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Human and Machine Systematics in
*The Chemistry of Tears*
By Elizabeth Postema

The plot of Peter Carey’s *The Chemistry of Tears* bears much resemblance to the clockwork automata it contains: complex, finely tuned, and constructed with a clever hand. Throughout the intertwining stories of Catherine, a horologist grieving her secret lover, and Henry, a worried father who commissions a mechanical duck, Carey deals with several intricate themes. The boundary (or lack thereof) between man and machine, the nature of the universe, and the possibility of a higher power are all subject to his exploration. In this 2012 novel, *The Chemistry of Tears*, Carey blends elements traditionally considered “human” with elements traditionally considered “mechanical” by describing human physiology and behavior as machinelike, while ascribing a certain life or personality to automata. By combining these normally disparate factions, Carey seems to argue that the distinction between the organic and the robotic is meaningless; instead, his interest appears to lie in the broader systems that transcend such categories. Whether human or machine, all things are subject to the scientific laws of the universe.

Aspects of human anatomy are of particular importance to Carey, as he recognizes their innate machinelike qualities. He details the various processes of the body, some of which bear heavy emotional connotations, in very robotic terms. When Catherine thinks of Matthew, her recently deceased lover, she cannot help but reflect on his decomposition: “All his beauty turned into a factory, producing methane, carbon dioxide, rotten egg gas, ammonia” (Carey 43). She compares his once living, beautiful
body directly to a “factory” of natural gasses, highlighting the mechanical nature of the corpse’s decay. Later in the novel, she also describes his tear glands as “intensely complicated factories” to achieve a similar effect (Carey 74). As suggested by the title, tears play an important role in the novel simultaneously as a traditional signal of human emotion and a scientifically complex chemical; after Catherine cries at a dinner party, her boss, Croft, explains how “tears produced by emotions are chemically different from those we need for lubrication” and that her “shameful little tissues… now contained a hormone involved in the feeling of sexual gratification, another hormone that reduced stress; and finally a very powerful natural painkiller” (Carey 224). Tears, which are usually detailed in more emotional terms (relating to sadness especially), are described by Croft in a surprisingly clinical way. Rather than make symbols of human emotion and mechanical elements mutually exclusive, *The Chemistry of Tears* tends to keep the two in close proximity. Even sex, an intimate and essential experience for most living organisms, can be understood as a machinelike process. Catherine remembers her private moments with Matthew in terms of his anatomy, their intercourse enabled by the process in which “the blood from the cavernous spaces of the penis is returned by a series of vessels, some of which emerge in considerable numbers and converge on the dorsum of the organ to form the deep dorsal vein” (Carey 144). The imagery of Matthew’s sexual organ as a kind of blood-fueled machine, full of “vessels” in the same way an automaton is full of tubes and wires, further bridges the divide between human and robot. According to Carey, then, all human bodies can be considered a kind of organic machine, programmed to abide by certain processes and laws of the universe.
To further muddy the boundary, Carey reverses how man and machine stereotypically behave; in *The Chemistry of Tears*, clocks and automata often appear lifelike, while humans seem cold and repetitive. The mechanical swan, a central figure throughout the novel, exemplifies the notion of the “living” machine. Catherine notes that when the swan is turned on, its “every eerie movement [is] smooth as a living thing, a snake, an eel, a swan of course” (Carey 221). While Catherine describes the swan’s lifelike motion as “eerie,” her opinion may be a product of her assumptions about machine behavior; as automata are traditionally viewed as cold and rigid, the idea of a machine that can move fluidly unsettles her. Despite being composed of inorganic parts, the automatic swan can maneuver just as smoothly and organically as any living creature. However, the swan is only one of several automata in the novel that displays uncannily lifelike characteristics – the laughing Jesus, an automaton made by Herr Sumper for his “Genius,” is another example. After the “eighteen-inch-tall likeness of Jesus Christ” falls, Sumper describes how “the arms opened wide, the body was lifted, and then the body rolled, and revealed the sacred heart, and then, from his chest came a laugh…” (Carey 193-194). Laughter is often considered a fundamentally human trait, entirely impossible for a humorless robot to experience. Sumper’s laughing Jesus contradicts this image, subverting the stereotype of machines as hollow, unexpressive hunks of metal. In fact, Catherine, a human, often expresses less emotion than the clockwork artifacts she works on. She describes herself as a “highly specialized creature,” able to easily observe and organize heaps of mechanical parts “even whilst reading heart-wrenching emails…” (Carey 104). Her ability to categorize with mechanical precision is, apparently, unaffected by her psychological state. Despite the emotional turmoil caused by her
lover’s last messages, she cannot help but note, classify, and mentally catalogue the swan’s various rings and plates, much like a robot designed to do a single job without thought. Even her deletion of the emails lacks much sentiment: “‘Meet you outside the place.’ Delete. ‘See you there.’ Delete. ‘I kiss your toes.’ Delete. ‘I love you. Sorry I was a beast.’ Delete” (Carey 102). The rhythm of the sentence imitates that of a factory machine, continually turning screws or drilling holes for each piece that cycles past. Catherine’s concise, repetitive actions – in the face of an emotionally charged process – paint her as more robot than human. Due to Carey’s subversion of what it means to be human or machine, it is often difficult to tell who or what is truly “real,” in the organic sense.

