Chapter 4
Reworking the Categories of Existence: Thomas Pynchon's

*Gravity's Rainbow.*

[...crossroads, where you can sit and listen in to traffic from the Other Side, hearing about the future (no serial time over there: events are all there in the same eternal moment and so certain messages don’t always “make sense” back here: they lack historical structure, they sound fanciful, or insane). (GR 624)]

“Encyclopaedic” and “paradigmatic” have almost exhausted themselves as possible adjectives for Pynchon’s gigantic novel *Gravity’s Rainbow*. Yet the book stands its ground as ‘all-encompassing’ for its whole gamut of knowledge systems and the many paradigms of postmodern narrative one can read into its wor(l)ds. One might at the outset come to terms with the experience, that any attempt to tackle all *GR* in one go is “either terribly ambitious or very foolish or both” (Nadeau 137). Another relevant premeditation would be the necessity of a constant vigil to resist the temptations of a “global interpretive hypothesis” of the kind suggested by McHale, like the “novel-as-hallucination” or the “novel-as-movie” which are powerful enough “to naturalize and thoroughly domesticate this maddeningly equivocal text, reducing it to univocal order” (CP, 110). The reading
of the text itself would serve as a process of "deconditioning" (McHale, *CP* 81) one's sensibilities to address the new conditions of narrative. This task of unlearning one's reading habits is as demanding as the reading of Pynchon's unwieldy novel. *GR* is classed among "the most widely celebrated unread novels of the past thirty years" (Moore 1). Not many works of the genre might have elicited such responses from readers that they "never got past the first hundred pages," or from a critic that it can be "pretentious to be seen with a tattered copy at an academic conference" (McHoul and Wills 23). In fact it is the world of the novel that is in tatters, a sort of jigsaw puzzle for our rereading to permute with and figure out patterns for the purpose of analysis. *GR*, like a "cosmic-web" holds "a textual space or cognitive field whose tightly woven symmetries and correspondences promise coherence, but ultimately defy attempts at ordering them into a meaningful pattern" (Heise 179).

Much ink has been spilt on the many fallacies of Pynchon criticism that goes after 'causes' and 'conclusions.' Edward Mendelson comments on the "Pynchon industry" (Moore 2), the institutions and 'collective enterprises' that have built themselves around Pynchon's work, paradoxically to honour something which implicitly condemns all such canonization (9). The effect of *GR* in penetrating the frames separating the high and the low arts, the cultures of art and science, and the 'elect' and the 'preterite' among humans has been recognized
Critics like Maltby study GR as “a radical critique of Western meaning systems” (160). A countervoice can be heard from the novel itself: “They’re the rational ones. We piss on their rational arrangements” (GR 639).

McHale points at the limitations of trying to reconstruct coherent worlds out of GR: the making of patterns which lead to the ‘real,’ as with a modernist reading, or any reading based on a realist ontology. He makes a typology of modernist readings, which try to reconstruct the chronology from fragments (CP 63). This kind of world building proves fruitful with modernist fiction founded on the stable ontology of an external reality and the textual reality. But the reading of GR gives only “provisional realities” which can always be contradicted or cancelled out (McHale, CP 66). McHale works upon some of the problematic passages in the novel where the reader, invited to reconstruct the “real” is forced in retrospect—“retroactive deconcretization” and “retroactive concretization”—to cancel the construction, and to relocate it in a character’s dream or hallucination, or vice versa (CP 62-86). The novel of “flickering,” indeterminable ontology can be a proper training in Keats’ “Negative Capability,” adds McHale: “when a man is capable of being in uncertainties, mysteries, doubts, without any irritable reaching after fact and reason [. . .]” (qtd. in. Blamires 236).
Critics have often been limiting themselves to conceive and reduce the whole of the novel as resting on its real-world contexts, whether historical, socio-economic, linguistic, scientific or esoteric, and one can find a whole tradition of such writing on Pynchon. Roland Barthes in *The Pleasure of the Text* suggests the openness of *GR* to references of the external world, that it still contains "a bit of ideology, a bit of representation, a bit of subject" (qtd. in McHale, *CP* 62). *GR* has also been variously correlated with different discourses and disciplines to cope with its subjects like quantum mechanics and ballistics; chemical and pharmaceutical processes; concepts like delta-t and the double integral; symbols like the 'mandala,' the zone, the parabolic rainbow, and the crossroads; the reading of tarot cards; principles from mathematics and statistical distributions; elements of myth and afterlife, all finding place in the intricate textual mosaic.

All shortcuts to the intractable structure and the proliferating concerns of the novel might be forebodings of perfunctory attempts that would gloss over the 'gravity' of the rainbow. Whether we go on an "exegetical drive" (McHoul and Wills 1) or draw the "Kute Korrespondences" (*GR* 590) in the novel, what is intended in this study is a streamlining of all the findings to their temporal or historical dimensions. We would as readers have to keep alert to the demands of postmodernist fiction and exercise our 'negative capability' by not trying to disambiguate Pynchon's ambiguities—what is called "the
ambiguity of ambiguity” or the “radical undecidability” (Keesey 106)—or reduce the open possibilities to one that is closed off.

The novel of seven hundred and sixty pages and hundreds of characters has four sections further divided into seventy-three discontinuous segments. There are possible plot lines to be traced along some thematic strands or happenings, also a sense of ‘plot’ as a conspiracy that looms large, in which the characters get implicated by the Secret System or by their own paranoid delusions. The reader, like the characters, gets progressively “knotted into” (GR 3) the plot with no clue for disentanglement: GR has been suggestively called “fictional labyrinth” (Seed), “allusive maze” (George 5), “cosmic web” (Heise 179), “thick description” of culture or an “epistemic repository” (O’Donnell 76). The temporal involvement with this labyrinth is therefore a revolutionary break from the linear, simple causality of realist narrative.

GR is set in the context of the final stages of World War II—the last nine months of war from December 1944 to a time immediately after the end of war in 1945. The first section “Beyond the Zero” situates itself in London with bombs coming across its sky, the bombardment and death [afterlife or ‘beyond the zero’] becoming the major preoccupations. The various ways in which the experts at army intelligence encounter the mysterious connection they find between the sex life of Tyrone Slothrop, the American officer and the V-2 rocket
strikes becomes central to the novel’s negotiations with causality and time. In "Un Perm'an Casino Hermann Goering" the scene shifts to southern France where the reader, along with the protagonist Slothrop is involved in random turns of events seeming to be manipulated by 'Them.' “In the Zone” is the lengthiest section, the multiplied narrative and thematic strands of which increasingly disorient the reader. The ‘Zone’ on a literal level can be said to stand for Germany “in that temporary state of flux between Nazi collapse and Allied partition” (Seed 158). The ‘Zone’ has also been interpreted as a mythic “place of origins” (Seed 158) and also as a kind of “heterotopian” space “capable of accommodating so many incommensurable and mutually exclusive worlds” (McHale, PF 44). In the final section “The Counterforce,” Slothrop and the narrative itself fail to hold together as integral creatures; the emergent ‘counterforce’ also seems to peter out. The themes, the finite set of characters and the events extracted from GR to form a summary of the massive and fragmentary narrative would be necessarily to answer conventional queries on ‘what the novel is all about.’ It might be excused as a self-conscious selection and ‘exclusion’ for the purpose of introduction.

The first and one of the recurring motifs introduced is the rocket: “a screaming comes across the sky” (GR 3). The explosion seems to be happening in the dream of Captain Geoffrey (“Pirate”) Prentice,
who dreams other people's dreams for them: a "fantasist surrogate" (GR 12) who has delusions of being "used for unspeakable purposes" (GR 13). Once the news goes up the echelon he comes into the strange hold of the Firm, constantly referred to as "They" with whom 'power' rests. In the London maisonette he shares with some others of the Special Operations Executive, he keeps a hothouse for bananas. Along with the relish of a 'banana breakfast' is given suggestions of an impending V-2 bombardment.

Teddy Bloat's spying into the private map kept by Lt.Tyrone Slothrop, an American intelligence officer stationed in London at ACHTUNG (Allied Clearing House, Technical Units, Northern Germany) triggers the whole drama of 'Their' involvement with Slothrop along the whole length of the text and vast spaces on the Continent. The spectrum of stars pasted on Slothrop's map of London marks the sites of his sexual encounters, which though cannot be sorted out into real or fantastic, however correspond to the sites of subsequent V-2 hits. The phenomenon catches the eyes of the organs of the Defense Department and Secret Intelligence Services. This is how Slothrop comes to be 'Their' favourite 'subject' in use for investigating V-bomb incidents, possibly to locate the revolutionary black rocket troops the Schwarzkommando, or unveil the secret of 'Schwarzgerat,' the rocket equipped with Imipolex G.
Slothrop’s affinity to the mysterious chemical Imipolex G, as revealed by the dossiers of the past, is the result of his behaviorist conditioning in childhood by Dr. Laszlo Jamf, the German chemist at Harvard. Slothrop’s conditioned erection in the presence of Imipolex-G explains his response to the V-2 rocket, which uses the polymer in its construction. There are problems of ‘reversal’ of stimulus-response and other anomalies which the behaviorist method falls short of explaining, and there are alternative methods put forth in GR which will form one of the major issues of the narrative as well as the proposed analysis: the viability of an organizing parameter like time, causality or history (Heise 179).

Edward Pointsman, the Pavlovian behaviorist in PISCES (Psychological Intelligence Schemes for the Expedition of Surrender) leads a research group at “The White Visitation,” conducting experiments in psychological warfare. He aims to interpret the Slothrop-rocket connection conclusively to prove “the stone determinacy of everything, of every soul” (GR 86). His notions of stimulus – response, cause and effect are strongly refuted by Roger Mexico of the same crew who upholds statistical methods and concepts like probability to explain Slothrop’s connections with the rocket. Some critics have found it convenient to identify Mexico with Pynchon, or his opinions as having greater affinity to Pynchon’s own ideas (Heise 187). One has to be cautious of thus fixing an ‘authorial
persona’ in the case of GR, for the multiple possibilities it negotiates with. Mexico, however, seems to stand out for his humorous but vehement dislike of the mystics and psychological freaks at “The White Visitation” (GR 41), his “genuine emotional engagement” (Heise 188) with Jessica Swanlake which is a rarity in the novel, and his role as a possible ‘counterforce.’

It would be easier to introduce some of the central characters in groups to integrate them with the issues they represent—Franz and Leni Pökler, Enzian and Tchitcherine, for instance—but not probably to say everything about them. There are unlimited possible analogies and pairing of characters in GR so that the idea of character as “separate and unique biological, psychological or social personages” (Mchoul and Wills 33) is rendered problematic. Franz Pökler, the German plastics chemist and former student of Jamf working on the rocket project, is essentially a “cause-and-effect man” (GR 159) and can construct causal connections for the films he can see only in fragments because of his habit of dozing off intermittently. Leni Pökler, his wife, tries to convince him of an alternative notion of ‘simultaneity’: that events should not be conceived of sequentially as cause and effect, but simultaneously as “metaphors” or “signs and symptoms” (GR 159). Leni and Pökler disagree on many things including his involvement with the war project, and they part.
Enzian and Tchitcherine meet only once almost towards the end of GR, accidentally in the middle of a bridge, not knowing each other: “a man has passed his brother by, at the edge of the evening, often forever, without knowing it” (GR 735). Tchitcherine, the Russian agent in the Zone is mostly preoccupied with the possibility of locating Enzian, his black half brother, only to bring him to an end. Enzian is an ‘other’ part of him, “a black version of something inside himself [. . .] he needs to . . . liquidate” (GR 499). There are significant associations for the colours ‘black’ and ‘white’ in GR, not only its racist allusions. Enzian commands the Schwarzkommando, the Black rocket corps of displaced African Hereros in the Zone who have survived colonization and war. He becomes the high priest of the rocket, forming a rocket mythology that yokes together Herero symbols like the ‘mandala’ and technological fetishism. Enzian and the Herero factions jointly work for the brand new rocket 00001 modeled on 00000. What Tchitcherine and Enzian as participants in the ‘project’ share with Slothrop and Prentice is their paranoid vision of “an all-encompassing network of corporate power that regulates not only global political developments but also the minutest details of their own lives” (Heise 196).

Katje and Gottfried can be coupled for their lives under ‘control’: they form with Captain Weissmann (Blicero) a “sado-masochistic trio” (McHoul and Wills 25) at a rocket site in Holland where Katje Borgesius
spies for the British. She is later taken to "The White Visitation" by Prentice, to be trained by Pointsman to act out a 'damsel-in-distress' drama before Slothrop who has now been transferred to the south of France. Slothrop saves her from the 'attack' of Pointsman's trained 'Octopus' Grigori, and they have a short affair before Slothrop smells the ploy and sets out in search of the secrets of his rocket-connection. After the war Katje forms another trio with Prentice and Mexico, a sort of counterforce, who set out in search of Slothrop who is lost somewhere in the Zone. Gottfried is Blicero's 'catamite' who meets his end as an "erotic category" (GR 758), as an enclosure in the 00000 fired at Luneberg Heath. Weissman "engineers all the symbolism" (GR 751) to accommodate the boy in the specially designed S-Gerat with an Imipolex shroud.

