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Temporal Bandwidths
Recontextualizations of Victorian History in Thomas Pynchon's *Against the Day*

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I don't understand why you're not all writing science fiction.
Alfred Kazin, graduate writing seminar
CUNY Graduate Center, 1983

Anyone who says we are a society lacking belief is not paying attention. If anything, we are lacking doubt.
Alexander Nazaryan, "Doubting Thomas"
The New Yorker, August 22, 2012

...the nineteenth century, which prided itself upon the invention of steam and evolution, might have derived a more legitimate title to fame from the discovery of pure mathematics.
Bertrand Russell, "Mathematics and the Metaphysicians"

The past is never dead. It's not even past.
William Faulkner, *Requiem for a Nun*

And somewhere, that unanswerable wave-function the sea.
Thomas Pynchon, *Against the Day*

In a paper of about 25 years ago, unfortunately not more widely read, I described how Thomas Pynchon's *Gravity's Rainbow* constituted not just a vision of history, but a theory of history. With a mathematical precision obscured by a true outsider's taste for the louche and the camp, *Gravity's Rainbow* was an engineer's novel: at once proposing and constructed consistent with a theory of history that deploys classical calculus – the mathematics of rocketry – to engage a historiographic discourse dominated by dialectical

theories of change versus continuity and offering ‘solutions’ based on derivatives and limits that outlined a very specific method for understanding the “course” of history and how it may intersect with individual fates. Which is to say, the novel argues that since calculus explains the relationship between change and continuity in the physical world, ergo, it could explain historiography, understood as the attempt to theorize change and continuity in the social and political world. The thesis is sometimes explicitly expressed textually:

“Temporal bandwidth,” is the width of your present, your *now*. It is the familiar “ Δt ” considered as a dependent variable. The more you dwell in the past and in the future, the thicker your bandwidth, the more solid your persona. But the narrower your sense of Now, the more tenuous you are. It may get to where you’re having trouble remembering what you were doing five minutes ago, or even – as Slothrop now – what you’re doing *here*, at the base of this colossal curved embankment... (Gravity’s Rainbow, 509.)

It is worth noting the formal typographic and grammatical choices in this fairly typical passage: the italicized pairing of ‘here’ and ‘now,’ the choice of the symbolic operator Δ over the Anglicized ‘delta,’ the capitalization of “Now.” More to the point, Pynchon’s thesis of history is expressed most concretely in the formal structure of the novel itself, which I argued takes the shape of a parabola, with text coming at great ‘speed’ – expressed as rhetorical incoherence – at the opening of the novel from the limit of the unknowable past, exiting in the novel’s last pages at great speed to the limit of the unknowable future, and having at its nearly mathematical center, the story of the novel’s erstwhile protagonist, Tyrone Slothrop, costumed as the super-hero Rocketman, crossing six lanes of the Autobahn to enter the American zone of West Berlin, thus invading the ongoing Potsdam Conference, to retrieve a parcel of cocaine. This is the moment at which the arc – the parabola, the “gravity’s rainbow” – of Tyrone Slothrop’s life inter-

sects with that of a newly global history. History has an arc, unknowable at its limits, in which an infinity of possibilities of past and future converge on a single point at the apex of “Now,” and into which we can gain invaluable insight from the application of classical mathematical rules governing the relationship between change and continuity, and to which we can be more or less well attuned based on the quality of our own “temporal bandwidths.”

It is my contention, here, that Pynchon’s more recent, largely misunderstood and under-appreciated 1,100-page Victorian-novel pastiche, *Against the Day*, similarly engages in both the telling and the explicit theorizing of capital-H History (‘explicit theorizing’ here meaning the attempt to actually articulate a historiographic theory, and not just that the novel’s narrative enacts a form of implicit theory that is latent in all narrative histories and historical fictions). As opposed to *Gravity’s Rainbow*, the ground of historical engagement in *Against the Day* has shifted backward to the late Victorian era, while ironically, the ground of mathematical discourse has shifted forward to encompass wave mechanics, quantum mechanics, the development of Boolean/formal logic and the various and often contradictory mathematical underpinnings of both special and general relativity. The calculus, after all, was the epitomal expression of Enlightenment and post-Enlightenment rationality and intellectuality (“The discoveries of Newton have done more for England and for the race, than has been done by whole dynasties of British monarchs,” the president of Harvard College, Thomas Hill, provocatively wrote as late as 1857 {Crowe, 37; Cohen, 57}, a moment that in retrospect, ironically, nearly coincided with the theoretical destruction of Newtonian concepts of space and time), and as “enlightening” as a historiography based on a thorough understanding of the calculus could

be, if one seeks, as so many contemporary historians after all do, a historiography that offers exit or transcendence from the prison-house of Enlightenment-inflected thought, one would quickly realize that a resort to Newton couldn't be the answer.

In the absence of any significant biographical information on Pynchon himself, one can speculate that between 1973 and 2006 he may have spent some time evolving his mathematical frame of reference from that of an engineer to that of a contemporary physicist, that he's spent some considerable time reading new work by contemporary academic historians, or in the greater likelihood, both. As Pynchon himself says towards the end of *Against the Day*, in a statement we will examine more rigorously at the end of this essay, "It is no longer a matter of gravity – it is an acceptance of sky" (AD, 1084), where "sky" I suspect is a broad metonym for the "field" of contemporary math and physics, and "gravity" a metonym for Newton and the calculus. But if the changes in Pynchon's mathematical thought can be understood as something of a logical progression, it is less clear why Pynchon might have chosen late Victorian political, social, and cultural history as the ground for this voluminous exegesis.

