TRANSHUMANISM, *FRANKENSTEIN*, AND EXTINCTION

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Shelley's novel has been fertile ground for ecocritics over the last two decades. In Ecocriticism and the Idea of Culture *(2014, 2016) I wrote about* Frankenstein *and culture's dialectical horror of nature. As a narrative of failed continuity,* Frankenstein *also exhibits our fear of culture, its machine determinism, of monstrous production in place of sustainable reproduction. Victor, the isolated, compulsive scientist is not unlike the figure of the lone programmer, coding for the "enhanced" human or cyborg of his uncritical posthuman dreams. Our world and its problems demonstrate that* Frankenstein *continues to be a prescient novel: before Darwin's theory of evolution, and long before genetic modification and what we call information technology, Shelley imagined the creation of a being as an assemblage of contingent "natureculture" in a bildungsroman that juxtaposes its creator's. While the novel invites us to consider the political promise of the monster (as I've argued elsewhere), it is also a commentary on the dangers of solitude, the dangers of failing to honour the social and ecological contingency, the entanglement, of all things in the pursuit of knowledge.*

This year marks an anniversary. It is Karl Marx's 200th birthday. It is also, of course, the 200th anniversary of Mary Shelley's world-shaping story about the construction of a new species from the raw materials of humanity. Shelley's novel[1] has been fertile ground for a wide variety of cultural narratives, for plays, films, and television, and for discourses about science, new technology and its implications. For literary critics, the novel has become increasingly important in the last few decades. Ecocriticism, as well as science and animal studies, have

[1] All quotations from *Frankenstein* in this article follow the text of Mary Shelley, *Frankenstein or The Modern Prometheus, The 1818 Text*, ed. Marilyn Butler (Oxford and New York: Oxford University Press, 1994, 1998). Subsequent page references appear in parentheses in the text.

used the novel as a tool for thinking about everything from the implications of microtechnology, such as gene editing and nanorobotics,[2] to the ontological horizon of the Anthropocene.

In *Ecocriticism and the Idea of Culture*,[3] I wrote about *Frankenstein*'s expression of culture's dialectical horror of nature.[4] The drive for technological innovation may be seen as an extension of or reaction to this horror; while such progress attempts to keep entropy at bay, it may also become its servant. As a narrative of failed continuity, *Frankenstein* also exhibits our fear of capitalist culture and its machinic determinism, of monstrous production in place of reproduction and sustainability. Victor Frankenstein, the isolated, compulsive scientist is not unlike the figure of the lone programmer, coding for the "enhanced" human (cyborg or downloaded-consciousness) of his uncritical posthuman dreams.

Our world and its problems demonstrate that *Frankenstein* continues to be a prescient novel: long before the publication of Darwin's or Wallace's theories of evolution, long before information technology and genetic modification, Shelley imagined the creation of a being as an assemblage of contingent nature-culture in a bildungsroman that parallels its creator's own contingent *Bildung*. While the novel invites us to consider the political promise of the monster, it is also a

2 "A nanorobot, then, is a machine that can build and manipulate things precisely at an atomic level. […] While some people dismiss the future of nanorobots as science fiction, you should realize that each of us is alive today because of countless nanobots operating within each of our trillions of cells. We give them biological names like a 'ribosome,' but they are essentially machines programmed with a function like 'read messenger RNA to create a specific protein.'" Peter H. Diamandis, "Nanorobots: Where We Are Today and Why Their Future Has Amazing Potential," *SingularityHub*, 16 May 2016, https://singularityhub.com/2016/05/16/nanorobots-where-we-are-today-and-why-their-future-has-amazing-potential/#sm.00000beqsxfgnlcx0ryxlm01hpz0d (accessed 3 November 2018).

