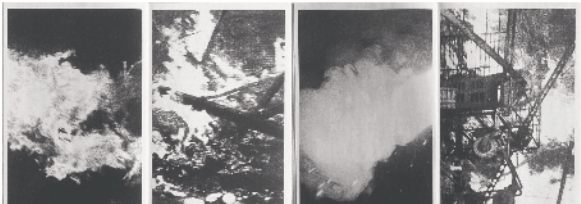
TECHNO-NEGATIVE A Long History of Refusing the Machine

Thomas Dekeyser



Techno-Negative

This page intentionally left blank

Techno-Negative

A Long History of Refusing the Machine

Thomas Dekeyser

University of Minnesota Press
Minneapolis
London

Portions of chapter 4 and "Conclusions" were previously published in a different form in "Rethinking Posthumanist Subjectivity: Technology as Ontological Murder in European Colonialism," *Theory, Culture & Society* 41 (2023), no. 2: 73–89; copyright 2023 Thomas Dekeyser, https://doi.org/10.1177/02632764231178482.

Published by the University of Minnesota Press
111 Third Avenue South, Suite 290
Minneapolis, MN 55401-2520
http://www.upress.umn.edu

ISBN 978-1-5179-1772-2 (hc)
ISBN 978-1-5179-1773-9 (pb)

A Cataloging-in-Publication record for this book is available from the Library of Congress.

Printed in the United States of America on acid-free paper

The University of Minnesota is an equal-opportunity educator and employer.

UMP BmB 2026

Contents

This page intentionally left blank

Introduction

Burning Down Artifice

Technology, Negativity, and Ontological Policing

The year is 2018, and the internet is about to come under attack.

The setting for the event is rather mundane: It is noon, and a group of people are hanging out beneath a bridge on the outskirts of Berlin. Despite the inconspicuous appearances, however, these are no ordinary workers or loiterers, and this is no ordinary bridge. As the anonymous crew knows all too well, this bridge holds more than motorized traffic. The bridge is a central node in the capital city's connective tissue, one of the pulmonary veins pumping digital oxygen in and out of crucial governmental, corporate, and residential districts. Opening an unsigned hatch, the group stares at their target: an immense nestling of fiber-optic cables linked to power cables. Time for execution—drain the cables with bottles of flammable liquid, throw a match, escape. By the time the police arrive, the culprits have long vanished, leaving behind little more than molten fiberglass, blackened transmitters, and torn pieces of insulation. The result is an entire region swamped into an internet blackout.[1] In the years that follow, anti-internet arsonists escalate their fiery intents, creating a string of attacks on fiber-optic networks in Munich, Toulouse, Paris, and plenty of other digital crossroads.

But why hurt what you adore?

The connectivity infrastructures under assault are the very mechanisms allowing the attackers to communicate not only with one another, sustaining a joyful social existence, but with the wider world, giving their actions an intelligible life after the flames turned into embers and, finally, into gray ashes swept up by a cleaning contractor. Why destroy what sustains you? The attacks appear irrational, hypocritical even . . . and yet, I must admit, they also make me chuckle,

striking a sinister chord with my own melancholy in the face of infrastructures that all too often don't know which side to pick: a project of liberation or an experiment in the macabre management and exploitation of people and planet?

Having spent the last five years sharing stories of technological refusal with a wide range of audiences, I have come to the comforting realization that I am not entirely alone in my pessimism. Most would never act upon such urges, but plenty have imagined what it would be like, how it would feel in the bones, to destroy a technological object that, momentarily or lastingly, appears hostile to one's ability to endure, let alone to flourish. Such dark dreams abound today, for technological modernization has proven much too poisonous, and much too boring, for centuries-old technological optimism to still impress many; not least, modern technology's solidification into the oligarchic power of "Big Tech," its mass harnessing of attention, its hypercommodification of social relations, its islands of e-waste, its unforeseen powers of surveillance and policing, and its proletarianization of work forces in cities and factories around the globe have taught us this much. Faced with the contemporary intensity of technological violence, plenty of us have felt the pull of techno-pessimism: We partake in digital-detox programs, anti-Google efforts, and campaigns against the automation of labor through artificial intelligence, or, simply, we wonder whether a life lived without internet connection or phone emails might relieve us from stress. Once we start looking carefully, we find that this suspicion of technology is not an anomalous affect—belonging solely to the anti-internet arsonist with a zeal for Heidegger and insurrectionary anarchism—but a feeling growing in intensity, ambition, and collectivity, haunting the dazzling march of technological innovation.

This book traces the often animated, sometimes bewildering, history of this feeling. What we find is that, far from a recent phenomenon emerging in a vacuum, an undercurrent of refusal underpins and pierces the long histories that make up the modern world's technological horizons. In fact, it permeates the history of technology, at every step and turn. *Techno-Negative* challenges the familiar tales of technological advancement as ones of invention, acceleration, and emancipation, employed by the West to separate itself from its "Others." Against the stories of technological progression as the smooth succession of inventions by genius interlocutors, in this book

it is presented as a political battlefield fraught with tension, contestation, and contradiction. It uncovers fragments of the too-little-known, and oft-perplexing, existence of a tenacious, fierce urge to negate life's technologization, and the equally persistent impulse in technological orthodoxy to condemn and repress this urge.

A journey into the world of "techno-negativity" will illuminate the conceptual stakes of contemporary techno-politics: How to think a negative relation to technology at a moment when technological devices, infrastructures, data, and algorithms are so omnipresent they engulf us? To critically think twenty-first-century artifice, the book claims, we need to explore the conceptual and political paths opened by refusal rather than limiting ourselves to the task of critiquing the dreams, stories, and innovations that have accumulated into our technological moment, even if such historico-theoretical analyses offer us crucial lessons about the intricacies of technological power. These do allow us to shed those genealogies that Siegfried Zielinski refers to as "comforting fables about a bright future, where everything that ever existed is subjugated to the notion of technology as a power to 'banish fear' and a 'universal driving force.'"[2] In the aftermath of numerous critical histories of technology, few would still embrace a progressivist historiography that casts technology as natural development, as the benevolent and sacrosanct augmentation of human ability. To name but two of the twentieth century's harshest critics of technology that will be introduced more carefully later in this book, Martin Heidegger presents technological modernization as the reduction of human and nonhuman life to "standing-reserve," and in Jacques Ellul, it is the becoming-autonomous of technology at the expense of human liberty.[3] Troubled by the sustained tendency toward linearity and homogenization of these genealogies, theorist-historians "from below" draw us into the multifaceted and uneven geographies, temporalities, cultures, and effects that have long informed the power relations inherent in technological invention and diffusion. Not least, Claude Alvares has taken us into the rich worlds of non-European invention while recasting Western technological ascendency as a matter of greed, arrogance, and aggression,[4] while Sadie Plant has retheorized the emergence of the computer by centering gendered labor and machinic inventions by women.[5]

For all their critical merit, what remains missing and unthinkable within these dominant genealogies is the disobedient subject.

In Heidegger and Ellul one will be hard-pressed to find any mention of the lived embodiments of their own crucial counterpoint to the technological optimism of their era and will even go out of their way, as Heidegger does, to ridicule the "stultified compulsion . . . to rebel helplessly against [technology] and curse it as the work of the devil."[6] In the histories from below, one finds accounts of diverse uptakes of technology, but little in the name of refusal, of dismantling and rejection.

