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Entropic Transformations and Time in Thomas Pynchon's Early Fiction

ABSTRACT

The paper examines entropy in its relation to time in Thomas Pynchon's second novel, *The Crying of Lot 49*. It approaches this complex relation by examining how transitions from order to disorder affect narrative representations of time and temporal experience in the novel. The paper argues that Pynchon's creative use of entropy consists in the delineation of the concept as distinct from mere stasis or cyclical repetition and in its application of the concept to the poignant portrayal of irreversible transformations of lived time and "local temporalities." Time in *The Crying of Lot 49* does not merely flow at different rates but also thickens or gets dispersed. Correspondingly, the novel portrays alternative temporalities as local niches, positioned 'sideways' in relation to the primary narrative frame of the text. In projecting these alternative temporalities, Pynchon's narrative resorts to imaginative strategies capable of deconstructing the time of empirical reality by means of temporal reversals and simultaneity.

KEYWORDS: entropy, time, transformation, irreversibility, disorder

STRESZCZENIE

Entropiczne transformacje i czas we wczesnych utworach Thomasa Pynchona

Artykuł bada złożone relacje pomiędzy entropią a czasem w drugiej powieści Thomasa Pynchona *49 Idzie pod młotek*, analizując znaczenie i funkcje entropicznych procesów na narracyjne sposoby przedstawiania czasu i doświadczenia czasowego. Artykuł dowodzi, że twórcze wykorzystanie entropii przez Pynchona polega na specyficznym operowaniu tym pojęciem jako odmiennym od stagnacji czy też cyklicznej powtarzalności oraz na zastosowaniu go do zobrazowania nieodwracalnych przemian czasu doświadczanego i „lokalnych temporalności". Czas w *49 Idzie pod młotek* nie tylko płynie w różnym tempie, ale także gęstnieje lub ulega rozproszeniu. Znajduje to odzwierciedlenie

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w powieści, która ukazuje alternatywne czasowości jako lokalne nisze, usytuowane „bokiem" w stosunku do pierwotnej ramy narracyjnej tekstu. Projektując te alternatywne czasowości, narracja Pynchona odwołuje się do strategii wyobraźni, dekonstruując czas rzeczywistości empirycznej za pomocą inwersji temporalnej i jednoczesności.

SŁOWA KLUCZE: entropia, czas, transformacja, nieodwracalność, nieład

Introduction

Entropy, a notoriously complex and confusing term employed in thermodynamics and communication theory to refer to disorganization in a closed system, has functioned as a driving engine in Thomas Pynchon's fiction since the publication of the short-story "Entropy" in the Kenyon Review in spring 1960. In his longer writings in subsequent years Pynchon also explored entropic tendencies, most notably in his second novel, *The Crying of Lot 49* (1966), which in both its thematic scope and narrative structure is (dis)organized by various entropic developments presented against the vibrant background of California in the Sixties. The term has, unsurprisingly, attracted a great deal of attention among scholars and other readers who approached entropy not merely as a technical term but as a metaphor, a metatrope or a "narrative attractor" and studied its application to literary texts. In the course of the last 63 years entropy has retained this privileged, celebrated position in Pynchon scholarship and has been conducive to a wide spectrum of analyses and studies (including critical assessments of Pynchon's alleged technical errors in his understanding and use of the concept). This unwavering interest and interpretative zeal aroused by entropy have also produced interpretations in which the term was (too) often overused and misapplied. Tony Tanner (1971), in his study of American fiction between 1950 and 1970, acknowledged that literary scholars of this period discussed entropy "with a looseness which any scientist would deplore" (p. 141). Stephen P. Schuber (1983), likewise, warned against abusing the concept by expanding too loosely its conceptual field: "Entropy… is but a measure of possibilities, and it is a mistake to subsume [its uses] under some generalized critical concept of entropy as a notion of decay" (p. 58). And yet this tendency to view entropy as a sort of socio-cultural transition to decay and/or homogeneity persisted and continues today.[1] Strangely enough, entropy's connection