3 Helena Feder, *Ecocriticism and the Idea of Culture: Biology and the Bildungsroman* (London: Ashgate, 2014).

4 The environmental context of the novel's composition is registered in *Frankenstein* as "culture's terror of nature's agency – of oceans and ice, storms and jagged peaks" (Feder 73). The storm scene in which Victor sees the monster in the Alps, following William's murder, is significant not only because it is drawn from Shelley's time in the region (recorded in *History of a Six Weeks' Tour*), but also because it links the power and agency of nonhuman nature to the person of the monster. "[… C]onnections between nonhuman nature and the produced body of the monster surface in the monster himself: a nonhuman creature and a product of human culture" (Feder 73). *Frankenstein* registers this terror of nonhuman agency as, in part, the humanist anxiety of objectification (such as Victor's horror at being the object of his creature's gaze).

commentary on the dangers of failing to care for social and ecological contingency, the entanglement of all things – knowledge as well as agents – in the pursuit of knowledge. The radical potential of the monster turns two ways: he is both a nonhuman agent, working against the forces from which he was made, and a warning about the way in which technological development often functions in this culture, reducing the human and the nonhuman to the raw materials of capitalist (re)production. However myopic or utopian the intentions of its creators, this 'progress' is always part of the ongoing consolidation of power that makes such advancement possible. As Marx had it, there is no innocence within capitalism.

In 2017 an unusual reading of the novel appeared in the journal *BioScience*. In this article, based on a mathematical model of the consequences of the population growth of the monster's progeny, Nathaniel J. Dominy and Justin D. Yeakel argue that Frankenstein's decision not to finish a female monster, while impulsive, was

> preceded by agonized reasoning that would be familiar to any student of ecology or evolutionary biology. Here, we present a formal treatment of Frankenstein's reasoning and show that his rationale for denying a mate to his male creation has empirical justification. Our results suggest that the decision was prudent because it averted our own extinction by competitive exclusion. We conclude by suggesting that the central horror of Mary Shelley's novel lies in its prescient command of foundational concepts in ecology and evolution.[5]

In an interview-article in *Phys.org*,[6] the authors of this study argue that although the notion of "competitive exclusion" didn't emerge until the 1930s, Shelley understood the concept; based on 1816 population densities, "'[w]e calculated that a founding population of two creatures could drive us to extinction in as little as 4,000 years,' said Dominy." This central horror, the recognition of human vulnerability, of our lives as animals in complex ecosystems with other creatures, is connected in the novel to the more horrifying realization: the Pyrrhic outcome of the technological truncation or transcendence of nature. If it were a joke, it

[5] Nathanial J. Dominy and Justin D. Yeakel, "Frankenstein and the Horrors of Competitive Exclusion," *BioScience*, 67.2 (2017): 107.

[6] "How Frankenstein Saved Humankind from Probable Extinction," https://phys.org/news/2016-10-frankenstein-humankind-probable-extinction.html, 28 October 2016 (accessed 3 November 2018).

might almost be funny ('if nature doesn't get you, culture will,' or Woody Allen's version of this idea: "I am at two with nature.").

Again, quite aside from the intentions of scientists and engineers themselves, technological innovation is often isolated or isolating; although much of this work is undertaken by groups in labs or corporate compounds, as opposed to an individual in a gothic tower, these are often socially, culturally circumscribed worlds within worlds. By its very nature it is unseen by the world at large (until completed or commodified) and so, in a sense, *unseeing*, just as Victor seems completely unaware of the nature or meaning of what he produced until it opens its eyes and *looks back* at him (and he flees in horror, of his monster, of himself[7]). This isolation, *Frankenstein* suggests, may blind the creators of new technology to any potential social and ecological consequences. And perhaps to the value of social and ecological life in general.

The nested structure of Shelley's novel, with narrations embedded within narrations, conversations within conversations themselves recorded and forwarded through letters from the Arctic explorer Robert Walton to his sister, Mrs. Margaret Saville,[8] calls attention both to the profound isolation of its central characters and the emotional, intellectual, and ecological importance of social affiliation. Walton, our frame narrator, longs for a friend to share his thoughts and adventures; our middle narrator, Victor, isolates himself from his loving family and his academic community in his attempt to transcend the boundaries of life and death with the creation of his monster; and our most embedded narrator, the monster himself, is the loneliest of all, the only one of his kind in all the world, spurned by humanity, desperately longing for a parent, friend, or

