Kelly Kennedy — Physics

ENTROPY: THE CONNECTION BETWEEN PHYSICS AND LITERATURE

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"Perhaps that is the most interesting question of all: to see what happens when there is nothing, and whether or not we will survive that too."
-Paul Auster In the Country of Last Things

Physical entropy, as defined in The Harper Handbook of Literature, is "the quantity of randomness or disorder in any system containing energy" (Frye 169). Whether we are aware of it or not, the process of entropy is happening around us constantly and has been since the beginning of time, long before Rudolf Clausius discovered the theory and coined the term, long before Thomas Pynchon wrote about it in his short story "Entropy," even before Herman Melville incorporated the idea into his short story Bartleby the Scrivener. Before Clausius gave it a name, the process of entropy was being played out in words by some of the greatest literary writers that ever lived, such as George Gordon, Lord Byron, who in 1816 wrote: "I had a dream, which as not all a dream. The bright sun was extinguish'd, and the stars did wander darkling in the eternal space, rayless, pathless, and the icy earth swung blind and blackening in the moonless air..." (from "Darkness"). Without question, entropy, before and since Clausius, has been and continues to be a major source of inspiration and intrigue for writers; the real question is why.

According to Zbigniew Lewicki, "when the great scientific revolution of the late nineteenth century shattered the foundations of Newtonian physics, based on certainty and the unfailing cause-and-effect chain; one of its indirect results was a drastic change in man's attitude toward his universe" (Lewicki 71). The irreversible tendency of a system including the universe toward increasing disorder struck fear into men; they no longer lived in a world they could feel safe in; they could no longer foresee hope for the future when the future would almost certainly bring the hopelessness of inertness.

Worse yet, entropy also influenced the communication, lack of and deterioration of, among people. It is highly improbable that when he developed the concept of entropy in 1854 Clausius had this in mind, being a
physicist and not a philosopher. The second law of thermodynamics states: "In an isolated system, there is no way to systematically reverse the flow of heat from higher to lower temperatures" (Anderson and Spielberg 155); entropy cannot decrease, rather it naturally increases. "The essence of the theory [of entropy] is that the universe is subordinated to a constant and irreversible process of 'dying' or, more precisely, of turning its energy into waste. The process can neither be stopped nor reversed—and there will be no regeneration" (Lewicki xv). If, then, a community of people is viewed as an isolated or closed system, and communication is the irreversible heat flow, it is not difficult to see how and from where the idea of communicational entropy emerged. The Harper Handbook of Literature defines entropy in information theory as "a measure of the amount of random error or disorder hindering communication" (Frye 169). Thus, combine the two theories and what you have is entropy in literature, particularly post-modern literature, and more specifically in the overall work of Thomas Pynchon, Paul Auster, and Robert Coover.

"When I think about [entropy] nowadays," explained Pynchon in 1984 in the introduction to his anthology of short-stories called Slow Learner, "it is more and more in connection with time, that human one-way time we're all stuck with locally here, and which terminates, it is said, in death" (Pynchon 14-15). While admitting that he really knew very little about how the concept of entropy worked when he wrote Entropy, Pynchon proves that with time his knowledge, as opposed to the idea of entropy, has increased through the years in his novel The Crying of Lot 49, in which he not only applies the information theory, but Clausius' original idea as well. The Crying of Lot 49 can be read as . . . an exploration of the imminent demise of the world by means of ingenious metaphorical employment of the Second Law of Thermodynamics" (Freese 171). In this novel, the protagonist, Oedipa Maas, is given the job of sorting out the messy estate left behind by an ex-lover, which includes travelling around California in a kind of chaotic haze where the more she learns the less she knows; attempting to understand a secret communication called the Tristero (a system that is also known as WASTE) and a peculiar Nefastis Machine (that is built on the famous thought experiment Maxwell's Demon), Oedipa begins to realize that things are falling apart even as she puts them together. "The Demon becomes a metaphor of Oedipa's experience. . . where [her] attempt at understanding her assignment is described as 'shuffling back through a fat deckful of days.' This is an image that in classical physics provides the standard illustration of the introduction of randomness into an ordered structure" (Freese 173). While this novel, as with any literary masterpiece, can be interpreted many different ways, it is safe to say that Clausius' idea of entropy is a central theme.