There is, of course, the fact that much of the contemporary revolution in mathematics, logic, and physics had its historical origins in the "long" mid-to-late nineteenth century (including the pre-world war years of the twentieth), and constitutes –if not exactly an *unwritten* history – a history that remains barely visible and poorly understood by many professional historians and literary critics. Even while the calculus maintains much of its technological and aesthetic prowess down to this day – making everything from jet flight to reductionist theories about the *a priori* positivist/rationalist bias of "science" possible – as early as the mid-nineteenth century, Newton's calculus, and the

Euclidean geometry on which it depended, were collapsing as valid, formal systems for explaining the physical world. As the historian Daniel Cohen succinctly puts it:

Continental mathematicians had based their calculus on a number system lacking the imaginaries, and on a fundamentally unsound algebra. The calculus of Isaac Newton and his British followers, built on a flawed extension of geometry, was even more problematic. (Cohen, 163.)

Indeed, Cohen continues, “Early in the Victorian period (and without much fanfare) two eastern European mathematicians, the Russian Nikolay Lobachevsky (1793-1856) and the Hungarian Jonas Bolyai (1802-1860),” – whose work appears in *Against the Day* – “challenged Euclid’s fifth postulate” and how “in 1854 the German theorist Georg Riemann (1826-1866),” – whose work plays a critical role in the plot of *Against the Day* – “established that non-Euclidean geometries could occur in spaces with more than three dimensions,” and calling this “[a] critical precursor to Einstein’s general theory of relativity” (164).

The Victorian “revolution” in mathematics, in short, begun in Cohen’s view with the purely mathematical prediction of the existence of the planet Neptune at the beginning of the century, and culminating with Russell and Whitehead’s logic at century’s end, challenged rather than reinforced Enlightenment constructs of science, and in the process undermined an entire critical thread of Western epistemology.

Euclid believed he had attained theoretically exact knowledge in his postulates, which for two millennia seemed to be unshakable, universally true. Had the earth been considerably smaller, however – say, the size of a house – the Greek mathematician would have realized that parallel lines can indeed intersect, just as lines of longitude meet at the poles. Thus non-Euclidean geometry showed how seemingly absolute mathematical laws were not transcendental after all, and pointed the way to a perhaps less revered, but more rigorous set of axioms. (166-67)

In *Against the Day*, Pynchon, characteristically, delights in caricaturing while illustrating the Victorian era's newly non-Euclidean view of the world, and parodies while expounding such a view's novel implications for the political philosophy of the time. The novel introduces us to the twin characters, Renfrew and Werner, "a pair of rival University professors, Renfrew at Cambridge and Werfner at Göttingen, not only eminent in their academic settings but also would-be powers in the greater world." Pynchon goes on to describe their reputations as those of "leading specialist[s], consulted by the Foreign Office" of their respective countries, and whose influence grew "well beyond the Balkans, beyond the ever-shifting borders of the Ottoman Empire, to the single vast Eurasian landmass and that ongoing global engagement, with all its English, Russian, Turkish, German, Austrian, Chinese, Japanese – not to mention indigenous – components, styled by Mr. Kipling, in a simpler day, 'The Great Game'" (226-27). One is tempted to try and identify plausible historical analogs for these characters: John Stuart Mill and Karl Marx, for instance. Taking a more literal reading, Renfrew might be modeled on the liberal politician and the Whewell professor of International Law at Cambridge from 1869 to 1887, William Vernon Harcourt, based on the fact that one of the novel's main characters, Yashmeen's, surname is Harcourt, and considering the importance of William Whewell to the history of Victorian mathematics. Someone whose German is better than mine might be able to build a case for the historical identity of the Werfner character, although one possibility would be the mathematician Hermann Amandus Schwarz, who was at Göttingen at the right time, was Jewish and so in the context "*unheimlich*," and whose biography on The MacTutor History of Mathematics archive of the School of Mathematics and Statistics of the University of St Andrews, Scotland (<http://www-history.mcs.st->

andrews.ac.uk/) notes the curious reputation he acquired for assisting, nearly every day, the stationmaster at the local railway station by closing the doors of the trains; both of which facts seem relevant embodied in the language of the passage we are going to talk about, reproduced immediately below. Pynchon, of course, complicates all this by suggesting over the course of the novel that Renfrew and Werfner may in fact be one and the same person, by which we aver he ultimately means that English and German academic interpretations of the Great Game were but two sides of the same intellectual coin. All that being background to the following classic Pynchon mash-up, in which Professor Renfrew explains to the novel's intrepid private detective, Lew Basnight, the distinctions between and implications of Euclidean and non-Euclidean space for the global politics of the nineteenth century.

He motioned Lew to a smaller room, where a globe of the Earth hung gleaming, at slightly below eye-level, from a slender steel chain anchored overhead, surrounded by an æther of tobacco smoke, house-dust, ancient paper and book bindings, human breath.... Renfrew took the orb in both hands like a brandy snifter, and rotated it with deliberation, as if weighing the argument he wished to make. Outside the windows, the luminous rain swept the grounds. "Here then – keeping the North Pole in the middle, imagining for purposes of demonstration the area roundabout to be solid, some unknown element one can not only walk on but even run heavy machinery across – Arctic ice, frozen tundra – you can see that it all makes one great mass, doesn't it? Eurasia, Africa, America. With Inner Asia at its heart. Control Inner Asia, therefore, and you control the planet."

"How about that other, well, actually, hemisphere?"

"Oh, this?" He flopped the globe over and gave it a contemptuous tap. "South America? Hardly more than an appendage of North America, is it. Or of the Bank of England, if you like. Australia? Kangaroos, one or two cricketers of perhaps discernible talent, what else?" His small features quivering in the dark afternoon light.