7 "It was already one in the morning; the rain pattered dismally against the panes, and my candle was nearly burnt out, when, by the glimmer of the half-extinguished light, I saw the dull yellow eye of the creature open; it breathed hard, and a convulsive motion agitated its limbs. How can I describe my emotions at this catastrophe, or how delineate the wretch whom with such infinite pains and care I had endeavoured to form? His limbs were in proportion, and I had selected his features as beautiful. Beautiful! – Great God! His yellow skin scarcely covered the work of muscles and arteries beneath; his hair was of a lustrous black, and flowing; his teeth of a pearly whiteness; but these luxuriances only formed a more horrid contrast with his watery eyes, that seemed almost of the same colour as the dun white sockets in which they were set, his shrivelled complexion, and straight black lips […]. Unable to endure the aspect of the being I had created, I rushed out of the room, and continued a long time traversing my bedchamber, unable to compose my mind to sleep" (38-39).

8 As many have noted, this 'audience' has the same initials as the author (Margaret [Walton] Saville – Mary Wollstonecraft Shelley).

mate. The only character to survive the narrative is Victor's brother, and former pupil, Ernest, the one set on a path of relationality; as Elizabeth had it, Ernest was to become a farmer.

As I've written elsewhere, for Victor, his intended wife, Elizabeth Lavenza, "embodies domesticated nature, a space of absence cultivated with human presence"[9]: "The world was to me a secret, which I desired to discover; to her it was a vacancy, which she sought to people with imaginations of her own" (21). Here Victor attributes to Elizabeth a quality of his own, denying in himself and in his work the relationship between knowledge and oppression, between aspects of the Enlightenment project and imperialism, patriarchy, and racism (it is Victor, after all, not Elizabeth, who seeks to "people" the world). Victor's characterization of Elizabeth also suggests that, to some extent, Victor viewed her world as empty, rather than the other way around; Elizabeth never says anything herself (in Victor's retelling) that would support his view of her relationship to nature. In fact, the pieces of remembered conversation Victor narrates suggest otherwise, such as her opposition to the elder Frankenstein's plans for Ernest Frankenstein to become a lawyer. Again, it is Elizabeth who suggests that Ernest should become a farmer, because "he is continually in the open air, climbing the hills, or rowing on the lake […]. A farmer's life is a very healthy happy life; and the least hurtful, or rather the most beneficial profession of any" (45). As Anne K. Mellor argues, Elizabeth's plan for Ernest demonstrates a commitment to an ethic of mutual dependence and cooperation.[10] Far from viewing the world as empty, Elizabeth sees the world as a presence, a partner in the project of life. Unlike Victor, Elizabeth seems to strive for harmony with nature rather than the pursuit of nature "to her hiding places" (36). For this reason, Victor's choice of the word "vacancy" in this context is particularly telling.[11]

[9] Feder 59.

[10] Anne K. Mellor, "Possessing Nature: the Female in Frankenstein," *Frankenstein: The 1818 Text, Contexts, Nineteenth-century Responses, Modern Criticism*, ed. J. Paul Hunter (New York: Norton, 1996) 284.

[11] A word choice that I discuss in Feder 60, echoes the key ontological problem of Percy Shelley's "Mont Blanc," originally published in *History of a Six Weeks' Tour*: "And what were thou, and earth, and stars, and sea, / If to the human mind's imaginings / Silence and solitude were vacancy?" (P.B. Shelley, "Mont Blanc" [142-44], P.B. Shelley and Mary Shelley, *History of a Six-Weeks Tour* 1817, facsimile edition [Otley: Woodstock Books, 2002] 183). There are several readings of the novel that foreground Victor's usurpation or negation of the female role in reproduction (one way to read his projection of "vacancy"), including Katerina Kitsi-Mitakou's conclusion: "*Frankenstein* exterminates all traces of female reproduction" (Katerina Kitsi-Mitakou, "'None of

