

Unravelling The Threads of Enigma: Entropy, Maxwell's Demon, and Communication in 'The Crying of Lot 49

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Abstract

Thomas Pynchon is a great postmodernist writer whose *The Crying of Lot 49* mixes postmodern elements and modern physics in an ironic way. In *The Crying of Lot 49*, the concepts of entropy and Maxwell's demon play a significant role in understanding the underlying themes and narrative structure. Entropy is a concept in physics which represents the degree of chaos in a system. Maxwell's demon is an imaginary solution to keep the entropy of a system low. The concepts of Entropy and Maxwell's demon are intertwined with the exploration of information theory, paranoia, communication and loneliness, and the elusive nature of truth.

Keywords: Entropy, Entropic sublime, Thomas Pynchon, Maxwell's demon, Paranoia

Introduction

Entropy refers to the tendency in closed systems for energy to dissipate and become unavailable. In his article "The Entropic rhythm of Thomas Pynchon's Comedy In The Crying Lot 49", Zoltan Abadi argues that Pynchon uses entropy as a metaphor for "the world of alienation and communication" in modern America (p. 117). The article states that for Pynchon, "entropy operates as chaos in communication" (p. 117). It argues communication is needed to offset the "loss of entropy" or breakdown in systems, but that "where there is a 'symmetry of choices', there is no information" (p. 122). This is directly relevant to Oedipa's quest in the novel to understand the mystery of The Tristero through communication.

Steve Vine in his article "The Entropic Sublime in Pynchon's The Crying of Lot 49" discusses the concept of thermodynamic entropy, which is "the measure of disorganization for a closed system" (162) and can lead to a "loss of difference between 'hot and cold' molecules, and ... to equivalence" (Vine 167). This is related to the idea of Maxwell's Demon presented in the novel, which is "the idea that entropy could be resisted in an imaginary machine that, by separating 'hot and cold' ... molecules from each other through the agency of a 'Demon,' would prevent the entropic ... dissolution of the fast into the slow, and avoid ... homogenization or thermodynamic heat-death" (Vine 167). The article also discusses the concept of informational entropy, which occurs when there is "an informational overload that collapses 'communication'" and "promotes communicational disorder: it generates an excess of output that cannot ... be reduced to meaning, sense or coherence" (Vine 167). This is related to the underground postal system of Tristero in the

novel, which represents "a network in which the transmission of information exceeds any regulation. This informational entropy introduces disorder into dominant modes of communication" (Vine 171).

Entropy is a measure of disorder or randomness in a system scientifically as Wehrl defines it "the entropy is a measure of the 'amount of chaos' or of the lack of information about a system" (Wehrl 223) and is associated with "disorder, ignorance, uncertainty" (Sethna 63). It quantifies the number of specific ways a system can be arranged, often leading to the notion that systems naturally progress from order to disorder. A common illustration is a gas in a container: If the gas is initially confined to one part, it's in a state of low entropy. Over time, the gas molecules will disperse throughout the entire container, transitioning to a state of high entropy, or higher disorder. In thermal dynamics, the second law of thermodynamics states that the total entropy of an isolated system can never decrease over time, and is central to the irreversible nature of natural processes. As the system's disorder increases, its entropy also increases.

In social sciences, entropy is related to information theory and is applied in three different formats, as a "measure of diversity, inequality or concentration", as "the solution of certain problems of system specification", and finally as "certain aspects of the theory of production" (Proops 5). For the current study, the concept of entropy is used to represent the atomization of American society in post-World War II era. We will argue that Pynchon's *The crying of Lot 49* is using Entropy, Maxwell's demon, and (mis)communication to criticize the atomization of American society.

The concept of societal atomization as a key theme is expressed through the narrative structure, characters, and overarching sense of disconnection that permeates the book. It refers to the breakdown of social structures and communities that traditionally give shape to individuals' lives, often leading to a sense of isolation or alienation. In Pynchon's work, this is depicted through the protagonist, Oedipa Maas, and her journey. Oedipa's quest begins with her assignment as an executor of her ex-boyfriend Pierce Inverarity's will, drawing her into a cryptic and fragmented world of signs and symbols. She encounters various eccentric characters and organizations, including the historical mystery of the Tristero system — an underground postal network which may or may not exist. The mystery symbolizes the hidden connections beneath the surface of the fragmented society.

