

THE EXPERIMENTAL RE-ENCHANTMENT OF POSTMODERNIST FICTION

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ABSTRACT

This article's aim is to describe a plausible connection between classical forms of quantified world-descriptions, especially in early modern physics, and the late response to these modes of world-reduction in postmodernist fiction. This article —working on two levels of analysis— will try to unveil a deep interconnection between the quantified reductionism of classical sciences and elements of radical abstraction in postmodernist imagination. After a concise inspection of Newtons' *Opticks*, Galileo's *Discorsi* and Descartes' *Discours*, critical attention will be focused on the narrative transfers, transformations, delimitations and —especially— iconic modes of (post)modern abstraction within postmodernist fiction. The culminating point of this paper centers on the idea that occidental versions of quantified worldmaking do not follow a simple concept of structural and/or functional description but are deeply embedded in epistemological and aesthetic assumptions, derived from a Cartesian worldview and a very strict interpretation of an early modern believe in "mathesis universalis."

KEY WORDS: Early modern physics, modes of abstraction, postmodernist imagination, fiction.

RESUMEN

El propósito de este artículo es describir una conexión plausible entre las formas clásicas de descripciones cuantitativas del mundo, especialmente en la física moderna temprana, y las últimas respuestas a estas formas de reducción del mundo en la ficción postmoderna. El artículo —operando en dos niveles de análisis— pondrá al descubierto una interconexión profunda entre el reduccionismo cuantitativo de las ciencias clásicas y los elementos de abstracción radical en la imaginación postmoderna. Tras un conciso repaso de *Opticks* de Newton, de *Discorsi* de Galileo y de *Discours* de Descartes, el ensayo centrará su atención crítica en las delimitaciones, transformaciones, transferencias narrativas y —particularmente— en los modos icónicos de la abstracción (post)moderna dentro de la ficción postmodernista. El núcleo temático de este artículo se centra en la idea de que las versiones occidentales de la construcción cuantitativa del mundo no siguen un concepto simple de descripción estructural y/o funcional, sino que están profundamente instauradas en las concepciones epistemológicas y estéticas derivadas de una visión cartesiana del mundo y de una interpretación muy rígida de la creencia en la "mathesis universalis" durante el período de la modernidad temprana.

PALABRAS CLAVE: física moderna temprana, modos de abstracción, imaginación postmodernista, ficción.



1. INTRODUCTION: SCIENCE, FICTION, AND ABSTRACTION (EXPERIMENTATION AND ABSTRACTION)

Permanent experimentation is an anthropological constant within human culture. Whatever form it may take —social or individual, political or ethical, psychological or physical— it fosters an ongoing process of slow (sometimes even abrupt) change within a given human system and its environmental conditions. And whatever definition of experimentation we might prefer,¹ a more or less intense erosion of man's inner and outer integrity, affecting a broad spectrum of familiar and self-evident contexts of unquestioned immediateness, seems to be central to all concepts.

Focusing on the idea that experimentation thus may be regarded as a basic mode of human self-modeling and disruptive inauguration of cultural development, the following considerations will converge on some typical scenarios, exemplifying different modes of overlapping experimentation —often regarded as incompatible— which lead to significant patterns of cultural interference. The main interest of this paper centers on those cases, where an experimental undermining of a given systemic stability is connected with a subtle intrusion of scientific modes into the individual and social world-making process —which normally implies a pressure towards quantification and, surprisingly, a typical influence on narrative strategies.

Contracting this program to an exemplary level, this paper's aim is to describe a plausible link between classical forms of quantified world-descriptions, especially in early modern physics (Descartes, Galileo, Newton), and late responses to these modes of world-reduction in postmodernist fiction. This implies, of course, an enormous historical and epistemological jump. But the subsequent considerations will try to illuminate the legitimacy of such an undertaking, as long as basic standards of modern narrativity and natural sciences remain in the focus of critical awareness. Skipping all variants of early modern and modernist fiction, the novels of Don DeLillo, Tom Phillips, and Thomas Pynchon will move into the center of analytical interest, uncovering a surprising correlation between modes of quantification in modern natural sciences and comparable strategies within postmodernist fiction, often called "experimental." The following considerations are intended to lay bare the constitutive interconnection between the quantified reductionism of classical sciences and modes of abstraction in postmodernist imagination.

