

Dracula's Cold-Chain

SUSAN ZIEGER 

University of California, Riverside, United States

HALFWAY through F. W. Murnau's *Nosferatu* (1922), Jonathan Harker watches in amazement as Count Dracula loads coffins onto a horse-drawn cart at superhuman speed. The vampire then leaps into the last coffin, and through the optical trick of reverse motion, the lid floats upward into place, sealing him in. Driverless, the horses set off. This amusing cinema-of-attractions moment preserves one of the themes of Bram Stoker's 1897 novel that has all but disappeared from subsequent vampire cinema: logistics. Not only does the text painstakingly document Dracula's transshipment of boxes filled with his native earth, but it also makes this strange cargo crucial to the vampire's un-dead condition. Logistics is the science and art of moving goods, people, and information efficiently to maximize profit; though it has become synonymous with the rise of the shipping container, its history is as old as trade itself. At the end of the nineteenth century, the ancient human action of loading and shipping boxes became part of a globalizing network of refrigerated supply chains and transoceanic shipping. Stoker's recording of now-humdrum transportation details befits the novel's characteristic mingling of ancient ritual and modern technological magic; Murnau captures it in the seemingly automated loading of a driverless horse cart. But this novel's true logistical marvel, appearing briefly as a detail but orchestrating the plot and governing the vampiric mythology, is what we now call "the cold-chain": the temperature-cooled supply and distribution network that was imbuing the times, spaces, and aesthetics of human life with "un-death."¹

Anyone who has tracked a package from a fulfillment center will recognize the logistical plot of *Dracula* (1897). The count packs himself in one of fifty boxes of Transylvanian soil, shipping them all to Whitby, where the Russian consul pays the wrecked *Demeter's* harbor dues, and

Susan Zieger is professor of English literature at the University of California, Riverside, and the author, most recently, of *The Mediated Mind: Affect, Ephemera and Consumerism in the Long Nineteenth Century* (Fordham University Press, 2018). She is the co-editor of *Assembly Codes: The Logistics of Media* (Duke University Press, 2021) and *The Aesthetic Life of Infrastructure: Race, Affect, Environment* (Northwestern University Press, 2022). Her forthcoming book is *Supply Chain Stories: How Logistics Shapes Modernity*.

Victorian Literature and Culture, Vol. 52, No. 2, pp. 355–374.

© The Author(s), 2024. Published by Cambridge University Press. This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

doi:10.1017/S1060150323000955

a local transporter retrieves the boxes and sends them to London by rail, with instructions to the last-mile delivery person to cart them to Carfax. From there, the vampire sends them to Bermondsey and Mile End. Jonathan Harker, interviewing the moving men, traces them to a “new-fangled” cold-storage warehouse in Cross Angel Street.² By the mid-1880s, such cold warehouses could be found in all the major cities of the United Kingdom; by the turn of the century, the refrigeration industry was organizing professionally.³ In the United States, refrigerated railcars—known by 1911 as “reefers”—transported partially butchered meat and produce farther than ever before. Continental Europe tended to resist it, but in the UK and the U.S. the cold-chain altered landscapes, diets, and tastes. Most profoundly, it reoriented the common sense of aliveness and death away from seasonal and local contexts, and toward the “life” of global trade, the calculation of freshness, and the risks of perishability.⁴ Goods acquired a life span of constant motion. Embodying the cultural shifts refrigeration wrought, Stoker’s un-dead creature inspired both desire and revulsion for the supernatural—heightened, technologically mystified nature—that the cold-chain seemed to make possible. As Harker notes, in mingled admiration and dread, “[H]e had achieved a certain amount of distribution” (282).

Ice was its first miracle, but by the 1890s the cold-chain good that seized the cultural zeitgeist was meat. The prospect of cheap and plentiful animal protein only gradually persuaded consumers to set aside their natural fear of and disgust for long-dead meat, and their belief that it was immoral to artificially prolong its freshness for commercial gain.⁵ As one writer put it, “The idea of eating meat a week or more after it had been killed . . . met with a nasty-nice horror.”⁶ Is there a better late nineteenth-century phrase for the precisely imagined, obscene thrills of *Dracula*, whose suave villain abides in an unnatural state of suspended decay, and on whose un-dead body Mina Harker sensually feeds, contracting a potentially fatal disease? In its nastiest-nicest plotline, Lucy Westenra is drained of blood, dies, becomes un-dead, and is dismembered with technical specificity, a sequence that resembles the slaughtering of livestock. Critics have long noted the text’s misogynist erotic violence, but they have not described the logistical context of its cold embraces. Likewise, they have generalized the novel’s racial fears of reverse colonization and degeneration without relating them to London’s integration into global supply chains. As burgeoning cheap distribution stimulated desires for attractive, potentially sickening commodities, the novel’s sleazy allure staged an early version of the modern consumer’s personal

endurance test: can one consume death and live? This was a pragmatic question for people persuading themselves to try foreign meat and other tantalizing cold-chain novelties. At its heart lay the fantasy that consuming imported, modern things could figuratively extend one's life span and mobility beyond one's physical limits and native environment.

Building on scholarly attention to the novel's fetishization of technology, critics have noted Dracula's logistical prowess as part of an emerging world system (Shapiro); as a new electrical management of modern time (Halliday); as an innovative disruption (Rojas); and as distribution reflecting London's geography (Davies). As the characters communicate, travel, and organize over long distances, the novel resonates with a broad sense of logistics as the technical coordination of a complex project. Logistics in general and the infrastructural cold-chain in particular reveal the novel's economic context. Following Franco Moretti, scholars have read Dracula as a figure of monopoly capital.⁷ I show how the logistical plot puts that capital into motion—a restless movement of goods that requires infrastructure. The cold-chain is an example of what Marxist geographer David Harvey calls “the spatial fix.”⁸ Capital carves out new infrastructures that are fixed in space; they absorb the overaccumulation resulting from incessant economic growth. As techniques of capital, logistics and infrastructure work together to circulate goods into new markets as they abandon old ones. Their urgency comes from capital's mandate to grow without limits. In this essay, I interpret the novel through the growth of the cold-chain and the “nasty-nice aesthetics” that accompanied its principal goods, ice and meat. In the conclusion, I describe the “degrowth” movement in ecological economics as a critical response to the vampire-logistician's limitless expansion and the cold-chain's most chilling global effects.