Victor's creature is truly a monster "turned loose upon society" (170) – indeed, he embodies the social consequences of a culturally-produced antisocial pursuit (a contradiction that only deepens: this abandoned creature longs for society more than anything else, a need Victor cannot fulfil if he is to preserve human societies). As Victor warns Walton, "If the study to which you apply yourself has a tendency to weaken your affections […] then that study is certainly unlawful, that is to say, not befitting the human mind" (37). Or, as Victor has it later, "A selfish pursuit had cramped and narrowed me" (51). Destruction, or "evil," is as banal here as Arendt had it: an inability to see one's self, one's actions, in a larger context.[12] Humans are social animals; we not only need to be with others physically to keep our actions in perspective, to maintain an ethical balance, we need to keep the existence of others in mind, to be with them emotionally. Even the monster, who repeatedly bemoans his isolation, claims in his first conversation with Victor, "My vices are the children of a forced solitude that I abhor" (121). For Victor and his double, it is solitude that is unnatural. And yet, as Victor narrates to Walton a few pages later, following his conversation with the monster, he "took refuge in the most perfect solitude. I passed whole days on the lake alone in a little boat, watching the clouds, and listening to the rippling of the waves, silent and listless" (124). This form of "solitude" is different from the one Victor embraced in Ingolstadt[13] to make his monster, and his immersion in solitude on a near-barren rock, "on one of the remotest Orkneys," to create a female for his monster "ungazed at and unmolested" (136). And it is different, again, from the even more isolated, uninhabitable place he, and the monster, end up – the Arctic, where Victor dies and the monster disappears, "borne away by the waves, and lost in darkness and distance" (191).

On the lake Victor is, as one might say in the nineteenth or twentieth century, "communing with nature," something we do far less in the twenty-first, according to a study funded by the Nature Conservancy: "From backyard gardening to mountain climbing, outdoor activities are on the wane as people around the world spend more leisure time online or in front of the tube […]

Woman Born': Colonizing the Womb from Frankenstein's Mother to Naomi Mitchison's Clone Mums," *Biotechnological and Medical Themes in Science Fiction*, ed. Domna Pastourmatzi [Thessaloniki: University Studio Press, 2002] 211).

12 See, e.g., Hannah Arendt, *The Life of the Mind: The Groundbreaking Investigation on How We Think* (New York: Harcourt, 1978) 49-51 and *passim*.

13 Now, of course, a marketing ploy if not a tourist attraction: https://www.ingolstadt-tourismus.de/en/tourist-information/unique-to-ingolstadt/frankenstein.html (accessed 3 November 2018).

'Videophilia has been shown to be a cause of obesity, lack of socialization, attention disorders and poor academic performance.'"[14] In this scene, nature is not "vacant" (as Victor may have consciously or unconsciously perceived it before); truly "silence and solitude" in this context are *not* vacancy (as "Mont Blanc" suggests). Does Victor return to a sense of his own embodiment and ecological embeddedness? His continuity with and within a large more-than-human community? His father tells him that he seems "to be returning to yourself. And yet you are still unhappy, and still avoid our society. [… But] if it is well founded, I conjure you to avow it [… or] draw down treble misery on us all" (124-25). In what follows, it becomes clear that Victor's father is referring to his upcoming marriage with Elizabeth and his fear that perhaps Victor is avoiding their society because he views her as a sister and not a future wife. But his first statement hangs ambiguously in the narrative, causing Victor to tremble "violently" (125). Victor, as we know, has good reason to avoid human society (Elizabeth might well have been spared had he not married her) even as it was his isolation that enabled his solipsistic technological innovation in the first place.

Just as consciousness is an emergent property of human gene-culture-environment co-evolution, the recursive nature of some technology creates a vicious cycle. Aside from any immediate foreseen or unforeseen social and ecological consequences, certain technologies both create a distinctly new, divergent future for humanity and commit us to a form of repetition: a spiraling trajectory. Victor's entanglement with his monster is an embodiment of this phenomenon: isolation produces further, deeper isolation. Some technology creates new versions of the problems it was made to solve, needs it cannot fulfill. In this case, composing a new species from the raw material of humanity, with either a view to defeating death or to remaking our species, only leads to death. For readers, one hopes, a more profound sense of human contingency and vulnerability, social and ecological embeddedness. Perhaps the most horrifying thing about *Frankenstein* is that this has not lately been the case.

Frankenstein is a novel of failed continuity, one which depicts and critiques this tragedy. Equally, Victor is an *uncritical* posthumanist.[15] And so are some of

[14] "Communing With Nature Less And Less," *ScienceDaily*, 5 February 2008, www.sciencedaily.com/releases/2008/02/080204172316.htm (accessed 3 November 2018).