Following this motive of unveiling dominant lines within the history of scientific quantification and the development of narrative modes in fiction, the first step will focus on the classical 'lions' of modern sciences: Newton's *Principia mathematica*, Galileo's *Discorsi* and Descartes' *Discours*. Critical attention will be drawn to the narrative transformations and iconic modes of systemic upheaval,

¹ Interesting to note that the Latin origin of "experiment" is tightly connected with the verbal form "periri," which belongs to a group of verbs implying "danger" or "dangerous variation."



dys-rational aberrations and subjective divergences, indicative of experimental abstraction within postmodernist fictions. These —admittedly— reductive analyses converge on the heuristic idea that occidental versions of abstraction —as we find them in early modern scientific texts and postmodernist fictions— do not follow a simple concept of structural and/or functional reduction (and sometimes destruction) but are tightly affiliated with epistemological assumptions, derived from a Cartesian worldview and an early modern believe in extreme forms of “mathesis universalis.”

2. EARLY MODERN QUANTIFIED WORLD-MAKING: DESCARTES, GALILEO, NEWTON

Analyzing the groundwork of modern times with regard to the constituent function of natural sciences would be a Herculean feat of its own. As a consequence, the analytic impetus of this paper will be considerably less ambitious and highlight the indisputable centers of early modern sciences, connected with the names of René Descartes, Galileo and Isaac Newton, by accentuating their typical strategies of transforming the complexities of a given natural event into a structural grid of abstract elements.

Starting with René Descartes, the first focus concerns his “Cogito, ergo sum,” the basic epistemological nucleus of modern philosophy and rational self-constitution of subjectivity. Taking a closer, though very short look at his *Discours de la méthode*, it quickly becomes clear that Descartes rationalistic scenario is based on a radical devaluation of the material world, while, at the same time, the interior spheres of the thinking subject are established as the only foundation of human certainty. Resulting in a radical dualism between material objects (*res extensa*) and the subjective familiarity with one’s own rationality, Descartes’ cosmos is characterized by a cataclysmic distance from outer reality, even the human body.

On account of this firm methodical tendency towards self-isolation and world-negation, Descartes’ dualism constitutes a world of cultural, ethical, even rational fragmentation, which can only be adequately described by a situation of radical *epistemological abstraction*. In his universe, the “Cogito” constitutes a world of lost coherences, which is void of matter, of intersubjectivity, and cultural identity.

Within the scope of this dissected world, Descartes’ special scientific techniques follow this conception. Taking, for instance, a look onto his investigations in physical optics, the enormous relevancy of the isolated subject becomes evident. Descartes applies a model of light which is closely allied with antique ideas of beams of sight, emitted from the human eye, like radar waves. Although Descartes is already well informed about the fact that light rays move from an illuminated object to the observer, he still exemplifies optical phenomena by identifying the observer with a blind man, who is scanning his environment with a stick, in order to get the information he needs for an adequate orientation. This fact is revealing: Descartes’ hermetic epistemology fosters a model of subjectivity, where the outer world comes into being with more than just a little help from a perceiving subject. His world is

an actual *tohuwabohu*, a disastrous environmental compilation, where only human activity may import partial meaning.

And as a final consequence, Descartes' hope for a mathematically structured world culminates in this preconception of a sensuously and materially dissolved environment. Mathematics and quantification become the last and only tools for reconstructing a world, evidently disorganized and persisting in a state of material disaster. They become a kind of blind man's futile remedy for a world in disorder, extracting patterns of regularity out of a sea of disastrous multiplicity by simple and radical abstraction.

Galileo, the second vanguard scientist of modern times, pursues a different strategy, totally different from Descartes' renouncement of the material world: in his worldview, matter matters, i.e. all forms of understanding the world start from experimental and basically inductive analyses of his environment. Famous of his experiments on moving and horizontally launched bodies, Galileo seems to reside in an extreme distance from any plausible critique concerning 'abstract' elements in his world-making. But a closer look at his experimental strategies unveils a near parallel to Descartes' ways of constructing a world out of a chaotic sea of material facts. It is Galileo who is the first to cut down reality to 'pure' situations, splitting a given phenomenon into different elements and starting his analysis with a reduced and extremely artificial arrangements of concrete —one might be induced to say: abstract— objects. What is emerging in Galileo's experimental scenarios is an artificially restricted world, showing coercive ideas of design in a field of debris. Such a situation may be appropriately labeled by the notion of *phenomenological abstraction*: Galileo's experimental conceptions imply the reduction of reality to an abstract version of it, consisting merely of analytical tools for staging a laboratory world-fragment in a chaotic environment. In the centuries after Galileo, the leading elements of his conceptions have become primary ingredients of physical and physicalistic world-making, with some recurring ideas as outstanding principles of phenomenological abstraction: "slow motion," as exemplified in his ingenious idea to substitute the investigation of free falling objects by having recourse to rolling balls on inclined planes; superposition of different forms of motion, grandiosely applied to horizontally launched objects; the reduction of a dynamic multiplicity in the external world to schematic descriptions of moving parts or parts at rest. In this material world, experimental natural sciences inaugurate the basic modes of splitting up and dissecting reality, of taking apart what once was a whole and holy phenomenon.