1 For a recent overview of this tendency, see, for instance, Rezaei and Samani (2012), Dalsgaard (2012), Letzler (2015).

with time, a connection that Pynchon himself underlines, has largely been left unexplored or remained marginal in critical assessments of his work. In his Introduction to the collection of short stories *Slow Learner*, Pynchon (1985b) admits there are shortcomings and weaknesses in his early fiction. Reflecting on his use of thermodynamics and information theory in constructing "Entropy," he confesses to committing "a procedural error beginning writers" may be prone to: "It is simply wrong to begin with a theme, symbol or other abstract unifying agent, and then try to force characters and events to conform to it" (p. 12). As a result of this mistake with "Entropy," "the humans" in it were "short-change[d]" and "came off as synthetic and insufficiently alive" (p.13). Despite these shortcomings, the story has often been anthologized and Pynchon's creative, if somewhat imprecise, use of entropy been seen as testifying to the possibility of a productive exchange of ideas between the humanities on the one hand and technology and the hard sciences on the other.[2] Pynchon admits to being particularly influenced by Norbert Wiener's *The Human Use of Human Beings* (1950), a book that advocated the use of entropy across disciplines and its application to the study of "the progress" of human society. Pynchon also acknowledges the positive views of entropy in the models by Clerk Maxwell and P.G. Tait. Significantly, Pynchon points out that the etymology of the word "entropy," coined by Rudolf Clausius in 1865 to describe the changes in the working of a heat engine, suggests primarily "transformation-contents" and explicitly links these entropic transformations with the irreversible temporalities of human existence: "When I think about the property [entropy – A.M.] nowadays, it is more and more in connection with time, that human one-way time we're all stuck with locally here" (Pynchon, 1985b, pp. 14–15).

This paper approaches that connection by examining how transitions from order to disorder affect narrative representations of time and temporal experience in *The Crying of Lot 49*. It argues that Pynchon's creative use of entropy consists in the delineation of the concept as distinct from mere stasis or cyclical repetition and in its application of the concept to the poignant portrayal of irreversible transformations of lived time and "local temporalities." Time in *The Crying of Lot 49* does not merely slow down or accelerate but also thickens or gets dispersed and wasted. The novel portrays alternative temporalities as local niches or "windows into deep vistas of space and time" (p. 28), positioned parallel to the mainstream temporal frame of the text, and accessible to some of the characters.

2 Pynchon (1984) comments more explicitly on the developments in this exchange in his New York Times essay "Is It O.K. To Be a Luddite."

Time and "high magic to low puns"

Oedipa Maas, the novel's protagonist, in her efforts to disentangle her ex-lover's legacy and disclose the Trystero mystery, acts much like the hypothetical demon from Maxwell's thought experiment[3] as she tries to sort out signals and symbols in order to make sense of the increasingly complex reality she finds herself in.[4] Confronting the chaos around her, Oedipa seeks to order random elements to "create constellations" (Pynchon, 1999, p. 65) of meaning, which can counterbalance (at least locally) one-way transitions and thus create a state of lower entropy. But in doing so, she becomes painfully aware of the tenuous character and the irreversibility of "human one-way time" (Pynchon, 1985b, p. 15) and of the fragility of the traces that humans leave behind.

In her aimless nighttime wanderings around San Francisco, Oedipa goes down to the *Embarcadero*, where she finds an old sailor in a rooming house. She comes to realize the old man will die from "DTs", that is delirium tremens – "a trembling unfurrowing of the mind's plowshare" (p. 95). When the dying man lying on his worn mattress asks for a cigarette, Oedipa recalls John Nefastis, the inventor of an impossible device that could be operated only by "sensitives" who, using it, could resist entropic decay and countervail "massive destructions of information" (p. 95). Overwhelmed by this unexpected encounter with a near-death experience, she imagines the mattress flaring up by accident:

> So when this mattress flared up around the sailor, in his Viking's funeral: the stored, coded years of uselessness, early death, self-harrowing, the sure decay of hope, the set of all men who had slept on it, whatever their lives had been, would truly cease to be, forever, when the mattress burned. She stared at it in wonder. *It was as if she had just discovered the irreversible process*. It astonished her to think that so much could be lost, even the quantity of hallucination belonging just to the sailor that the world would bear no further trace of (emphasis added; p. 95).