As the labels of “mechanical” and “humanlike” become less and less illuminating of differences between the two groups, The Chemistry of Tears turns to a different method of understanding the world: how life and the universe can be fathomed through a broad network of natural laws. Whether a being is composed of flesh or metal, the same rules of physics, thermodynamics, and conservation apply; both humans and machines are, above all, systems driven by actions and reactions. The digestive system, shared between both Catherine and Vaucanson’s Duck, exemplifies the notion of universal patterns. The language Catherine uses to describe this system, “eat, macerate, excrete” (Carey 137), mimics the actions of the duck, who “would be made to flap its wings, drink water, digest grain and defecate…” (Carey 22). The inorganic or organic nature of the individual is inconsequential, as these classifications play second fiddle to a more universal process. The sequence of eating, then excreting, remains the same whether it is a man or a machine. However, these systems are detectable outside the individual as well;
the Swinburne, an enormous museum and Catherine’s workplace, can be considered a kind of system in its own right. Catherine refers to it as a chaotic, yet astonishingly beautiful “great mechanical beast inside its Georgian cube on Lowndes Square, the wires, the trustees, the rules, the secrets… the entire jerry-built mandarin complex of rat runs which is a two-hundred-year-old building in twenty-first-century space” (Carey 82). Like many objects and environments described in *The Chemistry of Tears*, the Swinburne consists of both animate and inanimate elements, from complex networks of cables to hurried curators. Yet, these traditionally opposing facets fit together to form something “quite astonishing” indeed; like some enormous nervous system, the Swinburne operates through the numerous tracks, rules, and “rat runs” that constitute its existence (Carey 82).

Though Catherine feels that she fits perfectly as a horologist at this museum, she can pinpoint her exact place among the macro-systems of the Earth itself while on vacation with Matthew: “Swimming off Dunwich beach, we had been aware of our skins, our hearts, water, wind, the vast complex machine of earth, the pump of rain and evaporation and tide, timeless wind to twist the health trees” (Carey 144). While Catherine’s heart pumps blood, the hydrologic system pumps water through “rain and evaporation and tide”; while the nerves in her skin rush signals to her brain, the wind rushes unendingly from higher to lower areas of pressure. From the small-scale organs of the skin and heart to the enormous, earth-wide organs of wind and water, she can detect the patterns that compose her universe. The individual (whether organic or mechanical), the group, the Earth, and, by extension, the entire cosmos are all guided by the same thing: a network of systems based on scientific laws.
Yet, several characters in *The Chemistry of Tears* delude themselves with the fantastical ideas of a “deeper order” or “greater meaning” behind the universe; both Sumper and Amanda all fall victim to these fantasies. Carey suggests that, while it is seductive to imagine such higher powers, it is more important to appreciate the visible world and its natural systems. After Amanda reels off a violent and apocalyptic prophecy inspired by Sumper’s theories, including “ghosts” and “fabulous beings” that elude human perception, she finally admits “none of [that] can possibly be true” (Carey 229). The notion of solving the *Mysterium Tremendum* mentioned in Henry’s notebooks captivates Amanda’s wild imagination, to the point where she cannot think of anything else; she is consumed by finding hidden connections and messages to support her claims. However, in the end, she realizes that her theories are nothing more than unsubstantiated ravings. Catherine understands this from the start, telling Amanda in an earlier exchange, “We are not here to invent stories about the hull. We are here to restore this extraordinary object. The real world is beautiful enough” (Carey 117). While Amanda feels as if the swan’s hull requires an invented backstory, or a mysterious higher power to guide it, Catherine knows that such beliefs are unnecessary. She recognizes the rare beauty of the artifact on its own, with no need for added mystery – the visible universe operates on the same principle, inherently more awe-inspiring than any lofty speculation could match. Both Catherine and Matthew are able to accept this, opting to appreciate the world on a material (rather than spiritual) level. She believes that, while neither of them “had time for souls,” and while their bodies were simply “intricate chemical machines,” their rejection of mysticism never “diminished [their] sense of wonder, [their] reverence for Vermeer and for Monet, [their] floating bodies in the salty water” nor their “evanescent
joy before the dying of the light” (Carey 17). A “sense of wonder” can exist without theological or mystical beliefs, according to Catherine; the natural beauty of artwork, oceans, and sunsets are more easily appreciated in the absence of complex ontological theories. Though humans may be like organic automata, piloted by electrical impulses, neurotransmitters, and chemical signals, this material nature does not impede the individual’s ability to experience joy and amazement.

At the novel’s close, Catherine remarks that a human’s skin, “the largest sensory organ,” acts as a microcosm of the “universe itself” (Carey 229). Organs, circuit boards, wires, and nerve cells can all be considered small universes, then, as they are all organizations of complex systems; both a grieving horologist and a robotic swan, while superficially different, rely on these same systems. In essence, the universe as described in The Chemistry of Tears is a vast network composed of smaller and smaller networks, each of these regulated by fundamental scientific principles. While the universe that Carey presents lacks spirituality in the religious sense, it retains a certain soulfulness, rooted in the proper appreciation of the world as it is. Perhaps what Carey is arguing, then, is that the differentiations between man and machine, the fabricated narratives of a “higher power,” and the delusions of fate are all barriers to fully recognizing the grandeur of the universe. According to Carey, a rich and vibrant reality lies directly in humanity’s line of sight – humanity just has to notice it.
Works Cited