“Werfner, damn him, keen-witted but *unheimlich*, is obsessed with railway lines, history emerges from geography of course, but for him the primary geography of the planet is the rails, obeying their own necessity, interconnections, places chosen and bypassed, centers and radiations therefrom, grades possible and impossible, how linked by canals, crossed by tunnels and bridges either in place or someday to be, capital made material – and flows of power as well, expressed, for example, in massive troop movements...

(AD, 242.)

Like the unique point of view it imposes on Renfrew’s globe, the complex and opaque history of the development of modern mathematics during the Victorian era, if we are to take the words of Bertrand Russell himself at face value, must be understood as having had far more radical implications *for* history than any critical theory or simple revisionism:

The proof that all pure mathematics, including Geometry, is nothing but formal logic, is a fatal blow to the Kantian philosophy.... The whole doctrine of *a priori* intuitions by which Kant explained the possibility of pure mathematics, is wholly inapplicable to mathematics in its present form. The Aristotelian doctrines of the schoolmen come nearer in spirit to the doctrines which modern mathematics inspire; but the schoolmen were hampered by the fact that their formal logic was very defective, and that the philosophical logic based upon the syllogism showed a corresponding narrowness (Russell, 1589-90).

Or as Pynchon, in *Against the Day*, more pithily puts it: “‘Cambridge personality Bertie (‘Mad Dog’) Russell observed,’ observed Barry Nebulay, ‘that most of Hegel’s arguments come down to puns on the word ‘is’” (AD, 538). Regardless, Russell is clearly marking the end of something important in the broader history of Western intellectual life, as well as the need for the beginning of something new which we yet (as of 1917 at least; I would argue still today) have an imperfect grasp on. And virtually all the impor-

tant developments in mathematics and mathematical physics that led to Russell's marking of this rupture/rapture occurred during the so-called long nineteenth century, which in turn marks it as a privileged epoch of beginning or departure. As a matter of logic then – even of pure mathematical logic – the calculus, and the idealist logic and worldview that it underwrote, was no longer the right or sufficient tool for understanding any history, least of all the history of its own collapse as an intellectual system, and the possible social and political implications of that collapse.

If *Against the Day* were simply a novel about this history of mathematics it would still be fascinating, but one might find it lacking in broader interest and import. And while Pynchon may have a dubiously-deserved reputation as something of a conspiracy theorist, it would still be reductionist in the extreme to describe his historical novels as merely proposing some form of mathematic determinism. Pynchon seems unready to concede, as his character, the Quaternionist, Buddhist and early practitioner of the art of “bilocation,” “Dr. V. Ganesh Rao of Calcutta University” concedes in his own quest for “a gateway to the Ulterior,” to “the wisdom of simply finding silence and allowing Mathematics and History to proceed as they would” (AD, 130). Rather, layered generously, seemingly chaotically, among the endless chatter of quaternions, automorphic functions and the Maxwell field equations, are an abundance of cultural and political markers one (at least instinctively) takes as emblematically Victorian: grand capitalists and rabid anarchists, flying machines and steamships, grand tourists in Venice and Great Gamers in Central Asia, parapsychologists and Pinkerton detectives, world's fairs, panoramas, and ferris wheels.

Even should the grand unified equation of History prove in the end to be a formal, multi-variant equation in which many of the variables must signify the complex or irrational – the non-“real”, in short – that doesn’t exclude the possibility that other variables can still indeed signify what we yet perceive and call the ‘real.’ Or, as the character of “the Cohen,” the head of *Against The Day*’s version of the Victorian institution, the Society for Psychological Research, the T.W.I.T., puts it, it is all “an unavoidable outcome of the Victorian Age itself. Of the character of its august eponym, in fact” (230). If anything, Pynchon remains the “mathematic humanist,” a practitioner of what Daniel Cohen refers to as the “cosmopolitan pacifism” so “apparent in today’s scientific circles” (Cohen, 76), that we first met as long ago as this key passage, anticipating so many of the larger themes of Pynchon’s *oeuvre*, from *The Crying of Lot 49*:

She remembered ... talking about his Machine, and massive destructions of information. So when this mattress flared up around the sailor, in his Viking’s funeral: the stored, coded years of uselessness, early death, self-harrowing, the sure decay of hope, the set of all men who had slept on it, whatever their lives had been, would truly cease to be, forever, when the mattress burned. She stared at it in wonder. It was as if she had just discovered the irreversible process. It astonished her to think that so much could be lost, even the quantity of hallucination belonging just to the sailor that the world would bear no further trace of. She knew, because she had held him, that he suffered DT’s. Behind the initial was a metaphor, a delirium tremens, a trembling unfurrowing of the mind’s plowshare. The saint whose water can light lamps, the clairvoyant whose lapse in recall is the breath of God, the true paranoid for whom all is organized in spheres joyful or threatening about the central pulse of himself, the dreamer whose puns probe ancient fetid shafts and tunnels of truth all act in the same special relevance to the word, or whatever it is the word is there, buffering, to protect us from. The act of metaphor then was a thrust at truth and a lie, depending where you were: inside, safe, or outside, lost. Oedipa did not know where she was. Trembling, unfurrowed, she

slopped sidewise, screeching back across grooves of years, to hear again the earnest high voice of her second or third collegiate love Ray Glozing bitching among “uhs” and the syncopated tonguing of a cavity, about his freshman calculus; “dt,” God help this old tattooed man, meant also a time differential, a vanishingly small instant in which change had to be confronted at last for what it was, where it could no longer disguise itself as something innocuous like an average rate; where velocity dwelled in the projectile even though the projectile be frozen in midflight, where death dwelled in the cell though the cell be looked in on at its most quick. She knew that the sailor had seen worlds no other man had seen if only because there was that high magic to low puns, because DT’s must give access to dt’s of spectra beyond the known sun, music purely of Antarctic loneliness and fright. But nothing she knew would preserve them, or him. (Lot 49, 128-29.)