The encounter is transformative as Oedipa becomes "unstuck" in time but does not move backward or forward so much as sideways. She becomes sensitive to alternative timelines and temporal spectra, dreading the kind of revelation that the anarchist Jesus Arrable describes as "another world's intrusion into this one" (p. 88):

3 I will more explicitly discuss Maxwell's Demon and its relation to entropy below.

4 It is worth noting that Henry Adams, an important source of inspiration for the young Pynchon, used Maxwell's demon in *The Rule of Phase Applied to History* as a metaphor in his interpretation of history as a process moving towards entropic equilibrium.

> Oedipa did not know where she was. Trembling, unfurrowed, she slipped sidewise, screeching back across grooves of years, to hear again the earnest, high voice of her second or third collegiate love Ray Glozing bitching among "uhs" and the syncopated tonguing of a cavity, about his freshman calculus; "dt," God help this old tattooed man, meant also a time differential, a vanishingly small instant in which change had to be confronted at last for what it was, where it could no longer disguise itself as something innocuous like an average rate; where velocity dwelled in the projectile though the projectile be frozen in midflight, where death dwelled in the cell though the cell be looked in on at its most quick. She knew that the sailor had seen worlds no other man had seen if only because there was *that high magic to low puns*, because DT's must give access to dt's of spectra beyond the known sun, music made purely of Antarctic loneliness and fright. But nothing she knew of would preserve them, or him (emphasis added; pp. 95–96).

The encounter with the dying sailor is one of those rare kairotic moments of special "dispensation" (Pynchon, 1995, p.757) that unexpectedly flare up in Pynchon's fictional worlds and permit escaping or bypassing the one-directional flow of time. Pynchon's "high magic to low puns," far from mere wordplay, reveals temporal trajectories that are characterized in terms of time differentials as used in calculus. The above passage foreshadows Pynchon's elaborate use of calculus in *Gravity's Rainbow* as a core conceptual frame employed to articulate a wide spectrum of temporal levels or *umwelten* ranging from the eotemporal worlds of pure succession, to the irreversible biotemporality of living organisms, and to the noetic time of the human mind.[5] In *The Crying of Lot 49* Pynchon's use of delta t is not as extensive and nuanced, and yet the brief mentions of calculus clearly signal imaginative strategies capable of deconstructing the time of empirical reality by means of temporal reversals and simultaneity. As such delta t is linked with the narrative representation of temporal projections that run counter to the dominant entropic transitions. In this capacity it can, for instance, indicate a node in space and time in which a character's time-line is significantly altered as in the passage above.

Pynchon's perspective on decisive moments of change is perhaps most explicitly presented in *V.*, in the episode in which Esther Harvitz undergoes plastic surgery. Her best friend Rachel, who is very critical of the decision to get a nose-job, imagines the operation as a turning-point at which Esther's life-trajectory is changed by deviating from its previous course sideways.

5 For a detailed treatment of those temporal *umwelten* in Pynchon's fiction, see Misztal (2019).

> Rachel was looking into the mirror at an angle of 45°, and so had a view of the face turned toward the room and the face on the other side, reflected in the mirror; here were time and reverse-time, co-existing, cancelling one another exactly out. Were there many such reference points, scattered through the world, perhaps only at nodes like this room which housed a transient population of the imperfect, the dissatisfied; did real time plus virtual or mirror-time equal zero and thus serve some half-understood moral purpose? Or was it only the mirror world that counted; only a promise of a kind that the inward bow of a nose-bridge or a promontory of extra cartilage at the chin meant a reversal of ill fortune such that the world of the altered would thenceforth run on mirror-time (Pynchon, 1986, p. 46).