Characters can be integrated into patterns in GR using the modernist methods of "analogy" or "doubling" suggested by McHale (CP 79-80). Carroll Eventyr and Peter Sachsa are "mapped" on to each other as "spiritualist mediums" in the "séances" which take place at The White Visitation.' Eventyr is the 'medium' to conjure spirits and Sachsa his "control," the spirit through whom he contacts spirits in the "Other World." These 'world-to-world,' 'mind-to-mind' and 'present to past' transitions hold significant implications for the temporality of GR (McHale, CP 76). This analogy is extended with Eventyr speculating on the parallelism between his lover Nora Dodson-
Truck and Leni Pökler: “If there are analogies here, if Eventyr does, somehow, map on to Peter Sachsa, then does Nora Dodson-Truck become the woman Sachsa loved, Leni Pökler?” (GR 218).

There is another long-drawn transition between Slothrop’s sado-masochistic reenacting at the old studio of a scene from the film *Alpdrücken* with Margerita Erdmann who gets gang raped in the film, and Franz Pökler’s account of the fathering of Ilse on the night he returns from *Alpdrücken* with an erection (GR 395-98). Slothrop doubles as Greta Erdmann’s co-star in the film, Max Schlepzig whose name Slothrop is carrying at that time on a forged passport. McHale depicts a whole system of analogies triggered by these events: “both Slothrop and Franz Pökler map onto Max Schlepzig; Leni maps onto Greta, Ilse onto Greta’s daughter Bianca (begetted from *Alpdrücken*), and Greta on to her own earlier self” (CP 79). Here, unlike the ‘mind-to-mind’ transition in the case of Eventyr-Sachsa séances, the analogy is drawn from the narrative’s transition from one episode to the other, generating the pattern.

Some of the other characters that integrate into the general pattern of ‘war’ and ‘control’ are the drug cartels, like the German IG Farben, the transnational business conglomerates and the Secret Services involved with the Nazi and the Allied powers. ‘They’ can engineer the ‘war’ and other macro-political developments, also the microchemistry of the impulses of the body like sexuality to Their’
own ends (Heise 196). There are many ‘little narratives’ of GR this
discussion leaves out or ‘marginalizes’ to prune itself for its analysis
of the narrative’s temporal and historical deliberations.

The prefatory attempts would be incomplete without mentioning
some of the motifs and themes of GR, which would serve as co-
ordinates in our construction of its temporal concepts. The concepts
of the Zone, of “beyond the Zero” (death), of thermodynamic entropy,
the end of history, of film, ‘frames’ and “mediated reality” (McHale,
CP 115), the infinitesimal time of delta-t, the rocket parabola, and
symbols like the ‘crossroads’ would inform our analysis. Almost with
every turn of phrase in our study we find ourselves at ‘crossroads’
from where we can see the ‘text’ in some ‘Other Side,’ its codes
unreadable, “not making sense back here” (GR 624), defying our
attempts at classification and synthesis. The reading of GR gives
one the sense of being ‘caught in a maze’ with “its mix of disparate
genres, its overlapping, competing and contradicting themes,
metaphors and incidents, its several hundred characters and multiple
strands of plot” (Heise 181). It is in fact an invitation to participate in
the narrative game rather than seek ways out of its blind alleys. But
we as pattern seekers and rule-makers are sorry for not reaching
“the lex of the game,” like the ‘Unwilling Participant’ in Coover’s “Panel
Game” (PD 84).
McHale suggests not only the limitations of modernist strategies for reading *GR* but also that “the habits that would enable us to read texts like *Gravity’s Rainbow* adequately are still scarcely conceivable” (*CP* 112). He adds that Pynchon seems to make “metareaders” of us by soliciting our participation (marked by constant use of ‘you’ as narratee) in a self-reflexive reading: a reading of our own and others’ (mis)readings (113). The same is implied by Maureen Quilligan in her remark that “the text constantly invites and then exposes the reader’s imposition of meaning” (277). What is possible for us therefore, as “metareaders” of *GR* is to present “the range of possible solutions” (“meta solutions”) and know “what is at stake when any one particular solution is preferred over the others” (McHale, *CP* 113).

*GR* in fact is itself a “metareading” of the problems of narrative representation and history—of the “viability of history” and simple causality as “organizing parameters” (Heise 179) of experience—which projects a range of answers to these questions without the privileging of any. Heise’s “metamodel” built out of the philosophical and scientific theories presented by the text, is informed by an analytic understanding that none of them propose satisfactory solutions to the problem. Our interest in these theories would be the concept of narrative they portend in relation to the problems of the plot, as a key to our understanding of postmodern time and history: “what narrative and temporal form *Gravity’s Rainbow* offers to an age in
which causality has become questionable and larger time perspectives
difficult to envision” (Heise 185).

The different interpretations of causality and narrative
progression expressly given in GR are the behaviorist thinking of
Pointsman, the statistical methods of Mexico, and Leni Pökler’s
concept of ‘simultaneity’ instead of ‘sequence.’ There is also a fourth
interpretation, which emerges as a revelation in the course of a séance
involving the spirit of Walter Rathenau, German industrialist and
foreign minister during World War I:

All talk of cause and effect is secular history, and secular
history is a diversionary tactic. Useful to you, gentlemen,
but no longer so to us here. If you want the truth [. . .]
you must look into the technology of these matters. Even
into the hearts of certain molecules—it is they after all
which dictate temperatures, pressures, rates of flow, costs,
profits, the shapes of towers [. . .]. (GR 167)

The alternative Rathenau introduces is an investigation into
the “real nature” of “synthesis” and “control” (GR 167). Pointsman
and Mexico are seeking connections between Slothrop and the rocket;
Leni Pökler is suggesting an alternative to her husband’s linear
understanding and construction of experience based on cause and
effect; Rathenau, conjured up before Nazi men of business, is rejecting
their simple causal reasoning by revealing the dynamics of ‘micro’
and molecular causes and global corporate 'control.' The critiques of causality in *GR* therefore operate on scientific, narrative or representational, and socio-political levels (Heise 199). Heise's synopsis is methodical:

Three main complexes of ideas [. . .] stand against linear causality understood as a progression from cause to effect or stimulus to response: first, the idea that the natural sciences themselves no longer adhere to a mechanistic view of causality; secondly, the observation that, in at least one reading of contemporary history, the causal forces that affect the life of the human individual are no longer individual agents, but have shifted to the microscopic scale of molecules, atomic and subatomic particles on the one hand, and to the macroscopic scale of global networks of commerce, communication and transportation, on the other; thirdly, the notion that in an age of "hyper-real" forms of representation, and an intense awareness of the role symbolic systems play in our understanding of the world, causality is undermined through the blurring of borders between the real and the represented. (205-6)

In a reading of *GR* based on C.G. Jung's alchemical theory, N.F. George presents the alternatives as "three possible cosmologies"
informing the novel—Pavlovian determinism, Mexico’s ‘probabilistic’ indeterminacy, and a third possibility embedded in the fabric of the novel (5). The third alternative is given as an elaboration of Jung’s and the physicist Wolfgang Pauli’s “theory of synchronicity”: “Synchronicity is acausal; events are connected only by ‘meaningful coincidence’ and the timeline has no linear dimension. A system of this kind is essential in the alchemical universe, since there, too, events are ordered only by similitude and never by temporal succession” (George 5). He uses the theory to elaborately address the synchronic subtleties of “chemical synthesis” in *GR*.

At “The White Visitation” the specialists expediting psychological warfare respond in their own ways to the interesting phenomenon of Slothrop’s sexual adventures marked on a map of London, coinciding with the subsequent rocket strikes happening with a time lag of two to ten days. Rollo Groast talks of “precognition” or “prediction” of the rocket fall; Edwin Treacle, the Freudian explains it as “psycho kinesis,” Slothrop’s psychic power to cause the rockets to drop where he intends (*GR* 85). The elaborate argument between Pointsman and Mexico sets off into alternate ways of dealing with experience. Mexico, the statistician “devoted to number and to method” (*GR* 55) has made a map of London divided into squares for arriving at the probable number of strikes in these squares based on the Poisson distribution equation. His attempt is to extend his statistical methods to explain
the correspondences between his map of rocket strikes and the filmed maps of Slothrop sent to him by Teddy Bloat through Prentice.

Mexico and Pointsman are introduced expressly as binaries: as "Antipointsman" (GR 55) and "Antimexico" (GR 89), as "ideas of the opposite" (GR 89). Pointsman, belonging to a realm of deterministic "either-or" configurations, imagines like his master Pavlov "the cortex of the brain as a mosaic of tiny on/off elements" (GR 55), some always excited and bright, others inhibited and dark, so that even if the contours keep changing it can only be either of the two states: waking or sleep. Pointsman's analysis of all phenomena therefore is in binary terms:

[. . .] in the domain of zero to one, not-something to something, Pointsman can only possess the zero and the one. He cannot, like Mexico, survive any place in between [. . .] all Pavlovian brain-mechanics—assumes the presence of these bi-stable points. But to Mexico belongs the domain between zero and one—the middle Pointsman has excluded from his persuasion—the probabilities. (55)

The concept of the "excluded middle" is significant in the poetics of postmodern representation, which seeks a "third alternative to the polarity of true and false, any mode of being between existence and non-existence" (McHale, PF 106). We have encountered the possibilities of such a "middle" in the "plural ontologies" of Coover's
self-contradictory stories. The heroine of Pynchon’s *The Crying of Lot 49*, Oedipa Maas laments the absence of “another set of possibilities to replace those that had conditioned the land [. . .] waiting for a symmetry of choices to break down, to go skew” (125). Her involvement in the world of limited possibilities is like “walking among matrices of a great digital computer, the zeroes and ones twinned above, hanging like balanced mobiles right and left [. . .] . *Either* Oedipa in the orbiting ecstasy of a true paranoia, *or* a real Tristero” (125-26; emphasis added). All she has heard about “excluded middles” is that “they were bad shit, to be avoided” (Pynchon, *Lot 49* 125). The “either-or” determinism is related to the kind of “positivist closure” which precludes the indeterminacy of a middle between ‘true’ and ‘false’ (Malby 142). Lyotard in *The Postmodern Condition* reflects on the attribution of knowledge-status, in the context of a computer dominated culture, only to those statements which can be translated into the binaries, the “ones and zeroes,” of computer language (4).

Pynchon’s narrative transition from *Lot 49* to *GR* can be read as a transgression of the law of the excluded middle, what McHale considers the “defiance of an orthodoxy in poetics that outlaws such ‘in-between’ modes of being in principle” (*PF* 106). The narrative discourse of ambiguity and indeterminacy characteristic of *GR*, makes way into a hitherto unexplored ‘middle space’ or ‘interface,’ for
instance: "[...] one day its ‘reality’ wouldn’t matter any more. Of course it happened. Of course it didn’t happen" (GR 667).

The discussion on the postmodern privileging of ‘probability’ instead of ‘fixities’ and ‘definites’ can now be traced back to the Pointsman-Mexico argument. Mexico’s opposition to Pointsman is categorical: “Bombs are not dogs. No link. No memory. No conditioning” (GR 56). Pointsman’s ideal is “the true mechanical explanation” based on stimulus-response chains: “No effect without cause, and a clear train of linkages” (GR 89). Mexico postulates a breakthrough from what he considers a “sterile set of assumptions,” which is possible only when they gather “the courage to junk cause-and-effect entirely, and strike off at some other angle” (GR 89). This negation of links and causality is to the older Pointsman almost a childlike play with the “symbols of randomness and fright,” which the odd correspondence of the rocket strikes engenders. Pointsman is uneasy about the deconstructive possibilities of Mexico’s convictions, and his perplexed musing becomes a password for all our deliberations on time and history in the postmodern context: “[...] in his play he wrecks the elegant rooms of history, threatens the idea of cause and effect itself. What if Mexico’s whole generation have turned out like this? Will Postwar be nothing but ‘events,’ newly created one moment to the next? No links? Is it the end of history?” (56)
Despite Mexico’s revolutionary ambitions, his methods and mapping which disclose probabilities and “overall pattern of strikes” (Nadeau 145), he fails to solve “the riddle of Slothrop’s sexuality” (Heise 188). Slothrop remains a “statistical oddity” (GR 85) to him. “Mexico’s statistical approach may yield interesting results for large-scale phenomena,” says Heise (188), but does not find cues to understand the mapping of disparate entities like sexuality and rocket-strike into regular correspondence. Pointsman’s stimulus-response chain would be at a closer reach to Slothrop’s peculiar affinity to the rocket. Heise points out how critics who have discarded Pointsman’s approach as “simplistic” and “obsolete,” “have generally overlooked how complex Pavlovian theory becomes in Pointsman’s hands” (189). One cannot also discount the power Pavlovian conditioning wields as a tool manipulating individual lives and determining the turn of events in GR, however reductive or unethical its use, and however unmitigated the failure of Pointsman’s devices might be in the end.