REFRIGERATION AND THE VAMPIRIC COLD-CHAIN

The aspiration to master nature by moving cold things to distant, hotter places without compromising their wholeness was a characteristically nineteenth-century one, and it began with the logistical feat of delivering ice. The industry's founding-father narrative highlights Frederic Tudor, a Boston merchant who in 1806–7 obtained monopolies to export ice as medicine from Massachusetts lakes and Labrador icebergs to the British colonies of Jamaica, Barbados, and Antigua, and the French colonies of Martinique and Guadeloupe.⁹ After a decade working to persuade ordinary folks that drinking cold water was healthy, and defending

himself against charges of charlatanism when his customers let their purchases melt, Tudor perfected an infrastructural network of ice houses and the logistical prowess to keep wastage to a minimum. Using a horse-drawn ice-cutter to break up the frozen surfaces of small lakes and ponds, and shipping them in his specially designed and insulated double-dories, he created new markets for ice in alcoholic drinks, as a preservative for butter, apples, and cheese, and as an ingredient in ice cream in Caribbean and the southern U.S. In 1834 he opened markets in India and Brazil. His global cold-chain infrastructure also reached into the home: he sold small “ice-houses” that, using three pounds of ice a day, could keep a family’s perishable foodstuff. Tudor is celebrated for envisioning a market, but his expertise is also logistical: he developed the technical knowledge and means to extract and transport a fragile natural resource to distant markets in a race against time. His chain of stations where ice could be stored and sold became the infrastructural template for later supply chains. The profits from Tudor’s ice sprang from the seemingly magical defiance of physics and alteration of nature that could move a frozen lake to the tropics.

The natural ice market persisted throughout the century, but by its end, manufactured ice was emerging as its strong competitor. Ice manufacturing and air-conditioning use the same process: to draw heat out of the enclosed space, a liquid is evaporated and then condensed outside the space, the process then repeated in a closed cycle. In simple terms, “refrigeration removes heat from one place (a box) and as a vapor, transports it to another place (outside the box).”¹⁰ Its development was uneven: some inventors made advances in cooling rooms to improve the air in hospitals; others progressed in producing ice by expanding compressed air or evaporating volatile liquids. The first commercially made mechanical refrigerator was Scottish-engineer-turned-Australian-newspaperman James Harrison’s design with Daniel Siebe in 1857, though other models appeared throughout Europe and the U.S. Small firms patented them to export lager and meat, culminating in the successful shipping of frozen mutton from Argentina to France and from Australia to the UK in the 1870s.¹¹

Manufactured ice surmounted the occasional ice famines caused by warm winters; it also standardized volume and quality. By eliminating the inevitable melt on long journeys from northern lakes and ponds, it increased profit.¹² The natural ice industry did not go down without a fight, raising suspicions about ammonia and other chemicals added to the manufacturing process. In 1880 a proposed lease on buildings in

Charterhouse Street for cold storage was opposed because it violated public morals: "The Court should . . . be careful not to start or encourage a new industry for preserving that in which decay has taken place."¹³ Ice manufacturers returned the compliment, suggesting that the dirt, leaves, and insects in natural ice could cause intestinal illnesses and typhus.¹⁴ A similar contest took place between the livestock and dressed-beef industries, each claiming the unsanitariness of their opponent's product.¹⁵ At stake in this public sparring were enormous new markets: refrigerated boxcars and warehouses supercharged the existing cold-chain infrastructure with all manner of imported goods.

When Stoker has Jonathan Harker visit a cold-storage warehouse, he borrows the allure and the unease of logistical modernity and efficiency. Harker has been tracking Dracula's boxes of earth, following up tips from a hungover workman and a warehouse deputy to find Bloxam, the last-mile deliveryman at

some kind of a "new-fangled ware'us." . . . It was twelve o'clock before I got any satisfactory hint of such a building, and this I got at a coffee-shop, where some workmen were having their dinner. One of these suggested that there was being erected at Cross Angel Street a new "cold storage" building; and as this suited the condition of a "new-fangled ware'us," I at once drove to it. An interview with a surly gatekeeper and a surlier foreman, both of whom were appeased with the coin of the realm, put me on the track of Bloxam; he was sent for on my suggesting that I was willing to pay his day's wages to his foreman for the privilege of asking him a few questions on a private matter. (281)

Though the building may still be under construction, it is staffed and operational. Serving as an entrepôt for the international flow of commercial and individually shipped goods, where smuggling, pilferage, and other forms of theft have always been common, it befits Jonathan's bribe. I quote at length to illustrate how Stoker reveals the new refrigeration technology as part of a shadowy industrial urban geography and the obscure ranks of local workers, whose labor characteristically falls beneath the notice of the bourgeois consumers they supply.