As critics have noted, mirror-time in *V.* offers an illusive reversal of empirical temporality as it does not bring Pynchon's characters closer to moments of "dispensation out of the tissue of old-fashioned time, (Pynchon, 1995, p. 757) but instead provides them with the illusion of controlling their time-lines through various technologies. In both *V.* and *Gravity's Rainbow* "there are "nodes" (in time and space)[6] in which technology offers the possibility of a freedom that is false because it makes us all the more dependent on itself" (Smith & Tólólyan, 1986, p. 177). *The Crying of Lot 49* likewise presents such nodes in its insistent projection of alternative developments and shadowy realities.[7] Apart from featuring impossible technologies like the Nefastis Machine, the novel makes brief but important references to visual technologies and their capacity to override temporal succession. In chapter two, to give an example, Oedipa spends the night in a motel with Metzger, a lawyer assigned to help her execute Pierce's estate. In the course of their animated conversation it emerges that Metzger was a child actor performing under the name Baby Igor, and when Oedipa turns on television, astoundingly, it is showing one of Metzger's films, *Cashiered*. When

6 For an accessible discussion of time-space frames of narrative in Pynchon's novels, see Kolbuszewska 2000.

7 Thus, for instance, Emory Bortz, an English professor at San Narciso College, who helps Oedipa untangle some obscure and cryptic references to Tristero in the Wharfinger play, postulates a mirror-theory "by which any period of instability for Thurn and Taxis must have its reflection in Tristero's shadow-state." (p. 122). Mirrors in general seem to signal a sense of unrealized and yet active potentiality. Consider for example the episode from Chapter 5 in which Oedipa "fell asleep almost at once, but kept waking from a nightmare about something in the mirror, across from her bed. Nothing specific, only a possibility, nothing she could see" (p. 74). This "spectrality of the possible" is, as I have argued elsewhere, an intrinsic element of Pynchon's counterfactual imagination, which, among other things, seeks to open up alternative perspectives on past, present, and future in its effort to penetrate into the middle modal realm suspended between actualities and impossibilities: see Misztal (2020).

after a commercial break the movie comes back again, the plot is confused and the story does not move predictably from incident to incident:

> The father was huddled in a shell hole on the steep cliffs of the Anzac beachhead, Turkish shrapnel flying all over the place. Neither Baby Igor nor Murray the dog were in evidence. "Now what the hell," said Oedipa.
> "Golly," Metzger said, "they must have got the reels screwed up."
> "Is this before or after?" she asked (…) (Pynchon, 1999, p. 21).

Oedipa's question points to the temporal fluidity and a sense of causal relativity that the film is invested in. While the cinematic permits us to play with succession by creating the illusion of overcoming the uniform flow of time with its rigid succession of 'befores' and afters',[8] it is also isolated, Pynchon reminds us, in its own meaningless circular temporality. Filmic time is synthetic and artificial, as Metzger's film rests "in an air-conditioned vault at one of the Hollywood studios, light can't fatigue it, it can be repeated endlessly" (Pynchon, 1999, p. 20). Needless to say, the capacity for endless repetition is not an appropriate measure for counteracting the dissipation and progressive decline toward uniformity that the novel criticizes.

Another way of resisting entropic transition in Pynchon's narrative is through drugs and psychiatry. A case in point is Mucho Maas, recruited by Doctor Hilarius, Oedipa's shrink, who "broadened his [experimental] program to include husbands" (p. 107). Mucho, who has been tripping on LSD, develops acute tone-separating skills that permit him to transcend time and perform spectral analysis by mentally running tones in reverse: "Listen to anything and take it apart again. Spectrum analysis, in my head. I can break down chords, and timbres, and words too into all the basic frequencies and harmonics, with all their different loudnesses, and listen to them, each pure tone, but all at once" (p. 106). By opening separate channels for each tone, he can override succession and appreciate pure tones in their simultaneity. Time, as Mucho explains, is thus made relative as the separate time lines are defined with respect to an arbitrarily chosen point zero. These LSD trips, however, "make Egos lose their sharp edges" (p. 94) and erase distinctions between individual time lines:

> No matter who's talking, the different power spectra are the same, give or take a small percentage. (…) Everybody who says the same words is the same person if the spectra are the same only they happen differently in time, you dig? But the time is arbitrary. You pick your zero point anywhere you want, that way you can shuffle each person's time line sideways till they all coincide (p. 106).

8 Pynchon (1993) explores these playful sensibilities as "video-time" in another *New York Times* essay.

While the experimental LSD treatment empowered Mucho to overcome depression and anxiety, the change in his personality is so substantial that Oedipa can hardly recognize the person she had been married to.