Pointsman presents his quite unassuming approach to the problem of Slothrop’s odd connections, a “physiological” inquiry into “psychic” responses: “I am modest, methodical” (GR 89). He identifies the logical hazards of a simple stimulus-response explanation for the correspondence between Slothrop’s sexuality and the V-2 strikes: not only the reversal of rocket sounds, but also the cause-effect reversal in the sexual response preceding the rocket-fall, incites him
if not to “junk cause-and-effect,” but to effect some modifications (GR 90). There is a time-reversal involved in the “screaming” of the rocket coming across the sky, only when “it is too late” (GR 3), for the sound reaches only after the explosion, the rocket traveling faster than the speed of sound. The time-reversal is expressed as: “The reversal! A piece of time neatly snipped out [. . .] a few feet of film run backwards [. . .] the blast of the rocket, fallen faster than sound—then growing out of it the roar of its own fall, catching up to what’s already death and burning [. . .] a ghost in the sky [. . .]” (GR 48). The more puzzling temporal inversion is involved in Slothrop’s sexual calendar predating the V-2 bombardments—a “mean lag” of “about 4 ½ days” (GR 86).

Pointsman tries to discover some “ominous build up” (GR 86) or “Mystery Stimulus” (GR 84) from the history of Slothrop’s conditioning by Dr. Jamf, which is built into the rocket, or probably precedes the arrival of the rocket. The secret stimulus “Imipolex G” is revealed only later in the narrative when Slothrop comes across some documents on his childhood conditioning. To meet the demands of the peculiar case study, the original stimulus-response configuration is extended to account for longer time intervals, when, Pointsman believes, “certain inversions and reversions occur that preclude any simple linear progression from cause to effect” (Heise 189-90). The conditioned subject can evolve through time, through
the “equivalent” phase where any stimulus, strong or weak produces the same response, and continue through the “paradoxical” phase when strong stimuli bring weak responses and vice versa, to something that is “beyond,” beyond the “ideas of the opposite,” which is the “ultra paradoxical” phase (GR 90). In the “ultra paradoxical” phase the subject will not respond to the stimulus anymore, but will seek for “the stimulus that is not there” (GR 90).

Slothrop is to Pointsman “psychopathically deviant” (GR 90), a “classical case of some pathology” caused by “the weakening of the ideas of the opposite” or a “transmarginal” leap (or “frame-breaking”) into the “ultra paradoxical” stage where the ‘paranoid,’ ‘maniac’ or ‘schizoid’ subject finds it impossible to distinguish “pleasure from pain, light from dark, dominance from submission” (GR 48-49). Pointsman proposes for Slothrop a unique “reflex” or receptivity to some “sensory cue” which is “in the air” days in advance of the rocket for him to “feel them coming” (GR 49).

According to the Pavlovian tradition a process of “deconditioning” follows the experiment with the subject. Jarnf would have “extinguished” the reflex he had built up in the infant Tyrone Slothrop, assumes Pointsman (GR 84). There can be some further temporal complications consequent to this deconditioning: Pointsman is aware of the “extinction” which can go beyond the condition of zero reflex, which is a “silent extinction beyond the zero” (Heise 190; GR
85). The questions, which arise in the text in this context, are whether Jamf has deconditioned Slothrop to zero response only, and if so, then whether a conditioned reflex can lie dormant in a man for twenty to thirty years. The answers would be significant clues towards explaining the strange response of Slothrop to rockets.

The study attains psychoanalytic proportions, evoking concepts of the “resurfacing of the conditioned response later in life,” and the psychoanalytic principle of “belatedness” as a possible solution to the Slothrop mystery (Heise 190). Psychoanalysis in its traditional form, like any conventional reading, bases itself on connections between past causes and present responses where even accidental and contingent factors can be drawn into the causal frame, when dreams, delusions and slips of the tongue are traced back to some determinant in the past, and linear causal relations established (Heise 242). Heise concludes,

The Pavlovian paradigm of cause and effect seems to allow the reader to untie at least some of the narrative knots rather smoothly, but time is the one factor that resists this strategy of naturalization, since there is no way of aligning the temporality of Gravity's Rainbow with Pointsman’s model of causality. (193)

The identification of the “mystery stimulus” Imipolex G does not cancel the temporal and causal enigma of how Slothrop's map of
sex acts, whether fantasized or real, can 'recreate' the pattern of rocket strikes, 'before the fact,' but only produces another "similarly structured causal paradox" (Heise 191-193). Imipolex G is documented in the text as "an aromatic heterocyclic polymer, developed in 1939 [. . .] by one L. Jarf for I G Farben" (GR 249), which creates another puzzling reversal of causality and time, of how Infant Slothrop in an earlier decade can get conditioned by this polymer, and how the "smell of Imipolex G" can be "a smell from before his conscious memory begins" (GR 285).

Slothrop's meeting with Mario Schweitar, associated with psychochemie AG, the firm making Imipolex, registers an anachronism similar to that of the temporal reversal in Slothrop's conditioning with Imipolex G. Schweitar offers Slothrop some LSD, which the latter considers to buy in terms of 'pounds, shillings and pence' (GR 260). George considers this a "deliberate anachronism" devised to indicate the "synchronicity" operative in the alchemical context of GR (14). He records the history of LSD as a synthetic hallucinogen identified in 1943, coming into common use only in the sixties (21). McHale discusses this in terms of "creative anachronism" (PF 93), which will inform the study of GR as postmodernist revisionist history.

Nadeau's study of Pynchon's 'metaphysics' based on the revelations in the 'new physics' finds some other odds in Slothrop's
rocket connections: Slothrop's conditioned sexuality can no more be predictive of exact targets of the rocket strike than Mexico's probability equations (145). The possibility of an external force like "the Firm" manipulating the correspondence is also ruled out since there are only miniscule chances of engineering a direct hit, as revealed by Pökler, the rocket technician. The problems encountered in the course of decoding the mysterious connection between Slothrop and the rocket hits therefore involve both space and time. "If space and time are one dimension, then we must conclude, no matter how incredible the circumstance, that it is only chance or hazard that makes the patterns on the maps of Slothrop and Mexico identical," says Nadeau (146). It may be the novel distracting the analytically inclined reader with a spattering of clues, which entertain his logical mind along the bulk of the narrative, only towards abortive conclusions. The narrative seems to announce itself in the very first page: "No, this is not a disentanglement from, but a progressive knotting into [. . .]" (3). GR in fact becomes the kind of "Gordian knot" the reader indiscriminately cuts into to suit his world building, for the knot does not yield any logical untying (Nadeau 139).

The concept of 'conditioning' can be linked to the notion of "control," which is suggested by the spirit of Walter Rathenau speaking from "a new otherside existence" about 'history' and 'causality' and the "old dispensation" the 'Earthlings' have to let go (GR 164-167).
The audience at the séance with Peter Sachsa as the “medium” is a “Corporate Nazi Crowd” from IG Farben, the gigantic drug and dye cartel that is caught in a big scandal, and the subsequent turmoil in the market. Rathenau is recorded in history as “a corporate Bismark,” who as foreign minister has coordinated Germany’s economy during the first World War, one with a prophetic vision of an emergent “rational structure in which business would be the true, the rightful authority” (GR 165). The revelations at the séance point to the inadequacy of causal modes of reasoning, of “secular history” as a “diversionary tactic” which masks the “real” questions pertaining to the world at hand, which are, “what is the real nature of synthesis?” and “what is the real nature of control?” (GR 167) Rathenau’s philosophy refers to the condition of the microscopic forces acting as causative elements in an age of chemical “synthesis” and the “control” of the corporate power not only over the experiments in “synthesis” but also on global politics and even the most private realms of human existence like sexuality (Heise 196).

The vision of a “rational structure,” historically attributed to Rathenau, finds resonance in the narrative’s preoccupation with ‘rationalization’ and ‘control’ (GR 81; 88; 177; 230) in the context of the new order of a transnational “war-state” or “Rocket State” which ‘rationalizes’ economies to support the colossal war machinery: a “hypertrophied bureaucracy, a ‘cartelized state’ which can regulate
the economy, administer resources, and supervise research and development" (Maltby 150). This is manifest in "the Firm's—a global network of corporations and cartels like General Electric, Shell, Siemens, IG Farben and Standard Oil—desire to exert 'control' over systems, by maintaining their research interests intact, for a deeper reach into the life of nature and its principles, that can be translated into saleable technologies and consumer goods like Imipolex G and the rocket (Nadeau 142). The interests of the Firm get propagated for instance by "The White Visitation" and its intelligence network, working on the fringes of rationality, in connection with "a disused hospital for the mad" (GR 89) where every case of psychopathology is addressed by its heterogeneous crew—of "spiritualists, vaudeville entertainers, wireless technicians, Coueists, Ouspenskians, Skinnerites, lobotomy enthusiasts, [. . .] all exiled by the outbreak of war, from pet schemes and manias damned [. . .]" (GR 77)—to discover the complex processes in nature, which will lead them to new and effective modes of 'control' over individuals and phenomena (Nadeau 144-45). Slothrop's narrative existence as a subject of conditioning and an object of inquiry can be a case in point.

Maltby inquires into GR's spectrum of cultural and social practices where the ideology of "technological rationality" is operational (156-60). The ideology legitimizes domination and 'control' by a "system" which upholds "productivity" and "earnings," and can prevail
over other types of discourse (158). The instrumental rationalist discourse submits Kekulé's dream of the coiled serpent to their purpose in the development of benzene's structure, which has far-reaching consequences in the industrial synthesis of molecules. The symbol of eternal-return and renewal is violated by the system, which 'takes and not gives back,' "buying time" in the maniacal drive for more and more (GR 412).

Another interesting instance would be the scene in which Tchitcherine, in one of his rumored sessions with Wimpe, an organic chemistry enthusiast associated with the IG Farben, is witness to a discourse on the possibilities of carbon bonding, especially of the variations in opium alkaloids which emerge in the course of their "basic search" "to find something that can kill intense pain without causing addiction" (GR 348). The aim of the "chemical cartel" to undo the "parallelism between analgesia and addiction" is, to put it in their terms, "to find such a drug—to abolish pain rationally, without the extra cost of addiction" (GR 348). But 'addiction' proves to be something 'beyond' Their 'rational' schemes, very unlike the things they can 'control' and 'cause,' like "real pain," "wars," "machines in the factories, industrial accidents, automobiles built to be unsafe, poisons in food, water, and even air [. . .] quantities tied directly to the economy" (GR 348-49). Whatever academic and theoretical exercise they fund in this matter is dim and inconclusive, and the
clinching remark is, “a rational economy cannot depend on psychological quirks” (GR 349).

One might at this point review the historical context of the text—the late capitalist 1960s and early 1970s. In Maltby’s study of GR as a critique of ‘rationalized’ meaning systems, the ideological context is defined as the moment “when the crises and contradictions of the market economy appeared to have been successfully managed, contained, or averted by the regulative function of the state,” “when the ideologues of ‘organized capitalism’ acclaimed the benefits of global planning and the technical-bureaucratic organization of production and consumption,” and “communications—especially structuralism and cybernetics—were at the height of their prestige,” when contradictions were “flattened out” to affirm the status quo, a “total system swallowing all alternatives” (151).

Rathenau’s speech develops around his progressive account of the formation of the synthetic dye industry, especially the monumental IG Farben, but ends to refute simple causal explanations for the processes involved at the micro and macro levels of influence. The micro-level determinants of chemical “synthesis” which therefore determine bigger categories of existence like temperatures, rates of flow, profits entailed, and the massive shapes of towers are of the dimension of atoms, molecules or electrons which cannot be explained in human terms. In Heise’s words, “As elementary building blocks of
nature, they determine the structure and properties of all known substances, and their manipulation and alteration makes possible the creation of entirely new ones, whether these be drugs, plastics, nylon or nerve gases" (194).

Heise in the study of the postmodern experience of time has exposed the influence of the "very large and extremely small" time scales on the commonsense perception of time (38-46). The cosmological concepts like the "big bang" beginning and the expansion of the universe, and the current theories of cosmological evolution involve unimaginably large time scales (40) whereas the "nanosecond" time of computers deals with infinitesimally small dimensions like $10^{-8}$ (42). The revelations of quantum mechanics and particle physics involve "inconceivably small particles moving at great speeds" so that the human mechanisms of observation and measurement do not apply in the same way to the "subatomic zoo" of not only electrons, protons and neutrons, but also the ever-increasing number of discovered particles: quarks, mesons, hadrons, bosons, and so on (39; 42). This study is informed by Heise's analysis of how the "incompatible time scales" affect cultural awareness and the postmodern experience of time:

[. . . ] it has become impossible to conceive of the world as structured according to a common temporality [. . .] crucial for narrative, whose coherence depends on the reader's
ability to connect the narrated events in a common temporal medium [. . .] . Postmodern culture exposes human time as just one among a multiplicity of temporal scales, one that can no longer be considered the measure and standard of continuity. (46)

Heise invokes John Barth’s reflection on microscopic causes and “disparate scales of time and causation” (43) in the first of his “Two Meditations”: “which snowflake triggers the avalanche? A house explodes; a star” (qtd. in Heise 43). Foregrounding the inviability of using simple causal notions to the micro-levels of molecules, and “the enormous difference that the presence or absence of an electron can make” in constituting this world, the problem is carried over to higher realms of existence like psychological and political processes which might be thus considered “unpredictable” or “disproportionate effects of invisible causes” (Heise 43). Heise refers to Claude Richard’s essay on causality in contemporary fiction to suggest how “causality is linked to a conventional scale of reality,” and “if microscopic causes can be known only by their macroscopic effects, if causes escape the possibility of representation, what remains is only awareness and representation of, at best, betweenness” (qtd. in Heise 194).