Time, history, life itself, could be explained in the intersection of sex and calculus. This resort to the psychological, to the real, to the human, to history, to epistemological *and* ontological dramas, not through rational “science” as it is (poorly) understood by Russell’s “schoolmen,” but through a computation and acknowledgment of the irreducible *human instant*, remains one of the core rhetorical acts across all of Pynchon’s work. So Pynchon muses, in *Against the Day*, that “all investigations of Time, however sophisticated or abstract, have at their true base the human fear of mortality” (AD, 553), and “... on the face of it, all mathematics leads, doesn’t it, sooner or later, to some kind of human suffering” (541).

If a mathematical perspective implies that we are indeed living in a present characterized by a permanent, radical, but poorly understood and under-conceptualized, break in Western philosophy that has its origins in nineteenth-century discoveries in mathematics and mathematical physics, a humanist perspective, evidenced by a groundswell of recent literary and historical work that turns much of the received wisdom of mid-twentieth century literary critics and historians on its head, argues towards the notion that

we haven't yet adequately confronted the Victorian mathematician still struggling to find its place in our postmodern souls, and as a consequence, our whole accepted notion of the periodization of our recent social and political history must be reconsidered. As Tanya Agathocleous suggests in her elegant reconsideration of several semi-canonical literary and journalistic works of the era, *Urban Realism and the Cosmopolitan Imagination in the Nineteenth Century*:

...there are a number of historical and literary rationales for seeing the nineteenth century as the starting-point of the imperial and metropolitan imaginary that Marxists like Jameson and Raymond Williams locate in the modern period (Agathocleous, 9).

And on a related note:

... the twentieth century's *fin-de-siècle* contest over cosmopolitanism inherits more than it acknowledges from Victorian debates (32).

The idea of a "Victorian age," of course, is a conceit of the English-speaking world that Pynchon can't keep but sending up in his inimitable way, and in support ultimately of his larger historical arguments. Riffing on the possible historical consequences if the first, 1840 assassination attempt on Victoria had succeeded, we get this contemplation:

"Had the demented potboy Edward Oxford's pistol-shots found their mark sixty years ago at Constitution Hill, had the young Queen died without issue, the insupportably loathsome Ernst August, Duke of Cumberland, would have become King of England, and Salic law being thus once more observed, the thrones of Hannover and Britain would have been reunited..."

"Let us imagine a lateral world, set only infinitesimally to the side of the one we think we know, in which just this has come to pass.

...

“Suppose the whole run-together known now as ‘the Victorian Age’ has been nothing but a benevolent mask for the grim realities of the Ernest-Augustan Age we really live in....”

(230-231)

And when the American Lew Basnight insists that would be “horrible,” Pynchon turns the tables again: “Only a bit of fun. You Yanks are so serious.” (231)

Or consider the seemingly more important recontextualization, towards the end of the novel, which Pynchon offers us in the cosmopolitan voice of ‘Danilo,’ a Sarajevo patriot, descendant of Sephardic Jews and “master” of “Italian, Turkish, Bulgarian, Greek, Armenian, Arabic, Serbo-Croatian, and Romany as well as the peculiar Jewish Spanish known as Judezmo,” and “the one indispensable man in the Balkans,” defending the city against the catastrophic impulses of the “Great Powers” in 1911, but who might as well have been talking about 1991:

“I know it is difficult for an Englishman, but try for a moment to imagine that, except in the most limited and trivial ways, history does not take place north of the forty-fifth parallel. What North Europe thinks of as its history is actually quite provincial and of limited interest. Different sorts of Christians killing each other, and that’s about it. The Northern powers are more like administrators, who manipulate other people’s history but produce none of their own. They are the stockpilers of history, lives are their units of exchange. Lives as they are lived, deaths as they are died, all that is made of flesh, blood, semen, bone, fire, pain, shit, madness, intoxication, visions, everything that has been passing down here forever, is real history.

“Now imagine a history referred not to London, Paris, Berlin or St. Petersburg but to Constantinople. The war between Turkey and Russia becomes the crucial war of the nineteenth century. It produces the Treaty of Berlin, which leads to this present crisis and who knows what deeper tragedies awaiting us... Germans come down here on tours and marvel at how *Oriental* everything is. ‘Look! Serbs and Croats, wearing fezzes over their blond hair!

Blue eyes, regarding us from behind the Muslim veil!
Amazing!’ ... and once again the Muslim hordes move
westward, unappeasable, to gather, again, before the gates
of Vienna – never mind that it’s been unfortified for
centuries, the old glacis built over with public offices and
bourgeois housing, the suburbs penetrated easily as any
Austrian whore – it cannot be true, God would not permit –
but here is their hour at hand, and in their panic, what is the
first thing they think to do? They turn and swallow Bosnia.
Yes, that will fix everything! Leaving us all now to wait,
here in the winter twilight, for the first thunder of spring.”

(828.)

Still, putting the question of nomenclature aside for a moment, there is no doubt Pynchon’s investment in the Victorian age also mirrors a reinvigorated interest in the literary, social and political history of the era so denominated. The fact is, writing, in English especially, in any historicist frame, we may in fact be seeking a “modernist critique of nineteenth-century forms of knowledge” that “results in a formal and ideological rejection of the kinds of imaginative totality that Victorians envisioned (Agathocleous, 172)” but we have neither truly intellectually escaped from the kinds of Kantian totalizing vision we share with our Victorian forebears, nor do we have a really accurate or complete picture of that Victorian “imaginative totality,” because we have elided from our view most of the complex history of the mathematical sublime that is the firmest common ground on which the (so-called) postmodern and the Victorian meet.