> She could not quite get it into her head that the day she'd left him for San Narciso was the day she'd seen Mucho for the last time. So much of him already had dissipated (p. 106).

In tracing these time lines and spectra, Mucho moves beyond what Doctor Hilarius calls "relative paranoia" (p. 101) towards its more extreme variant that obliterates clear distinctions between the hallucinated and the real world. Mucho runs thus the risk of having his own time line dissipated. In a thermodynamic context, dissipation refers to the amount of useable energy lost to the surroundings. Correspondingly, Mucho's narrative presence fades away and he effectively disappears towards the end of the penultimate chapter. He resembles thus Slothrop from *Gravity's Rainbow*, whose temporal transformation renders him invisible in the novel's universe. Slothrop's temporal deconstruction follows Mondaugen's law, which describes "personal density" as "directly proportional to temporal bandwidth":

> "Temporal bandwidth" is the width of your present, your *now*. It is the familiar "Δt" considered as a dependent variable. The more you dwell in the past and in the future, the thicker your bandwidth, the more solid your persona. But the narrower your sense of Now, the more tenuous you are. It may get to where you're having trouble remembering what you were doing five minutes ago, or even – as Slothrop now – what you're doing *here*, at the base of this colossal curved embankment… (Pynchon, 1995, p. 510)

Hilarius's experimental therapy helps Mucho cure himself of his nightmares of empty and meaningless life in a used car lot as "a member of the National Automobile Dealers' Association. N.A.D.A." (Pynchon, 1999, p. 107). And yet the price of escape from the nihilistic void to alternative realities is high, as Mucho, like Hilarius, goes crazy. His temporal bandwidth shrinks dramatically and his presence grows thin as the amount of "useable energy" is irreversibly wasted.

Paranoia and negentropy

Oedipa, in her efforts to counteract entropic disorder, also develops a paranoid perspective. But unlike Mucho, her time line is placed within the spectrum defined by paranoia and "anti-paranoia, where nothing is connected to anything, a condition not many of us can bear for long (Pynchon, 1995,

p. 435). When Oedipa comes to the realization that every single route that led her to the Tristero can also be traced back to the Pierce Inverarity estate, she cannot exclude the possibility that the whole affair might be an elaborate joke orchestrated by Pierce. Obsessed with her quest, she becomes unsure about anything in her life as the number of possibilities increases dramatically. Relentlessly pursuing a multitude of clues and leads, Oedipa amplifies uncertainty by overthinking herself, to use Pynchon's phrase, into "brainfreeze" (Pynchon, 2009, p. 96). Her attention becomes fixated on the unremitting flow of bits of information as she frantically explores various plots and possibilities. She engages thus in a massive effort of information gathering only to realize that she cannot establish a clear hierarchy of importance among the discovered plots and leads. Growing more and more paranoid, Oedipa is unable to change her attitude and way of reasoning, as she believes that even a smallest detail can be of large significance. Her pursuit becomes antithetical to a reductive approach that aims to work out a pragmatic solution by the careful selection of information and its controlled processing.

When performing even a relatively simple task in a complex system, such as negotiating the way through a crowded city, we are not expected to take the city fully into account. The urban layout of streets and roads peppered with numerous signs requires much longer driving time than a long stretch of highway where not much happens except for the appearance of occasional billboards or road signs. "But the negotiation of the objects and people in the city is a complicated and thus concrete reality" (Turner, 2023, p. 9). In this urban environment we can benefit from increasing our ignorance of the surroundings to find our way through:

> We can only get through the city quickly by massively increasing our ignorance of our surroundings, by ignoring all the elements of it that are unique, temporally asymmetrical, and unstandardized. We obey the traffic signs, basically the unambiguous measures of the physics of the roadbed and the simple conventions that govern whose turn it is to move. The city seems disordered to us, but that is because of our desire for certainty (p. 9).

The city, when viewed in terms of information theory, is an open complex system prone to contingencies and delays, which can multiply the flow of information. Thus, when calculating a road trip in this context "certainty involves not the increase of information but its decrease. The more ignorant we are, the more secure in our measurement" (p. 9).