The other crucial problem linked to the massive effects of ‘chemical synthesis’ and its possibilities suggested by Rathenau, is the development of the industrial conglomerates and their “control”
over global macro-level events and micro-level manipulation of individual lives and phenomena. What is significant about this notion of "control" is that it works out a temporal dynamics of its own which is no longer subject to human intention (Heise 194). Pynchon’s fictionalization of the German IG Farben brings in the context of the historical development of the German and the international synthetic dye industry following the technological boom effected by the First World War. The development of the chemical technology and the possibilities in chemical ‘synthesis’ falls outside the purview of simple causality and human agency. Even the pervasive controlling agency of “the Firm” that makes itself felt in the paranoid delusions of characters as well as as a strong determinant of global happenings and individual lives cannot be done-away-with in linear and irreversible cause-and-effect terms (Heise 194-199).

The power of the technological and industrial agencies to effect global changes as well as manipulate the molecules and even organic metabolism (Heise 195) is what informs the paranoid suspicion of Enzian that World War II itself is more a conspiracy with technological purposes rather than political consequence:

It means this War was never political at all, the politics was all theatre, all just to keep the people distracted . . . secretly, it was being dictated instead by the needs of technology . . . by a conspiracy between human beings
and techniques, by something that needed the energy-burst of war [. . .]. The real crises were crises of allocation and priority, not among firms—it was only staged to look that way—but among the different Technologies, Plastics, Electronics, Aircraft, and their needs which are understood only by the ruling elite . . . (GR 521)

The narrative later calls it a drug-induced talk, stimulated by “stuffing down surplus Pervitins” and as “paranoid terror”(GR 522), but the kind of paranoia which induces in Enzian visions of hitherto unknown power sources, distribution networks and “routes of power our teachers never imagined, or were encouraged to avoid”(GR 521) strikes other characters like Slothrop, Prentice and Tchitcherine, where again we find instances of drug-induced paranoiac delusions. One might point incidentally to the kind of power the chemical industry wields over the drug user’s mental processes. Elsewhere in GR, Enzian also surmises the postwar propaganda of a history which conditions them to expect rivalries, when “in fact it may all be a giant cartel including winners and losers both, in an amiable agreement to share what is there to be shared” (GR 326). The narrative moment which considers Katje’s worth as a spy also reveals the real business of War as “buying and selling”:

[. . .] the mass nature of wartime death [. . .] serves as spectacle, as diversion from the real movements of War.
It provides raw material to be recorded into History, so that children may be taught History as sequences of violence [. . .]. The true war is a celebration of markets. [. . .] So, Jews are negotiable. Every bit as negotiable as cigarettes, cunt, or Hershey bars. (GR 105)

What is pertinent to the study of this concept of an “incalculable plot” (GR 521) is that it has a complex dynamic maintained between “molecule and management” which cannot be explained in terms of conventional causal relations (Heise 195). In one of the séances at “The White Visitation” with Eventyr as “the medium,” Sachsa as “the control,” Roland Feldspath as “the spirit” and Selena as “the wife and survivor” (GR 30-31), we find the spirit, like that of Rathenau, speaking from the “other side” of existence on the “illusion of control”:

A market needed no longer be run by the Invisible Hand, but now could create itself—its own logic, momentum, style from inside. Putting the control inside was ratifying what de facto had happened—that you had dispensed with God. But you had taken on a greater, and more harmful, illusion. The illusion of control. That A could do B. But that was false. Completely. No one can do. Things only happen, A and B are unreal, are names for parts that ought to be inseparable . . . . (GR 30)
Feldspath, the sought-after expert on “control systems, guidance equations, feedback situations” (GR 238) for Aeronautical Establishments makes appearance in “Slothropian Space,” when Slothrop in a sort of “reverie” touches the spirit of Feldspath. The spirit is eager to realize “one of his death’s secret missions,” “to show them what he knows about Control” (GR 238).

The process is ‘beyond’ human or any single agency. “The Firm” and its global network holds intercepting lines of complex purposes, and not only the market but individual lives get caught in the maze, not solely in their paranoiac delusions. With Slothrop it is not only the obsessive delusion of “a rocket with his name written on it” (GR 25) but the narrative ‘reality’ of some sort of sexual conditioning which relates him to the V-2s exploding in London. Slothrop’s narrative, from his most elemental impulse to the eventful exploit across the continent shows signs of being engineered towards some goal like the finding of the mysterious “S-Gerät” apparatus or the destruction of the Schwarzkommando. His rocket-connection is variously researched at “The White Visitation,” to further tighten the grip of the British Secret Service and corporate bodies on him. Before being led to the Zone he is made to stay in the south of France, where his dramatic encounter with the British agent Katje, the disappearance of his companion, his papers and personal possessions, and even the little information he gets which urges him to seek more about “S-
Gerät" and Imipolex G—everything strikes him as preplanned, to direct him to the Zone. He goes through a preparatory drill in German dialects, matters of ordinance, electronics and aerodynamics; it is Hilary Bounce from Shell International Petroleum who teaches him propulsion (GR 240). In the Zone the shadow of surveillance looms large and there are few turns of chance when Slothrop escapes the monitor.

A simple equation based on the politics of an absolute power subjecting the individual to some fixed purposes, would be to overlook the implications of the narrative. To explain the "control" as a confirmation of "the Firm's" absolute sway, as a linear, causal logic of power, would turnout to be enigmatic on closer analysis, says Heise (197). Using Slothrop to trace and kill the Schwarzkommando seems a haphazard way of achieving the aim—"an extraordinarily inept and complicated means" (Heise 197)—that the British and their Allies can accomplish in more straightforward ways. Moreover, the amount of mystery and narrative suspense associated with 'S-Gerät' and Imipolex G does not get justified in the end, which seems almost irrational when compared to the clues and conspiracy which frame the quest undertaken not only by Slothrop and the Secret Services, but also the Schwarzkommando. The whole project involving rocket technicians and the devising of the S-Gerät apparatus in the construction of the 00000 rocket seems to be worked out, not to
destroy any strategic target, or make profit for any business cartel, but to create a symbolic death-instrument for captain Blicero’s catamite Gottfried, who is enclosed in the rocket in its launch from Lüneberg Heath. Blicero as representative of ‘the Firm’ “invests all these resources, manpower and creative design” seemingly to satisfy his personal fantasies (Heise 198). Therefore, as Heise concludes:

[...] a strange discrepancy here emerges between the idea that science, politics, business and individuals are all controlled by the designs of an institutional network, and the impression that the Firm’s resources can at random be turned over to the arbitrary use of compulsive individuals like Blicero. (198)

Though GR does not identify any emergent countermovement to ‘the Firm’s’ ‘technological rationality’ and ‘control,’ there are counter discourses which emerge in the narrative—anti-Eurocentric, carnivalesque and deconstructive—also, a “loose grouping of rebels” into the “counterforce” (Maltby 160; 165). In this ‘polyphony’ of discourses and narrative possibilities, causal determinacy vanishes, and the reader’s attempts for coherence get thwarted.

It would be meet awhile to dwell on the narrative consequence of séances, in the context of the invocation of Rathenau. One of the significant aspects of the séances, reveries and other levels of reality, like dreams or drug-induced hallucinations, which are inherent to
the narrative’s negotiations on the nature of reality, is that the very structuring of these alternate realities in the text models the kind of reality/time it portends. In the modernist text the different levels of ontology can be maintained by dismissing the intrusive ‘other world’ as the vagaries of an unusual mind. In GR the “spiritist séances” and mind-to-mind transitions effect a compression of time through which “past and present come to co-exist simultaneously as consciousnesses inside and outside of linear time appear side by side” (Heise 193). McHale dwells on the crucial transitions in GR which “reverse real-world temporal order” by the passage accomplished from Eventyr’s world of the present to the past of Sachsa and the other spirits he contacts through the “control” (CP 76-80). The ‘mind-to-mind transitions’ posit the simultaneity of the two worlds mapped on each other, since there is no ‘real time sequence’ which makes viable such reversals and time-shifts: the shift “from coordinates in the character’s ‘real’ phenomenal world to coordinates in the Other World, the world ‘beyond the Zero’” (McHale, CP 76).

The coexistence of the terms “shift” and “simultaneous” in the context of the postmodern narrative’s characteristic ‘unreadiness’ to distinguish between “real” and “hallucination,” can be explained as its incapability to transcend “language”: “narrative, by its very nature incapable of representing simultaneity except by sequence, must deploy this moment of parallel experience as a transition from one
perceiving mind to another by way of a mutually-perceived sound" (McHale, CP 76). *SF*, for instance, posits a Tralfamadorian time of all moments existing simultaneously; its protagonist gets "unstuck in time" to move back and forth in ‘shifts’ or ‘schisms,’ but the narrative with its frequent and swift transitions between episodes, and associational juxtapositions however cannot do without sequence in its telling and does not reach the extremes of spatial form as ‘a clump of symbols all read at once’ (*SF* 64).

The ‘in-between’ existence of postmodern narrative, as neither sequential nor simultaneous, hints at a representational challenge which is analogous to the hurdles put before simple causal reasoning and linear temporality in *GR* in the form of “synthesis” and “control.” It also brings to mind the condition of individuals like Slothrop “caught between molecule and management” (Heise 196), the causal bridges for which are in a broken state in the narrative.

In Rathenau’s critique of causality the scale shifts from simple notions of human agency to that of the miniscule and the immense causative elements whose web of interference does not warrant linear cause-and-effect narratives. Alternative structuring devices gain relevance here, not only with Rathenau’s shifted sense of ‘reality,’ but also with the novel as “a matrix of correspondences” (George 5), which cannot be tamed with causal case. McHale constructs *GR* into patterns, structural analogies, mind-to-mind and narrative
transitions, which impress one with the 'simultaneity' of GR as a temporal experience (CP 73-80).

Susan Strehle in *Fiction in the Quantum Universe* draws an opposition between the "realists" and the "actualists" in GR, based on Heisenberg's distinction of "actual" as pertaining to subatomic levels of reality. When realists like Slothrop believe in linear time and causality, for the actualists "time is not a causal chain directed at death, transcendence, or salvation but a succession of coincidental moments to be celebrated for their own sake," or "a game of chance" (54).

N.F.George's reading of the alchemical codes also affirms the "synchronicity" of the narrative, where he draws analogies between the novel's "synthesis" of codes relating to dyes, drugs, plastics and aromatic compounds and the alchemical processes of Jung. The "chemical wedding" in GR plays with an "organic synthesis" of compounds, which can be related to the narrative's own realization as structure, since the uniqueness of organic compounds is a "function" of their "structure rather than substance"—not the number and kind of atoms but their "spatial configuration" in the molecule (George 6). One of the patterns that emerge by association of signs in the "synchronous universe" of GR is alchemy as a "structuring device" which juxtaposes chemical, narrative and psychic processes. In the novel as in the world of alchemy, it is a "chain of coincidence" rather
than of causal connection (George 9). George draws in the many coincidences, some long drawn out, informing the chemistry of substances like 'mauve,' the first dye synthesized from coal tar. Mauve is introduced in Rathenau's narration of the development of dye industry:

Passed over [ . . . ] . We passed over the coal-tars. A thousand different molecules waited in the preterite dung. This is the sign of revealing. Of unfolding. This is one meaning of mauve, the first new color on Earth, leaping to Earth's light from its grave miles and aeons below.

There is the other meaning . . . the succession . . . . (GR 166)

Rathenau talks of these "signs" as "symptoms of a process" which follows "the same form" (GR 167).

The "cyclical dynamics" of alchemy can be attributed to the 'form' or process Rathenau refers to: coal-tar, alchemically terra damnata, the rejected waste of chemical processes, when transfigured into 'mauve' gets ennobled to "prime matter" (George 8). Mauve is thus considered a figure of the "Philosopher's Stone" in alchemy, and moreover, since the cycle is eternal, it is also an interface or "transition point, the end of one thing and the beginning of another"(George 8). The cyclicity recurs in Kekule's dream which also serves as a "blue print" for new arrangements, for a progressive
development of the new methods of synthesis in the industry: the
dream of the serpent biting its own tail inspires the idea of constructing
benzene as a hexagonal ‘ring’ of carbon to carbon bonds (GR 412).
Thus mauve gets associated with not only ‘oneirine,’ one of the
frequently appearing drugs in GR, which evokes the Kekule dream,
but also others by a coincidence which marks the tale of mauve that
“mauve was discovered by accident when William Perkin set out to
synthesize quinine and produced the dye instead” (George 9). This is
an instance drawn from the alchemical study to present how the
possibility of such a reading of ‘correspondences’ proves the
‘synchronicity’ of the narrative itself. The ‘chain of coincidences’ or
the ‘infinite possibilities’ of selection demands constant decoding,
which strikes the reader as “the problem of ordering one’s knowledge
under acausality,” where “things only happen” (GR 30), where change
is ‘explained’ by itself (George 11).