What explains this erasure of refusal from the histories of technology? We might argue that the critical thinker can only work with what she finds in the archive, and, as it happens, Achille Mbembe is right when he tells us that the archive is always a product of judgment, of the selective exercise of a specific authority invested in a particular historical narration and the taming of others,[7] and so is Christina Sharpe when highlighting the accumulated erasures of (in her case, anti-Black) violence from the archival record.[8] But as Sharpe's own (his)story of slavery's afterlives demonstrates brilliantly, tales of violence and refusal abound in the archive, if only one learns how to conduct archival imagining, looking close enough between the official lines and in the informal cracks of the archive. The deeper problem is that much of modern thought on technology is still tied to what Frédéric Neyrat, in reference to the famous Hungarian American cybernetician, calls the "Von Neumann Syndrome," whereby moderns are invested in thinking technology only in terms of its inevitable take-up and extension, however beautiful or gruesome that trajectory may be.[9] Technological refusal remains something to be suspicious of, to be shunned, as if the embodied experiment with criticality is akin to its soiling, rather than its productive expansion into more-than-discursive registers. We need to shed the fear of techno-negativity, which for too long has been scorned as a misguided or naive, even infantile, project that runs counter to any meaningful formation of technological politics.

What is at stake is more than historical curiosity. By sustaining the structural absence of technological refusal, we lose the opportunity to illuminate the problem of contemporary technological politics anew. This task is an urgent one. From the denial of gig workers' rights and the large-scale extension of surveillance and policing abilities, to Big Tech's desire to shape electoral politics and the environmental collapse fueled by immense data centers, the terrors as-

sociated with contemporary technologization are becoming increasingly hard to ignore. But the irony of our times is that we, like the arsonists, are all dependent upon this technological present whose promise, whose tales of emancipation, fewer and fewer believe in. This is the affective paradox underpinning what in this book I call the "techno-negative": longing for the dismantling of what sustains you. This is not the "cruel optimism" described by Lauren Berlant,[10] where one holds an attachment to what is, ultimately, averse to your flourishing, but its inversion: a disbelief in what holds the conditions of one's ability to live on. The data, the applications, the algorithms, the cloud storage, the mobile devices, and the wearables we might disdain are the same ones that—in empowering much of our personal, social, and working lives—constitute us. The imaginative challenge for contemporary technological politics is: How to refuse what is part of you? To take on contemporary technology is to engage in a struggle over what should, and what shouldn't, constitute what is properly "human."

To address this philosophical battle, we need to understand it as but one episode within the extensive struggle for a dominant theory of the human that marks the conflicted histories of technology. Across crucial episodes within the history of technology, the negotiation over the status of "the human" in the face of technicity has survived under different names and been refigured on shifting grounds. For this reason, we need to bring out the demons the archive carries in its texts, its gaps, its absences, and its outsides, by tracking the changing ecologies of technological refusal. In every case, we will encounter a rich cast of figures, from machine-breakers in ancient Greece to computer arsonists in 1980s France via executions of inventors in the modern world, with each invested in the dissolution of a given technological construct, revealing that the history of technology is as much a story of invention as the genealogy of a struggle to undo it. Each in their own ways, they will bring us into the book's central argument: The extension and expansion of the technical realm is inextricably tied up with a political struggle for a conception of the human, for an understanding of the "human self," what constitutes us, and what doesn't. Tracing the historical manifestations of technological refusal brings us, this book reveals, into how a period, a people, an individual, understands itself as a "self," as a "subject" with recourse, however tentatively, to the category of "humanity."

Before untangling the conceptual complexities of human-technology relations, we must first draw the contours of this book's object.

Object: Techno-Negativity

Two central terms guide this book. The first—the "techno" in techno-negativity—speaks to the precise terrain of intervention for the protagonists of this book. Its form is consistent throughout: the invention, production, and social uses of artificial objects (components, devices, systems).[11] In this book, the terrain of such objects is defined neither by a general logic (e.g., what "governs" in Foucauldian technique, or what "enframes" in Heidegger), nor by a precise end (e.g., what rationalizes in Ellul, or what takes nature as means in Arendt). Instead, I take it first and foremost as a *material* category—those material expressions emergent from the inventive procedures translating earthly provisions into resources of practical, aesthetic, and economic concern—whose artificiality emerges from their being generated by, and, in having their own force of becoming, from their coming to generate, human life.[12] In this book, which material objects exactly constitute the technological, as well as the particular coordinates of "artificiality" vis-à-vis the human, will shift in tune with the historically specific conceptions offered by those refusing technology's invitation.

"Negativity" brings us into the mode of relation to technology this book is concerned with. Unlike an affirmative relation ("yes"), negativity calls for neither acceptance nor the acceleration of technological objects. Escaping the lure of a reformist connection ("yes, but"), negativity also denies the promise of their adaptation, redirection, and improvement. The negative prefers the discursive category of the "no," blocking and declining rather than embracing and creating.[13] Like some of its scholarly companion figures—including the "queer negative," "afro-pessimist," and "crip negative"[14]—the techno-negative is profoundly suspicious of calls for concession and resolution. Instead, we encounter a relentless drive toward "refusal": the radical undoing of one or more technological objects. For all its discursive force, long admired by philosophers ranging from Gandhi to Marcuse, techno-negativity must not in this book be understood as a metaphor, but as a diverse range of concrete phenomena in which artificial objects come under assault materially, socially, and discursively.

Negativity's (non)relation to technology cannot be understood, strictly speaking, as a matter of dialectics. Refusal is not a secondary response (an anti-thesis) to a technological status quo (a thesis), as if the latter could ever exist without already inhabiting its own undoing.[15] As the book will reveal, technology is as much a story of invention as it is of collapse. Each technological object is co-constituted by its own dismantling by way of human resistance, built-in obsolescence, or an inhuman force of entropy. For our purposes, one cannot speak of technological objects before considering the modes of refusal, the spirit of techno-negativity, that co-constitute them. This book thus contests the contemporary insistence on the primacy of technological success stories—when the technology performs as intended—and aims at rediscovering the central role the thinking and practices of the techno-negative play in shaping the trajectories of technological objects and their implications.

From "below the radar" interventions to formal challenges, from tools of the law to explosive weapons, from indifference to arson, from the protectionism of the conservative to the political "no" of the militant, the techno-negative stories we will tell undermine the one-dimensional domain of a reactionary romanticism, infantile primitivism, or, more generously, workerist concern of the Luddite to which technological refusal is commonly reduced, as if outside of difference, history, and geography. The book showcases how techno-negativities are propelled by shifting, often ambiguous, and at times even contradictory ways of operating, sets of motivations, and affective logics. But they are never arbitrary, unscathed by the material, political, and philosophical forces from which they emerge.

The book showcases that each mechanism of power—from the Greek *politeia* and medieval pastoral power to cybernetic principles of control—coincides with its own specific instantiations of the techno-negative. Of central importance, the book argues, are two socio-economic upheavals, producing distinct modes of refusal. First, the growing to dominance of Western capitalism in the early nineteenth century shook up existent expressions of technological refusal, supplementing techno-negativity's functioning as the expansion of social and religious sovereignty with its materialization as the struggle against dominant interests. Second, capitalism's restructuring in the early twentieth century by way of technology's deepening expansion into everyday life crucially triggered a third mode of refusal, one

centered on principles of disconnection and opacity. Governed by a logic of supplementation, not substitution, these shifts serve to organize this book into three parts; refusal as "sovereignty," as "revolt," and as "withdrawal."

Running across them is the stubborn recurrence of a surprising, more ontological scale of power. The book argues that technological refusal can rarely be reduced to the spheres of practical considerations (e.g., will the artifact improve the quality of life?), economic considerations (e.g., will it increase or reduce productivity?), or ethical considerations (e.g., will it facilitate or rupture social relations?) commonly assigned to it. The battle for and against a technological object rarely proceeds without some claim that asserts itself, implicitly or less so, in the domain of political ontology. Approached from the vantage point of its refusal, the history of technology presents itself as a crucial terrain in which claims to humanity are fought, where the technological facilitates the extension, solidification, rupture, or negation of a particular conception of being properly human, with the concomitant drawing and redrawing of the dividing lines between the human and its "Others." Only by gaining a thorough grasp of how technology is intricately tied up with what the book terms this "ontological policing" can we begin to fully understand it as a political technique, one that governs by way of ascribing some beings with the luxury of "humanity" while excluding others. The central target of *Techno-Negative* is this onto-political life of technology. If we leave this life unexamined, and thus in place, our techno-politics run the risk of reproducing old, and introducing new, models of domination, of falling victim to the alluring but dangerous promise of a technological imagination based on a humanist idea of value, the self, and community that cannot help but produce its own outsides.