[15] "The belief that technological development, as a unified generative force, will enable human life to 'evolve' indefinitely promotes a view of humans as, paradoxically, inherently outside and above the rest of nature. This view of technology and the material world fuels and is fueled by the enterprises of late capitalism, from monocropping and factory farming to the genetic modification and creation of organisms (such as Craig Venter's new bacteria). As one recent article on Mary

Shelley's readers. Mladen Jakovljević is not alone when he observes that *Frankenstein* contains a "prophetic image of the posthuman."[16] Catherine Waldby, for example, seems to celebrate the novel's prescience:

> Shelley takes the first fictional step towards understanding what artificial life and artificial intelligence might mean. *Frankenstein* has become the archetypal techno-monster story in part because of this prefigurative power, its anticipation of the potentials of science to create new forms of life.[17]

Interestingly, Waldby argues *Frankenstein* describes and prefigures "a world in which the human body and human sociality owe a greater and greater debt to technoscientific and machinic systems,"[18] without giving weight to the way in which the novel records the breakdown of human sociality at the hands of those "technoscientific and machinic systems." That is where the novel is truly prescient, where it prefigures a social "debt" not unlike the debt of colonization levied onto the colonized by global neoliberal capitalism.

Despite the advent of what might be more aptly termed anti-social networks and media, the human trafficking and exploitation facilitated by the "dark web," the rise of what Vandana Shiva aptly terms "biopiracy,"[19] and the increasing consolidation of material and political power over human and nonhuman life through technoscientific systems generally, when some readers and critics refer to the novel as "prophetic," they actually mean it positively. Jay Clayton notes the way in which "a few influential writers and artists have begun to interpret Shelley's tale of a modern Prometheus as promising things they would like to see

Shelley's novel suggests, it is just this kind of technological intervention at issue in *Frankenstein*. One might even say that Victor Frankenstein is an *uncritical* posthumanist. Both *Candide* and *Frankenstein* problematize systematic rationalism; as narratives of individual human development, they speak to the humanist notion of development itself, and its (technological) trajectory" (Feder 51).

16 Mladen Jakovljević, "Do Androids Dream of a Modern Prometheus?" *Rethinking Tradition in English Language and Literary Studies*, ed. Željka Babić, Tatjana Bijelić and Petar Penda (Newcastle upon Tyne: Cambridge Scholars Press, 2017) 169.

17 Catherine Waldby, "The Instruments of Life: *Frankenstein* and Cyberculture," *Prefiguring Cyberculture: An Intellectual History*, ed. Daren Tofts, Annemarie Jonson and Alessio Cavallaro (Cambridge, MA: MIT Press, 2002) 29.

18 Waldby 29.

19 Vandana Shiva, *Biopiracy: The Plunder of Nature and Knowledge* (Boston: South End Press, 1999).

happen in real life."[20] And then there are scientists. Clayton cites two radical proponents of AI, "Hans Moravec, founder of the world's largest robotics program at Carnegie Mellon University, and Rodney A. Brooks, director of the MIT Artificial Intelligence Laboratory," who not only "share a fundamental belief that the future belongs to silicon rather than carbon-based life forms," but "welcome the idea of a new species supplanting humanity entirely."[21] Clayton sees the utilitarian view of Moravec and Brooks as of a piece with the "stern rationalism advocated by Shelley's father, William Godwin, to whom she dedicated *Frankenstein*."[22] Yet, over and over, the novel warns against such rationalism, reason disconnected from social feeling (sympathy, empathy), needs, and responsibilities. When thought and feeling aren't artificially separated, and *separated from others*, it's harder to rationalize violence, to pursue an end without any thought of the costs to others.