Oedipa is unable to adopt this reductive perspective as her quest involves the opposite strategy: an exposure to all sorts of possibilities, which lead in turn to the incessant proliferation of information. Even though she becomes aware early in the novel that this openness might lead her astray,

she continues her investigation as "a sensitive" executrix of Inverarity's estate. Consequently, the leads she uncovers and follows bring her closer to the dread state of chaos. Yet her pursuit does not simply aim at locating the source of disorder but rather involves the ability to navigate through uncertainty and establish local loci of order.

The possibility of countering entropic transition appears to be present and to a certain degree viable in the fictional world of *The Crying of Lot 49*. Pynchon does not rule out the positive notion of entropy as a measure of energy available for work and playfully engages the negentropy idea in the narrative construction and the workings of the Nefastis Machine. The Machine operates by making use of the ordering principle instantiated by a hypothetical creature from a thought experiment postulated by the Scottish scientist Clerk Maxwell. By distinguishing fast-moving molecules from slow ones and grouping them according to their speed, the demon makes more useful energy available in the system than there was originally. He decreases thus the randomness of the system and seemingly violates the second law of thermodynamics, which states that the irreversible arrow of time flows from order (usefulness) to disorder (randomness). It is hard not too see a close analogy between Oedipa and Maxwell's demon: Oedipa attempts to sort the multitude of clues and signs just as the demon sorts molecules. But this affinity, especially in the context of the Nefastis Machine, is much more complex and nuanced as Pynchon does not present the machine as a *perpetuum mobile*. Nefastis is not quite so crazy, J. Kerry Grant (1991) insists, as to believe that he has invented a device that violates the physical law of thermodynamics. In order to place a given molecule in the appropriate section, the demon must first perform measurements and determine whether the kinetic energy of a molecule is greater or lesser than the mean kinetic energy of the gas molecules in the system. These measurements in turn involve thermodynamic expense. As Nefastis explains to Oedipa, the decrease in entropy is "offset by the information the Demon gained about what molecules were where" (Pynchon, 1999, p. 77). In other words, "the demon's capacity to lower the entropy of the system by shunting the molecules into two separate enclosures is 'bought' at the expense of a rise in entropy equivalent to the amount of information obtained" (Grant, 1991, p. 48). The Nefastis Machine requires an energy input in order to operate. The sensitive "feeds" the system with some kind of energy that the demon taps into. In processing the multitude of molecules, the demon exposes itself to thermal fluctuations and disturbances, which makes him prone to "heating up."[9] To counteract this risk,

9 The machine's actual mechanical operation is not explicitly revealed and Pynchon's text invites us to fill in the gap. Accordingly, if we assume that the demon is "vulnerable to disturbances

"the demon must periodically be returned to its initial state – one in which it is once again capable of performing its measurements accurately" (p. 49). Furthermore, this suggests that the demon must be able to direct the surplus energy outside of the system, to "channel the entropy to an outside 'dump' or 'garbage can'" (p. 49). If we take the Nefastis machine as a model for Oedipa's predicament as Grant suggests, then the information overload should be offset by the increase of thermal entropy and energetic disorder. To perform her task as the executrix of Inverarity's estate and bring order to his tangled interests, Oedipa should undergo a "mental reset." And yet this does not seem to happen. Instead she becomes more and more passive; the middle of chapter five marks a clean break after which Oedipa no longer directly receives "immediate signs of the Trystero (…) she only hears about its past existence through documents, stamps, books – always second hand" (Mendelson, 1978, p. 206). Her important contacts – Mucho, Dr Hilarius, Metzger, Driblette – are, likewise, dispersed and fade away. Oedipa's expectant passivity is not enough to clear things up. While local states of order are not impossible, they become increasingly rare as Oedipa carries on by tracing more and more random trajectories.