Target: Ontological Policing

To approach technology as a matter of "ontology"—as the examination of the order of being—is to foreground the question: What is the nature of humanity's relationship to technology? Do technologies drive us away from, or toward, being properly human? Do they constitute and expand, or undermine, human subjectivity? These queries are both the founding questions—variously investigated through the (un)weaving of the pairs human/nonhuman, mind/world, organic/

inorganic, subject/object, human/animal, artifice/nature—and the terrain of much debate, for much philosophical reflection on the technological in Western thought. Six conceptions of human-technology relationality dominate debates on the politics of technology, ones that are far more usefully delineated by way of a certain conceptual consistency rather than through any neat chronological periodization.

Most prominent in ancient Greek philosophies of *technē,* the first insists on *a mimetic relationship* between technology and the human, whereby the former can only ever imitate the latter, as per the ontological distinction between natural objects (*physis* as self-reproductive) and artifacts (*technē* as nonreproductive).[16] The second conception is the Promethean foregrounding of *a compensatory relation*. The human, in this reading popularized by the negative anthropology of German philosophers of technology Arnold Gehlen and Günther Anders, is born unfinished and instinctually deprived, and thus, unlike other animals, can only ensure its survival by compensating for its originary lack through the development of artifice.[17] A third theorization picks up the impulse of this conception but dampens its anthropological claims, asserting *a relation of extension* that centers, as Ernst Kapp and Marshall McLuhan have, technology as a projecting-out of human organology.[18] A fourth conception reverses the logic of extension to assert *an atrophic relation* of human-technology pairings, insisting on either the withering-away of human bodily function and cognition (as in Paul Alsberg's and Ray Lankester's notions of physiological regression and degeneration),[19] or their taking on of a merely parasitic function in the face of an autonomous technological realm, as suggested by Jacques Ellul, Lewis Mumford, and (to a lesser degree) Langdon Winner.[20] A fifth theory offers *a causal relation* of the human-technology pair, one that, according to Heidegger, originates in the Aristotelian notion of *ktema praktikon* (practical equipment), and continues to dominate many popular accounts of technology today. Arendt and Heidegger are two of its most prominent philosophers and vehement critics, showing how an insistence on artificial objects as instrumentality ("man-made means to an end established by man")[21] ignores both the catastrophic result of subordinating the world to questions of serviceability—the "homo faber" who, in Arendt, cannot but engender what she calls "earth alienation"[22]—and the ontological potential for technology as a positive force "unveiling" the world to the human, rather than flattening

it to our access to it. A sixth conception, articulated by a number of dominant posthumanist theorists, prioritizes *a constitutive relation* to force us to think the human not only as co-emergent with technical evolution (as per Simondon's theory of transduction and in the phenomenological stance of Don Ihde),[23] but as always already coproduced by it (Hayles; Stiegler).[24]

What is at stake in each of these six conceptions is the ontological status of the human vis-à-vis technology. In the following chapters, the book will return to these heterogeneous conceptions by showing how they align with, and are distinct from, the words and practices of techno-negativity. For now, what is crucial is that, across them, technology is conceived of as, variously, the bringing-into-being, or the threatening of, a normative theory of the properly "human." Let's take two examples. In the compensatory conception of human-technology relationality, artificial objects allow the human to become its whole self, simultaneously lesser than and distinct from other forms of animal life. The atrophic theory of relationality presents those same objects—particularly in their machinic, self-regulatory form—as a threat to the wholeness of organic human life. What emerges across the six conceptions is a series of distinct theories of the properly human with its own foundations, contents, and boundaries (however porous, as per the posthumanist conception), alongside a "nonhuman" Other on the basis of each theory's own predicaments (the animal, the inanimate, the inorganic, the artificial, the object, and so on). What is commonly missing from these theorizations is a self-reflective thrust: a consideration of this ontological labor as more than neutral metaphysical contemplation. What is forgotten is that ontology is not simply the framing of the world but its production; not signification or categorization but creation.[25] Or, as Roberto Esposito writes in his argument for the study of political ontology, "every philosophical definition of being entails presuppositions and effects of a political nature."[26]

Heidegger suggests there is an indissoluble connection between ontology and politics when, in his *Letter on Humanism,* he brings us into the extensive legacies of the "human" as a political category in service of dominating a "nonhuman" other. For Heidegger, humanism has many different lives, each time taking on a form appropriate to its precise circumstances. The first humanism, which has roots in ancient Greece but only comes into full fruition in ancient

Rome, could only ever be thought by opposing *homo humanus* (who embodies the Greek virtue of education) to *homo barbarus*. Later, Renaissance humanism would continue this separation, with the inhumanity of *homo barbarus* embodied by Gothic Scholasticism, while Christian Humanism would prop up the humanity of the human in contradistinction to another inhumanity: a *Deitas* to which man is a Child. For all their differences in purpose, teaching, and realization, these humanisms agree, according to Heidegger, that the *humanitas* of *homo humanus* is determined on the basis of "an already established interpretation of nature, history, world, and the ground of the world, that is, of beings as a whole."[27] But for Heidegger, the problem is less that the human, and their humanity, manifest themselves as a grounding at the expense of another, than that, in remaining metaphysical rather than ontological, they take the essence of "man" to be obvious as, simply, *animal rationale*. What this ignores, Heidegger suggests, is an appreciation of what ontologically distinguishes "man" from other living beings (plants, God, animals): its access to the truth of Being, the truly distinctive character of man's Dasein. Not only does Heidegger, in this gesture, ontologize humanism (providing human superiority with a basis in ontology, and thus extending it); he also fails to sufficiently investigate, by relegating to the past, the procedures of ontological exclusion his *Letter* opens up, conveniently ignoring his own commitment to the dehumanization of Jewish people along the way.

Others reveal that the age-old problem of ontological differentiation, far from extinguished, saturates the contemporary conditions of political subjectivity, action, community, and emancipation. *Homo sacer* (Agamben), the Black (Wilderson), the queer (Edelman), woman (Irigaray), the colonized (Mbembe), the savage (Arendt);[28] these are but a few names given to the contemporary embodiment of ontological exclusions. The result is a series of figures who maintain an uncertain recourse to humanity, either occupying the hybrid space between the human and its Others (e.g., Agamben's "wolf-man," Mbembe's "living dead"),[29] or an outside space removed from subjecthood in all its forms (e.g., Warren's Black as nonbeing).[30] The social, discursive, and institutional carving out and management of dividing lines between the properly human and its abyssal Others it relies upon is what I call "ontological policing."[31] If policing (in its everyday uses) is the governing of social, material, and territorial

borders by way of inclusion-exclusion procedures, then ontological policing is its ontological twin, incorporating some beings within the discourse of proper humanity while either sidelining or directly expelling others.[32]

Ontological policing has two central features. The first is its logic of inclusive exclusion. Lee Edelman writes: "There can be no 'all' without the 'not all' inaccessible to thought; no life, no mode of being, without the mode of nonbeing posed against it."[33] The figure of the nonhuman is externalized, only to be reintegrated as an Other (an object, thing, animal, commodity) against which the human attempts (at various rates of success) to prop up the unity, the discursive comprehensibility, of its own world. As a constitutive outside (rather than an absolute outside), the nonhuman helps produce an order of being to structure a given world, haunting it as the limit to intelligibility, the specter of its impossibility.[34] The second feature is its orientation toward differentiation. Schemes of ontological policing are always tied up with regimes of valuation; the ontological order of being is the social ordering of being. Such schemes give meaning to—that is to say, legitimize—the enactment of differential rights, capacities, and access to differently ordered beings within the same space or time.[35]

