Decay, Scale, and the Future of Victorian Organicism

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Organicism offered nineteenth-century writers a potent ideological model for explaining the relationship between the processes of life and human artifice.[1] Through an analogy that likened all systems to living organisms, organicism produced a vision of self-organizing holism, where the whole--be it a mollusk, a poem, or a nation--achieved organic totality through the coordination of interdependent parts. From Immanuel Kant and Samuel Taylor Coleridge's critique of mechanical form to Herbert Spencer, G. H. Lewes, and Auguste Comte's theorization of the social, Romantic and Victorian organicism worked to consolidate the aesthetic and socio-political ideals of coherence and interdependence.[2] Yet the idea has been plagued by incoherence. John Kucich's recent entry in *Victorian Literature and Culture*'s "Keywords" laments the scant critical attention paid to Victorian organicism in recent years, suggesting that this may be due to "the absence of a distinct, coherent intellectual tradition" (792).[3]

This paper explores one of its longstanding sources of incoherence and contradiction: the problematic afterlife of mechanism.[4] Putting pressure on the narrative that announces the end of mechanism around 1800, this paper considers how the

mechanical continued to haunt the Victorian organism by turning to Samuel Butler's *Erewhon* (1872) and its depiction of machine evolution. Reading Butler's novel as a paradigmatic expression of the afterlife of mechanism, this paper constructs a brief genealogy of the mechanical underpinnings of Victorian organicism lensed through the study of decay, which exposed the living system to physio-chemical processes that were automatic and unwilled, ensconced deathliness in the folds of vitality, and reconfigured the logic of a growth-based organicist history. With an eye toward the scalar implications of organicism, I argue that Butler's novel, written under the looming threat of Victorian mineral depletion, demands a reckoning with the extractive economies of inorganic history that, in turn, encourages us, to reimagine the hinge point between natural and cultural systems.

I. Dying Matter; Living Machines

In the standard narrative, the rise of organicism at the end of the eighteenth century marks the collapse of the Newtonian clockwork universe. This narrative of decisive break was given its seminal articulation in Michel Foucault's *The Order of Things* (1966), which presents the study of organic structure as an epistemological rupture that overturned the classical taxonomy of *visible* characteristic and replaced it

with a new science of *invisible* function. For Foucault, this turn to an invisible order led to a newly historical conception of nature. Only by wresting the organism from the temporally synchronous plane of visible resemblance could it enter "the great temporal current" of evolutionary time (275). Foreclosing the possibility of modes of historicity not tied to organic growth, it is unsurprising that Foucault insists that organicism resulted in "the radicalization of the dividing-line between organic and inorganic," producing the inorganic as "the inert, the unfruitful--death" (231, 232). If only the study of the living can produce history, then the nonliving must be exiled to the ahistorical domain of death.

One way to recouple the organism to inorganic history is to construct an alternative genealogy of organicism that attends to the lingering effects of atomism and mechanism. By atomism, I refer to ancient philosophies of elemental matter that gained new scientific and political significance the nineteenth century.[5] By mechanism, I refer to systems of natural philosophy that believed all phenomena could be explained in terms of natural laws (often characterized as reductionist and deterministic).[6] Granted, it is not self-evident that we should try to think these conceptual histories together. After all, not all mechanical philosophers were atomists.[7] Not all atomists were mechanical philosophers.[8] Nevertheless, the principles of atomism

and mechanism did often underwrite each other, and, in the case of the Victorian organism, they supported each other in the conception of the organism as reducible to elemental processes that were involuntary, automatic, and unwilled--processes not easily distinguished from mechanism.

Hence, T. H. Huxley's "On the Physical Basis of Life" (1868) attacked vitalism by insisting that the foundation of life was protoplasm, a wobbly jelly made up of a few chemical elements, "carbon, hydrogen, oxygen, and nitrogen, in very complex union" (143). In Huxley's formulation, atomism does not upend organic holism; instead, atomistic combination leads to "complex union." Moreover, Huxley's protoplasmic organicism transacts its unity through the decomposition of nonliving minerality: "under whatever disguise it takes refuge, whether fungus or oak, worm or man, the living protoplasm not only ultimately dies and is resolved into its mineral and lifeless constituents, but is always dying, and, strange as the paradox may sound, could not live unless it died" (145). Echoing Huxley's vision of living matter's dependence upon nonliving atoms, G. H. Lewes's *The Physical Basis of Mind* (1877) leads to a similar conjunction of organic growth and inorganic atomism routed through the operations of decay, such that, for Lewes, organized matter is "a synthesis of compositions and decompositions" (37). Operating at a microscopic scale, atomism

is woven into the cellular make-up of the Victorian organism through the fold of inorganic decay, challenging the idea that the organism must be freed from the nonliving matter in order to enter into historical time.