It may be important to consider in what ways the trend for revisiting and revisioning of the Victorian has roots in our own contemporary preoccupations, concerns, worldviews, and prejudices. All histories are in their way also histories of the present. Rightly or wrongly, the focus of modern political history in the English-speaking West has shifted from the internecine European struggles of the early modern period – Danilo’s “different kinds of Christians killing each other” – that had their ultimate expression in

World War II and manifested themselves most strongly in the recent past as obsession with the Cold War, backwards (but also more narrowly) to the colonial wars of the eighteenth and nineteenth centuries (critically reading formerly invisible colonial actors into “history” in the process) – Danilo’s “real history” – that had their ultimate expression in World War I, and manifest themselves in the imagination of the present as an obsession with the conflict between the Muslim and European “worlds” – a new concern for the events that led up, not to the dropping of the bomb at Hiroshima, but to that “peace to end all peace” (see the David Fromkin book of the same title), the imposition of an alien, linear geography and a false Kantian universalist political philosophy across broad swaths of western Asia and northern Africa, the tragic inequities of which were finally brought to our attention one sunny September morning in lower Manhattan. The fact that *Against the Day* is both figuratively and literally an important “9/11” novel – written, probably in the City of New York, in the months and years immediately following that murderous though hardly mysterious or unprecedented catastrophe, and containing fairly early in the narrative an elegiac interregnum directly addressing “the unfortunate events to the north, the bad dream I still try to wake from, the great city brought to sorrow and ruin” construed as a vengeance upon “urban civilization” itself (151) – I would agree, is inseparable from the novel’s fascination with the late Victorian world. Pynchon’s novel, drawing on a scientific understanding and novelistic depiction of the quality and mysteries of time that transcend the nearly parodic rationalist understandings of other contemporary writers, has made a conscious narrative choice to bring the Victorian into the present, to revision his artistic and historical “temporal bandwidth” so that, as Foucault suggests in his contemplation on the meaning of Kantian “enlightenment,” that “present may be interrogated in

an attempt to decipher in it the heralding signs of a forthcoming event” (Mishra and Hodge, 376, quoting Foucault at 97).

That Foucault cherry adorns Vijay Mishra and Bob Hodge’s 2005 manifesto, “What Was Postcolonialism?” Seeking, from a Marxian perspective, as Foucault identified Kant as seeking in his “*Beantwortung der Frage: Was ist Aufklärung*,” “exit,” “departure,” “escape” from, in Kant’s instance the past, in Mishra and Hodge’s “a trinity of ‘posts’” – postcolonialism, postmodernism, and poststructuralism – that “has effectively colonized and enclosed the open space of ‘afterness,’ each morphing into the others in an endless play of almost sameness, closing around a single version of history in the name of plurality” (382), Mishra and Hodge argue that by viewing postcolonialism not as mere theory, but as historical artifact, one may finally arrive at a new “social purpose of criticism” (398, quoting Dipesh Chakrabarty, “The Future of Criticism”) by “considering the difference that ‘today introduces in respect of yesterday’” (399, quoting Foucault). *Against the Day* narratively embodies the theory. Pynchon’s Yashmeen Halfcourt, who one can make the case for as the (partially occluded) central protagonist of the novel – heroine if such an old-fashioned term is not strictly *unheimlich* – is not only an embodiment of the “foreclosed [woman] native informant” (385) of Gayatri Spivak’s *Critique of Postcolonial Reason*, the figure who by her voice alone in Mishra and Hodge’s reading uncrowns “the last Three Wise Men of Continental (European) tradition” – Kant, Hegel, and Marx (386, citing Spivak at 111). But like Kipling’s Kim, by virtue of her canonical European education, in Yashmeen’s case at both Cambridge and Göttingen, also manifests quite literally the “hybrid identity politics” of historical “bourgeois anticolonial struggles” (383).

She had been the ward of Lieutenant-Colonel G. Auberon Halfcourt, formerly a squadron commander in the Eighteenth Hussars, seconded some while ago to the Political Department in Simla for the odd extra-regimental chore, and currently believed operating somewhere out in Inner Asia. Yashmeen, sent back here a few years previously for a British education, had been placed under the protection of the T.W.I.T. “Unhappily, to more than one element active in Britain, her degree of bodily safety too readily suggests itself as a means of influencing the Colonel’s behavior. Our custody hence extends rather beyond simple caution.”

“I can look after myself,” declared the girl, not, it seemed, for the first time.”

(AD, 222.)

Nearly immediately upon introduction in the novel, Yashmeen voices her own version of the native informant’s critique of theory divorced from history, agency, or what Mishra and Hodge, to reiterate, refer to as “the social purpose of criticism,” to which we would add the necessarily corollary concept, the ‘social purpose of literature.’

“On this island,” she went on,” as you will have begun to notice, no one ever speaks plainly. Whether it’s Cockney rhyming codes or the crosswords in the newspapers – all English, spoken or written, is looked down on as no more than strings of text cleverly encrypted. Nothing beyond. Any who may come to feel betrayed by them, insulted, even hurt, even grievously, are simply ‘taking it too seriously.’ The English exercise their eyebrows and smile and tell you it’s ‘irony’ or a ‘bit of fun,’ for it’s only combinations of letters after all, isn’t it” (224).