As a relentless battle for an updated conception of what counts as properly "human," the history of technology is a privileged (but by no means only) site of ontological policing. By way of technology and its refusal, ontological policing establishes lines between the human and its Others. This book aims to gain purchase on this precise ontological labor of technological advancement. Too often, when addressing the question of technology's ontological work, technological innovation is thought of as the progressive blurring of human-nonhuman demarcations, a process of intensifying hybridization of human and technological life that makes any attempt as separating the one from the other a futile endeavor. We are all increasingly, the argument goes, cyborgs ontologically inseparable from our technological augmentations. Complicating the singular progressivism of such ontological claims about technological histories, the book shows that each technological innovation uniquely carries within it a specific potential crisis in existing models of the properly human, including, but largely exceeding, tales of ontological hybridization. Paying attention to histories of techno-negativity, we find that the

introduction of new technologies is often tied up not with ontological hybridization but with the production of novel ontological exclusions or peripherizations, and the procedures of dehumanization, rehumanization, or subhumanization these give rise to. Such practices of ontological policing are inevitably, and profoundly, political, for they cannot be thought outside of their material expressions, their translation into an uneven social organization of life.

Despite this, contemporary techno-politics fails to sufficiently think and confront ontological policing. My argument is that three dominant strands of techno-political thought in particular run the risk of reproducing and magnifying, rather than undermining, the violent humanism expressed by ontological policing. These strands take the form of three figures: the techno-reformist, the posthumanist, and the techno-rationalist.

Let me introduce each briefly. The reformist is the figure who identifies in our technological present a series of important biases and shortcomings. They follow a modest logic of correction and regulation, showcasing a strong belief in the ability to redirect—step by step—technological objects and systems in the direction of a more democratic, less damaging future. To the reformist, only by keeping technology at a safe distance from the human is it possible to master and guide the trajectory of technological expansion away from its current flaws. The posthumanist, by contrast, is skeptical of any recourse to a pure humanity in need of saving from technological invasion. To the posthumanist, the human subject is not external to, but always already co-constituted by, technological objects. In fact, in breaking up the restriction inherent to any bounded notion of human selfhood, technological augmentation is able to expand humanity's abilities to affect and being affected. The techno-politics of the posthumanist translates this into a maxim: We ought to celebrate technological entanglement and the emancipatory decentering of liberal selfhood it promises. Finally, the techno-rationalist follows the posthumanist's strict denaturalization of the human. The rationalist's techno-politics is centered around the belief in the liberation from human vulnerability and finitude by way of humanity reengineering itself rationally through technological manipulation. Unlike the posthumanist, they extend the reformist's humanist obsession with mastery, and dislocate it from its grounding in "the human" while shifting it to the level of cybernetic ensembles.

For all their differences and promises, as we will see, what these figures share is a commitment to either radically embracing (the reformist), or updating (the posthumanist and the rationalist), humanism. They forget that humanism, by way of ontological policing and its production of an Other, has a fatal tendency toward instigating new forms of domination and subjugation.

The technological imperatives the three figures leave us with today are: "Reform!" and "Accelerate!" The book aims to be a conceptual declaration, and source of inspiration, for those not enamored by, or those suspicious of, the promise of such commands. Techno-negativity offers us a spirited alternative in whose unyielding commitment to refusal—if we are willing to probe carefully—we may find the seeds of a techno-politics settling for nothing less than the promise of abolition.

Itinerary: An-Archives of Refusal

What is accumulated across the chapters that follow must be mistaken neither for a monumental countergenealogy to histories of technology nor for an exhaustive treatment of technological refusal, as if the real that is history is simply a totality that can be reconstructed.[36] If *Techno-Negative* is historical in its mode of inquiry, it is more in tune with a Michel Foucault than an Abbott Payson Usher. The latter, a renowned historian of technology, makes it his task to show how an empirical event (a practice, an object) comes into being and spreads—shifting people's habits, livelihoods, governments. We may call this mode a "constitutive history." Foucault, by contrast, is suspicious of teleological narration and the search for origins, preferring the impulse toward fragmentation.[37] His "archaeological history," or more precisely "archaeological genealogy," prioritizes historiography as the heterogenization of that which is imagined to be consistent with itself.

My own method accelerates Foucault's into an explicitly "destitutive genealogy" whose an-archival approach is marked by a commitment to rupturing both constitutive histories and the very desire to construct new ones. This requires turning to the archive, looking for the gaps, absences, or fleeting mentions hinting at the presence, however obliquely, of techno-negative praxis. By foregrounding these, and while partially dependent upon and paying tribute to the

cautious work conducted by period-historians of technology, the objective of the book is not to fill the gaps of history, to resurrect the forgotten or left out into a counterhistory. Neither the work of a historian nor of a philosopher, *Techno-Negative* is genealogical in method and scope. The book is the labor of a conceptual empiricist aiming to trace the connecting points between an idea (the human) and a practice (technological refusal) across changing spatio-temporal terrains. This requires closely engaging the emergence of conceptions of human-technology relationality encountered in specific philosophers of technology (from Plato to Heidegger, Aquinas to Hayles), but only ever where their manifestos resonate—in the form of materialization, negotiation, or rejection—with the embodied-material practitioners of techno-negativity.

Many of those practitioners who are given narrative primacy in the book would have never entered the archival records if it had not been for their encounter with power. Without their direct refusal of a given technological object, they would have been lost to the passage of their own lifetime. This is the first principle applied in selecting the book's protagonists: They must have existed, and during their existence have confronted a technological form through a practice of refusal to the extent that it became of interest to archivists (the historians, publishers, museums, journalists, state bureaucrats, and other story-collectors of a given age and place). The second principle of selection is that their actions, or their own narrations of those actions, must do justice to the variety of forms of ontological questioning, of the renewed questioning of the human, that make up the contested lives of technological histories.

The book's chapters follow the divergent traces left by the selected cast of techno-negative protagonists. Chapter 1 starts from Archimedes's destruction of his own war machines, binding the very promise of *technē* to its refusal and delay. Focusing on three conceptual distinctions developed in Aristotelian and Platonic discourse—*technē*/*ēpistēmē*, *technē*/*physis*, *technē*/*tuche*—we encounter a wariness toward artifice as an affront to an agential theory of the human as uniquely animated by the soul and intellectual faculties. Two "animate instruments" in particular—"the machine" and "the slave"—pose a crucial threat to the sanctity of the properly human, the *homo humanus*. Responding to *technē* as a problem for early humanism, by way of technology's presentation as the horror of ontological

corruption, Greek techno-negativity's ontological policing functioned as a securing of a social ordering, the governors-governed relations beneficial to the dominant classes of the Greek city-state. Chapter 2 shows how the techno-negativity of medieval Christian demonology emerges from a conflation of the *artes mechanicae* and the demonic. The chapter travels via the pleas of the Cistercian Order, Peter the Chanter, Saint Augustine, Charlemagne, and Pope Innocent III into the early medieval conception of technology as the manifestation of one of seven deadly sins: Pride. Through polemic tracts and legal exclusions, artifice is kept at bay as an assault on God's civilization—the right to devour God and his creative transcendence over this world, as if not everything was already produced, perfectly, by *Deitas*. What was to be maintained in this ontological policing was a political theology centered around pastoral power, extending God's authority over the Catholic and non-Catholic world in the name of Christian humanism.