A consideration of the compartmentalization of thought and feeling, or of knowledge itself (and indeed this consideration of *Frankenstein* at 200) would not be complete without a word about "STEM." In her January 2018 blog, "Frankenstein Is about Us Not STEM," sociologist of science Brigitte Nerlich claims the novel is "not about science, or more importantly is not about *flawed* science," but "about creatures."[23] Surely the novel is "about" all of these things. Nerlich argues that the two new editions of the novel (brought out for the 200th anniversary) operate, to varying degrees, on what she disparagingly calls "the deficit model": the idea that scientists and engineers have a deficit in ethical reasoning that must be remedied through education. Without driving a pitchfork through the heart of STEM,[24] this oversimplification is countered by contextuali-

20 Jay Clayton, "*Frankenstein*'s Futurity: Replicants and Robots," *The Cambridge Companion to Mary Shelley*, ed. Esther Schor (Cambridge: Cambridge University Press, 2003) 85. Clayton continues: "This development takes two forms: first, revisions that explore genetic and reproductive technology; second, those that reimagine *Frankenstein* in a world of cyborgs, artificial intelligence (AI), artificial life (AL), and robotics" (85).

21 Clayton 94.

22 Clayton 94.

23 Brigitte Nerlich, "Frankenstein Is about Us Not STEM," University of Nottingham, 19 January 2018, http://blogs.nottingham.ac.uk/makingsciencepublic/2018/01/19/frankenstein-us-not-stem (accessed 20 May 2018).

24 STEM is, after all, a monster of Frankensteinian proportions, made from the raw materials of scientific inquiry and the idea of the university. Like Victor's poor monster, its existence threatens that from which it has been made (but unlike Victor's monster, less sympathetically). These are hard times for the 'unapplied' sciences and the humanities. They're attacked ideologically, defunded by state legislatures, and forced to adapt to the business model of 'education.' See, for example, A.S., "Humanities

zation: in late capitalism, we all *suffer* from a deficit of ethical reasoning; global neoliberalism embodies and cultivates this deficit in ethical reasoning. It does so in part through the compartmentalization of knowledge and the prioritization of those lines of inquiry which may be commodified ("applied" sciences and technological development). As the philosopher of science Rebecca Newberger Goldstein argues, science is very good at describing the world, but we need the humanities to interpret or give it meaning.[25] Science needs to be part of a much broader cultural inquiry into the nature of what it means to be human animals in a world of complex assemblages of human and nonhuman natures, as well as animals and ecosystems that require space free from humans and human-made things (from depleted uranium to microplastics).

Unlike many current, scientifically-minded arguments for the novel's prescience, Shalon Noble's reading of the monster as "a figure for thinking through a *new nature* formed through human intervention: the Anthropocene"[26] recognizes the duality of the monster's radical nature.[27] As the "spirit of the

Students: An Education: How Many Students of the Humanities Are Needed?" *The Economist*, Free Exchange, 1 February 2010, https://www.economist.com/free-exchange/2010/02/01/an-education (accessed 3 November 2018).

25 Andrew Anthony, "Rebecca Newberger Goldstein: 'Science is our best answer, but it takes a philosophical argument to prove that,'" *The Guardian*, 19 October 2014, https://www.theguardian.com/books/2014/oct/19/rebecca-newberger-goldstein-interview-science-philosophy-plato-googleplex (accessed 3 November 2018): "'There are two kinds of questions,' she says. 'What is? and What matters? And when it comes to descriptions of reality, ontology, I do think that science is our best answer, but I think it takes a philosophical argument to prove that. It's an epistemological argument. You have to argue for scientific realism against instrumentalism, and that's all philosophical stuff. But the upshot is that science provides the best description of what is: it's energy and matter and genes and neurons. That's what reality consists of. But the realm of philosophy is in trying to reconcile what science is telling us – which is why philosophers have to know science – with other intuitions we have, without which we can't make sense of our lives."

26 Shalon Noble, "An Uncertain Spirit of an Unstable Place: *Frankenstein* in the Anthropocene," *Romantic Ecocriticism: Origins and Legacies*, ed. Dewey W. Hall (Lanham, MD: Lexington Books, 2016) 124.