Yashmeen is a Victorian heroine, confronting a series of inescapable postmodern dilemmas, as I would suggest Pynchon himself is a postmodern hero seeking solution to a series of inescapable Victorian dilemmas. Yashmeen seeks but ultimately fails to find escape or transcendence from her own prison-house of Kantian language-based logic, even with access to the forms and functions of the new math, yet like the Marxian theor-

ist of Mishra and Hodge's imagination, she would point the way towards a process of completing "the incomplete project of modernity" not by "breaking off completely" with her own "premodern past, but of making the latter inhere in modernity as a significant and empowering trace" (Mishra and Hodge, 396). At the same time Yashmeen explicitly calls our attention to the unavoidability of the "heterotemporality" (397) of history that Mishra and Hodge identify as the biggest problematic facing Marxian theory in this age *after* postcolonialism.

She had no illusions about bourgeois innocence, and yet held on to a limitless faith that History could be helped to keep its promises, including someday, a commonwealth of the oppressed.

It was her old need for some kind of transcendence – the fourth dimension, the Riemann problem, complex analysis, all had presented themselves as routes of escape from a world whose terms she could not accept, where she had preferred that even erotic desire have no consequences, at least none as weighty as the desires for a husband and children and so forth seemed to be for other young women of the day.

But lovers could not in general be counted as transcendent influences, and history had gone on with its own relentless timetable. Now at Yz-les-Bains, though, Yashmeen wondered if she hadn't found some late reprieve, some hope of passing beyond political forms to "planetary oneness," as Jenny liked to put it. "This is our own age of exploration," she declared, "into that unmapped country waiting beyond the frontiers and seas of Time. We make our journeys out there in the low light of the future, and return to the bourgeois day and its mass delusion of safety, to report on what we've seen. What are any of these 'utopian dreams' of ours but defective forms of time-travel?"

(AD, 942.)

Amy J. Elias, of the University of Tennessee, helpfully gives us a name for contemporary fictional narratives that embody their own critical theory, "metahistorical

romance,” which she defines as “historical fiction which morphs the historical romance genre into a literary form that is able to encompass the historiographical debates of its own time” (Elias, 163). Setting the stage for her astute argument, Elias walks through a pocket history of Western historiography. At the “dawn” of European history she posits a historiography based on “premodern’ religious views” where “lived human history was chaotic and violent” but where “idealist faith” delivered “ontological order ... that defined ethical action in the present and made it meaningful” (160). This was followed by the long era of “secular humanism and ‘modernity’” – a phase it is not entirely clear has yet ended – where “history might appear chaotic, but the Newtonian universe was ordered and rational,” and “hope lay in humankind’s ability to apprehend the masked patterns of historical progression and construct ethical and emancipatory political systems based on those patterns” Characteristic markers of the long secular humanist or modern phase were, in her words, “liberal democracy, Kantian ethics and Marxism (160).

What may or may not have been the postmodern rupture arrived, in an ironic twist, with a collapse of faith in what others – notably John McClure and Vincent Pecora – have called the “secularization narrative,” the realization that “[f]or more than 300 years” so-called “secular modernity, against the claim that it value only “reasonable deliberation by brilliant people” had in fact really only been “adept at constructing new religions and new gods that pretended they were not new religions or new gods.” With a certain delight, Elia avers, “You can’t swing a dead cat in the West after 1650 without hitting a new, reasonable god of one sort or another” (161). Out of this realization grew two by now well-entrenched camps of postmodernist historicist work, the necessary reaction to the condition of late modernity where “the intellectual culture of the ‘West’ stands

frozen like a deer in the headlights of an oncoming Greyhound bus. Panicked, guilt-ridden, insecure and defensive, but also giddy, reckless, irreverent, and defiant” (161). Elia broadly characterizes the two postmodern camps as 1) anti-postmodernists, who “recognize the existence” of the postmodern moment but “mourns this condition as an end game of bankrupt modernity”; and 2) “radical post-modernists” for whom “there is no recuperation of history outside language,” and who take an “almost Hegelian leap” into the recognition that “self-consciousness is language and vice versa, and this is the final revelation for Man.” These “radical postmodernists” take a metaphysical turn to the deconstructivist “sublime of Jean-François Lyotard and Jacques Derrida,” but whose “ethics,” Elias argues, “must fall back on Nietzsche” (162). But postmodern “metahistorical fiction” as she defines it has derived from an under-recognized third rail of postmodernism:

... a third way that hearkens back to pragmatist and Emersonian understandings of communicative action and truth. This ‘realist’ voice in the debate aligns itself with a modified, provisional empiricism and attempts to recuperate history as the product of reasonable investigation and scientific method, but as historiography it is also careful to distinguish itself from naïve or vulgar empiricism predicated on outdated beliefs about the truth of science (162).

Thus, in Elias’s conception, metahistorical fiction, points simultaneously backward to the formal realism of high Victorian literature while pointing forward to a scientific method that has escaped “vulgar empiricism” and “outdated beliefs,” neatly answering the opening paradox of this essay, why a mature Pynchon’s purview in *Against The Day* might have moved simultaneously backward in historical perception but forwards in scientific perception relative to the earlier historiographic theory underlying his earlier masterpiece, *Gravity’s Rainbow*. Returning to *Against the Day*’s central female character, Yashmeen

Halfcourt, we discover a heroine whose narrative of her own intellectual development also neatly mirrors the long journey to “third-way” postmodernism:

Mathematics once seemed the way – the internal life of numbers came as a revelation to me, perhaps as it might have to a Pythagorean apprentice long ago in Crotona – a reflection of some less-accessible reality, through close study of which one might perhaps learn to pass beyond the difficult given world.