Newton, finally, is one of the first to describe processes within reality by applying formalized versions of language. Though he still refrains from using mathematical equations abundantly, he writes in a style —especially in his *Principia mathematica*— which might be characterized as consisting of linguistic formulas. Many of the groundbreaking passages in his work on dynamics and the laws of motion, though totally void of overt mathematical formalisms, may be read as camouflaged versions and anticipations of the mathematical skeletons to come. With regard to these strategies, Newton's attempt to describe reality with formalistic modes, assumed to achieve the status of "nature's language" in later times,



preconceives of reality in a reduced and sclerotic version, based on *formalistic abstraction*.

Running on a second track, partly parallel to this formal mode of reductive demontage of reality, there is another “disastrous” leitmotif to be found in Newton’s theories, based on considerations concerning content. It is his inclination to apply gravitational models to all fields of physics and physical interactions, even optics. Contracting the multiplicity of material interactions to modes of attraction (or sometimes: repulsion), Newton constructs a shrinking world of forced similarity. Gravitation as a standardized form of explaining world-dynamics constitutes a monolithic model. The coherence of gravitation implies an elimination of real difference, substituting the idea of dynamically differentiated and pluralistic variants of matter with the coercive union of ubiquitous identity. By subjugating all forms of interactions to gravitational pull, Newton’s basic idea of intra- and inter-material relationships implies a final scenario of collision, destruction or gravitational collapse —at least: of extreme abstraction.

So the basic result of this tour de force through modernity’s early natural scientists’ ways of world-making is the unveiling of three powerful modes of decomposition and dissolving of given natural and cultural coherences: Descartes’ *epistemological abstraction*, Galileo’s *phenomenological abstraction*, and Newton’s *formal(istic) abstraction*. Converging in modern sciences’ penchant for overall quantification of any given part of reality, these early modern starting points constitute the basic pillars of what will be called henceforth in this paper *quantified abstraction*.

3. SOME BASIC MODES OF QUANTIFIED ABSTRACTION ON POSTMODERNIST FICTION

The following paragraphs will try to give a concise outline of different elements and components of abstraction in a selection of postmodernist novels, typologically representative of the aforementioned triadic structure. In accordance with the considerations presented above, the following cursory glances on typical variants of postmodernist fiction will follow this tripod strategy of elimination, found in early modern scientific approaches to nature: epistemological, phenomenological, and formalistic disintegration. Meant to offer some form of orientational matrix, this patterning is supposed to remain in the terrain of heuristic intentions. It is primarily oriented towards the unveiling of singular innovative aspects, not towards the construction of systematically finished analytical versions.

3.1 EPISTEMOLOGICAL ABSTRACTION: DELILLO’S *BODY ARTIST*

Just in the first year of this century, Don DeLillo —a regular producer of enormously voluminous novels— came out with a small novelette entitled *The Body Artist*. It tells the story of a woman, deeply entangled in the process of mourn-

ing for her recently deceased husband. The reader is confronted with a tableau of personal disintegration, affecting the mind of the female protagonist. Even the developmental elements seem similar: concentration on one's own sensibility, construction of illusionary visions, emotional modes of accepting the givenness of turmoil and chaos. Yet, DeLillo's mourning widow shows traits of specifically new postmodernist imaginative ways of world-making: she reduces the world outside to a world inside her own house, contracts the diverging strands of uncontrollable systemic dispersion to a near-subjective environment, a kind of mindful expansion of her body. Thus, *The Body Artist* brings back classical Cartesian components and problems into the narrative realm, preparing their postmodernist reorganization on an aesthetically renewed level.

One of the main points of aberration consists in DeLillo's way of bringing residual coherence to the mind, by making the subject's body a space and emotive matrix for perceiving the outer world and inner states. By this fascinating technique of "writing the body," DeLillo's narration covers a field of minimal nuclear coherence, opposing the final threat of total personal disaster, impending over the subject's deeply injured mind and soul. In this respect, the epistemological disaster of Descartes' "Cogito" is limited to a groundstate of bodily and mindful presence, a kind of minimal existence within a fluctuating state of unlimited versions of living. What is fascinating about this extreme mode of abstraction in this novel is the fact that in DeLillo's elementary model of human residual coherence, catastrophic disintegration appears as a kind of authentic plane of pre-structured human existence. Descartes' disastrous "Cogito," demolishing the world and reducing certainty to a paralytic dead-end street, is substituted by a new corporeal and environmental mindfulness, where a rationalistic center is not to be discerned. In this regard, DeLillo's new subjective epistemology of the mind-body stands out as a kind of postmodernist correction on early modern mind-body-disjunctions — a kind of postmodernist corporeal remedy to early modern demolitions of the subject's longing for identity.