Chapter 3 serves as a turning point in the book. The techno-negative ceases to be a model of sovereignty and is, increasingly, supplemented by its translation into an assault on the strategies of authority. To bring this development to the foreground, the chapter zooms in on two distinct state responses to the machinization of labor tools in Western and Central Europe. Before the nineteenth century, mercantilist imperatives inspired states to burn looms, even executing some inventors. By the time the Luddites organized themselves, states became inclined to turn not against the machines but against the revolting workers. This shift can only be understood in light of the state's embrace of anti-protectionist economics promoted by a capitalist theory of property, labor, and production. In turn, the Luddites helped turn techno-negativity from a method that staves off, to one that unleashes, insurrection. Beyond a narrow struggle against economic precarity, however, techno-negativity quickly spiraled into an assault on the ontological degeneration of machinery later recognized by Arendt, Ellul, and Gehlen. Chapter 4 turns to the organized resistance to Western technologization during European colonialism. It shows how techno-colonialism is intimately tied up with the exclusion of indigenous lives as subhuman—a form of ontological policing I theorize as "technological onticide." Working through dubious travelogues, the development of the field of "social evolutionism," and the racist science of polygenism, the

chapter reveals how the presumed absence of technology became a (theo-centric, ratio-centric, bio-centric) measure of the Other's subhumanity, at the same time as this Other was expected to be humanized through their technologization. The chapter suggests that, by arguing for the "co-constitutive" logic of human-technology relationality, posthumanist theories of technological subjectivity insufficiently engage the human as the historico-political effect of negating the assumed nontechnological colonial Other. The result is a failure to confront the legacies of ontological murder. The chapter finishes by articulating the need to probe ways of thinking technological politics in ways that circumvent the violence of ontological policing. We open chapter 5 with one nineteenth century figure (a drunk Karl Marx) and end with another (French revolutionaries). The chapter examines the singular practice holding them together (lantern smashing) as a process of "publification" of techno-negative histories, both in terms of target (state property) and actors (a diverse range of practitioners). It speculates that the seeming aimlessness of the practice drives both its standing as a source of frustration for commentators and authorities, and its affective—and I will suggest, libidinal—popular appeal for practitioners. A second speculation proposes that, in attacking illumination, the smashers, possibly unwillingly, entered into a clash between conflicting legacies of the Enlightenment. Theirs was an embrace of the Enlightenment ethos of reason, democracy, and liberty, but, equally, an attack on the way the state generalized what were, to the *lumières,* a series of "epistemological" propositions into "epistemic" vectors of control. The effect is a series of what I call "policing epistemics" that enable a political theory of the human subject as "enlightened man": knowing, knowable, and to be known. Such a theory showed much contempt for, and criminalized, the dark(ened) subject who, remaining invisible, carves out their own path: an epistemics of opacity.

With the "electrification" of global capitalism at the beginning of the twentieth century, techno-negative tendencies encountered a new set of obstacles. The result, chapter 6 argues, is the proliferation of techno-negative practices opting not for materially assaulting technological objects but for the distant politics of the commune. The chapter opens by telling the story of one such community and its unthinkable annihilation: being bombed by a helicopter owned by the Philadelphia Police Department. By reading founding texts

employed by three intentional communities (John Africa's MOVE, Gandhi's Tolstoy Farm, and Sri Aurobindo's Auroville) alongside theories of techno-rationalism in Martin Heidegger and Herbert Marcuse, the chapter shows that one insult—calling someone a "techno-phobe"—plays a crucial role in legitimizing the sometimes lethal refutation of techno-negative exodus as an "Other" against which to define a theory of technological humanity. The chapter shows that techno-rationalism operates as a censoring both of alternative modes of rationality and of its own irrationalities. It asks whether, despite its confidence, techno-rationalism is not itself an expression of fearfulness—a phobia of more-than-human excess. Chapter 7 stays in the twentieth century to examine not withdrawal but a renewed dynamic of direct antagonism: the arson of 1980s computer companies. The chapter treats these as a politics of revenge, whereby one mode of violence—of computation—is matched by another. The computer arsonists take computational violence as temporal in nature: the cybernetic investment in reducing futurity to the extension of the present, its reduction of the space of radical virtuality as a condition of human subjectivity. Engaging Norbert Wiener's "prediction machines" alongside Henri Bergson's principle of virtuality, the chapter argues, allows us to think of computer arson as the scandalous production of its own forms of futurelessness.

The conclusion retraces the conceptual lineages of this book and brings them to bear on current articulations of techno-politics. What holds contemporary techno-reformism, techno-rationalism, and posthumanism together is their sustained, if often implicit, commitment to the ontological policing that defines humanism. Tracing their varied paths, the chapter argues that central to this lingering humanism is the quest for ontological security against the undoing of the human as a site of unity and identity. After pushing against the violent afterlives of humanism, I offer a brief polemic in favor of an abolitionist politics of technology that resolutely rejects any axiological commitments to the human. An abolitionist politics calls out to the inhuman, counterhuman, nonhuman, and unhuman, not for solutions but for companionship in techno-negativity.

Part I

Sovereignty

This page intentionally left blank

Chapter 1

Delay

Homo Humanus and the Ontological Horror of *Technē*

A short tale troubles the designation of ancient Greece as the birthplace of Western *technē*. In Plutarch's *Lives,* published in the second century AD, we are introduced to a large cast of famous Greek ancients, one of whom is the inventor and mathematician Archimedes. Among other achievements, Archimedes was applauded for his development of hydrostatic principles and for sculpting war machines—including what came to be known as "the claw of Archimedes," a giant grappling hook that was operated by a crane, first lifting, then drowning, enemy ships upon their entry into ports. The scientific knowledge of Archimedes, writes Plutarch, "had won for him a name and fame for superhuman sagacity."[1] But, Plutarch continues, Archimedes "would not consent to leave behind him any treatise."[2] He had his own machines destroyed as soon as they had fulfilled the role they had been designed for.[3] He was possibly the world's first machine-breaker.

This brief story signals a forgotten undercurrent in Greek thought that binds the very invention of *technē* to its refusal. Already in its earliest uses, the term *technē* could not be detached from an atmosphere of destitution, as if its emergence was, at once, a gift of civilization and a harbinger of doom. Ancient definitional struggles over *technē* offer a case in point. As David Roochnik and Tom Angier show, the etymological origins of *technē* lie with the Indo-European term *tektōn:* the person who works with wood.[4] Around the eighth century BC, in the pre-Platonic writings of Homer, we begin to encounter a broadening out of *technē* to refer to the knowledge and skills of those crafts that, like those of the woodworker, require a significant degree

of rational expertise, including the ability to find intelligent solutions to clear problems through a basic understanding of geometry and statics. Generally in line with the Homerian tradition, *technē* would later, in Platonic and Aristotelian thinking, come to refer to those crafts, and the knowledge those crafts require, that rely upon having a determined goal, precise methods, and rational applicability.[5] At no point in its development, however, does the concept acquire a stable definition, any internal coherence, or a fixed set of features generally agreed upon within ancient Greek thought. The Aristotelian tradition, for instance, retains much of the emphasis on systematicity and clear aims as essential features of *technē,* but distances itself from measurement and quantification as the sole or central conditions of those features, while questioning whether the predetermining of ends in *technē* runs counter to the pursuit of freedom.[6] More antagonistically, the pre-Platonic poet Hesiod, in his *Theogony,* developed the habit of employing the term to speak of "deception" and "tricks," rather than its more common use in pre-Platonic discourse as a referent to speak of admirable crafts and knowledges. From its conception, then, the notion of *technē* was subject to such definitional and etymological infighting. But such struggles were greatly in excess of simply discourse. We will see in this chapter that, while intimately connected to careful philosophical debates about *technē* and companion concepts (*tuche, ēpistēmē,* and *physis*), the promise of *technē*—the ability to master both subject matter and the more-than-human world—is, from the outset, underwritten by various desires for its material delay and brute destruction. The ancient histories of technological expansion are inseparable from the stubborn appetite for technology's negation.