Stoker's reference to the cold-storage warehouse is easy to overlook, but the entire plot of Dracula's travel to London and return to Transylvania allegorizes this new logistical cold-scape of perishability.¹⁶ The vampire's transit indexes the period's burgeoning transoceanic refrigerated trade: as with ice, meat, and produce, precise rules govern the delicate operation, and are always under threat. Dracula can achieve spectacular mobility by shape-shifting into mist, a wolf, and a bat, but as

Van Helsing explains, the distances he can travel in such forms are limited. His inability to circulate during the day prohibits him from an ocean voyage—unless he travels disguised as goods, boxed inside the coffin where he normally sleeps. Like freshly killed animals or harvested plants transported via refrigeration, Dracula is cold. When he shakes Jonathan's hand, his own is "cold as ice—more like the hand of a dead than a living man" (22). The cooled space of his coffin is like the refrigerated boxcar or cold-storage room: the dirt functions like packing ice for delicate organic goods, or an evaporating coolant that lowers the air temperature. Resting in his box "on a pile of newly dug earth," Dracula is ambiguously alive: "either dead or asleep, I could not say which," reports Jonathan (56). Traveling under these conditions as "horrid cargo" (241), Dracula and his boxes, filled with their "freight of earth" (61), are carted to the port at Varna, loaded on the *Demeter*, rescued from the wreck at Whitby, sent by rail to King's Cross, and finally by cart to Carfax. For most of the trip, the dirt is not refrigerated: it is itself the refrigerant that keeps the count "fresh," an ambiguous, un-dead category. The pause at the cold-storage warehouse is the gratuitous embellishment that reveals the ancient vampiric lore to be a fantastic version of the mystified, hypermodern technology of global trade. The novel's supernatural features conjure the surreal magic of local goods made available across the world—as fantastic as Tudor's transporting of lakes and ponds thousands of miles from the frozen north to the tropics.

The novel's engagement with the logistical concepts of perishability and freshness thus comments on a crucial cultural shift, from traditional, natural life spans and seasons to the times and spaces created by artificial cooling. Because recently alive refrigerated commodities can decay, that organic process uncannily mimics the aging process of living beings; in a cold state of suspended deliquescence, they are like Dracula, "un-dead." For centuries before its mid-twentieth-century iteration as the shipping container, "the box" was a simple icon of logistics—more modular and stackable than the sack. Since the sixteenth century, it was also a euphemism for a coffin. Artificially cooled, "the box" becomes a special environment that ensures the unnatural "life" of the goods, a span of time now conceived as the length of their transit from harvesting to consumption. The word "perishable," related to foodstuffs likely to rot rapidly, had been in use since the fifteenth century; as the plural noun "perishables," it emerged in the mid-eighteenth century with the industrial revolution; and in the twenty years following the wider adoption of refrigeration technologies in the late 1890s, its use soared.¹⁷ Stoker uses its cognate

twice in the context of Dracula's vulnerability on his return journey to Transylvania; for example: "Whilst the old fox is tied in his box, floating on the running stream whence he cannot escape to land—where he dares not raise the lid of his coffin-box lest his Slovak carriers should in fear leave him to perish" (377). Contemporary readers might have heard the echo of "perishability." Here is another excessive moment where Stoker cannot resist indexing refrigeration: if the un-dead vampire is naturally cold, he shouldn't also require the preserving effects of the boxed dirt. Like meatpackers and other transoceanic shippers of refrigerated goods, Stoker plays around with the rules of life, making both Dracula and his coffin embody refrigeration technology.

Tellingly, labor forms the blind spot of the supernatural-technological figure of refrigeration. As cargo, Dracula's existence is in the hands of the Slovak carters. So too was all the cargo that flowed into London handled by a variety of logistics workers: carters, boatmen, draymen, icemen, railroad men. Throughout the novel, Stoker names these otherwise anonymous figures and even makes the ship's captain into a hero. Yet he also gives his vampire-capitalist a scene that erases the human labor along the supply chain. It takes place in Jonathan's interview with Bloxam:

"There was the old party what engaged me a-waitin' in the 'ouse at Purfleet. He 'elped me to lift the boxes and put them in the dray. Curse me, but he was the strongest chap I ever struck, an' him a old feller, with a white moustache, one that thin you would think he couldn't throw a shadder."

How this phrase thrilled through me!

"Why, 'e took up 'is end o' the boxes like they was pounds of tea, and me a-puffin' an' a-blowin' afore I could up-end mine anyhow—an' I'm no chicken, neither." (281)

Here Dracula performs the mundane logistical task of carrying his end of a box with superhuman strength, a power metaphorically derived from centuries of absorbing life and extracting labor, the function of capital. A vision of un-dead or automated labor that requires no traditional sustenance, it contrasts with Stoker's workers demanding beer from their bourgeois interrogators. Murnau uses the marvels of cinema to play this scene for laughs, but in the novel it reveals a techno-capitalist's erasure of human power, the living economy in which people require sustenance to perform work.

The scene forces a readjustment to Moretti's argument that Dracula's labor at the castle—driving the carriage, cooking, and cleaning—is aristocratic ascetism, linked to his own lack of conspicuous

consumption and avoidance of waste.¹⁸ It is a point easily refuted by his extravagant vamping of Lucy and Mina, whose overdetermined bodies become sites of wasting illness.¹⁹ I go further: as a figure of global capital closely connected to supply chains, Dracula *must* waste. The spatial fix of infrastructure opens new markets by converting natural resources such as land, animals, and human labor into value; in important recent reworkings of Rosa Luxembourgh's terms, these are referred to as capital's externalities or "multiple outsides."²⁰ Capital must use up this "cheap nature" in order to accumulate value. As a technique of capital, the cold-chain leads to environmental and labor exploitation, figurative legacies of un-death, in an "ongoing, radically expansive, and relentlessly innovative quest to turn the work/energy of the biosphere into capital (value-in-motion)."²¹

A direct confrontation between capital's violence and human labor takes place in the novel when Renfield misguidedly attacks the deliverymen Jack Smollet and Thomas Snelling—another narratively excessive moment that reveals supply-chain violence. Invested with Dracula's un-dead power, he momentarily overpowers them and Seward's lieutenant Hennessey, "pulling us to and fro as if we were kittens" (167). Afterward Smollet and Snelling, who Hennessey had first observed "wiping their foreheads, . . . flushed in the face, as if with violent exercise," "said that if it had not been for the way their strength had been spent in carrying and raising the heavy boxes to the cart they would have made short work of him" (167–68). The scene stages a contest between traditional English labor-power and the mystical superhuman strength of capital that comes from the direct ingestion of living beings. Capital always overreaches, going in for the kill and demanding even more exertion from workers; this excess is the waste or surplus that it seeks to extract. The extraction is typically mystified behind the abstracting technology of "refrigeration" or "the supply chain." That Stoker gives names and physical details to every segment of the logistical plot, dramatizing the workers' interactions with Dracula and Renfield, italicizes the unease with global supply-chain technologies that seek to drain the workforce of its vital energy. By contrast, Stoker does not personify the much older technology of the railway through its workers.