This instance of an alchemical alternative to simple causality
is similar to the ideas that emerge in the Rathenau and Feldspath
episodes, which deal with the illusions of ‘cause’ and ‘control.’ With
Leni Pökler’s theory of causality, the focus is on narrative
representation and time, an interest that runs parallel to the
configuration of ‘time’ in postmodern narrative. Leni’s repudiation of
causality is manifest in the rejection of sequence and series in
representing experience: “Not produce [. . .] not cause. It all goes
along together. Parallel, not series. Metaphor. Signs and symptoms. Mapping on to different coordinate systems [. . .]

(Heise 159). Heise explains how this view relates to the narrative configuration of GR with its analogies, patterns and correspondences (200-204). Leni also makes an entry into questions of 'real' and 'fictional,' undoing the conventional frames of reference in narrative representation.

The context is when Leni and her husband Franz Pökler watch Fritz Lang's film Die Frau im Mond. Franz is amused by the technical virtuosity; Leni sees a dream of flight, which for her is one among many possibilities: "There is the moment and its possibilities. [. . .] Real flight and dreams of flight go together. Both are part of the same movement. Not A before B, but all together . . . "(159). Leni's reflection resonates with that of the communication from the spirit of Feldspath, of A and B as discontinuous, acausal, "unreal" parts (GR 30).

Leni's articulation of 'possibilities' in representation is set against the 'cause-and-effect' sensibility of her husband who is, for her, limiting himself to conventional sequences of understanding life and its narrative representations like film. Franz watches the movies "nodding in and out of sleep," however finding cause-and-effect connections for the fragments he gathers with his eyes open (GR 159). The rocket technician mercilessly rejects his wife's astrology, when what she attempts is to reach out for something like a 'dream of flight' to other possibilities. In his characteristic way of "removing
all the excitement from things with a few words” he says, “Tides, radio interference, damned little else. There is no way for changes out there to produce changes here” (GR 159). Leni’s argument for an alternative to simple causality reached by “mapping on to different coordinate systems” again meets the usual unromantic response: “Try to design anything that way and have it work” (GR 159).

Leni’s approach is a breakaway from the redundant ways of Pökler and a reaching out for an alternative that ‘she does not know’ (GR 159). This is structurally similar to the postmodern narrative’s transgression of conventional temporal, causal limits towards multiple possibilities of realization. Both attempts being experiments or negotiations with the usually fixed dimensions of representation like time, causality and linearity, are not therefore made for the kind of test firing Pökler suggests. As in the case of GR there can be no “given” rule of the game to test its conformity or effectiveness. Leni’s concept of “parallel” existence, “metaphor” and “signs and symptoms” mark the denial of causal sequence for sense-making: “events can come to refer to each other regardless of their temporal relation or the contingencies that separate them” (Heise 200). Such coincidences and juxtapositional associations work well in the case of GR, for instance, in the alchemical reading, and the ‘mapping’ by McHale, which have been referred to.
GR can generate an “endless chain of analogies, substitutions and mirrorings of characters and events” (Heise 201) justifying the kind of spatial reading Leni puts forth. The “parallel experience” presented as “mind-to-mind transition” (McHale, CP 76) in Eventyr and Sachsa is something of the kind Leni reaches after, a shift to coordinates in some Other World. Just as Eventyr and Sachsa map on to each other as “analogues,” Eventyr tries to extend the parallelism to their lovers Nora and Leni (GR 216). McHale explains the transition in terms of “analogical integration” characteristic of modernist fiction which elicits a reading based on “non-mimetic unifying patterns: analogies between events, strands of action, characters, themes” (CP 79). The difference with the postmodernist use of the device is that it is expressly anti-mimetic in modernist novel, lying at a different level from the fictive world, whereas in GR the “mapping” is “mimetically motivated” (McHale CP 79). In the model of reality presupposed by GR, says McHale, the correspondence between characters Eventyr-Nora and Sachsa-Leni is “real”—parapsychological or supernatural, but “real” (CP 79). There are even more “bizarre” and outrageous mappings possible, for instance, the analogical chain which starts from the transition between the reenaction of the Alpdrückchen rape by Slothrop and Margerita Erdmann, and Franz Pökler making love to Leni inspired by the film (GR 395-98). The “deviousness and implausibility” of the connections that can be drawn between
characters, not justifiable by plot or chronology, impresses one with a “growing suspicion that almost any character in this novel can be analogically related to almost any other character” (Mc Hale, CP 80).

The analogical patterning realizes Leni’s possibility of “parallel not series” (GR 159). In fact the multiple possibilities of correspondence, which lead to an “infinite series of substitutions between persons and events,” however do not help any historical interpretation of narrative (Heise 202). It is “free but unmanageable analogical patterning” (McHale, CP 80), which is, as in the case of Slothrop’s paranoia, able to “connect anything with everything” (GR 703; Heise 202). Blicero conceives Gottfried and his black lover Enzian as mirror replicas and supposes a black female analogue for Katje. There is black and white doubling in the case of Enzian and Tchitcherine also. Slothrop and Gottfried, by conditioned erectile responses to Imipolex G and their rocket connections become metaphorical doubles. There are also substitutions, replicas and coincidences in the case of events: for instance, the supposed self-immolation of Enzian by launching himself in the 00001 replicates the fate of Gottfried enclosed in the S-Gerät. Heise draws in a case of repetition of incidents when “Slothrop’s dive after his mouth harp into the toilet bowl of the Roseland Ballroom in 1939 is echoed by his trip into the shadowy territory of the Zone where six years, one transatlantic move and 600 pages later, the very same mouth harp
turns up again, apparently by sheer coincidence” (202). Another instance would be the coincidence of speech between Ilse and Gottfried who never ‘really’ meet in GR, and therefore cannot be explained off as one utterance ‘causing’ the other (Tabbi, “The Wind” 83). At the fantasy land of Zwölfkinder, the slender boy passes her by without her knowing him “for her own second shadow” (GR 429).

One of the most significant aspects of postmodern representation one might derive of such resistance to cause and effect, and realization of multiple realities, is “a blurring of the distinction between the sign and what it designates” (Heise 205). The distinctions between “real” and “represented,” the possible interrelation between waking reality, dreams and fantasies, or between past, present and future, get subverted by the kind of alternative reading implied by Leni and the novel itself (Cowart 61). Leni’s reflections on “signs and symptoms” does not assume any “reality” outside itself or more “real” than the sign system, so that representation has a temporality of its own independent of the “real” world time conceptions (Heise 205). The kind of “simultaneity” or “perpetual present” (Cowart 61) one might attribute to GR can be seen in this context. The “flickering” of ontology (McHale, PF 32) of ‘real’ and ‘represented’ is all the more foregrounded by the reversal effected when the German film director Gerhard von Göll assumes his filmed version of the supposed black rocket troops to have generated the ‘real’ Schwarz kommando:
“Schwarzkommando are really in the zone, leading real, paracinematic lives [...]. He is convinced that his film has some how brought them into being” (GR 388).

Film, in fact becomes GR’s most sought after medium to challenge the conventions of reality: “the inadequacy of cause-and-effect models of the phenomenal world, and of cozy assumptions about the ultimate reality of that world” (Coward 33). The subversive effect of the film motif in the novel is at its pungent best when the movie seems to call itself into real life. The narrative testifies to the conviction of von Göll, of having given form to the ‘real’ Schwarzkommando, to be something more than any “megalomaniacal delusion” (Cowart 38) when the researchers at PISCES tend to explain it thaumaturgically:

At PISCES it is widely believed that the Schwarzkommando have been summoned, in the way demons may be gathered in, called up to the light of day and earth by the now defunct Operation Black Wing. [...] who could have guessed there’d be real black rocket troops? That a story made up to scare last year’s enemy should prove to be literally true [...] (GR 275-76)

There is a sort of interplay between the ontologies of ‘film’ and ‘fiction,’ of ‘real’ life and ‘reel’ life in GR. This further complicates the multiple world of GR with the indefinable relation existing between cinematic and real. The numerous references to films real and
fictional, to actors and directors, serve as significant cultural pointers, but as Cowart realizes, “film is more to the novel than a source of culturally rich allusion: it is its ostensible medium” (33). It becomes another instance of the breaking of frames, when film breaks into the genre limits of fiction like the rocket which pierces into the sky of London in the first page of GR, and that which in the last page of the novel hangs in the “last delta-t” of its fall (760) above the old theatre where the whole drama seems to get enacted/narrated. In fact both the beginning and the end of GR give the sense of “mediated, second-order representation” (McHale, CP 110). The first scene of the V-2 rocket screaming across the sky and its detonation happens not in the “real” world but in a dream of Pirate Prentice. Prentice’s status as “fantasist-surrogate” (GR 12) also suggests double mediation, since he might be channeling somebody else’s dream. The last scene of GR also describes the launching of a rocket, may be a successor to the V-2, over the theatre where GR seems to be ‘mediated’ as film. The suggestion is that the whole text might be a movie screened in a Los Angeles movie theater. A fixing of the “novel-as-movie,” though would ‘effectively solve’ GR as McHale examines, however would reduce its “strangeness” to increased intelligibility and demote the novel’s ontological world into a secondary or “nested representation” (CP 111). This strategy of “framing” the novel as the constituents of a movie
would “naturalize” and “integrate,” and thus “thoroughly domesticate this maddeningly equivocal text” (McHale, CP 110).

The cinematic discourse is however integral to the structural and thematic concerns of GR, and pervades as a stylistic, cultural and metaphorical presence. The ontological significance of this generic coexistence, which breaks the conventional boundaries between film and fiction, real and illusory, can be the major focus of a film-based study of GR. Not less important is a look into the narrative-structural correlations between film and the novel, and how conventional narrative structure gets undone. Charles Clerc refers to a typographic curiosity when the Viking edition divides the episodes of GR by “a sequence of seven squares, representing in the manner of a logogram both frames and the sprocket holes of a film projector” (112). Such sprocketed separations ( □ □ □ □ □ □ ) between the successive narrative segments of the novel deny the “smooth continuities of traditional fiction” and the “narrative quanta” get imaginatively integrated only in the process of reading (Moore 30) just as “the rapid flashing of successive stills” (GR 407) in film counterfeits movement.

Thomas Moore in his analysis of “framing” as a “central epistemological symbol” (3) in GR conveniently calls its four divisions “reels.” The last reel “The Counterforce” has separately titled fragments or ‘frames’ as in the case of the ‘catching’ and blurring of the old film which jerks through the projector before its final break
The word "CATCH" repeatedly interrupts Pynchon's narration towards the end of the novel (GR 759), and analogous to the film catching in the projector, the narrative of GR 'jerks' and 'sputters,' in a "phalanx of montage pieces" or "near-abstract shots" (Cowart 59). Cowart draws in Sergei Eisenstein's theory of 'montage,' which in its juxtaposition of film fragments generates a 'new concept' or associative reconstruction, which unlike the smooth linear flow of causal narration, proceeds as a 'series of shocks' or 'surprises' (58-59).

This filmic structure recurs in GR when the world and its phenomena are seen in filmic terms, as a series of 'frames.' Geological passage of time is put in movie-language when a character talks of rock's time scale as "frames per century," in which the erosion of rocks, "its aeons of history" is to be recorded: "Who'll be there, once or twice per century, to trip the shutter?" (GR 612-613). This concept of successive frames is applied variously to projectiles and the passing of human time as well. The German engineers working at the rocket project at Peenemünde derive a filmic trajectory for the projectile by filming its specific locations at different points of time:

There has been this strange connection between the German mind and the rapid flashing of successive stills to counterfeit movement, for at least two centuries—since Leibniz, in the process of inventing calculus, used the
same approach to break up the trajectories of cannon
balls through the air. (GR 407)

Franz Pökler, the “cause-and-effect man” very much involved
with the Peenemünde project, is to experience this succession of
‘frames’ extended “past images on film, to human lives” (GR 407).