Thomas Pynchon studied engineering physics in Cornell university. His novel, *The Crying of Lot 49*, uses concepts from modern physics as metaphors to give a view of American society and analyze the condition of the individual in the post-World War II era. United States turned into a super power after the second World War and represented an ideal society where everyone has a comfortable life. However, the lived experience of the post-World War II generation, represented in Pynchon's complex novels, shows it otherwise. His *The Crying of Lot 49* is filled with paranoia, isolation, madness, conspiracy theories, and miscommunication.

In *The Crying of Lot 49*, Oedipa Mass is trying to cope with these issues through psychotherapy, drug abuse, affairs, paranoia, and emotional attachment. Pynchon uses the metaphor of entropy and Maxwell's demon to show how Oedipa deals with the increase of isolation and atomization in American society.

Maxwell's demon is a thought experiment in physics that challenges the second law of thermodynamics, which states that entropy in a closed system always increases. The demon, in this experiment, selectively allows particles to pass through a barrier, thus decreasing entropy. Imagine a tiny demon who controls a small door between two chambers of gas. By only allowing faster-moving (hotter) gas molecules to pass through to one chamber and slower-moving (cooler) gas molecules to another, the demon seems to reduce entropy without expending energy—creating a heat differential and doing work in the process. This scenario proposes a theoretical violation of the second law. However, upon closer scrutiny, it's revealed that the demon's measurement and selection process must involve energy, thus upholding the law.

This idea of a selective filter resonates with the protagonist Oedipa Maas's quest for meaning and truth in a chaotic world full of miscommunication and conspiracy theories. Entropy has “to do with communication” (Pynchon), and the two fields of entropy in communication and physics are unrelated except in one thing “Maxwell's Demon”. For Nefastis “Communication is the key”.

Nefastis's machine marks the fact that communication in postmodern world has gone downhill. His machine contains “an honest-to-God Maxwell's Demon”. Maxwell's Demon has one duty, to decrease the value of entropy and thus the degree of miscommunication and loneliness. Comically, Oedipa is so desperate that she truly believes in the existence of the demon and falls for Nefastis' trick by saying “Are you there, little fellow?”. Oedipa lives in a society with so much miscommunication and she needs to stay safe and sane, this is the reason behind her naïve search for the Demon, to decrease the degree of entropy and societal atomization.

The concept of Maxwell's demon is implicitly connected to Oedipa's pursuit of truth and her encounters with various conspiracies and secret societies throughout the novel. As she delves deeper into a complex web of information, she becomes increasingly paranoid and questions the reliability of her own perceptions. This is exemplified in the following passage:

"Yet if she hadn't been set up or sensitized, first by her peculiar seduction, then by the other, almost offhand things, what after all could the mute stamps have told her..." (Pynchon, Chapter 3)

This passage suggests that Oedipa's search for truth and meaning is ultimately futile, as the forces of chaos and uncertainty, symbolized by entropy and Maxwell's demon, continuously disrupt and distort her perceptions.

Atomism is “an understanding of the individual as metaphysically independent of society” (Taylor 8). Atomistic scheme of society “sees society as a locus of collaboration and rivalry between independent agents with their individual goals” (99). In an atomistic society, individuals are like atoms, isolated and not connected, any attempt at communication will lead to either disconnection or miscommunication. In the novel, characters cannot communicate properly. This improper miscommunication leads to either madness or substance abuse. Dr. Hillarius goes mad and Mucho, Oedipa's husband, begins abusing drugs and prefers living in illusions to a real world with no actual communication.

Miscommunication is also related to language gone rampant. John P. Leland in his article, "Pynchon's Linguistic Demon: The Crying of Lot 49" contends that "Language has become man's

source of alienation and the prison which locks him within the hallucinatory possibility of words" (49). The language we speak is a medium by which we are deluded that the reality is directly accessible via language. "All attempts to impose upon language patterns of sense which are beyond language are doomed" (Leland 49). This is further emphasized by Nefastis saying "Entropy is a figure of speech". Entropy as an element of uncertainty and chaos is a figure of speech and the linguistic techniques used by Pynchon represent this uncertainty. For instance, the novel begins with a very confusing passage that needs quoting entirely:

ONE summer afternoon Mrs Oedipa Maas came home from a Tupperware party whose hostess had put perhaps too much kirsch in the fondue to find that she, Oedipa, had been named executor, or she supposed executrix, of the estate of one Pierce Inverarity, a California real estate mogul who had once lost two million collars in his spare time but still had assets numerous and tangled enough to make the job of sorting it all out more than honorary. Oedipa stood in the living room, stared at by the greenish dead eye of the TV tube, spoke the name of God, tried to feel as drunk as possible. But this did not work. She thought of a hotel room in Mazatlan whose door had just been slammed, it seemed forever, waking up two hundred birds down in the lobby; a sunrise over the library slope at Cornell University that nobody out on it had seen because the slope faces west; a dry, disconsolate tune from the fourth movement of the Bartok Concerto for Orchestra; a whitewashed bust of Jay Gould that Pierce kept over the bed on a shelf so narrow for it she'd always had the hovering fear it would someday topple on them. Was that how he'd died, she wondered, among dreams, crushed by the only ikon in the house? That only made her laugh, out loud and helpless: You're so sick, Oedipa, she told herself, or the room, which knew.

Language is perplexing, not communicating anything except a set of sentences with no context as its background causing confusion, miscommunication between the reader and the novel, and uncertainty. This is also related to atomization, since the most important tool to communicate is language. People cannot have a real talk in the novel. They are talking either about their imaginary conspiracy theories such as Tristero or the ship battle between USA and Russia as the root of all historical grudge between the two countries as Fallopian says "But that was the very first military confrontation between Russia and America. Attack, retaliation, both projectiles deep-sixed forever and the Pacific rolls on. But the ripples from those two splashes spread, and grew, and today engulf us all". Another example that relates to the sterility of truth is the talk between Nefastis and Oedipa over the machine that carries the Maxwell's Demon, after Nefastis explains what he means by Maxwell's Demon, Oedipa replies "Help ... you're not reaching me". Overall, language fails and cannot transfer the truth and is therefore atomized, words cannot get across between agents.

Argument

A key figure in the novel is Dr. Hilarius, also known as Callisto, who believes that American culture has become a "closed system" shut off from outside influences (Vine 169). Dr. Hilarius is described as modulating his voice like a "Gestapo officer" and a "psychotherapist". These hints he may represent forces of control and manipulation. It's revealed he had actually worked for the Gestapo, the secret police of Nazi Germany. This connects him to authoritarian regimes that seek to restrict information and freedom. His presence in the novel seems to reinforce

that the "crazy world" Oedipa inhabits is not just in her mind. This lends credibility to the mysterious forces she encounters. As someone affiliated with oppressive, secretive organizations like the Gestapo, Dr. Hilarius could symbolize how such forces aim to increase entropy and restrict the free exchange of information in "closed systems".

Moreover, Vine views American consumerism as an entropic force that will reduce all diversity and individuality to uniform "sameness" as everything is subsumed under corporate capitalism and consumerism (Vine 169-170). This is also related to atomization process of society. Mucho works in a car junkyard and collects pieces. He sinks in the number of things consumed by American society:

Yet at least he had believed in the cars. Maybe to excess: how could he not, seeing people poorer than him come in, Negro, Mexican, cracker, a parade seven days a week, bringing the most godawful of trade-ins: motorized, metal extensions of themselves, of their families and what their whole lives must be like, out there so naked for anybody, a stranger like himself, to look at, frame cockeyed, rusty underneath, fender repainted in a shade just off enough to depress the value, if not Mucho himself, inside smelling hopelessly of children, supermarket booze, two, sometimes three generations of cigarette smokers, or only of dust.

Mucho feels the leftover traces of past owners in trade-in cars form a "salad of despair". He feels isolated just like the leftovers are isolated and separated. Mucho is also an entropic character. He is the one who first tells Oedipa about W.A.S.T.E., the possible underground postal system. He characterizes it as "entropic", suggesting it promotes disorder. Mucho's own life seems disordered and chaotic. He is described as living a "nomadic life" and being in a "state of perpetual transition". After their breakup, Mucho continues to confuse Oedipa with cryptic postcards. His obscure communications keep her wondering and unsure, amplifying the entropy. By committing suicide, Mucho removes any chance of gaining clarity or context from him about W.A.S.T.E.

Metzger is another atomized character who consumes TV shows and is only able to connect to others through his past profession as an actor. He has played as "Baby Igor" and lives only inside his "looks". He begins an affair with Oedipa but at the end he runs away with a sixteen-year-old teen girl. The failed love relations in the novel all amount to atomization. Mucho and Oedipa fail as a couple, Metzger and Oedipa fail too, Miles want to only have a taste of relationship with a mature woman (Oedipa), etc.