NASTY-NICE AESTHETICS

The tale of refrigerated meat is one of death and infrastructure. In the U.S., it began with railroads transporting livestock, altering wild

grasslands and prairies into feedlots. It developed in the late 1850s with the ice-harvesting of Wisconsin lakes to transport “dressed” or partially butchered meat long distances. It expanded again in the 1880s with the refrigerated railcars that kept meat flowing year-round throughout the U.S. and to Great Britain. Both natural ice and refrigeration kept railcars, stockyards, icing stations, and warehouses from sitting idle during the summer. By flowing throughout the year, constantly reaching new markets, and using every particle of the animal for all manner of commodities—from hairbrushes to oleo to violin strings to glue—the meatpacking industry extracted value at each opportunity. It also transformed concepts of life and death. No longer local, cold-chain animals lived fragmented lives, “born in one place, fattened in another, and killed in still a third.”²² Rather than merely dying, they were mechanically disassembled on conveyor belts that would inspire Henry Ford’s automobile assembly lines. The decay of their flesh required standardized rules and inspections for icing and transportation, and the inventive packaging and recombination of parts that had already rotted or become diseased. Dressed beef and processed meats were especially suspicious, for example the bologna that contained putrid meat and sawdust. By 1906 Upton Sinclair was documenting the scandal in his novel *The Jungle*. Kingpin meatpackers such as Gustavus Swift and Philip Armour had built their empires out of waste, by extracting value even out of inedible materials. “This seemed akin to making something out of nothing,”²³ a kind of magic created not by production but by the logistical and infrastructural network, and in turn, their imperative to grow markets. Stoker’s neologism “un-dead” is in dialogue with “the dead-meat trade” as it was known.

The refrigerated meat industry inspired another apparently supernatural power: the technology could preserve human corpses in the Paris morgue from deliquescing. As Vanessa Schwartz documents, in the 1880s the new practice of cooling the air replaced the trickle of cold Seine water over bodies, keeping them pristine from any interference that might falsify autopsy results.²⁴ Slowing the decay of dead humans, refrigeration staged a sensational spectacle of preservation—one that Stoker’s vampire mythology exhibited on the page, as Dracula emerges from his coffin undecayed night after night for centuries. Though this instance differs from the logistical transport of dressed meat, it nonetheless commodified the preserved human body, drawing crowds to the spectacle, a different mode of circulation. Disgust merged with uncanniness as human bodies remained apparently whole by the invisible agency of chilled air.

A remarkably similar cultural narrative about altered conditions of life and death lasted throughout the century in literary works by Edgar Allan Poe, Sheridan Le Fanu, Wilkie Collins, and Marie Corelli. In premature burial narratives, beautiful young women were mistakenly buried alive and later discovered—after they had died ironically while trying to escape their coffins, eating their own body parts, and even giving birth postmortem.²⁵ Resonating with the antivivisection movement and working-class fears of anatomists, the 1890s saw an efflorescence of popular stories in the London press such as “Mistaken for Dead” and “Sounds from Another Coffin”—as well as activism to prevent premature burials.²⁶ In an 1899 interview with the *British Weekly*, Stoker speculated that vampire lore descended from a case of a person who fell “into a death-like trance . . . buried before the time. Afterwards the body may have been dug up and found alive, and from this a horror seized upon the people, and in their ignorance they imagined that a vampire was about.”²⁷

The dead-meat industry, the Paris morgue, and the premature-burial narrative set the stage for the nasty-nice erotics of the novel’s ambiguously alive female vampires. Stoker amplifies the premature burial genre’s dramatic irony, melodrama, and gory horror when he has Van Helsing unscrew Lucy’s coffin lid three times: first, to show Seward the vacant box from which she has departed on her nocturnal hunt; second, to show him that Lucy’s corpse bears none of the signs of putrefaction; and finally, to cure her un-dead condition by driving a stake through her heart, then decapitating her and stuffing her mouth with garlic. The last procedure must be completed by her fiancé, Arthur, who otherwise “will sometimes think that she [that] he loved was buried alive, and that will paint his dreams with horrors.”²⁸ In the premature-burial narrative, the coffin is a prison; but for Dracula, Lucy, and the three seductive Transylvanian vampires, it is home. In keeping with this twist, Lucy’s signs of life—walking, talking, drinking, and flirting with Arthur—must be reversed by killing her again, correctly. Stoker writes an apotheosis of the premature-burial narrative that, by baroquely imagining its erotic violence, obliterates its coyness and ends its cultural relevance. The shift involves commodifying the victim along the lines of the cold-chain’s packaged meat.