Pökler, the ‘fanatical movie hound’ (GR 577) is used to dozing on and
off and later making causal connections between the film fragments
he watches, as if “the dramatic connections were really all there, in
his dreams” (GR 579). Pökler in ‘Their’ hold is allowed to see his
daughter Ilse, born of the Alpdriicken night, now confined to a labour
camp with her mother, only once a year in brief visits. Coward senses
the kind of “perverse poetic justice” involved in Pökler’s “being allowed
to see his daughter in ‘frames’ so widely separated that his ability to
make the connections, in his dreams or otherwise, is stretched to the
breaking point, with the result that he can never be certain that he is
seeing the same girl from year to year” (57). Ilse, the child made of a
film, splits into the successive stills of a film for the father’s perception:
“Isn’t that what they made of my child, a film?” (GR 398) The physical
principle of motion pictures gains narrative significance here when
using the ‘persistent vision’ of the father’s love ‘They’ create for him
“the moving image of a daughter, flashing him only these summertime
frames of her, leaving it to him to build the illusion of a single child.

. . . what would the time scale matter, a 24th of a second or a year [. . .]
The movement of the film happens in his mind with a succession of still images or frames similar to film's illusive continuity: in film it is twenty-four frames per second, too fast for a single frame to be detectable (Clerc 126-127).

The same structural principle traces the rocket trajectory as it develops from "innumerable frames: blast-off, ascension, peak of flight, fall and crash" (Clerc 127). Elsewhere in the novel is an interesting reference to "films of Rocket flights, frame by frame, [. . .] flightless themselves . . . film and calculus, both pornographies of flight" (567). Both lack the spontaneity and unity of an actual experience and are mere "stills" of the actual flight (Clerc 110).

The illusion of continuous movement is guaranteed by our inability to register the infinitesimal moment of time between the frames. GR holds the analogy between 'Δt' of calculus and the time between the film frames, as Friedman observes in his "Science and Technology" (74). The illusion of continuity is the product of a "persistence of vision" (GR 422), the name the pre-cinematic nineteenth century has given to "the phenomenon of the mind's momentary after-imaging of what the eye has just seen, the imaginative 'filling in' of a space between frames of perception" (Moore 40). For the moviemakers 24 frames per second becomes the technique to maintain persistence of vision, whereas for Pökler it is his persistent love for his daughter that should aid the conjoining of the
discontinuous fragments. There is no question of temporal and causal continuity or any coherent narrative. Filmic structure inlaid into the narrative of GR becomes one of the prime instances of "the resistance of time to causal construction" (Heise 213).

Not only the text's concept of narrative, but its language and semiotics have also been determined by the filmic trope, which would be a highly fertile area left unexplored in the study. The role played by the interspersed world of cinema in denying a coherent fictive world by its violation of ontological boundaries is inevitably central to the analysis of time and narrative in GR. McHale points to the several "spectacular metalepses" or "violations of the ontological hierarchy" which occur throughout GR:

[...] cinematic images of copulation lead to the conception of two real girls; an Allied propaganda film apparently generates a real corps of Black African rocket troops; and, in a final, apocalyptic metalepsis, the rocket launched within the film-within-the-novel hangs poised above the theater in which the film itself is being viewed. (PF 130)

The rocket which has escaped from the movie has "crossed the dimensional interface" (Cowart 57) to hang in the last infinitesimal moment 'Δt' of its fall above the theatre where its story is being screened. This distortion of the fixities of different levels of existence
like fiction and film is one among the many distortions of ‘reality’ that is effected in GR. In Cowart’s words,

Pynchon delights in making us see reel become real in Gravity’s Rainbow, and this ‘obscuring of the distinctions’ between two-dimensional illusion and three-dimensional reality contributes to a discrediting of objectivism. Film [. . .] becomes literally something to conjure with, for events and phenomena prove to be simulating filmic paradigms rather than the other way round. (61)

One can draw instances from the supposed invocation of the Schwarzkommando from Gerhardt von Göll’s Operation Black Wing footage—filmic images ‘sowing the seeds of reality’ (GR 275, 388)—and ‘film and life cross-fertilizing each other’ (Cowart 39) into the many “shadow children” (GR 397) born of the film Alpdrücken. The filmic interface, which is normally impenetrable, is burst and the seeds are sown. GR attributes to Alpdrücken, the pornographic film, the fathering of an entire generation of Germans: Bianca, Margherita Erdmann’s daughter conceived during the making of the movie; Ilse born of Pöklér’s inspired response to the film; the many possible fathers among the audience, and the mass of masturbators, all “putative fathers” of Bianca (GR 472). The narrative holds the clinching remark: “How many shadow children would be fathered on
Erdmann that night?" (GR 397). "Film, like fiction or projected worlds, can bring about new realities," says Peter L. Cooper (118). It is the loss of distinction between the different spatial and temporal planes of two realms of existence, of film and fiction. Such coexistence of multiple worlds and times happens with dreams, fantasies and séances also in GR. Dream, like movie, is a significant narrative trope in GR. There is Slothrop, the dreamer, Pokler who makes no distinctions between dreams and movies, Pointsman, Margherita, Prentice and others who have their own encounters with fantasies and hallucinations. All these cannot be explained using conventional causal models or temporal configurations. GR in this sense strikes at convictions about 'reality,' which is now no longer distinguishable from something that is characterized as 'filmic' or 'illusory.' "Reality" becomes "no more substantial than the flickering images on a movie screen" (Cowart 36), as the narrative itself repeatedly reminds: "its all theatre" (1; 3; 267; 302; 326; 521; 722). Along with it get subverted all the allied assumptions founded on theories of the Absolute.

GR disrupts our conventional searching after absolute distinctions when some description we register as happening in the fictive world is later attributed to a character's dream or drug-induced hallucination, as in the case of Prentice's dream of the V-2 strike on London. As Tony Tanner has observed, "it is not always clear whether
we are in a bombed-out building or a bombed out mind” (qtd. in McHale CP 66). Our fixing of facts can thus be “retroactively deconcretized” or in the other way “retroactively concretized”: “the reader, invited to reconstruct a ‘real’ scene or action in the novel’s fictive world, is forced in retrospect—sometimes in long retrospect—to ‘cancel’ the reconstruction [. . .] and to relocate it within a character’s dream, hallucination, or fantasy” (McHale, CP 62).

All the fragments of the narrative and the different levels of ontology scrambled up do not give the sense of a coherent narrative but exist in juxtapositional simultaneity. Narrative elements coexisting in a time which is ‘present’ becomes common to fiction, dream and film. Cowart in his analysis of film in GR holds up the assumption that film like dream creates a ‘virtual present’ (48). He concludes:

What is true of the possible interrelation between life and film is true as well of the possible interrelation between waking reality, dreams, and fantasies, or even between past, present, and future. For example, though one can discern a chronological sequence to the action of the novel, it is completely disregarded—in fact, suppressed, in the telling, and further subverted by adherence throughout to narration in the present tense, as if all were taking place in the perpetual present of the mind’s private movie theatre. (Cowart 61)
Another characteristic of the novel obviously derived from film is the concept of the reversal of processes, which McHale considers "the extension to reality itself of film's capacity to be run backwards" (CP 111). Such a temporal reversal is tried with Slothrop's family history of the Puritan voyage to America, when ships move in reverse, even the vomit gushes back into the mouth, and Slothrop is English again (GR 203-204). There is another instance of the narrative negotiating with the fact that the rocket Blitz is irreversible. In this entire film run backwards there is "faired skin back to sheet steel back to pigs to white incandescence to ore, to Earth" (GR 139). In an almost similar experience in SF's television movie run backwards there are the bullets getting sucked back into the bombing planes, and thereon disintegrating back into raw materials. Seeking ways out of the dismal conditions of existence, these artificers seek to rework reality conventions fundamental to which is an irreversible arrow of time.

Fiction-makers like Pynchon and Vonnegut seek to reconceive 'reality' and 'time' using metaphysical concepts derived from the new revelations in science. GR integrates "the most diverse cultural and natural phenomena" and announces its 'assembly' using the metaphors of 'lattice' and 'mosaic' where "fictional plots shade into historical and scientific ones" (Seed 158). Pynchon finds his fictional
methods and metaphors from his training in electrical engineering and his deep indulgence in science and technology.

Science, as Gerald Holton muses in *Thematic Origins of Scientific Thought*, "has always had a mythopoeic function" in that "it generates an important part of our symbolic vocabulary and provides some of the metaphysical bases and philosophical orientations of our ideology" (448). The ontological status of science as a repository of 'a priori' truths in a world of 'either-or' categorical thinking toppled with the new revelations in the twentieth century. The mythopoeic function of the new science manifesting itself in contemporary fiction leads to valid insights on "the fundamental organizing principles in the symbolic universe of Western man" (Nadeau 12). The repercussions of Einstein's theory of relativity are such that they powerfully interrogated the nature of reality itself—what may be called the Newtonian world-view—bringing about some "profound changes in the conceptual machinery upon which an entire cosmos had been constructed" (Nadeau 3).

Pynchon's reworking on the categories of existence like time and causality develops into an "alternate metaphysic" (Nadeau 2) which could be studied as evolving out of his involvement with, among other knowledge systems, quantum theory and the theory of relativity. The advent of relativity in field physics and quantum theory in micro-physics is considered to have altered the scientist's view of reality:
concepts of determinism get subsumed by principles of indeterminacy.
We can see this shift wrought in the thematic oppositions of GR, between causal and acausal modes of thinking. From the realm of
'cause and effect' sureties of the like of Pointsman, it is a shift to the
'probabilities' of Roger Mexico, whose methods can be related to the
statistical and mathematical descriptions of connections between
objects as they move relative to one-another in what Einstein calls “
a space-time continuum” (Cooper 25). The different alternatives to
simple causality in GR in turn seek to replace our linear conception
of temporality.

Einstein's theory of relativity posits a time that is 'relative' to
observer positions: even simultaneity is not the same for different
observers unless they are at rest relatively to each other (Smith and
Oaklander 164). Pynchon derives from scientific epistemology his
concern over knowable, impersonal 'reality,' which is addressed by
his several characters from their observer positions: Pointsman,
Mexico, Leni, Pokler, Rathenau, Feldspath and those who give in to
paranoia and drug-induced hallucinations, all exist with their versions
of 'real,' none of which is narratively legitimized. In this he draws
upon Einstein and Heisenberg (Uncertainty principle) to reveal the
unstable interface between a priori and relative facts (Cooper 21). As
a character from John Barth's "Bellerophoniad" in Chimera says, "the
truth of fiction is that Fact is fantasy; the made-up story is a model of the world" (246).

With Pynchon it is more a configuring of science’s ‘epistemological and theoretical problems’ into narrative than any thematic analysis based on scientific concepts. Science and its metaphors are therefore ingrained in GR as “signs and symptoms” of the structuring of its ‘reality’ (Cooper 111). In the light of Heisenberg’s uncertainty principle, the absolute determinism of the kind of Pointsman, does not work any more. Mexico’s order of ‘probabilities’ is to Pointsman “symbols of randomness and fright” portending “a contingent future” (GR 56). Alan J. Friedman and Manfred Puetz’s study of science as metaphor in GR relates this randomness to the new order in which “randomness can be positive, allowing for the spontaneous, the surprising, the undetermined” (Cooper 121): “the uncertainty principle means that no possibility can be ruled out, and that there is hope that nature’s constant reshuffling produce desirable new opportunities” (Friedman and Puetz 76; emphasis added). This brings to mind Einstein’s famous response to this randomness as ‘God playing dice with the Universe.’ One can draw correlations with the narrative possibilities/times envisioned in GR.

Friedman’s study of ‘science and technology’ in GR brings in the uncertainties and randomness involved in the assumptions of quantum physics so that the predictions “often tell us not of a single
expected result but of two (or more) completely different possible
behaviors for an experiment” (91). One image from this particle physics
is significant for the kind of narrative we delve in: “the branch point”
or “a situation presenting a distinct number of possibilities” (92) where
the chances of an atom of radium to remain whole or disintegrate is
completely random. In quantum happenings “neither history nor a
deterministic god can alter the odds or close off a fork” (92). One can
see how these ‘forks’ apply to Borges’ “forking paths” and the
indeterminate narrative directions of GR.

Friedman’s study based on the “three historical visions of the
universe, borrowed from science” (70) becomes a major reference point
for the analysis of the uses of science in GR. The three visions
identified are the Newtonian clockwork mechanics, statistical physics
and thermodynamics, and quantum physics. With Newton is
associated the assumption of a predictable ‘law like’ universe, obeying
the three Newtonian laws of motion, and the law of universal
gravitation (71-78). In GR the Pavlovian determinism of Pointsman
can be an extension of the Newtonian process, with its belief in “the
ture mechanical explanation,” “a pure physiological basis for the life
of the psyche” and “a clear train of [cause-effect] linkages” (GR 89).