Professor McTaggart, at Cambridge, took what one must call the cheerful view, and I confess that for a while I shared this vision of a community of spirits in perfect concord, the old histories of blood and destruction evolved at last into an era of enlightenment and peace, which he compared to a senior combination-room without a master. I am today perhaps more of a Nietzschean, returned to thoughts of the dark future of slavery and danger from which you sought to rescue me. But one’s rescue is surely, at the end of the day, one’s own responsibility.

(AD, 749.)

For Elias, there is no mystery or obfuscation here; she puts Pynchon squarely in the camp of third-way, Emersonian “poetic” postmodernism:

In novels by Toni Morrison, Thomas Pynchon, J.M. Coetzee, Steve Erikson, Zadie Smith, Salman Rushdie and many others writing after 1970 one can see an obsession with history, a struggle to figure out how it works and what went wrong and how to fix it, but also a frustration with this search that leads again and again either to a stalemate of explanatory alternatives or a recuperation of values that the text itself seems to want to forgo. While mid-century metahistorical romances by Thomas Pynchon, Robert Coover, Günter Grass and others evinced some of the motivated play advocated by poststructuralist, Derridean historiography, by the end of the century, with a new seriousness spawned by postcolonial critique and the end of the Cold War, the metahistorical romance was grappling with the meaning of history much more in a manner of pragmatist or realist historiography that was congenial to a postcolonial perspective. The metahistorical view is, I suppose, in this sense ironic rather than tragic. It yearns for

the unattainable, it seeks the unrepresentable, it goes on
(165).

*[Unfortunately, on this 17th of January 2013, for the most practical of causes,
I must suspend the composition of this essay. What follows is a brief synopsis of topics
I intend to include in the next draft, if and when time permits me to continue.]*

- The interesting congruence between the constructions “metahistorical romance” and “science fiction.”

But if we do insist upon fictional violations of the laws of nature – of space, time, thermodynamics, and the big one, mortality itself - then we risk being judged by the literary mainstream as Insufficiently Serious. Being serious about these matters is one way that adults have traditionally defined themselves against the confidently immortal children they must deal with. Looking back on "Frankenstein," which she wrote when she was 19, Mary Shelley said, "I have an affection for it, for it was the offspring of happy days, when death and grief were but words which found no true echo in my heart." The Gothic attitude in general, because it used images of death and ghostly survival toward no more responsible end than special effects and cheap thrills, was judged not Serious enough and confined to its own part of town. It is not the only neighborhood in the great City of Literature so, let us say, closely defined. In westerns, the good people always win. In romance novels, love conquers all. In whodunitsses we know better. We say, "But the world isn't like that." These genres, by insisting on what is contrary to fact, fail to be Serious enough, and so they get redlined under the label "escapist fare."

This is especially unfortunate in the case of science fiction, in which the decade after Hiroshima saw one of the most remarkable flowerings of literary talent and, quite often, genius, in our history. It was just as important as the Beat movement going on at the same time, certainly more important than mainstream fiction, which with only a few

exceptions had been paralyzed by the political climate of the cold war and McCarthy years. Besides being a nearly ideal synthesis of the Two Cultures, science fiction also happens to have been one of the principal refuges, in our time, for those of Luddite persuasion.

(Thomas Pynchon, "Is It O.K. To Be A Luddite?" New York Times Book Review, 28 October 1984.)

Include a brief discussion of the Joseph Conrad and Ford Maddox Ford science fiction novella, *The Inheritors*.

- What then, constitutes "history" in *Against the Day*?

Time is the ultimate ambiguity. Nevertheless, whatever time might be, history *is* time, but the writing of history is an exercise in a kind of "non-time," in which our explorations of the past are only really given legitimacy by their reception in the future – the future's perception of the "truthfulness" of our own history. History, then, is a purposeful construction of what Pynchon described earlier as "temporal bandwidth." Mishra and Hodge's "heterotemporality", where the social purpose of the work can only be determined in some "future past." As Florian Schwieger says of Francis Parkman's histories:

Parkman's heterochronies, i.e., his historical works, not only accumulate time but also establish relationships between formerly unconnected temporal planes. By recording history they establish, as Foucault puts it "a place of all time that is itself outside of time" (Schwieger, 42, quoting Foucault's "Of other Spaces" in Nicholas Mirzoeff (ed.), *The Visual Culture*, at 233).

- What does the title, *Against the Day*, mean?

The "day" is an arbitrary unit of time, and as such, the ultimate embodiment of status quo bourgeois ontology. Ergo, "Against the Day." The novel refers again and again to "the bourgeois day." *Against the Day* we have the poles –

where it is either always night or day and a constant Pynchon trope, and the “sky,” which is Pynchon’s newly discovered metonym for space-time, gas, chaos, and especially light, and the pure mathematics that best but not fully explain them. The villain of Conrad’s *The Secret Agent*, Mr. Vladimir was on to more than we give him credit for when he describes “science” as the “sacrosanct fetish of to-day,” offers an explanation for why the Greenwich Observatory was both fictional and real target of bombings, and jokes “Since bombs are your means of expression, it would be really telling if one could throw a bomb into pure mathematics,” which could be a quite accurate description of one of the major sub-plots of Pynchon’s novel. This leads directly to the follow-on question: Are we talking about the *end* of time, or the end of *time*? Are we talking teleology here, or science, or both? (That high truth in low puns rearing its ugly head once again.)

- A brief discussion of how the different treatment of time in *Against the Day* and Part Four of Nabokov’s *Invitation of a Beheading* underscore the principal historical preoccupations at their moment of composition (i.e., the height of the Cold War for Nabokov, the opening days of the war between {as Pynchon styles it} Middle Asia and the West for Pynchon).