3.2 PHENOMENOLOGICAL ABSTRACTION AND STRICT EXPERIMENTATION: TOM PHILLIPS

Another central narrative technique in postmodernist fiction is connected with a dominant aspect of modern natural sciences and their eliminative means of structural reduction, called 'phenomenological abstraction.'

A fascinating example of such experimental fictional strategies, leading to a radical dys-phenomenological conception and working with the Galilean concept of 'purifying' a given phenomenon by erasure, is Tom Phillips's novel *A Humument: A Treated Victorian Novel*, published in 1980. Phillips' narrative technique centers on an authentic Victorian novel — *A Human Document*, written by W.H. Mallock and published in 1892— and deletes it to a rudimentary skeleton, which yields a new text and thus tells a totally new story. Here we have —transposed onto a narrative level— one of the main procedures of classical physics: the reduction of a given reality to pure elements, out of which an unexpected meaning, a kind of

formerly camouflaged matrix of coherence emerges, bringing a structural, but at the same time radically dys-phenomenological component into the text.

Such forms of narrative experimentation do not only suggest modes of dissolution, where the formally structured text topples over into some version of self-liquidation. It also brings to mind that modern natural sciences, based on Descartes' hope for a "mathesis universalis" as a trans-subjective expansion of the 'Cogito,' destroyed a given phenomenological coherence in favor of a new monolithic structure, some early variant of order out of—in this case, self-produced—chaos. In Phillips' novel, this new order is iconically persistent, substituting the stereotypical parallel lines of printed letters by bubbles and blurbs, brought into a linear logic by connecting tubes, hoses, and umbilical cords which dissect (and interweave) the page like an endless intestinal knotting into. On the last page of his novel, this whole process of entanglement ends in a radical incontinence of the text which lets go of its abstract scheme of reconstruction in a kind of final verbal disgorging. Putting, by the way, the rainbow on the last page of his novel, Phillips even alludes strongly to one of the favorite themes of early modern physics: explaining the colors of the rainbow was one of Descartes' main efforts in his optical treatise, he published in a single volume with his legendary *Discours*. Thus, on this last page of Tom Phillips' *A Humument*, early modern physical reductionism and narrative dispersion come together in one disastrous act of incontinence, where modernity's proud formal design becomes the ultimate debris of an ongoing process of decay and involuntary self-demontage.

Nevertheless, the Galilean impetus of constructing a parallel world, made out of well chosen elements taken from the given background of phenomenological textures, remains one of the basic ideas in Phillips narrative composition. Enriching fiction by implementing such an innovative technique into the ongoing process of forming new versions of the written, Tom Phillips has developed a remarkable addition to the idea of a postmodernist novel.

3.3. FORMALISTIC ABSTRACTION: PYNCHON'S *GRAVITY RAINBOW*

Reaching the third level of partial equivalence between early modern modes of formal world-quantification, the question of *formalistic abstraction* comes to the fore—a dominant trait of Newtonian ways of world-making. A famous postmodernist novel mainly concerned with questions of formalistic pre-structuring and explicit inclusion of formal modes of physical quantification into the narrative composition is Thomas Pynchon's *Gravity's Rainbow*. Undoubtedly, this novel counts among the milestones of postmodernist fiction, partly due to its encyclopedic scope, but also because of its integrative use of formalistic means taken from natural sciences.

In order to understand the typology of abstraction embedded in this strategy of inclusion, it should be known that Pynchon's WWII-novel puts Nazi activities to construct a "retaliation weapon" (a rocket named V-2) into the narrative focus. To underline this topic and its adjacent themes and meandering develop-



ments into an overall expansive territory, Pynchon uses basic formulas concerning physical theories of motion, laws of gravitation and special details connected with rocket technology. His insertion of formulas is Newtonian insofar, as he does not disperse them as iconic signals of formalistic presence into the text, but assigns them a constitutive function within the overall narrative matrix. A closer look at one of these formulas may illustrate Pynchon's modes of describing a late-modern culture in disastrous dissolution.