To begin, we need to address a phenomenon that has puzzled historians of ancient Greece, what we may call "the paradox of *technē*": the failure of the expansion of scientific knowledge to translate into a corresponding burst of technological invention. Of course, invention was not entirely absent from ancient Greece. Calendars, clocks, screws, aqueducts, bridges, and a wide cast of military inventions all came into being via the minds and hands of the ancients. In the writings of Heron of Alexandria, we read rich descriptions of hydraulic presses, steam engines, automated fountains, vending machines, and wind-powered machines. A small number of Heron of Alexandria's inventions materialized, but most remained imagined, with many of

them only centuries later becoming prototypes for the machinic inventions of later civilizations, including in medieval times and the modern period. And this, historians have shown, was the case for the vast majority of scientific and mathematical experiments. The materialization of technological inventions by no means paralleled the radical expansion of scientific thought in the era. The thought of some pre-Platonic and Platonic philosophers did severely disturb older models of conceiving the earth and its place in the universe. But if these thinkers imagined a technological revolution, important sections of Greek civilization refused to enact it technically.[7] It seems that, for some, the very conception of the term *technē* had brought something dark, possibly sinister, into the world, something that must, for as long as possible, be kept at bay.

What are the conditions enabling and legitimizing this delay of technological invention? Why did Heidegger's Greek *homo humanus* hesitate in the face of the artificial? This chapter will show that *technē* introduced a substantive problem into the philosophies of writers who placed themselves at the heart of, and benefited from, an exclusivist theory of "the human." We will show how two "animate instruments," in particular, worried some of the humanist Greeks. These instruments bring into the world the possibility of an alien, possibly hostile will in excess of "the human," and thus needed to be contained if *homo humanus* was to maintain its onto-political hold on the Greek world.

Prometheus: Between Mastery and Fate

To begin, we need to turn to existing attempts at explaining the lack of technological innovation among the Greeks. These tend to emphasize practical, political, and ethical concerns. According to one of the more dominant, argued for by philosophers and historians of technology including Pierre-Maxime Schuhl, the "free men" of ancient Greece's highest strata showed little interest in the actual invention of technology because there was simply no need to.[8] The mere omnipresence of Greek labor (slaves and workers) meant there was much human capacity available for reckless exploitation. There was therefore little incentive to displace labor by the force of machinery. The Roman historian Suetonius tells us that the use of human labor was largely preferable to the high cost of technical invention.

He recounts the moment when the Capital of the Roman Empire is being rebuilt after it has been destroyed by an invasion. He writes: "An engineer offered to haul some huge columns up to the Capitol at moderate expense by a simple mechanical contrivance, but [the emperor] Vespasian declined his services: 'I must always ensure', he said, 'that the working classes earn enough money to buy themselves food.'"[9] The streets and houses were overflowing with free or cheap labor, culling any true interest in technological advancement.

Still, the Greeks' delay of invention runs much deeper than practical considerations. We learn this by listening to one influential Greek origin story of *technē*. The myth—told first by Hesiod in *Work and Days* and later retold by Plato and others, with shifting emphases and scores of moral interpretations—starts with two brothers: Prometheus and Epimetheus. These two brothers, referred to as "foresight" and "hindsight," were Titans—a generation of Greek gods preceding the Olympian gods—living on earth without human or nonhuman creatures. In Plato's telling, after the gods "fashioned [creatures] out of earth and fire and various mixtures of both elements in the interior of the earth,"[10] the two brothers received a task: to equip life on earth with suitable powers, one species at a time. Only the weakest were given swiftness; only the smallest were offered speed; only the most fragile were given strong reproductive abilities. The result: Each species attained the abilities needed to prevent both extinction and domination. Upon inspection, Prometheus saw all the species were well furnished in a great balance of the whole, except for one: "Man alone was naked and shoeless, and had neither bed nor arms of defense."[11] With the appointed hour approaching, Prometheus took a leap. He stole fire, the wisdom of the arts and crafts, from the gods Hephaestus and Athena, and gave those to humanity. With its originary helplessness generously compensated for, he believed, now humanity "was well supplied with the means of life."[12]

This is partially a story of human victory over the divine realm. Humanity could now not only obtain the crafts essential to its preservation; it could also have "a share in divinity."[13] But it is also a warning. Prometheus was sentenced to the most horrid of deaths for his dangerous theft. Not only had he tricked the gods; he had also granted the divine powers of fire and craft to a species that lacked the wisdom necessary for careful usage. Zeus clung Prometheus to a

cliff high up in the mountains, where he was exposed to the elements and an eagle hungry for his organs. His liver was pierced and ripped open by the eagle's sharp claws and beak, the hellishness of which Prometheus would have to endure into eternity. By morning his liver would heal, and the eagle would return, eager for more blood and revenge. This early Greek tale of technology is, then, by no means a straightforward celebration of technological ingenuity, the mastery over the environment gifted to naked, defenseless humanity. In Aeschylus's version of the story, Prometheus cries out: "All these devices I invented for human beings. Yet now in my own misery, I can't devise one single trick to free myself from this agony."[14] His are the moans of someone confronted with the limits of human agency and mastery in the face of an other-than-human will.

But they are not his moans only: We hear them echoed in various forms throughout the early development of the concept of *technē*. Martha Nussbaum has shown that the question of mastery over the more-than-human world has long expressed itself throughout pre-Platonic, Platonic, and Aristotelian thought in the form of a crucial tension between *technē,* on the one hand, and *tuche* (fate), on the other hand.[15] The double question at stake: Can, and should, the *technai* increase human control over the contingency of the world? To Nussbaum, the question facilitates a fundamental crack dividing Greek philosophies of technology. For some, including the Hippocratic writers and Plato, the dialectic of *technē*/*tuche* is an undeniable and desirable feature at the heart of any conception of successful *technē*. Woodworking, shipbuilding, and other *technai* are, in this reading, essential tools in the humanist pursuit of control over the nonhuman. Others, most notably Solon and Aristotle, are more cautious, not only taking humanity as forever bound by limitations outside of its control, but suggesting that the best human life is the one vulnerable, and welcoming, to those very limitations, embracing the ungovernability of *tuche* as a source of both self-development and modesty.[16] Even Plato, who wouldn't go as far as celebrating such limitations and who is otherwise excited by the humanist possibility of radically reducing contingency, wonders whether *technē* might not indeed pose a challenge to the human as the privileged locus of agency and animation, of mastery and control.

To begin to understand the paradox of *technē,* the technonegativity of delaying technological inventions, we need to probe

this ontological tension: Is *technē* the affirmation or the displacement of Greek ideals of the human agent? Does it elevate Greek humanism—centered as it is on *homo humanus* and the ability to govern the nonhuman—or does it undermine it? Probing these questions in the next sections will shed light on the Greek delay of innovation. We begin by turning to an unusual psychoanalytic interpretation of this delay. This will lead our investigations and bring us into the ontological horror the Greeks experienced when confronted with the agency of an alien Other.

Psychopathology of Machinic Life

Fast-forward two millennia for a necessary detour. In the summer of 1919, a patient and friend of Sigmund Freud stepped onto a chair, tied a curtain braid around his neck, and fired a bullet into his head, effectively killing himself twice. The suicide of Victor Tausk left a strong mark on Freud's circle and had mixed effects on Freud himself. Tausk had regarded Freud with deep admiration as the great inventor of psychoanalysis, that "triumph of one of the greatest ideas of mankind,"[17] as he wrote in a farewell note. Freud, himself, had respected Tausk for his analytic abilities, and blamed his suicide on "the horrors of war" Tausk experienced alongside a severe Oedipal complex. But Freud had also called Tausk infantile, troubled, and wild. In a letter to fellow psychoanalyst Andreas-Salomé after Tausk's death, Freud wrote: "I confess that I do not really miss him; I had long realized that he could be of no further service; indeed that he constituted a threat to the future."[18] Responding to the letter, Andreas-Salomé affirmed Tausk had "a frenzied soul with a tender heart" who threatened not only Freud—with Freud afraid Tausk might steal his unpublished ideas—but psychoanalysis more generally.[19]

In the year of his suicide, Victor Tausk had published an article that solidified his status as a daring thinker on the margins of psychoanalysis. The article, titled "On the Origin of the 'Influencing Machine' in Schizophrenia," offered an unlikely reading of the problem of paranoia in patients diagnosed with schizophrenia. Narrated via the exemplary case of "Miss Natalija A," Tausk details how schizophrenic patients seek to counter a narcissistic overinvestment in the ego. To liberate herself from the psychic tension of narcissism, Miss Natalija A projected a representation of her own body

into the "outside world," attempting to externalize that which had become unbearable—the excess of her own ego.[20] In doing so, her ego was no longer considered part of her body, leading to a schizophrenic position. As this position developed, the externalized ego distorted and fragmented until it was a complex mechanical device, her machinic double.