Indeed, Victorian organicism pointedly embraces mechanism at the scale of evolutionary time. In his 1858 essay, Alfred Russel Wallace compared natural selection to a machine: "the action of this principles is exactly like that of the centrifugal governor of the steam engine which checks and corrects any irregularities almost before they become evident" ("On the Tendency," 62). As the unique feature of the "centrifugal governor" is a feedback system to regulate engine speed, Wallace's metaphor shows how the idealization of organic nature--its capacity for homeostatic self-regulation--becomes increasingly indistinguishable from mechanism in the age of cybernetic steam.[9] Furthermore, while Darwin's tree of life and his entangled bank might seem quintessentially organic, it is worth pausing to consider the effect of opening the *Origin of Species* (1859) to find a prolix account of pigeon fanciers: Darwin's organic world is construed as epistemologically indistinct from the artificial world of domestication. Moreover, Darwin's Malthusian checks upon population operate as blind mechanisms that would be at home in a Newtonian universe if it were not for the randomization of chance mutations that upend

the idea of ordered design.[10] Rather than lapsing into ahistorical oblivion, atomistic combination and mechanical checks become the engines of organic evolution. In this way, Butler's *Erewhon* simply amplifies persistent contradictions in the history of Victorian organicism: all organisms, from the smallest blob of protoplasmic jelly to the largest aggregates of social history, can be viewed as living machines dependent upon the vitalizing effects of dying matter.

II. Mineral Histories

In "The Book of the Machines," the Erewhonian prophecies that lead to the prohibition of machines, Butler presents the competing views of two Erewhonian philosophers: the first predicts that machines will evolve to surpass and enslave humanity; the second speculates that humans will use machines to extend their powers. For the first, the organism is a machine, a body composed of tools; for the second, the machine is an organ, an extra-corporeal limb that extends the body. It is useful to bear in mind that, in ancient Greek, *organ* meant tool, and organs were initially viewed as the organic tools of animals--whereas tools were regarded as the artificial organs of humans.[11] As Deleuze and Guattari argue in *Anti-Oedipus* (1972), Butler carries these two competing theories to such an extreme point that he shatters both the organicist and the mechanist

arguments: he reveals "the interpenetration and direct communication between the small machines scattered in every machine, and the small formations dispersed in every organism: a domain of nondifference between the microphysical and the biological" (286). But rather than producing a domain of nondifference, I am interested in how the narrative draws our attention to mineral histories that ultimately produce a domain of scalar differences and discontinuities.

Before the narrator learns about "The Book of the Machines," the Erewhonian magistrate discovers that the narrator has an illicit object: a watch. The heinous nature of this offense is incomprehensible to the narrator who does not yet speak the language. Resorting to non-verbal communication, the magistrate takes the narrator to the town museum, which is filled with the ruins of Victorian steam culture, a heap of broken and rusted cylinders, pistons, flywheels, and cranks. The latest in Victorian mechanical technology appears to be hundreds of years old. This temporal displacement is incomprehensible to the narrator:

> The people had very little machinery now. . . They were about as far advanced as Europeans of the twelfth or thirteenth century; certainly not more so. And yet they must have had at one time the fullest knowledge of our own most recent inventions. How could it have happened that

> having been once so far in advance they were now as much behind us? . . . At last I concluded that they must have worked out their mines of coal and iron. (85)

Reading the signs of age manifest in the rusted machines, he attempts to create a coherent narrative by mapping a progressive mechanization onto a universal history of man. He presumes that he can compare and sequence the evolution of geographically distant societies based upon the mechanical expertise encoded in the historicity of rust. But his attempt to construct a linear, progressive narrative quickly becomes tangled: the rusted machinery refers back to an Erewhonian past that *had been* concurrent with the European present even as it points forward to an alternative Erewhonian future that *would have been* "far in advance" of the Europeans. Against this proliferation of heterogeneous histories, the depletion of the Erewhonian mines are represented as an irreversible process. Placed in the context of Butler's experiences in colonial New Zealand, the exhausted mines put a hard stop on the logic of settler colonialism: even the frontier's exploitable resources have their limits.[12] By positioning the stripped mines alongside the broken fragments of machinery, the narrative of progressive growth is forced to confront the limits of colonial expansion and the finite temporality of mineral exhaustion.