Statistical mechanics is said to provide “convenient answers”
to the problems of making exact straightforward application of
Newtonian laws (Friedman 79). It deals as such with ‘probabilities’
and approximations. Mexico's statistical predictions of Rocket strikes in GR are good approximations but cannot draw the exact trajectory or striking point of a V-2 rocket. The statistical method is again significant in that it is the mathematical base of the thermodynamic imagery in GR (Friedman 78). Thermodynamics in its metaphorical applications is linked to the fundamental issue of the nature of 'time.' The second law of thermodynamics can be stated as, "for the universe as a whole, or an isolated part of it, processes forward in time tend to increase disorder" (Friedman 84). The disorder is talked of in terms of 'entropy,' which is a mathematical quantification of that state. As Zamora tries to define the concept:

Entropy refers to the statistical probabilities of various molecular distributions in a thermodynamic system. It also refers to the irreversible tendency of a thermodynamic system to move from the least probable to the most probable molecular distribution, that is, from a state of molecular organization capable of producing work to a state of random, disorganized, uniform molecular movement. Entropy reaches its maximum when the position and velocities of molecules are distributed uniformly and completely at random. Any spontaneous changes in the system will be in the direction of increasing entropy, of increasing randomness and disorganization.
The law of entropy requires that the total amount of entropy in the system increase. At the end of the entropic process, heat energy will be nontransferable because everything will contain an equal quantity of energy. This equilibrium, which represents the maximum molecular disorder, the greatest molecular homogeneity, is called heat death. (53-54)

Entropy in that sense gives time direction, which is considered as going from lesser to greater disorder, thereby indicating the past as moving on to the future (Heise 207). Zamora considers entropic time as unidirectional and irreversible, as in the case of an apocalyptic vision of time. The shift from Newtonian physics is drawn as "the transition from Newtonian reversible time to the irreversible time implied by the law of entropy" (Zamora 59). In Newtonian physics, time is not considered to have a direction, for the past and future are identical in essence, and because of the continuing laws of cause and effect, and of energy operative in the universe. Entropic time posits historical directionality, but no purpose as with apocalyptic ends. The entropic ‘arrow of time’ is linear, unrepeatable, with increasing entropy, so that order and structure are destroyed to a sort of point where time appears to stand still (Zamora 59).
Critics have found parallels between the entropic disorder and the disintegration of both the narrative of *GR* and its protagonist Tyrone Slothrop. As Heise puts it,

[...* the force of entropy reveals itself in the scattering of the protagonist and the disintegration of clear narrative progression especially in the last chapter, which incorporates an increasing number of disjointed episodes and characters, with ever more tenuous relations to the central story line. (*208*)

However, one cannot overlook how the narrative and its characters seek alternatives to irreversible processes in *GR*. One such instance is that of 'time reversals' attempted in *GR*. Entropy speaks of a world that only "tends to" disorder, as we have seen in Friedman's definition, implying the violations that are possible in this case. Friedman suggests how the 'second law' is only a "statistical truth, a truth about the universe that is only generally true" (*84*). What matters to us in our analysis is the kind of 'time reversal' involved when the law is supposed to get violated, however 'unlikely' such happenings may be. *GR*’s many reversals attempt such 'impossible' phenomena, sometimes in film run backwards or through drugs and dreams:

It is the dope that finds you, apparently. Part of a reverse world whose agents run around with guns which are like
vacuum cleaners operating in the direction of life—pull the trigger and bullets are sucked back out of the recently dead into the barrel, and the Great Irreversible is actually reversed as the corpse comes to life to the accompaniment of a backwards gunshot. (GR 745; emphasis added)

In the Oneirine induced hallucinations there is "some radical though plausible violation of possibility: the presence of the dead, journeys by the same route and means where one person will set out later but arrive earlier" (GR 703). One can look into how these challenges to entropic order and death itself in the form of 'unlikely' time reversal become part of the 'alternatives' or 'possibilities' in GR. Another instance is of the V-2 falling faster than sound, so that it is heard only after the explosion (GR 48)—a reversal in perception of the normal time sequence (Friedman 85).

The role of ideas from new physics in the radical reconception of reality, in both design and meaning in GR has been a fertile area of inquiry. What has emerged in the course of analysis is the kind of "interdependency and indeterminacy" characteristic of GR's extension of reality, where the different alternatives exist simultaneously in a pattern of dynamic tension (Tabbi, "The Wind." 70). GR is therefore an 'uncertain Zone' (GR 303) of coexisting contraries, whether it be visions of reality derived from science, or the violations of the fixed boundaries between different levels of existence like fact and fantasy.
“The Zone” is GR’s term for postwar Germany, a ‘plural space’ with its unique “new Uncertainty” where, it is said, “categories have been blurred badly” (GR 303). There is posited a blurring of distinctions between living and dead souls: “The status of the name you miss, love, and search for now has grown ambiguous and remote, [. . .] some still live, some have died, but many, many have forgotten which they are” (GR 303). “In the Zone” is the third section of GR located in occupied Germany with its “frontierless” nationalities ‘streaming out there’ (GR 549). The post-war Zone in GR, with national frontiers undone, and the Allies scrambling for power, has a motley crowd of exiled groups, spies, dope-runners and other adventurers. The pitiable exodus and fragmentation take considerable narrative space: “Separations are proceeding. Each alternative Zone speeds away from all the others, in fated acceleration, [. . .] fleeing the Center. [. . .] Each bird has his branch now, and each one is the Zone” (GR 519).

McHale considers Pynchon’s zone as paradigmatic of the ‘heterotopian’ space of postmodern narrative, by relating it to Foucault’s concept of ‘heterotopia,’ as “a large number of fragmentary possible worlds coexist[ing] in an impossible space” (PF 45). In fact the collapse of national boundaries is only the surface indicator of the more devastating collapse of ontological divisions in GR (McHale, PF 45). In the Zone, as the narrative says, the distinctions between different levels of existence like death and life get blurred (GR 549)
and the Zone acts as an “interface” (GR 668) for the incommensurable worlds to coexist. We find the penetration of the interface in the case of film and reality as in the Von Goll film sowing seeds of reality; drug-induced hallucinations in the narrative get concretized as real, and vice versa, effecting an indeterminate ontology. This can be considered a violation of the “law of the excluded middle” (McHale, PF 44), which rules out such a simultaneity of mutually exclusive worlds.

The terms, ‘heterotopia’ and ‘multiple worlds’ bring into our purview Mikhail Bakhtin’s conception of the novel as ‘polyphonic’ and ‘carnivalesque.’ Keith Booker in the essay on the genre of GR traces its allegiance with Bakhtin’s idea of the novel (61-66). Bakhtin’s theory is founded on the novel’s way of incorporating various ‘languages’ of society into its discourse, effecting “heteroglossia” or a “diversity of voices” (Booker 63). This plurality of discourse, says McHale, is achieved by the use of different stylistic features corresponding to the different uses or ‘registers’ of language. He also affirms the important distinction between the formal and stylistic ‘heteroglossia’ of a text and the kind of ideological dialogue or ‘polyphony’ of voices it generates (McHale, PF 166). GR with its heteroglossic narrative breaks up the “projected world into a polyphony of worlds of discourse” (McHale, PF 167). GR as such is a ‘mosaic’ of different registers like that of science and technology,
military jargon, slang, psychoanalysis, business, myth, and philosophy.

Bakhtin considers such polyphonic narrative as deriving from the medieval carnival, where a laughing crowd of clowns, fools, dwarfs and jugglers—the humorous and the grotesque—opposed the official and the serious in medieval culture (Ashok 57). He draws distinctions between traditional or official literature, which is stylistically homogeneous, and "carnivalized" literature which is "heterogeneous and flagrantly 'indecorous,' interweaving disparate styles and registers" (McHale, PF 172). Instead of a unified projected world we have the text's ontological space intercepted by a "multiplicity of inserted genres" like letters, essays, poems, or theoretical dialogues (McHale, PF 172). The carnivalized literature also deliberately violates the norms with its grotesque descriptions related to the human body like defecation or sexual excess. We sense the carnivalesque impulse in GR when Mexico pisses on "Their rational arrangements" (GR639). The heterogeneous, unbounded nature of Pynchon's narrative goes without saying. GR gives us a sense of the grotesque with its frequent involvement with violence, sodomy and shit, and its sado-masochistic encounters.

GR's involvement with the carnival in its world-building is significant for its subversive impulses: "a denial of closure, a defiance of authority, a faith of indeterminacy, a reversal of hierarchies and a
violation of prohibition” (Ashok 58). It deconstructs the ‘given’ categories of existence like ‘time.’ As Bakhtin says in his Rabelais and His World, carnival is “the true feast of time, the feast of becoming, change and renewal. It [is] hostile to all that [is] immortalized and complete” (qtd. in Ashok 58). This notion can be discussed in relation to the kind of deconstruction of time and meaning addressed in the introductory section on “the ever-becoming time.” Carnival, like the Derridian conception of ‘deferred’ meaning, cannot be accounted for with the simple metaphysics of time and history (Currie 78-79). GR as narrative carnival outlaws the linear homogeneous narrative and its ‘exclusion’ of differences, in its ‘play’ with language and its ‘dialogic’ representation of several alternative models of causality and time.

This play can be seen in GR’s spattering of clues to solve its narrative riddles, which however lead only to abortive conclusions. It might be described in Leni Pökler’s words, “as ‘Δt‘ approaching zero, eternally approaching, the slices of time growing thinner and thinner, a succession of rooms each with walls more silver, transparent, as the pure light of zero comes nearer […]” (GR 159). ‘Δt‘ in calculus designates an “infinitesimal moment” (Heise 213) of time. In terms of narrative time, as in the ‘Δt‘ between the frames of a film already discussed, this infinitesimal present moment is insulated from past and future. In film it is an illusory continuity guaranteed by an imaginative filling in of the ‘Δt‘ between frames (Moore 40).
In GR, the ‘Δt’ is ‘eternally approaching’ zero and thus pointing towards a possible narrative coherence, when there is a lot of information to fill in the gaps left by such problems as Slothrop’s rocket connections or the nature of ‘Their’ ‘Control.’ But the ‘Δt’ only grows thinner and thinner, and no conclusions can be drawn out of the clues: there is no escape in GR from this “slice of time” which resists continuity and causal construction (Heise 212-213). There are characters in GR like Slothrop and Franz Pökler experiencing this condition of getting limited by ‘Δt’ from making causal/temporal connections. Pökler is trapped in the ‘Δt’ between the short visits once a year of his daughter Ilse, compelled to make a moving picture from the different filmic frames of his child (Heise 214; GR 398).

The final image of GR leaves the reader/audience in such an ‘eternal present’ or “Now –” (GR 760) when the tip of a rocket is eternally suspended above an old movie theatre where the whole drama of GR seems to be played. It is “the last delta – t” (GR 760) before the fall, and the reader is caught “in the final ‘Δt’ in which the next frame will never come” (Heise 214). Thus the different fragments of GR do not add up to any coherent whole, but abruptly end in an uncertain present.

Slothrop’s “personal density” is assessed in terms of “temporal bandwidth” in accordance with a law enunciated by Kurt Mondaugen, one of the German rocket engineers:
‘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 [. . .].

(509)

The narrative notes how Slothrop “has begun to thin, to scatter” (509), his temporal bandwidth or ‘Δt’ getting thinner to restrict itself to “an increasingly narrow present” when, as Heise puts it, “causal connections, which are defined through time, lose their meaning and can only be perceived as mere effects, or ‘signs and symptoms’” (209). What is implied here is a weakening of Slothrop’s sense of time, which makes it difficult for him to conceive of himself as a historical being with motivations, causes and courses of action (Heise 208).

In the opening chapter itself Slothrop is presented as cut off from any sureties of past memory or future progress. Moreover, there is the paranoiac vision of the V-2 rockets with his name written on them. One finds him trying to gather some moments from his vanishing time by keeping a starred map of his sexual adventures:
it does celebrate a flow, a passing from which [ . . . ] he can save a moment here or there" (GR 23). Thus it is for Slothrop, "the past out of mind, the future uncertain, and the present a configuration of paper stars on a map" (Heise 181).

Slothrop is implicated in the central narrative riddles of GR—his secret affinity to the V-2, the various uses he is put to in unraveling the mysteries of the Zone, and his paranoiac involvement with the supposed power conglomerate ('Them'). In fact the untying of these narrative knots is the same as defining Slothrop's identity. In the narrative there is reference to "Tyrone Slothrop, who was sent into the Zone to be present at his own assembly — perhaps, [ . . . ] his time's assembly [ . . . ]. He is being broken down instead, and scattered" (738). His love-map becomes the first sign of his scattering, this metaphor getting concretized in his final dispersal. In between he takes on many disguises—British journalist Ian Scuffling, "Rocket man," German actor Max Schlepzig, a Russian spy, mythological pig hero Plechazunga—that further destabilize his flickering self into "a series of representational mirages" (Heise 205).

Slothrop's formation can be characterized as 'ever becoming,' taking on a sequence of "provisional selves" (Cooper 5). His state of being caught in 'At,' divorced from past and future, what Jameson calls "pro-tensions and re-tensions across the temporal manifold" (25) can be related to the postmodern concept of 'schizophrenia'
Jacques Lacan explains this 'disunity' in the personality as "a kind of linguistic disorder," "a breakdown in the temporal chain of signification" when the subject is unable to "sustain the linearity of things" (Currie 102). In the absence of a linear concept of time "the narrative of personal identity and the experience of selfhood are at stake" (Currie 103). Jameson points out how it is this 'linearity' that serves to "unify the past, present, and future of our own biographical experience or psychic life" (26).