If Oedipa's quest is motivated by the idea of negentropy that opens up the possibility for a system to evolve into a state of lower entropy over time, her paranoid state of mind contributes to the increase of information disorder. This is especially prominent in the episode where Oedipa wanders randomly through San Francisco at night and keeps seeing signs of Tristero everywhere. In Pynchon's fictional world, information acquisition is not necessarily associated with a reduction of disorder. The simple reception of signals is insufficient to decrease informational entropy; it emerges that Oedipa is unable to process signals contextually and navigate through information. As Letzler (2015) notes, her quest is driven by her efforts to detect and distinguish among "competing forms of organization, each with its own threatening drawbacks" (p. 40). The real question that she is incapable of resolving is "about the relative strengths of competing forms of order" (p. 40). Ultimately she cannot rule out any possibility, even the possibility of sharing another person's hallucinations:[10]

> Either Trystero did exist, in its own right, or it was being presumed, perhaps fantasied by Oedipa, so hung up on and interpenetrated with the dead man's estate (Pynchon, 1999, p. 80).

resulting from collisions with gas molecules and photons from blackbody radiation" (p. 49) and unable to infinitely dissipate this thermal energy surplus, it is bound to heat up.

10 Oedipa, for example, cannot exclude the possibility of Nefastis being deranged: "Why worry, she worried; Nefastis is a nut, forget it, a sincere nut. The true sensitive is the one that can share in the man's hallucinations, that's all" (pp. 78–79).

Much like her husband Mucho, Oedipa's energy is largely dissipated as her negentropic strategies fail. The final scene in which she expects the mysterious bidder to reveal him- or herself does not seem to promise a final resolution (if there is any), but rather suggests another turn that will keep her going around and around.

Concluding remarks

As Azarian (2022) points out, the concept of entropy can be dangerously misleading when applied to systems that are not isolated. Moreover, contemporary science recognizes more than the two kinds of entropy,[11] "thermodynamic and informational" (Pynchon, 1999, p. 76), which are explicitly invoked in *The Crying of Lot 49*. Trying to clarify the concept to Oedipa, Nefastis describes entropy as a metaphor that

> connects the world of thermodynamics to the world of information flow. The Machine uses both. The Demon makes the metaphor not only verbally graceful, but also objectively true (p. 73).

It is clear from Pynchon's comments in the Introduction to *Slow Learner* that he was aware of the protean character of the concept especially when applied outside of its technical context. And yet he was not dissuaded from testing its metaphorical potential. Correspondingly, entropy in Pynchon's texts opens up critical perspectives by drawing on a kind of socio-cultural interpretation of the second law of thermodynamics. It is also intimately linked with the temporal dimension of human existence in its contingency and finitude. In his later novels entropy is symptomatic of negative strategies that produce "structures favoring death" (Pynchon, 1995, p. 167). But even when adopting broad perspectives, for instance on the homogenizing transformations of postwar American society,[12] Pynchon does not

11 Entropy in contemporary science is not merely linked with the increase of disorder or transition towards equilibrium as defined by Boltzmann's and Gibb's models of statistical mechanics. This statistical or configurational form of entropy is by no means the only mode in which energy – the primary cosmic organizer – circulates in our universe. While dissipative structures such as living organisms have a natural tendency to dissipate a thermal or chemical gradient and "tend to be more irreversible due to the second law of thermodynamics and the one-way arrow it dictates" (p. 41), they can also evade this tendency by making use of free energy around them, a possibility that Maxwell's demon was intended to represent.

12 He explores these transformations not only in the novels discussed in this paper but also for instance in *Vineland*, in which television is presented as the main generator of "the entropy of leisure" (Thoreen, 1992, p. 57).

lose sight of individual life trajectories terminating at "a time differential, a vanishingly small instant in which change had to be confronted at last for what it was" (Pynchon, 1999, p. 95). Not all encounters with "the Great Irreversible" (Pynchon, 1995, p. 749) are transformative; nevertheless they reveal qualitative and emotionally charged dimensions of "that human one-way time we're all stuck with locally here, and which terminates, it is said, in death" (Pynchon, 1985b, pp. 14–15). Pynchon's use of entropy, even if not free of some technical inaccuracies, is creative as it permits him to poignantly portray individual lifelines in their complexities and nuances. Entropy in the *Crying of Lot 49* operates as "a compelling metaphor of exceptional range and emotional power" (Mendelson, 1978, p. 183), capable of registering lived time in its multiplicity and qualitative variety.

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