Dracula’s bites have chilled Lucy, so that she is “nearly as cold” as her dead mother beside her (158). An un-dead commodity, she circulates around London as the folk-branded “Bloofer Lady.” Lucy appears “adamantine,” “heartless,” “voluptuous,” and “wanton”; she has a “carnal and unspiritual appearance” (225). Such descriptives, especially “carnal,” suggest her own meatiness as much as her appetite, and they betoken

needs both sexual and alimentary. As a juicy product served up for readers' delectation, Lucy resembles packaged meat.²⁹ The ambiguously dead woman appears gorgeous, but her inner decay hints at invisible disease—not only the sexually transmitted variety but food-borne illnesses.³⁰ No less than thirteen Contagious Diseases Acts related to animals were passed in Britain between 1853 and 1893 to deal with them. Van Helsing's medical-religious procedure restores the nasty woman back to a nice, *heimlich*, cheerful sweetheart. Once properly dismembered, she regains her "unequalled sweetness and purity," along with "the traces of care and pain and waste"—the unambiguous signs of true death (231). The ritual makes the meat wholesome again. The restoration from supernatural back to nature—the organic "waste" of decay—deflates Lucy's plumped-up sexiness but evokes the comforting familiarity of a trusted brand and the plainness of a generic one. It reflects a tension between the delicious deadly thing and the plain living one—between the familiar perversity of much modern consumption, and a counteraesthetic of the natural found on the fringes of unfashionable vegetarianism and teetotalism in the high consumption of the 1890s. This narrative negotiation resembles consumers' reconciliation of their simultaneous desire for the apparent beautiful freshness and disgust at "foul Thing[s]": refrigerated meat, ice, and other consumables that can make one fatally ill (231). Women's natural bodies are examples of Moore's "cheap nature": the "waste" of capitalism's outsides, like the grasslands, animals, and the sweat of supply-chain laborers.

The three un-dead women at the castle italicize the perversity of the nasty-nice aesthetic in their animality, which figuratively reverses the supply chain. When one seduces Jonathan, he finds her breath "honey-sweet. . . but with a bitter underlying the sweet, a bitter offensiveness, as one smells in blood." Her "voluptuousness . . . was both thrilling and repulsive, and as she arched her neck she actually licked her lips like an animal" (45). Mastering his own sexual desire for the women, Van Helsing likens them to livestock when he executes them at the novel's end: "Oh, my friend John, but it was butcher work" (394). Rather than give in to desire, the civilizing forces of medical science, law, and technology must put down the animal, and men's animal urges, with technical violence. Refrigeration was transforming the individual living creature into an abstract, standardized, fungible, "neatly wrapped package one bought at the market."³¹ While disorienting and suspicious, the process was also genteelly distanced from the abattoir. Van Helsing writes to Jonathan that had he not witnessed the women's spiritual repose, "I

could not have gone further with my butchery. I could not have endured the horrid screeching as the stake drove home; the plunging of writhing form, and lips of bloody foam” (395). Lucy and the novel’s other un-dead women’s butchery suggest a regression along the supply chain toward the violent, dirty labor at its start. The cold-chain had moved slaughterhouses out of cities and into the hinterlands, where the work of killing animals could be kept out of consumers’ sight. The cold-chain’s aspirational sterile modernity reframed this labor as barbarism.

Stoker laces the novel with moments of predation that perform the violent capitalist fantasy which was helping consumers to accept the cold-chain. In the most spectacular, Dracula vamps Mina: “[H]is right hand gripped her by the back of the neck, forcing her face down on his bosom. Her white nightdress was smeared with blood, and a thin stream trickled down the man’s bare breast which was shown by his torn-open dress” (300). The scene has a feral quality, seen in Mina’s comparison to a kitten, and Dracula’s animal arousal: “the great nostrils . . . quivered at the edge; and the white sharp teeth, behind the full lips of the blood-dripping mouth, champed together like those of a wild beast” (301). Here is a cultural trope in which aristocratic perversity mingles sexual expression with childlike play disguised as animals. In Mina’s recounting after Dracula has fled, she describes how he had first bitten her and casually referred to his blood-sucking as “a little refreshment to reward my exertions.” Yet he had also boasted that it made her “flesh of my flesh, blood of my blood, kin of my kin” (306). The performance superimposes a consumer treat over a barbaric rite. In contrast to the novel’s orderly supply chain, the rehearsal of animal frenzy suggests the violence of procurement at its source. Similarly, Renfield creates a local food chain of flies, spiders, and sparrows, which he eats, while keeping an account book to quantify the life he has ingested. He represents the insanity of shuttling between rational modernity and ancient frenzy. Even “Bersicker,” the London Zoo wolf, seems like a desperate urban shopper resorting to cannibalism: “If he can’t get food he’s bound to look for it, and mayhap he may chance to light on a butcher’s shop in time. If he doesn’t, and some nursemaid goes a-walkin’ orf with a soldier, leavin’ of the hinfant in the perambulator—well, then I shouldn’t be surprised if the census is one babby the less” (150). At bottom, the novel suggests, ordinary shopping is feral prowling.

And yet throughout the 1890s, British consumers still preferred freshly killed meat to frozen.³² The novel’s sensational scenes of blood-drinking also illustrate a fantasy of eating an animal just after killing it,

and they use the term and concept of *freshness* to do it. Jonathan observes Dracula in his coffin: "on the lips were gouts of fresh blood, which trickled from the corners of the mouth and ran over the chin and neck." Lucy's lips "were crimson with fresh blood. . . the stream had trickled over her chin and stained the purity of her lawn death-robe" (225). And Mina thinks that "a long time must have passed before he took his foul, awful, sneering mouth away. I saw it drip with the fresh blood!" (306). Dracula's physical repletion is the satisfaction of being "gorged with fresh blood" (267). This freshness comes from instant absorption of the kill. No supply chain can furnish sustenance fresher than drinking from the living source. Yet that vivid healthiness cannot be separated from the savage violence that obtains it. Like meat, ice, and other delights of the cold-chain, *Dracula* packages itself as a fresh novelty—a modern-but-timeless, perverse pleasure that can make you a little sick.