Atomization also leads to the fragmentation of society and its failure to make decision or to take action to heal such fragmentation. Taylor writes "A society in which all goals are really those of individuals, as they are portrayed in the atomist scheme, would be an extreme case, and a degenerate one. It would be a society so fragmented that it was capable of very little common action, and was constantly on the point of stasis or stalemate" (99). Characters in the novel are under the fragmentary force of atomization and at the brink of madness.

Dr. Hilarius, throughout the novel, becomes increasingly unstable and descends into madness, mirroring the concept of increasing entropy. At first, he seems to be a figure of authority and sanity, an ordered system of sorts. However, as the plot progresses, his behavior becomes erratic and unpredictable, signifying a move towards higher psychological entropy. This breakdown reflects a move from a state of organized thought into a chaotic mental condition,

paralleling the second law of thermodynamics where systems naturally progress to a state of greater disorder. His role as a therapist—supposedly a healer of the mind—becomes ironic as he himself loses grip over his sanity. This can be associated with the idea that even systems designed to manage or interpret entropy are not immune to its effects. His breakdown could thus inspire readers to reflect on the ways in which entropy infiltrates the human psyche, questioning the stability and order we all presuppose in our mental landscapes.

Dr. Hilarius's condition could also be read as a metaphor for the breakdown of communication and meaning, which is a principal theme in *The Crying of Lot 49*. It stands in parallel to the increasing complexity and entropy Oedipa encounters in her quest to understand the mysterious W.A.S.T.E. postal system and the potentially fictive Tristero organization. In this way, entropy pervades the novel not just as a physical concept but as a metaphor for the breakdown of meaning and the challenges faced in decoding reality and understanding one's place within it. It also can stand for the lack of communal will to counter its fragmentary and atomizing capacities.

The only character who tries to make a difference and to stay sane in a paranoid and fragmentary world is Oedipa. As Steve Vine analyzes how the underground postal system Tristero, which Oedipa investigates in the novel, represents an attempt to resist this entropic vision. Tristero allows for secret communication outside the dominant system, embodying "otherness" to it (p. 171).

Death heat is not a term explicitly used in the novel, but it may be a concept related to both entropy and the heat death of the universe, where the universe reaches a state of no thermodynamic free energy and can no longer sustain processes that increase entropy. In 1854, Helmholtz "predicted the heat death of the universe: he suggested that as the universe ages all energy will become heat, all temperatures will become equal, and everything will "be condemned to a state of eternal rest" (Sethna 67).

In literature, it could be used metaphorically to describe a situation in which a system, be it a society, relationship, or individual psyche, reaches a point of maximal disorder and, metaphorically, 'dies' due to an inability to sustain itself or evolve further of the universe, where the universe reaches a state of no thermodynamic free energy and can no longer sustain processes that increase entropy. In literature, it could be used metaphorically to describe a situation in which a system, be it a society, relationship, or individual psyche, reaches a point of maximal disorder and, metaphorically, 'dies' due to an inability to sustain itself or evolve further. The relation between death heat and entropy in a literary sense, applied to Pynchon's novel, can be seen in the representation of a society moving towards chaos and losing its capacity to convey coherent and actionable meaning, akin to the thermodynamic heat death. Pynchon's narrative suggests that systems (whether they are communicative networks like the postal system, or social structures) inherently tend towards a point where they may no longer function as originally intended due to the increasing disorder within them. This metaphorically resonates with the concept of the heat death of the universe, the ultimate state of maximum entropy, suggesting a sort of 'death' or stagnation of meaning and purpose. In *The Crying of Lot 49* this heat death or complete silence is represented in two ways. First it is represented in the disintegration of American society as the characters such as Dr. Hilarius goes mad or Mucho commits suicide. And the second one can be related to the abrupt ending of the novel. The novel raises questions that seem to be answered in

the auction but it stops there with total silence and suspense of all the elements in the novel. As the novel draws to its end “The auctioneer cleared his throat. Oedipa settled back, to await the crying of lot 49”, the reader is left in total silence and a form of death.

It seems that the concept of entropy in the novel leads to atomization and fragmentation of society and the individuals living in it. The post-World War II American society lack communication. This lack of communication and miscommunication is represented in the metaphor of Entropy and Maxwell’s Demon. Oedipa thinks she can stop the process of social entropy through Nefastis’ machine. Yet there is no Demon in the machine to stop it. At the end, the increase in the miscommunication through TV, consumerism, and leads to atomization and fragmentation of society where there is no communal will to change it. Thus, the characters either go mad or suicide. The reader is left in the dark about the result of the auction which may imply the concept of the heat death of the universe.

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Conflict of Interest

The author declares that he has no conflict of interest.

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