Pure Time, Perceptual Time, Time free of content, context and running commentary – this is *my* time and theme. All the rest is numerical symbol or some aspect of Space. The texture of Space is not that of Time, and the piebald four-dimensional sport bred by relativists is a quadruped with one leg replaced by the ghost of a leg.... I cannot imagine Space without Time, but I can very well imagine Time without Space. “Space-Time” – that hideous hybrid whose very hyphen looks phoney. One can be a hater of Space,

and a lover of Time... There are people who can fold a road map. Not this writer. (Nabokov, 574-577.)

- How does a post-Newtonian science inform Pynchon's historiography?

This is a tough one.

There is no unambiguous thing as either space or time. The competing mathematical systems referred to so often in the plot of *Against the Day* – the Quaternion and the Vectorist – could each explain only one by delegitimizing the other, by turning either space or time into something that could no longer be described as an independent “thing.” The great mid-19th century mathematician William Rowan Hamilton, the father of the quaternion formula, described Hermann Grassmann, generally credited with creating Vectorism thus: “[Grassmann] is a great and most German genius; his view of space is at least as new and comprehensive as mine of time” (Crowe 86). Without getting too complex, they remain equally valid but mutually contradictory totalizing mathematical systems; one can describe continuity, or the infinitesimally small change in time, but only by creating “imaginary” geometrical space; the other accurately describes space, but only by turning time into an infinite series of simultaneities; one is invaluable in describing wave mechanics, the other at describing quantum mechanics. And their successor systems are both absolutely necessary to being able to physically describe light, in its unknowable duality as both wave and particle. This is the starting point for the new mathematical sublime, which becomes, in Pynchon, the historical sublime that is, according to Elias, the Shambala and Holy Grail of “metahistorical romance.” Light is mathematically and scientifically ambiguous, but it is also *the*

epiphenomenon that must, if anything does, qualify as *the* a priori, because everything is light. Matter is a byproduct of light, consciousness is a byproduct of light, the continuing influence on everything we are of the black hole at the center of the Milky Way is a byproduct of light. But even understanding that everything is light forces us to confront the new sublimity, because several elemental processes we must take at face value are literally to the best of our knowledge physically impossible: the event horizon at the boundary of a black hole, a gate through which all is both lost and unknowable; quantum tunneling which, while theoretically impossible is also the mechanism driving everything from the nuclear fusion that powers the universe to the spontaneous mutation of cells that is responsible for both cancer and evolution, and which we know does actually exist because, ironically, it is responsible for the great heat generated by Internet “server farms.” Still, science can’t quite explain it. Here re-enters the metaphysics that was part and parcel of the thinking of the mid-19th century mathematicians who created our post-Newtonian view of the world and the universe. Typical of Pynchon, some characters in *Against the Day* travel across metaphorical event horizons, others travel via metaphorical quantum tunneling, some travel spontaneously in space, others travel spontaneously in time. When dealing with the “heterotemporal” contours of postmodern historiography, it is reductionist in the extreme to reduce the resulting thought experiments to “mere” fantasy or play. It’s kind of funny in its presentation, but it’s serious in the extreme.

- This new scientific metaphysics directly engages and helps deconstruct the “secularization narrative” of modernity described by Vincent Pecora, John A. McClure and Colin Jager, among others, as an important marker of serious postmodern thought. The scientists and mathematicians who are the ground for deliverance from the Euclidian/Newtonian prison-house of Enlightenment were not “secular” for the most part, but as a rule fairly deeply religious but wildly ecumenical, being variously a bunch of Jews, Unitarians and “drugged Methodists” (Berridge, “Opium Eating and the Working Class in the Nineteenth Century: The Public and Official Reaction,” *British Journal of Addiction*, 73:1 (January 1978) at 111.)

As we have already seen, it is wrong to assume that the purpose of nineteenth-century pure mathematics and the symbolic logic that arose out of it was to construct a completely scientific, secular realm of philosophy. Boole and De Morgan did not know what the future would hold, and they had very different agendas than the Whig history imagines. A panoramic examination of their writing – not only their mathematical treatises but also their private letters, unpublished works, and even poetry – makes it clear that the creators of symbolic logic and their supporters yearned for a more profound religion than contemporary sects seemed to offer, a religion that did not have its foundation in dogma, liturgy, or ecclesiastical organizations (Cohen, 11.)

“...men, and pious men too, who seem honestly to think that science and religion are naturally opposed to each other ... I cannot conceive a more monstrous absurdity.” (Cohen, 68, quoting Benjamin Peirce, 1853 address to the American Academy of Arts and Sciences.)

Science remained powerful and worthy of respect; at the same time, given its limitations, it could never destroy transcendental beliefs: “Atheism and materialism are no necessary results of scientific method. From the preceding reviews of the value of our scientific knowledge, I draw one distinct conclusion, that we cannot disprove the

possibility of Divine interference in the course of nature. . . . From science, modestly pursued, with a due consciousness of the extreme finitude of our intellectual powers, there can arise only nobler and wider notions of the purpose of Creation.” As faith in scientific certainty waned, so would insidious and antireligious materialism, Jevons believed, because like theological uses of mathematics this secular philosophy drew strength from overly arrogant and expansive theories of scientific knowledge. (Cohen, 163.)

Which takes us back to Emerson again, who was a great, sometimes direct, influence on many of these same prominent 19th century mathematicians, and points us towards the broader meaning of the significant American passages and characters in *Against the Day*. Like the necessary return of the premodern in the postmodern, the American turn on the Victorian is a confrontation of the Adamic with the Aristotelian; “let there be light” versus “in the beginning was the word.” Or, as the Thelonius Monk epigraph to the novel puts it most succinctly: “It’s always night, or we wouldn’t need light.”

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