This schizophrenic time is 'ahistorical,' as described in GR's image of "crossroads" where there is "no serial time": "events are all there in the same eternal moment and so certain messages don't always 'make sense' back here: they lack historical structure, they sound fanciful, or insane" (624). These 'insane' messages can be "a rubble of distinct and unrelated signifiers"(Jameson 26) characteristic of schizophrenic utterance. Slothrop himself, towards the end of GR is said to turn into a cross, 'crossroads,' "a spatial intersection" which implies "access to a different ahistorical temporality" (Heise 203). Slothrop's dissolution ends in his getting "scattered all over the Zone," not to be "'found' again, in the conventional sense of 'positively identified and detained'" (GR 712). His sailor friend Seaman Bodine becomes one of the few to still see Slothrop as "any sort of integral creature," most others failing to "hold him together, even as a concept"
This is how Heise dwells on Slothrop's precarious hold over his self and time:

Ironically [. . .] the spatial configuration he traces on the map with his paper stars is a record of time, a historical rather than geographical document. Already at this moment, Slothrop is living time symbolically; when the end of the novel converts him into what the initial map represents, a spatial figure of dispersal, he loses time definitively. (209)

Slothrop's 'At' is in that sense similar to Leni Pökler's concept of an "acausal hyper present," (Heise 210) which in turn relates to the postmodern cultural time-sense engendered by the global market, the developments in technology and communication, where 'simultaneity' and 'hyper present' are catchwords (Harvey 61).

Slothrop is considered the most spectacular instance of character as "a textual function" rather than an "integral creature" in postmodernist writing (McHale, PF 105). The Zone in which he gets scattered and absorbed is "a space of writing" affirming "the ineluctable writtenness of character" in postmodern fiction (McHale, PF 105). This "writtenness" is a key word in our understanding of postmodern narrative construction, of a world that flaunts its status as 'artifact.' Postmodern preoccupation with language and narrative form, temporal and causal construction can be studied in this light.
The next concern would be the structuring of GR as a 'temporal construct,' and the kind of reading experience it engenders. GR exhibits elements of "self-contradiction"—"Of course it happened. Of course it didn't happen" (GR 667)—and of narrative "embedding" or "nesting" discussed in McHale's poetics of postmodern fiction (PF 112-119). These strategies interrupt and complicate the ontological space of GR, multiplying its worlds and unveiling its process of world building. In GR McHale identifies the effect of trompe-l'oeil, which is produced when the reader is misled to take a representation at one narrative level for something at a lower or higher level (PF 114). The "retroactive concretization" and "retroactive deconcretization" in GR are as well discussed in McHale's Constructing Postmodernism (62-86).

The beginning and the end of GR give instances of what Jean Ricardou calls "variable reality," defined by McHale as "the strategy whereby a supposedly 'real' representation is revealed to have been merely 'virtual'—an illusion or secondary representation, a representation within the representation—or vice versa, a supposedly virtual representation is shown to have been 'really real' after all" (McHale, PF 116). The initial scene of GR, the rocket strike and evacuation of a city, passes for real in our reading until it is "retroactively" attributed to the dream of Pirate Prentice, which is one level of ontology 'down' from the narrative. In the last scene the
entire world of GR is relegated into a “nested representation,” as framed by a “movie-within the novel” (McHale, PF 116). This manipulation of “diegetic levels” has to be considered in terms of the “defamiliarization” it effects on narrative representation (Heise 217). There is also the way in which the two scenes suggest temporal and causal inversion: the first scene depicts a city already hit by the rocket, and the last one has an approaching missile hanging in the last ‘At’ of its fall. The narrative begins with “It is too late” (3) and ends with “There is time” and “Now everybody” (760).

The reader gets variously reeducated or ‘deconditioned’ of his usual ways of reading by GR’s strategy of leading the reader into reconstructing the fictive world, only to be revealed later as dream or hallucination (McHale, CP 61). This is again a ‘reversal’ of the sequential progress of reading, when the reader is intermittently made to rework the fictional world. There are many such “problematic passages” in GR as its first scene of evacuation, when “the reader, invited to reconstruct a ‘real’ scene” is forced in retrospect to ‘cancel’ the construction and to relocate it in Prentice’s dream (McHale, CP 61).

Another instance of the ‘undecidability’ of the ‘reality’ of what is narrated is the episode of incest between Pökler and his daughter Ilse. Soon after the arresting description of “hours of amazing incest” (GR 420-1) it is negated as fantastic with, “No. What Pökler did was
Though this negation seems to remove the ambiguity regarding the 'reality' of the episode, McHale identifies a number of critics who have overlooked these suggestions to the contrary and retain incest as 'happening' in the world of GR (CP 68). He identifies this as an instance of the reader's unwillingness to "deconcretize" something that dawns on him as such a shocking and concrete episode.

The reader's difficulty in fixing the ontology of narrative levels on such 'flickering' planes can be compared to the characters of GR in an abortive quest for the secrets of the rocket, and their paranoid fears about the forces of Control. The reader does not reach comfortable answers from the load of information which is gradually made available to him, since every information gives form to some further riddle, thus eternally deferring the narrative from reaching its 'meaning.' In this 'ever-becoming' there is always the 'last slice' of time (Heise 212), the 'Δt,' that keeps the narrative away from the "Absolute Zero" (GR 3) of its conclusion. It is the "last immeasurable gap about the roof of this old theater" (GR 760) where a rocket is poised, not to explode and bring the narrative to 'zero.'

Pynchon's conception of the "absolute zero" has to be understood in terms of the narrative's involvement with the parabolic path of the rocket--the 'gravity's rainbow.' Joseph Slade explains 'Δt' and 'absolute zero' as:
Here the parabola is sliced up by integrals from a base line stretched between the rocket’s point of firing and its point of impact. Those lines are artificial and arbitrary. Along the parabola itself an infinite number of lines can be drawn, and each two of them—as double integrals—bound a moment in time, relative of course to distance. As the rocket moves along its path, and as it passes these artificial divisions, it has passed through a change in time—designated by the $\Delta t$. Theoretically, precisely because the number of divisions can be extended infinitely, the rocket can be said to be poised in the sky ("The Perfect Rocket is still up there, still descending, approaching final zero in an asymptotic—approaching but never reaching infinity—curve, like Zeno’s famous arrow. (206)

Nadeau elaborates on the Rocket icon in *GR*, in which its characters like Enzian and his group of Hereros consider the rocket parabola as a reconciliation of polarities or unification of opposites in approaching ‘absolute zero’ (139-140). Absolute zero thus becomes for the rocket worshippers “the point of transcendence which takes up into itself all discrepant particulars—it symbolizes the alpha and omega of all being” (Nadeau 140).

*GR*, in keeping its temporality as $\Delta t$ never reaching ‘zero,’ devoid of conclusions, thus defies the hope for reconciliation of opposites.
Moreover it’s seeking of the “excluded middle” between either-or categories makes irrelevant all such categorical thinking. This is realized by GR’s structural principles of ‘acausal’ and “asymptotic temporality” (Heise 216): ‘acausal’ in the limitations of simple temporal and causal conceptions in explaining the narrative problems like Slothrop’s conditioning to Imipolex G or his relation with the rocket; and ‘asymptotic’ when the novel fragments in association inching towards some kind of coherence get stalled by the ‘At’ denying access to ‘meaning.’ This experience of time is “asymptotic,” ‘asymptote’ being a line that continually approaches a curve but never meets it (Heise 216). This aspect of postmodern narrative time finds resonance in the deconstruction of ‘meaning’ as “indefinite referral from signifier to signifier” (Derrida 25).

The study of time also turns to how such a narrative as GR succeeds in “posthistoricizing history” (Heise 218) with its many explanatory/representational alternatives to simple causal reasoning. GR as such works in two ways to effect a reinterrogation of conventional norms of history: first, the acausal alternatives which can be derived from the text invalidate linear time and history, and its own structure as a temporal construct deny coherent explanations to the narrative enigmas; second, it seeks narrative means of subverting the ‘official’ version of history.
McHale identifies in *GR* elements of "apocryphal or alternative history," of "creative anachronism," and of "historical fantasy" (*PF* 90-96) as violation or demystification of official history and its conventions. *GR* has a version of history as "paranoiac conspiracy-theory" uncovering layers of conspiracy lying thick under the official historical records of the Second World War—the inscrutable micro and macro elements of 'control,' which form a central narrative problem. We have Katje musing on the "real business of War" as camouflaged by the spectacles of violence and death: "It serves as spectacle, as diversion from the real movements of the War. It provides raw material to be recorded into History, so that children may be taught History as sequences of violence, battle after battle [...]" (*GR* 105). There are the survivors of the Zone dreaming of "food, oblivion, alternate histories" (*GR* 336).

The narrative supposes 'plots' at the level of global corporations, technologies, and also otherworldly influences, thus integrating history and fantasy, effecting a confusion/conflation of ontological levels. McHale also points at the 'anachronism' in portraying the world-views of some of the characters including Slothrop and Roger Mexico, where their mentality seems to "flicker back and forth between the 1940s and the 1960s," resulting in "a kind of double vision or split-screen effect, the present and past simultaneously in focus" (*PF* 93).
Hutcheon studies the postmodernist revision of history in fiction in terms of “historiographic metafiction.” In Hutcheon’s view these works in their theoretical self-awareness rethink and rework on the forms and contents of the past. GR can be considered a ‘classic’ instance of such ‘theoretical self-awareness’ and the reworking of narrative categories. The discussion has already recorded the narrative’s self-conscious reflections on causation and narration, and how simple notions of history and time cannot organize the experiences of GR. The structure of GR itself is a specimen of the kind of recounting possible after the so-called end of history. In Heise’s words,

Through its encyclopedic format, its complex combinations of fact and fantasy, its subtle manipulations of diegetic levels and the paradoxes and indeterminacies of its temporal and causal structure, Gravity’s Rainbow succeeds in looking back at the twentieth century from a moment in which historical reasoning has become a precarious undertaking. (218)

One of the concepts that can be drawn in in the context of our correlating history, narrative and postmodern culture is that of “thick description.” Steven Earnshaw attributes it to the New Historicist type of writing which provides cross-sections of societies or “cultures frozen in time” with no narrative linking or sense of past and future
(63). This method can be related to the postmodern narrative time of a "perpetual present" which glances backwards to the past, only to "recover other presents" (Earnshaw 63).

Patrick O'Donnell delves into the "archaeology" of GR which, he thinks, can be aptly described using the anthropologist Clifford Geertz's interpretation of culture as "thick description": a way of talking about human existence not in terms of "symmetrical crystals of significance, purified of the material complexity in which they were located" with principles of order and universality imposed on them (qtd. in O'Donnell 74-75). Culture with Geertz is more accurately a "palimpsest whose stratified, diffuse scribbings and erasures reveal the conflicting, half conscious patterns of a civilization that works at cross-purposes to itself" (O'Donnell 75).

The polyphonic narrative of GR in its cultural synthesis of interweaving discourses is considered a "thick description" or "dense archaic layer" or "epistemic repository" (O'Donnell 76), a journey into the labyrinthine narrative of which is termed "a progressive knotting into" (GR 3). The 'knotting into' can again be related to J.Hillis Miller's concept of narrative "repetition" which is defined in "Ariadne's Thread" as "anything which happens to the line to trouble or even confound its straightforward linearity: returnings, reknottings, recrossings, crinklings to and fro, suspensions, interruptions, fictionalizings" (157).
Thus the narrative line of GR gets transformed into a tangled web in which the reader gets progressively enmeshed.

The involvement of the reader in this process is central to postmodern fiction’s self-conscious foregrounding of the process of its interpretation and meaning making. This metafictional theme of the modes of articulation of meaning or the narrative representation of experience emerges in GR in the form of the protagonist Slothrop’s search for the meaning of his own existence, and the narratological concerns like structure, or the organizing principles of time and history. ‘Language’ and its systems of ordering becomes, therefore, a central preoccupation of Pynchon’s narrative. Since time exists as “boundary condition” (Turetszky 1) for language and the ‘self,’ one might reword it to say that GR is largely preoccupied with ‘time.’ As Charles Russell in his study of Pynchon says,

[...] the fiction of our era offers a radical critique of art as language, of language as social behavior, and, correspondingly, of social behavior as versions of semiotic systems. These writers’ preoccupation with language, especially with the ceaseless dialectic of assertion and collapse of meaning—of creation and deconstruction—generates the self-reflexive linguistic play that has become the primary aesthetic style of our period. (252; emphasis added)
GR's 'counterforce' against the limiting narrative conventions and systems of Western thinking is operative in its reworking of language or time—the categories that determine the structure and operation of consciousness and culture. Elements of such reworking have been located in the thematic and structural specificities of GR. For this analysis, which is inclined towards the manifestation of time in postmodern fiction, GR serves as one of the most challenging, yet rewarding cultural statements of postmodern 'time.' GR is Pynchon's fictional compilation of the motifs and methods of postmodernism, enough excuse, it is hoped, for the exclusion of a large body of fiction, many of which would as well have served our purpose.