To be a modern meat consumer is to be neither predator nor prey. Dracula challenges the Crew of Light to cast off their civilized peacefulness or risk becoming the latter: "You think to baffle me, you—with your pale faces all in a row, like sheep in a butcher's" (326). He is mocking them for banding together: sheep's only defense against predators is flocking. Yet the capacity of sheep's dead faces to bewilder or perplex him suggests an uncharacteristic humaneness, as if a butcher had suddenly regretted his work. An awkward goad, the line nonetheless suggests the death battles below the scrim of civilized trade. As Moretti notes, because the capitalist-bloodsucker's conquest is totalizing, "one cannot 'co-exist' with the vampire. One must either succumb to him or kill him."³³ Though the sheep eventually dominate, for much of the novel they remain in thrall to Dracula's blend of modern logistical prowess and predatory violence. They reflect the position of consumers of refrigerated meat who, unable to enter wholeheartedly into a global modernity of unproven technologies, and developing a new distaste for a kinship with animals, remained entranced and disgusted by the cold-chain's nasty-nice aesthetics.

The nasty-nice aesthetic had a racial dimension. Between 1815 and 1914, Britain outsourced its food supply, creating a vulnerability that Parliament debated in 1897 and which still features in its national angst.³⁴ Grains, meat, and dairy products from Ireland, the U.S., and Canada fed urban workers and fueled the Industrial Revolution, creating a global infrastructure of ports, railways, steamships, and warehouses. Refrigeration boosted imports from Australia and New Zealand / Aotearoa, seen as a "world-wide benefit" in transferring a surplus from across the globe to hungry British masses.³⁵ Between 1880 and 1916

Britain imported 150 million Antipodean frozen sheep and lambs; most were consumed in London.³⁶ A double ideological maneuver was required. A fanciful notion that the tacit kinship of white colonies and postcolonies would prevent adulteration finessed the long-distance travel of dead meat; it was helped by the suspicion of nearer European meat, which was thought to be scrawny and ill. An 1847 scandal in which offal appeared in tinned meat imported from Galatz in Romania likely exacerbated and cemented this mistrust.³⁷ Refining the scholarly interpretation of “reverse colonization,” in which the invading eastern European buys up English property and figuratively rapes British women, we see that Dracula usurps London’s distribution networks, a process underway for decades as foreign meat and produce circulated through the city.³⁸ The novel reflects the fear of infrastructural integration in the precisely chosen locations of Dracula’s fifty boxes, which encircle London like fulfillment centers from which to distribute infection.³⁹ Conversely, the cultural memory of Galatz as a source of disease may inform its prominence as the last stop on the vampire-slayers’ assassination mission. Traveling there to execute Dracula, they purify the supply chain at its source. Calculated in biopolitical terms, it is an act of racial extermination of the putatively degenerate eastern European and figurative Semite.⁴⁰ If Britain’s imperial strength depended on imports, then the threats to its cultural identity had to be neutralized by racially curating the supply chain. Yet the enormous scale of this “carnivorous empire” made supply-chain security an impossible task.⁴¹ Just as the wholesomeness of meat could never be guaranteed, neither could the abstract whiteness of its workforce or origins.

CONCLUSION: DEGROWTH

At the turn of the twentieth century, Britain’s imperial power relied on its command of the world market through entrepôt capitalism combined with colonial rule. By making raw materials and goods pass through its vast depot, where it reshuffled and redistributed them, Britain made transport into “a kind of manufacture” and came to dominate the world market.⁴² Global trade grew at an exponential rate: “Between 1850 and 1913, transportation costs plummeted, information flows accelerated, tariffs fell, trade treaties such as free trade agreements with unconditional most-favored-nation clauses and treaty ports proliferated, and empires expanded.”⁴³ None of this happened without an exponential enlargement of logistics and its infrastructures. The cold-chain helped power capital’s demand for unceasing growth. Numerous scholars have noted the novel’s

imagination of vampirism as a similarly limitless, unsustainable project that depletes the natural resources on which it depends. I contend that it allegorizes not merely this economic growth but its accompanying expansion of global supply chains. The novel appears to side with the liberal vampire-hunters who fight for “limits to growth” and a return to traditional ways. But it also purveys spectacles of automated labor, the conversion of cheap nature into value, and capitalist fantasies of predation that enact fantasies of limitless growth to meet limitless consumer appetites. The cold-chains laid down in that period became the template for twentieth-century ones, leading to our current moment of apocalyptic unsustainability, in which the pressure to cool the world is fatally heating it.⁴⁴

Ecological economics is the field that corrects orthodox economics' omission of the environment from its calculations; the school of thought that does so most directly is called degrowth. Degrowth is “a critique of the ecological consequences of economic growth”; it contends that “we should extract, produce, and consume less, and we should do it all differently” because the costs of growth now outweigh its benefits, and because growth cannot reduce inequalities, only “postpone confronting exploitation.”⁴⁵ Degrowth exposes how economic growth is “the rate at which our economy is metabolizing the living world.”⁴⁶ The monetary theory at the heart of degrowth comes from Silvio Gessell's *The Natural Economic Order*, and it bears on my discussion of refrigeration. It is a direct attack on accumulation: “Nobody, not even savers, speculators, or capitalists, must find money, as a commodity, preferable to the contents of the markets, shops, and warehouses. If money is not to hold sway over goods, it must deteriorate, as they do. Let it be attacked by moth and rust, let it sicken, let it run away; and when it comes to die let its possessor pay to have the carcass flayed and buried.”⁴⁷ On the theoretical level, Gessell reimagines money that is not a store of value—money that does not grow under the artificial condition of capital investment. Metaphorically, this means making it as ephemeral, sensual, and susceptible to spoilage as the animals that become packaged meat. In this way, it resembles Dracula's hoard, “a great heap of gold in one corner—gold of all kinds, Roman, and British, and Austrian, and Hungarian, and Greek and Turkish money, covered with a film of dust, as though it had lain long in the ground. None of it that I noticed was less than three hundred years old” (55). Uninvested money simply depreciates with inflation; metaphorically it grows dusty with disuse. Gessell would exploit this by having the state systematize its expiration. When money goes bad, it incentivizes expenditure on needed goods, rather than speculative investments that

detach value from resources. Money is then forced to resume its natural functions as a means of exchange and a unit of account, better reflecting the labor that makes commodities. In this way, money as a store of value will stop driving capital accumulation and demanding the exploitation of the outsides or externalities of cheap nature. By contrast, as Houston notes, at the novel's outset Dracula is shown putting his money into circulation as he purchases Carfax and expands into London—the only way capital grows and multiples.⁴⁸

