avoid overly shifting the focus of my own narrative, I just mention in passing

- the "Geometry more permissive than Euclid" apparently spherical rather than hyperbolic, in chapter 33,
- the Möbius smoke ring in chapter 34,
- and the ruminations on Time, the "Space that may not be seen," the "true River than runs 'round Hell" in chapters 32-34.

Time is undoubtedly of thematic import in *Mason & Dixon*, and this particular sequence of attempts to circumscribe Time is initiated by the swallowing of a Watch

that operates by Perpetual-Motion by a character known only as R.C. Aware that Pynchon must have learned in his engineering work that an elliptic partial differential equation typically arises in the determination of a system's steady state behavior, when time is no longer a factor, I sought unsuccessfully in *Mason & Dixon* an example of such an equation. I had already found hyperbolic PDEs in *Against the Day*, but a cursory inspection of *Gravity's Rainbow* turned up no parabolic PDEs — the (apparently nonsensical) equation for "motion under the aspect of yaw control" is not one.

Having completed his reflections on the consequences of swallowing Time, Pynchon opens chapter 35 with Cherrycoke's family's most heated, and most quoted, argument, on the relation between History, Truth, and 'Novel.' Philadelphia lawyer Ives LeSpark puts it this way:

"Time on Earth is too precious. No one has time, for more than one Version of the Truth."

For the author, swallowing Time amounts to enclosing it in a novelistic structure. Most suggestive of the *Mason & Dixon's* cyclical structure is the prediction in its very last line:

"We'll fish there. And you too."

Addressed to Mason by his two older sons, after (or as?) they "ensign their Father into his Death," the last three words lose none of their poignancy if they are taken literally as a prediction, which becomes true only on the condition that the narrative is meant to recommence at that point from the beginning. As it is a convenient way to reconcile Mason's abrupt decision near the end of his life to return with his family to Pennsylvania with this summary of his life, made shortly before Dixon's death:

"To leave home, to dare the global waters strange and deep, consort with the highest Men of Science, and at the end return to exactly the same place, us'd,— broken..."

Gluing the novel's two ends together in this way is also the only way to validate what the "British Dog" promises Mason and Dixon at the end of the penultimate chapter:

"The next time you are together, so shall I be, with you."

Mason's words the "next time," in chapter 3, could well serve as my motto:

"Isn't it worth looking ridiculous, at least to investigate this English Dog, for its obvious bearing upon Metempsychosis..."