Indeed, the decade leading up to *Erewhon*'s publication was marked by intense public debate about coal exhaustion, as population growth and growing affluence put a new mineral spin on longstanding Malthusian fears.[13] In the interval between the publication of Butler's early sketch for the novel "Darwin Among the Machines" (1863) and *Erewhon* (1872), sanguine estimates of British coal supplies were sharply revised as coalfields came up against the rapacious scale of human consumption. In 1861, the geologist Edward Hull had projected that British coal reserves would last for "upwards of a thousand years" (*The Coal-fields of Great Britain*, 188). But, just two years later, in his 1863 Presidential Address to the British Association for the Advancement of Science, the Newcastle industrialist William George Armstrong announced that there was "much cause for anxiety" ("Address," liii). Predicting an increased rate of consumption of 2.75 million tons of coal per year, Armstrong arrived at a drastically reduced time frame: British coal mines would be exhausted in 212 years ("Address," liv). But this was not the worst prediction. William Stanley Jevons's *The Coal Question* (1865) unleashed widespread fears of scarcity, when his calculations produced an even shorter timeframe: "a century of our present progress would exhaust our mines" (214-15).

In speculating that the Erewhonian mines of coal and iron have been "worked out," the text positions the fantastical

question of machine evolution in relation to the real-world concerns of mineral futurity. Situated at the troubling nexus of imperial appropriation and ceaseless capitalist growth, the opening gambit of "The Book of the Machines" imagines machine evolution as the outgrowth of a reiterative, cyclical mineral evolution:

> There was a time, when the earth was to all appearance utterly destitute both of animal and vegetable life, and when according to the opinion of our best philosophers it was simply a hot round ball with a crust gradually cooling. Now if a human being had existed while the earth was in this state and had been allowed to see it as though it were some other world with which he had no concern, and if at the same time he were entirely ignorant of all physical science, would he not have pronounced it impossible that creatures possessed of anything like consciousness should be evolved from the seeming cinder which he was beholding?. . . Yet in the course of time consciousness came. Is it not possible then that there may be even yet new channels dug out for consciousness, though we can detect no signs of them at present? (198)

Instead of "in the beginning," the Erewhonian philosopher commences with "there was a time": such a time might be over,

but such a time might come again. This subtle rhetorical shift paves the way for another possibility: an iterative mineral evolution. If the evolutionary process runs from minerals to life, and from life to consciousness, why cannot consciousness arise *again* from the mineral realm? To support to his theory of machine evolution, the Erewhonian philosopher presents an array of arguments in favor of nonhuman consciousness: potatoes display cunning; pitcher plants are clever; and hen eggs are pieces of pottery. Forestalling objections that these displays of consciousness are only physiological responses, he urges us to consider: "whether those things which we deem most purely spiritual are anything but disturbances of equilibrium in an infinite series of levers" (201). Meanwhile, the second philosopher insists that machines are simply "extra-corporeal limbs" (223). For Deleuze and Guattari, Butler's doubled rhetoric shatters the organicism-mechanism debate. But what happens when we read machine evolution back into the history of mineral exhaustion this essay has been tracing?

Tellingly, the idea that machine evolution might be an iterative mineral evolution--a new phase of mind in the history of metallurgic development--is rhetorically figured through an alienated human observer, who must step outside history and gaze upon the earth "as though it were some other world with which he had no concern" (198). Positioned as an extraterrestrial

observer with no knowledge of "physical science," the nightmare of machine evolution is really a displaced capitalist dream that constructs a place outside inorganic history, outside physical science, outside the finitude of resource depletion to imagine an endlessly reiterative mineral evolution. In this way, the novel's satirical sendup of machine evolution points to the ways in which organic historicity bypasses the extent to which nineteenth-century knowledge production was mediated by modes of imperial extraction, technological instrumentality, and physio-chemical materiality that—far from revealing the inorganic as ahistorical—demonstrates the volatile and violent co-evolution of organic and inorganic history.

III. Inorganicism

Despite my insistence that mechanism offers one way to read inorganic history back into organic form, I do not think we should try to resolve the tension between organicism and mechanism. Admittedly, one of Timothy Morton's (many) critiques of organicism rests upon the fungibility of "parts" in both organic and mechanical systems: "organicism is a form of mechanism, with soft components. The parts of an organic whole are replaceable: holism cares not a jot for unique objects" (*Realist Magic*, 172).[14] But Morton's critique of organicism--its totalitarian disregard for individuality--performs the elision

it seeks to critique: it elides the domain of differences this essay has been trying to open between the appropriative and violent inorganic economies that underpin organic systems and the metaphors that try to contain their holistic development.