Refrigeration serves as an excellent metaphor and material instance of capital's tendency to lay waste to the world in the name of efficiency. Designed to keep food fresh, it actually generates waste by encouraging overbuying. It is a classic instance of "Jevons' Paradox": the efficiency savings of technologies are rarely realized because the lowered cost increases demand and production.⁴⁹ Food made cheap by refrigeration encourages people to store it in their home refrigerators, the household infrastructure. They become both tiny household warehouses advertising abundance and power, and "coffins" "where food goes to die."⁵⁰ Domestic family economies simply absorb the low costs of warehousing decaying food; but the myriad monopolies that made up Britain's imperial entrepôt at the turn of the twentieth century did not. They deployed refrigeration to keep goods circulating, skimming profit off every mile of the journey. The novel's chills do not have to remain ideological coercions.⁵¹ Instead, they can prompt reflection about our own participation in the cold-chain and its aesthetics of decay, freshness, and waste.

ACKNOWLEDGMENTS

I would like to thank Dehn Gilmore, Devin Griffiths, Aaron Matz, Sarah Raff, Beatrice Sanford Russell, Rachel Teukolsky, and audience members at the University of Sydney Political Economy Seminar, the Victorian Persistence Seminar at Université Paris Cité, the Clark Library Core Program at UCLA, and the University College Cork conference, "Breaking the Network" for their insightful responses to earlier drafts of this paper.

NOTES

1. On the cold-chain, see Rodrigue, *Geography*, chapter B-9.
2. Stoker, *Dracula*, 281. All subsequent references to this edition are noted parenthetically in the text.

3. Pearson, "Birth."
4. Cowen, *Deadly Life*.
5. Freidberg, *Fresh*, 5.
6. Swift and Van Vliissingen Jr., *Yankee*, 69.
7. Moretti, "Dialectic," 67–85; Houston, *From Dickens to Dracula*, 121–31; Shaviro, "Capitalist Monsters."
8. Harvey, *Limits*, 431.
9. Seaburg and Paterson, *The Ice-King*, 37–38. This paragraph is indebted to this source.
10. Gantz, *Refrigeration*, 34.
11. Gantz, *Refrigeration*, 59.
12. See Rees, *Before the Refrigerator*, chapter 2.
13. Quoted in Critchell and Raymond, *History*, 164.
14. Rees, *Before*, n.p.
15. Cronon, *Nature's Metropolis*, 334–41.
16. Twilley, "The Coldscape."
17. Google Ngram Viewer.
18. Moretti, "Dialectic of Fear," 72–73.
19. Kreisel, "Demand and Desire," 110.
20. See Mezzadra and Neilson, *Politics*, chapter 2; and Harvey, *The New Imperialism*, 138–42.
21. Moore, *Capitalism*, location 354.
22. Cronon, *Nature's Metropolis*, 224.
23. Cronon, *Nature's Metropolis*, 253.
24. Schwartz, *Spectacular Realities*, 58.
25. See Bondeson, *Buried Alive*.
26. Behlmer, "Grave Doubts," 227.
27. Quoted in Miller, "Getting to Know," 4–5.
28. Stoker, *Dracula*, 215.
29. See Adams, *Sexual Politics*.
30. See Forman, "Parasite."
31. Cronon, *Nature's Metropolis*, chapter 5.
32. Perren, *Taste*, 82.
33. Moretti, "Dialectic," 74.
34. Belich, *Replenishing the Earth*, 450–51.
35. Critchell and Raymond, *History*, v.
36. Belich, *Replenishing*, 450.
37. Belich, *Replenishing*, 447.
38. Arata, "The Occidental Tourist."
39. Davies, "London in *Dracula*," n.p.

40. See Pick, "Terrors"; and Zieger, *Inventing the Addict*, 196–232.
41. Young, "Carnivorous Empire," 180.
42. Arrighi, *Long Twentieth Century*, 176.
43. Meissner, "New Perspectives."
44. Owen, "How the Refrigerator."
45. Kallis, *Degrowth*, 1–2.
46. Hickel, *Less Is More*, 104.
47. Gessell, *Natural*, 33.
48. Houston, *From Dickens to Dracula*, 119.
49. Jevons, *The Coal Question*, 141.
50. Evans, *Food Waste*, 69; and "Your Refrigerator."
51. Moretti, "Dialectic," 85.