Centering on rocket-flight and resulting destruction, the formulas applied in the novel's narrative framework appear in each of the five chapters. Approaching the physicalistic levels of *Gravity's Rainbow*, it turns out that each of the four parts of the novel exhibits *at least one* eye- and mind-catching mathematical formalism. In the first Part —“Beyond the Zero” (Pynchon 1-177), it is the equation for Poisson's distribution, using power series (140), discussed in the next paragraph; in the second part —“Un Perm' au Casino Herman Goering” (Pynchon 179-278), the reader is confronted with a ballistic equation, where the parameters for stable trajectories appear in the form of a differential equation (239). “In the Zone” (Pynchon 279-616) —the third main part of the novel— presents a simple integration problem in the form of a graffito, mixed with verbal components (450); and in the final part —“The Counterforce” (Pynchon 617-760), we find an equation put into words and broadened out into a transmogrifying attitude towards mathematical physics (700).

Presenting some kind of iconic appeal to the reader's memory that this novel is about the ultimate implications of the technological process of modernization, they are also tightly connected with its formal means. In chapter 1, for instance, Pynchon quotes the formula for the Poisson distribution, relevant for rocket's impacts on London territory due to German attacks. What is conspicuous about Pynchon's use of this formula is the nomenclature he applies. Most textbooks of statistical physics give this distribution in the following (exponential) form

$$[f(x) = (\lambda x/x!)e^{-\lambda}] (1);$$

but in *Gravity's Rainbow* we find another, rarely used version:

$$[f(m) = Ne^{-m}\{1 + m + m^2/2! + m^3/3! + \dots + m^{n-1}/(n-1)!\}] (2).$$

Both equations are equivalent ways to express the same empirical situation; but why does Pynchon use version 2? A very simple answer may be given in the following way: Formula 2 transports, in addition to the mathematical content, an iconic presentation of what is happening —the dispersion of impacts, broadening out, covering more and more territory. In the same way, the elements of the formula add up to an overall distribution of disastrous and destructive design, giving an almost endless series of similar impacts (very clearly visualized by the self-similar terms of the formula). This divergence shows to the eye what formalistic abstraction is primarily about: It mainly consists in a repetitive mode of reducing reality to a formal design, inducing the (self-)contraction of the phenomenal world into a formal grid, and initiating, finally, the dissolving of a given plural unity into a terrain, spangled by uniform disintegration.

To pick out another highly representative example of Pynchon's meticulously selected formulas, we find a strangely looking "demi-verbal" equation in chapter III, given in the following form: " $\int(1/(\text{cabin}))d(\text{cabin}) = \log \text{cabin} + c = \text{houseboat}$ " (450). What looks, at first glance like a strangely playful collage of mathematical items and linguistic (perhaps humorous) elements, turns out as a camouflaged and parodied version of one of the main formalistic backgrounds in classical Newtonian theory of gravitation and its technological applications in rocket flight. Substituting in this formula "cabin" by the variable "x," we come across the basic integration for gravitational problems, concerning potentials etc. Secondly, we have an iconic description of a rocket being launched, and an adequate textual description of what is happening during the flight of a rocket, from launching till "landing."

All in all, this formula, once again, shows, how the means and formal backgrounds of gravitation, applied by modern physics, constitute a hidden scenario of comprising design and debris, beauty and destruction. Formalistic abstraction, in this regard, is a Janus-faced constitutive mode of narrative reconstruction. It imports new elements of formal support and enchanting playfulness into a scenario of fictional disaster, thus trying to elucidate a widespread inner connection between scientific and aesthetic modes of describing the world.

4. CONCLUSION

Abstractions—in occidental world-making—are basic forms of construction and composition. They imply acute processes of systemic disintegration. Drawing a line of division through anthropological horizons, these structural and functional upheavals may be found within the objective sphere of outer world and the subjective terrain of innerness. Unexpectedly, perhaps, but very rigorously, modern scientific modes of world-making support these disastrous forms of composing a modern identity, by adjusting the Cartesian starting-point—i.e. epistemological abstraction—to phenomenological and formal needs.

Postmodernist fictions, far from being pluralistically divergent or bound to any form of 'anything goes,' move in the wake of this tradition, but always alert to comment on these original modes of being modern in a playful, ironical, parodical and narratively creative way. Experimenting in this postmodernist way with the traditional canon of modern abstractions of subject and object, such fictional forms of re-enchanting the purist skeletons of modern worldviews achieve an almost Nietzschean character, where the playful rearrangement of fragmented "rationalistic self-deceptions" is the only way to overcome the Cartesian misconception of a formalistically closed world order, which seems to be permanently present, though often—and this is a quote from *Gravity Rainbow*—"too immediate for any eye to register" (760).

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