27 Noble 123-24: "Ecocritically, Romanticism has held a privileged place since its historical moment coincides with the Industrial Revolution, often read as the advent of the modem world as we know it. That the two moments coincide is no coincidence; a cornerstone of Romanticism is its bearing witness, often explicitly, to the radical potential for change, for better or worse, inherent in the scientific and technological advances of its time. […] Mary Shelley's *Frankenstein* stands out as one of the most thorough Romantic engagements with contemporary science, since Shelley situates the

Anthropocene," he is "himself the very transgression that a conventional genius loci would warn against" – but he "does not simply warn against transgression, however, for he represents a nature already transgressed against. In the Anthropocene, the transgressive genius loci demands community with the transgressor."[28] Noble is right to point out that, like Victor and his monster, the future of humanity and the Anthropocene are interdependent; but the dis-ease, the generative force of technological capitalism he carries (the inescapable potential of his existence against social and ecological health), cannot be cured by "engaged sympathy" with the patient alone (as Noble suggests), though the lack of such sympathy among humans and with nonhuman others seems a source of the illness in the first place.[29] The future of *many* other species is, sadly, not interdependent with the Anthropocene: the Anthropocene precludes their futures altogether. This is what we call the Sixth Mass Extinction.

The genii (or genius loci) cannot be put back into the bottle; there is, as we all know, no going back. The monster stands both for and against the combined forces which made him – nature *and* culture. Yes, "[i]n the Monster, nature has re-wilded, appearing strange with an agency that defies human efforts to contain it."[30] But the horror is that technological capitalism has "wilded" too, and not in ways which are sustainable for other natures and cultures. Unsurprisingly, *Frankenstein* itself has become wild in the vast landscape of culture, as meme, narrative, and genie, generating both critiques and celebrations of the pursuit of

work within the contemporary landscape of scientific discovery. The preface (written by Percy Shelley) to the 1818 edition opens with an appeal to 'Dr. Darwin, and some of the physio-logical writers of Germany' to support the idea that the events of the novel are 'not of impossible occurrence.' […] Such scientific approaches to *Frankenstein* coincide with the industrial reading of the novel in which a mad scientist's hubristic desire for domination over nature leads to devastation: for himself, his loved ones, and potentially for all of humanity. In this industrial reading, *Frankenstein,* like many Romantic texts, reacts against the dangerous interventions into nature that its author witnessed around her. It is commonplace now to speak of Romanticism and industrialism together, reading in Romanticism a reaction against the 'dark Satanic Mills' (à la Blake) of contemporary industrial advance. While *Frankenstein* clearly engages the anxieties of its present moment, anxiety is, of course, not bound by the present; anxiety anticipates what might be. […] I read the Monster ecologically as a trope or figure for the future and its monstrous promise. The figure for Shelley's future is the figure for our present." My emphasis and conclusions differ, but this is an insightful, timely reading of the novel.

28 Noble 131-33.

29 Noble 135.

30 Noble 134.

transcendence (of human sociality, the ecological community, or the material conditions of life). As part of the cultural imaginary, it is also a place from which science itself, its ambitions and achievements, may originate: as Jasia Reichardt points out, while *Frankenstein* "has passed into general mythology," and new, transgenic animals "have become an industry."[31]

The form of thought is the form of the social;[32] 200 years after its initial publication, *Frankenstein* is a culturally pervasive shorthand for framing fear and desire in terms of the antinomies of freedom and determinism. What, then, does it mean that we keep dreaming of forms of disembodiment that arise from and threaten to destroy the social itself?[33] That Transhumanists invest untold amounts of money in the pursuit of 'immortality' or the 'evolution' of the species through cyborgs or the cloud? It reflects the crisis levels of income inequality and ecological degeneration of late capitalism; it reflects a struggle to continue to find meaning in a world more technologically mediated and corporately controlled than ever before; it reflects our enduring need for feelings of immediacy which we experience as *belonging*. As a real world of self and others, in which their complex interrelations, their mutuality and contingency, matter. And on this year which also marks the 200th anniversary of Marx's birth, capitalism remains, like Frankenstein's enduring monster, a mechanism by which society consumes itself (and the idea of itself). Our thoughts on form – on embodiment, evolution, and extinction – are indeed also our thoughts about (and in capitalism, our rational fears of) the social.

31 Jasia Reichardt, "Artificial Life and the Myth of Frankenstein," *Frankenstein, Creation, Monstrosity*, ed. Stephen Bann (London: Reaktion Books, 1994) 136, 146.

32 As my friend Neil Larsen is fond of saying.

33 A question I will take up again in another article, on *Frankenstein*'s recombination/ reincarnation in a recent novel by Michel Houellebecq.