WORKS CITED

- Adams, Carol J. *The Sexual Politics of Meat: A Feminist-Vegetarian Critical Theory*. 1990. 25th anniv. ed. London: Reaktion, 2015.
- Arata, Stephen D. "The Occidental Tourist: *Dracula* and the Anxiety of Reverse Colonization." *Victorian Studies* 33, no. 4 (1990): 621–45.
- Arrighi, Giovanni. *The Long Twentieth Century: Money, Power, and the Origins of Our Times*. London: Verso, 1994.
- Behlmer, George K. "Grave Doubts: Victorian Medicine, Moral Panic, and Signs of Death." *Journal of British Studies* 42, no. 2 (2003): 206–35.
- Belich, James. *Replenishing the Earth: The Settler Revolution and the Rise of the Anglo-World, 1783–1939*. Oxford: Oxford University Press, 2009.
- Bondeson, Jan. *Buried Alive: The Terrifying History of Our Most Primal Fear*. New York: Norton, 2002.
- Cowen, Deborah. *The Deadly Life of Logistics: Mapping Violence in Global Trade*. Minneapolis: University of Minnesota Press, 2016.
- Critchell, James Troubridge, and Joseph Raymond. *A History of the Frozen Meat Trade*. London: Constable, 1912.
- Cronon, William. *Nature's Metropolis: Chicago and the Great West*. New York: Norton, 1991.
- Davies, Gill. "London in *Dracula*; *Dracula* in London." *Literary London: Interdisciplinary Studies in the Representation of London* 2, no. 1 (2004).
- Evans, David. *Food Waste: Home Consumption, Material Culture, and Everyday Life*. London: Bloomsbury, 2014.
- Forman, Ross. "A Parasite for Sore Eyes: Rereading Metaphors of Infection in Bram Stoker's *Dracula*." *Victorian Literature and Culture* 44, no. 4 (2016): 925–47.
- Freidberg, Susanne. *Fresh: A Perishable History*. Cambridge, Mass.: Belknap, 2009.
- Gantz, Carroll. *Refrigeration: A History*. Jefferson: MacFarland, 2015.
- Gessell, Silvio. *The Natural Economic Order*. Translated by Philip Pye. 1920. London: Peter Owen, 1958.

- Halliday, Sam. *Science and Technology in the Age of Hawthorne, Melville, Twain, and James: Thinking and Writing Electricity*. London: Palgrave Macmillan, 2007.
- Harvey, David. *The New Imperialism*. Oxford: Oxford University Press, 2003.
- . *The Limits to Capital*. 1982. London: Verso, 2018.
- Hickel, Jason. *Less Is More: How Degrowth Will Save the World*. London: Penguin, 2020.
- Houston, Gail Turley. *From Dickens to Dracula: Gothic, Economics, and Victorian Fiction*. Cambridge: Cambridge University Press, 2005.
- Jevons, W. Stanley. *The Coal Question: An Inquiry Concerning the Progress of the Nation, and the Probable Exhaustion of Our Coal-Mines*. 1865. 3rd ed. London: Macmillan, 1906.
- Kallis, Giorgio. *Degrowth*. Newcastle upon Tyne: Agenda, 2018.
- Kreisel, Deanna K. "Demand and Desire in *Dracula*." In *Economic Women: Essays on Desire and Dispossession in Nineteenth-Century British Culture*, edited by Lana Dalley and Jill Rappoport, 110–23. Columbus: Ohio State University Press, 2013.
- Meissner, Christopher M. "New Perspectives on the First Wave of Globalization." *The Reporter* 1 (2015).
- Mezzadra, Sandro, and Brett Neilson. *The Politics of Operations: Excavating Contemporary Capitalism*. Durham: Duke University Press, 2019.
- Miller, Elizabeth. "Getting to Know the Un-Dead: Bram Stoker, Vampires, and 'Dracula.'" In *Vampires: Myths and Metaphors of Enduring Evil*, edited by Carla Kungl, 3–18. Amsterdam: Rodopi, 2006.
- Moore, Jason W. *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*. London: Verso, 2015.
- Moretti, Franco. "The Dialectic of Fear." *New Left Review* 136 (1982): 67–85.
- Owen, David. "How the Refrigerator Became an Agent of Climate Catastrophe." *New Yorker*, January 15, 2022, <https://www.newyorker.com/news/annals-of-a-warming-planet/how-the-refrigerator-became-an-agent-of-climate-catastrophe>.
- Pearson, Andy. "The Birth of the Refrigeration Industry in London: 1850–1900." *Ior.org.uk* (2018).
- Perren, Richard. *Taste, Trade, and Technology: The Development of the International Meat Industry Since 1840*. London: Routledge, 2017.
- Pick, Daniel. "Terrors of the Night: *Dracula* and 'Degeneration' in the Late Nineteenth Century." *Critical Quarterly* 30, no. 4 (1988): 71–87.
- Rees, Jonathan. *Before the Refrigerator: How We Used to Get Ice*. Baltimore: Johns Hopkins University Press, 2018.
- Rodrigue, Jean-Paul. *The Geography of Transport Systems*. 5th ed. New York: Routledge, 2020.
- Rojas, Ana Raquel. "Vampires and Unicorns: Atavism, Futurism, and Disruption in a Twenty-First Century Reading of *Dracula*." *Victorians Institute Journal* 46 (2018): 7–32.
- Schwartz, Vanessa. *Spectacular Realities: Early Mass Culture in Fin-de-Siècle Paris*. Berkeley: University of California Press, 1999.
- Seaburg, Carl, and Stanley Paterson. *The Ice-King: Frederic Tudor and His Circle*. Boston: Massachusetts Historical Society, 2003.
- Shapiro, Stephen. "Transvaal, Transylvania: *Dracula's* World-system and Gothic Periodicity." *Gothic Studies* 10, no. 1 (2008): 29–47.

- Shaviro, Steve. "Capitalist Monsters." *Historical Materialism* 104 (2002): 281–90.
- Stoker, Bram. *Dracula*. 1897. Edited by Maurice Hindle. London: Penguin, 2005.
- Swift, Louis F., and Arthur Van Vlissingen Jr. *The Yankee of the Yards: The Biography of Gustavus Swift*. New York: A. W. Shaw, 1927.
- Twilley, Nicola. "The Coldscape: From the Tank Farm to the Sushi Coffin." *Cabinet* 47 (2012).
- Young, Paul. "Carnivorous Empire: The Global Growth of Victorian Britain's Meat Markets." *Victorian Review* 45, no. 2 (2019): 177–81.
- "Your Refrigerator Is Where All That Farmer's Market Produce Goes to Die." *Science* 2.0, August 29, 2019.
- Zieger, Susan. *Inventing the Addict: Drugs, Race and Sexuality in Nineteenth-Century British and American Literature*. Amherst: University of Massachusetts Press, 2008.