The more this schizophrenic position grows, the more the machinic double becomes what Tausk calls an "influencing machine." Miss Natalija A started feeling persecuted by the hallucinatory machine she had conjured, declaring that "she has been under the influence of an electrical machine made in Berlin, though this machine's use is prohibited by the police."[21] This machinic force of persecution was increasingly believed to be operated by her perceived enemies. It is those who threaten the narcissistic ego that are repulsed as the enemies, and that become the manipulators of the machine used, at a distance, to afflict the patient. In the case of Miss Natalija A, the machine was believed to be manipulated by a rejected partner controlling and draining her feelings and thoughts by means of telepathy, invisible wires, radio waves, air currents, magnetism, X-rays, and other mysterious modes of transmission. When the partner struck the machine, Miss Natalija A felt the pain; when he stroked it, she experienced sexual arousal. Everything that occurs to the "diabolical apparatus" happens to her. In fact, despite the inhumanity of the levers, batteries, wires, boxes, and buttons that make up its construction, Tausk suggests that the machine still represented her whole person, "the projection of [her] body on to the outer world."[22] As she slid further into a schizophrenic position, the double disintegrated slowly into a purely mechanical form, causing an experience of alienation in which the self is little more than a projection over which she had not only lost control but by which she became herself controlled. Before Tausk could satisfactorily resolve this machinic paranoia, Miss Natalija A turned her back on him, noting that she could no longer trust him, as he, too, was now pulling the cords of her influencing machine. A few months later, Tausk stepped onto his chair, curtain braid in hand.

Fourteen years later, another member of Freud's circle—Hanns Sachs—returned to Tausk's controversial publication, finding it useful in understanding a seemingly distant problematic: the paradox of *technē*. The reason why the ancient Greeks failed to invent machines,

Sachs argues in "The Delay of the Machine Age," cannot be reduced to the omnipresence of slaves. Instead, he suggests, we need to examine the psychopathology of the Greeks. Like Miss Natalija A, Sachs proposes, the ancient Greeks were victims of excessive regression into narcissism, indicating an overinvestment in the ego. He writes: "It was a narcissistic conflict which implanted this inhibition in the peoples of antiquity."[23] This is expressed, first of all, in the Greeks' glorification of the perfect human body, witnessed in art and in science. Every minuscule detail of the body—muscle, skin, movement, bearing—was studied and reproduced with relentless precision and zeal. Likewise, the Greeks celebrated "a love attachment between persons of the same sex."[24] In tune with psychoanalytic logic of the early twentieth century, Sachs disturbingly suggests that the lofty praising of homosexuality, in the Platonic tradition, can be explained by an overinvestment in the ego and therefore by the pathological narcissism of Greek antiquity. More interestingly, to Sachs prominent Greek philosophers and poets were deeply anthropomorphic in their relations to the surrounding world, incapable of seeing the beauty that nature glimmers with unless it exists in a beneficial relation to humanity. Finally, their gods and demigods—Prometheus, Zeus, Epimetheus, to name but a few—were first and foremost projections of the human ego.[25] If they had superhuman powers, their actions were still restricted to human purpose and limitations, their visual representations bound to human forms and their ethics woven into human morale.

Sachs argues that this multilayered overinvestment in the ego produced uncanny feelings that prevented the invention of machines in the late classical period.[26] Sachs notes, while quoting Tausk, that such "machines produced by the wit of man are fashioned after the likeness of the human body, an unconscious projection of his own bodily construction."[27] The machine is the externalization of the human ego, and thus, as with Miss Natalija A's influencing machine, becomes a threat to it. This is the uncanniness that emerges when "without warning an object begins to move or to speak in a human manner."[28] Shocked by the sudden appearance of animation in the inanimate, the Greeks experience narcissistic trauma. Like Tausk's schizophrenic patient, the Greeks were repelled by the machinic representations of their selves in the external world. Externalized and disowned, the machine becomes independent from the agency of the

human ego, and subordinated to an alien will, the possibly hostile will of an enemy controlling and inflicting with pain the human body and psyche. The conspiracy of the machine is the displacement of the human will, the annihilation of the ego, at odds with the looming humanism of the Greeks. In Sachs's schema, schizophrenic tendencies are the price the human species pays for the technological exteriorization of agency. Delaying the blossoming of *technē,* the paranoid Greeks turned, and kept turning, inward.

Animate Instrument 1: The Machine

So far, we have considered a plausible thesis: A generalized penchant for human narcissism may have caused the Greeks to pause in the face of technological expansion, fearing it might bring about a radical undoing of humanity's unique, superior position vis-à-vis the nonhuman world. But we need to query: What is it to diagnose, almost clinically, a civilization's relation to technology? What are the stakes when the person investigating such a complex relation is not a historian of antiquity but a psychoanalyst from the Viennese School?

There are some particular points of concern with Sachs's explanation of the techno-negative refusal of machinic inventions. For one, the easy slippage from patient with schizophrenia to a general population in history, and back, adds up to a civilization-wide psychoanalysis, and is clearly prone, to say the least, to conceptual imprecision.[29] There is much lost in the jumps from the individual (Miss Natalija A) to the collective, from the present (early twentieth century) to the past (Greek antiquity). Even if we conceptually follow the method of psychoanalysis, and understand its merits, Plato never lay on Sachs's couch. The result is an unfocused attempt at digging out the unconscious fears of a two-millennia-old civilization. Yet, even if its methods are dubious, and its answer to a complex historical question one-dimensional, in his dramatizations Sachs ends up surfacing an ontological problem that sits at the heart of and legitimizes the Greek conflict with *technē,* and is worthy of closer examination.

Sachs is right to point us toward the problem of "animation" for Greek thinkers of *technē.* As Bernard Stiegler shows in the opening pages of his *Technics and Time, 1,* this problematic inflicts the very earliest conceptions of *technē* as distinct from *ēpistēmē.* In Homeric times, the terms were still often employed interchangeably to refer

to understanding something with such depth that you are entirely at home in it. With Aristotle, the philosophical *ēpistēmē* is increasingly pitched against *technē,* whereby, Stiegler maintains, "all technical knowledge is devalued."[30] The grounds of this devaluation? *Technē* is a mode of knowledge that concerns itself with objects that are inferior since they do not carry within themselves "self-causality." Aristotle distinguishes the "natural being" (*physis*) that has within itself "a beginning of movement and rest," from "the product of art" (*technē*) that lacks a "source of its own production within itself."[31] The Aristotelian tradition in particular, as expressed most clearly by Heidegger in his conception of *technē* as that which "reveals whatever does not bring itself forth and does not yet lie before us,"[32] underscores this absence of self-causality as a ground upon which to relegate *technē* to the inferior status of "inanimate instruments." The result is an understanding of tools as, simply, means in service of human ends, whereby, as Agamben notes, "the instrument could not appear as an autonomous form of causality."[33] In this conception of *technē,* the human—alongside other natural beings—is the locus of agency, the exclusive agent of animation, that exists at the expense of a technical Other who remains ontologically distinct. We are left with a neat ontological formula: The human, superior through its inherent ability for animation, is clearly ontologically separate from inanimate artifice.