Another writer of post-modern fiction who utilizes Clausius' idea of entropy is Paul Auster. In his novel, In the Country of Last Things, which
feels very much like a detailed dive into a combination of the Black Plague and the Holocaust, Auster's protagonist, Anna Blume, ventures to an unnamed country in which she says "nothing lasts, you see, not even the thoughts inside you. And you mustn't waste your time looking for them. Once a thing is gone, that is the end of it" (Auster 2). This observation is parallel to Clausius' idea that disorder is irreversible. Much like Pynchon's protagonist, Oedipa, Anna Blume finds herself in the midst of a futile search for life as it once was, the normalcy she knew before she entered this country where everything around her falling apart. "In general," Anna tells us of this entropic unnamed country, "people hold to the belief that however bad things were yesterday, they were better than things today. What they were like two days ago was even better than yesterday. The farther you go back, the more beautiful and desirable the world becomes" (Auster 10). Naturally, then, as Clausius described, things randomly progress into an irreversible state of disorder.

While Pynchon and Auster obviously construct novels around the fear and negativity that entropy arouses, Robert Coover takes a less serious and subtle approach that is at once comical and cryptic, an approach that is as humorous as it is thought-provoking. In his book, A Night at the Movies, Coover, much like a Latin Ovid did years ago, takes common American fantasies, in this case well-loved movies, and twists them into a sort of post-modern reality with entropy as an underlying theme. In an ideal American classic the "good guy" always wins, and happy endings are as essential to us as breathing, such as in the movies "High Noon" and "Top Hat," as well as in any Charlie Chaplin flick. But in Coover's "real" world, "High Noon" becomes "Shootout at Gentry's Junction," and the hero, Sheriff Henry Harmon, does not whistle happily into the sunset after taking care of the "bad guy," instead in the end "Henry Harmon the Sheriff of Gentry's Junction spun and met the silver bullet from his own gun square in his handsome suntanned face" (Coover 72).

In his spin-off of "Top Hat," Coover uses imagery that is exactly opposite to the simplistic story with Fred Astaire that we are used to. Instead of complex dance scenes, Coover creates complex shoot-out scenes; in the end, Astaire's character is not the happy-go-lucky dancer, instead he is a happy-and-demented murderer. It is perhaps with Coover's recreation of Charlie Chaplin that the idea of entropy is most obvious. In what Coover calls "Charlie in the House of Rue," "things begin normally enough—Charlie looks about, does a lot of business with his hat and cane—but they quickly escalate into chaos: not only do objects defy him (as they do in the original movies), but people also begin to act very strangely. By the end "... a woman has hanged herself, another woman has sexually assaulted Charlie and Charlie himself is left stranded in this surreal world, in which the reassuring conventions of slapstick humor no longer apply" (Kakutani C24). What Coover is attempting to do, and in my opinion does very well,
is to present the idea of entropy of American idealism. We do not, nor have we ever, lived in an ideal world. We do, however, and always have, exist in a place that is constantly changing.

While the three authors I have focused on in discussing entropy and literature are certainly not the only ones who have found an opportunity to combine the two, they do represent a majority of post-modern writers who seem intrigued by the idea and feel that it is to some degree their responsibility to present the facts: Rudolf Clausius around the middle of the nineteenth century discovered the idea of entropy, an idea that has proved true again and again not only in the scientific world, but in all aspects of life. Without constant work, the world will progress into a state of disorder, and eventually total equilibrium. By using our energy as humans, we may not, of course, reverse entropy, but we can keep it at a steady minimum.

Works Cited