If the organic metaphor has been used to lubricate the hinge point of natural and cultural systems, then, perhaps, the socio-political and ecological imperative is not to facilitate the easy passage between dissimilar components, but rather to slow down our thinking enough to attend to the discrepancies and disturbances that wrench at the seams of wholeness.[15] Accordingly, I am suggesting neither a substitution of mechanism for organism, nor a sublimation of the inorganic into a "vibrant" materiality.[16] Like Dana Luciano and Mel Chen's approach to queering the nonhuman turn, I propose that the task of investigating inorganic history is not to examine how the categories of organic and inorganic melt away, "but how those categories rub on, and against, each other, generating friction and leakage" ("Has the Queer Ever Been Human?" 186).

"Inorganicism"--an ungainly formulation meant rub against its organic other--points to the ways in which "organicism" is clasped and surrounded by an inorganic reality that it continually metabolizes in its holistic perpetuity. It is also meant to be read in a historical register: the disturbances of *in*organicism are happening *in* the historical episteme of the

organism and its corollary social imaginaries. Given the persistent allure of organicism for both sociological and environmental thinking, inorganicism might allow us to rethink the hinge of social and cultural systems in a moment when models of political collectivity seem to be buckling and failing daily. If organicism's centralized totality has been faulted for lending itself to authoritarian regimes, it might be wise to consider how the atomism of inorganicism would seem to rests upon a knife's edge: it may lead to neo-liberal fantasies of individual pursuit maximizing social wellbeing, or it may produce forms of accretive assemblage uniquely responsive to the exigencies of historical crisis.

NOTES

1. The body of scholarship on organicism is vast. Key sources that have informed my thinking include: Richard, *The Romantic Conception of Life*; Gigante, *Life*; Mensch, *Kant's Organicism*; and Haraway, *Crystals, Fabrics, and Fields*.

2. For Kant's epigenetic critique of mechanism, see Mensch, *Kant's Organicism* pp. 1-15. For epigenetic organicism in British Romanticism, see Gigante, *Life*, pp. 12-45. For the influence of Spencer, Comte, and Lewes's organicism on Victorian science and literature, see Shuttleworth, *George Eliot and Nineteenth-Century Science*, pp. 1-21.

3. Writing against the Marxist critique of its political conservativism, Kucich rereads organicism's paternalism as a forerunner to state-sponsored corporatism and the emergence of the welfare state. See Kucich, "The Organic Appeal" and "Organicism."

4. For an overview of the persistence of mechanism in modern science, see Riskin, *The Restless Clock*, pp. 1-10. For an earlier articulation of "neo-mechanism" in the nineteenth century, see Schofield, *Mechanism and Materialism* pp. 235-98.

5. For the influence of Lucretian atomism on Romantic and Victorian literature, see Goldstein, *Sweet Science* pp. 1-34; Priestman, "Lucretius in Romantic and Victorian Britain"; Turner, "Lucretius Among the Victorians"; and Mershon, "Ruskin's Dust."

6. For mechanism's "demise" in relation to the problem of living/nonliving matter, see Gaukroger, *The Collapse of Mechanism* pp. 331-84.

7. René Descartes was a mechanical philosopher who rejected atomism. See Hattab, *Descartes on Forms and Mechanisms*, pp. 85-119. More broadly, the seventeenth-century corpuscular school of mechanism is usually seen as breaking with atomism. See Thompson, *Fictional Matters*, pp. 1-25.

8. For example, Goldstein's *Sweet Science* demonstrates how the Romantic revival of Lucretian atomism was allied to a poetics of life, as opposed to a philosophy of mechanism.

9. Self-regulation is a defining feature of cybernetics. See Hayles, *How We Became Posthuman*, p. 7.

10. For Darwin's complicated relationship to mechanism, see Riskin, pp. 214-49. For an earlier account of Darwin's end to "the opposition between mechanism and organism," see Gillispie, pp. 388-409.

11. See Forster and Burkett, "The Dialectic of Organic/Inorganic Relations," p. 408.

12. I am drawing on Moore's idea that frontiers are essential to the "cheap nature" that drives capitalism: capitalism is "a system that consumes unpaid natures as a condition of its existence," requiring "an endless frontier process" (125, 107).

13. For the Malthusian dimension of the coal exhaustion debates, see Jonsson, "The Coal Question Before Jevons."

14. Morton's critique of organicism is a persistent strain in his ecological writing. In *The Ecological Thought*, he censures organicism for being "ultimately authoritarian" (23), while in "Queer Ecology," he simply declares that "organicism is not ecological" (278).

15. For an excellent critique of organic wholeness and a plea for more "open" ecological thinking, see Griffiths and Kreisel, "Introduction: Open Ecologies," pp 1-20.

16. For a discussion of "vibrant" matter as distinct from mechanism and vitalism, see Bennett, *Vibrant Matter*, pp. 62-81. For a critique of the ontological turn and its participation in the logic of settler colonialism, see Rosenberg "The Molecularization of Sexuality."

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