This is where the machine, as "animate instrument," makes its horrifying entry, corrupting the comfort of any strict categories. If *technē* had remained limited to the terrain of inanimate objects it would, following Sachs's argument, never have caused the Aristotelians the worry it did. Machinery exists in between the human subject and the nonhuman object. The result: the rupture of the borders drawn between them via the separation of *physis* from *technē*. *Technē* ceases to function ontologically as an inclusive outside against which the human, as animate being, can be easily articulated and made comprehensible.

The animation considered to be unique to human and natural life is now embodied by the technical object whose originary inferiority relies upon its very lack of self-animative abilities. Acquiring such abilities means *technē* begins to enter into a terrifying proximity to *homo humanus* while maintaining a certain distance from it. This "distant proximity" does not limit, but instead *enables,* the

ontological horror of animate instruments: The machinic is all the more terrifying because we know (through intellect) it to be a machine, but our senses (by body) constantly lead us to question this knowing. To allow machinery into the world is to release, once and for all, the shimmering possibility that whatever appears to be human is, in fact, a soulless automaton, that "automatic, mechanical processes are at work, concealed beneath the ordinary appearance of animation."[34] We are not only, for the first time, led to doubt whether, as Freud notes citing Ernst Jentsch, that "apparently animate being is really alive," but also whether "a lifeless object might not be in fact animate."[35] The machine haunts *homo humanus* as its potential breaking point, the moment at which its unity, and its comprehensibility, are under threat. This is why the encounter with the animate instrument, or the inanimate human (humanoid),[36] might trigger a sense of incomprehension or revulsion, a hardly quantifiable or qualifiable recognition of animated life as excessive of familiar categories. Perhaps it is this affective disruption of the ontological ordering of the world that the Greeks safeguarded against through their delay of the animate instrument. Techno-negativity allows the Greeks to pursue ontological policing, keeping *technē* at a comfortable distance and cancelling its ability to invade the familiar terrain of the human.

Animate Instrument 2: The Slave

What we are still missing in our attempt at grasping the Greek paradox of *technē,* and what Sachs forgets, is a consideration of the precise definition of "the human" under threat by *technē.* The agential theory of the human subject—which prioritizes human access to animative qualities—we have been describing does not take "animation" in its totality, and in its multiplicity, as its distinctive feature. Only certain human beings, and only certain modes of animation, are granted the luxury of access to the status of the properly human. This is where a second crucial designation of "animate instruments" comes to matter: not the machine, but the slave.

In Aristotle and Plato, the slave is so far removed from *homo humanus* that it occupies, by nature, a deeply marginal position with only indirect recourse to "humanity." This ontological peripherization rests on a specific conception of the proper "human" as

"intellectual human." Heidegger explains this carefully by showing how the key Greek philosophers, and later the Romans, are interested less in "man" (*homo*), than in "human man" (*homo humanus*).[37] This involves the molding into being of a "human" in accordance with Greek ideals of virtue.[38] Attaining these ideals requires attending the Greek schools of philosophy and becoming schooled in the *paideia* of what the Greeks considered to be "good conduct." At the heart of this schooling sits the demand to develop those faculties that center intellectual agency at the expense of those that do not. Only by doing so does one become "human" rather than "barbarian" (*homo barbarus*). Aristotle articulates this clearly in his Book II of *De Anima* when distinguishing between three elements of the soul: the nutritive, sensitive, and intellectual faculties.[39] If vegetative life harnesses nutritive abilities—the principles of growth and nutrition—and animal life additionally enrolls sensitive capacities, those faculties in themselves are not "anthropine," not "properly human."[40] While shared by much of plant, animal, and human life (*zoè*), the nutritive and sensitive faculties have by nature "no share in human virtue."[41] And while humans need to be familiar with the nutritive and sensitive faculties of the soul, the *ergon* truly proper to the human is located in the intellectual faculties—the "reason" that separates "political life" from "simple life," *bios* from *zoè*. In short, *homo humanus* is the human animated by the intellectual faculties of free, political citizens.

As Hannah Arendt tells us, the result of this theory of the human, found in Plato as much as in Aristotle, is a prioritization of *vita contemplativa* (*ēpistēmē*, "intellect," "reason") over *vita activa* (*technē*, "craft," "bodily labor").[42] The contempt toward embodied, sensuous activity expresses itself sharply in the disdain for the manual laborer, the one working with the *technai*, with what Aristotle in his *Politics*, and in stark contrast to the techno-positivity of his *Mechanica*, pejoratively calls the "banausic" or "utilitarian" arts.[43] These "useful arts" "degrade the mind," he suggests, and while they might have practical value, "to dwell upon them would be in poor taste."[44] The manual laborer, reduced to those bodily activities that "make the mind preoccupied,"[45] fails to live up to the grandeur of noninstrumentalist intellect (*ēpistēmē*) that theorizations of "political man" are indebted to. As with Aristotle, in Plato's *Republic* the physical laborer is far removed from the "free men" who embody political life as agents of pure conception, of theoretical experimentation, and who show little

concern for the embodied forms of knowledge and practice required by the arts and crafts.[46] Plato went as far as to condemn artisans and craftsmen—those conductors of base handicraft—to the lowest layers of his utopian state.

But only with the ultimate embodiment of manual labor—the slave—does the degradation become explicitly ontological. As slaves had done nothing wrong, their capture had to be validated on the basis of what they *are*.[47] Aristotle in particular developed a conception of the nature of slaves that would legitimize their capture and forced labor. For him, slaves are "designed by nature for subjection,"[48] and therefore the war for their capture is just by nature. What marks them as naturally subjugated, as "natural subjects," is their ontological status outside of the category of *homo humanus* from which they, he notes, "differ as widely as the soul does from the body and the human being from lower animal."[49] Again, it is the distinction between the faculties, between *ēpistēmē* and *technē,* that comes into play here.

At times in *Politics,* the slave appears to occupy the status of bestial animality,[50] the being lacking the superior intellect of the human animal. Aristotle writes: "that which can foresee by the exercise of mind is by nature lord and master, and that which can with its body give effect to such foresight is a subject, and by nature a slave."[51] In the case of masters and "free men," the soul governs the body and the intellect rules the emotions.[52] By distinction, the slave's soul is dominated by the body, by the sensitive and vegetative faculties, and as such, it fails to exceed the lowest natures of animal life.

Elsewhere in *Politics,* the slave is conceptualized not as animal but as "animate instrument," occupying the hybrid space between tool and body, artificiality and organism. Unlike manual laborers (e.g., the craftsmen), slaves not only *employ* tools; they are *reduced* to them. If she is a living tool, the slave is only so in relation to her master, without agential properties of her own. As the originary model for the machine, Agamben argues, the slave is the human life that takes place entirely in the domain of bodily "use"[53]—not the human who acts (*homo humanus*) but the body that is acted upon. For this reason, more than simply facilitating the increase of productive labor, the slave secures *homo humanus* its proper dimension, its political life, by liberating it from bodily necessity.[54] The slave, as human being and social institution, inhabits the ontological periphery of *homo humanus* and is its enabling factor.

In summary, the animate instrument—as we have been describing it in its double sense as "machine" and "slave"—is required as a necessary inclusive exclusion that holds up *homo humanus*. The fragments of techno-negativity we have outlined help to maintain, through ontological policing, an agential conception of the human as decisively animated by the soul and the intellectual faculties, and that is carefully demarcated from the inanimate, irrational, embodied, and enslaved. In this view, the Greek paradox of *technē* is neither simply a practical consideration nor solely a question of ethics. What is instead at stake is the categorical divisions between the Human and its Others, *ēpistēmē* and *technē, physis* and *technē*. The trouble, from the viewpoint of *homo humanus,* is that *technē* introduces the possibility of new structures of animation in the shape of, variously, a machinic will, embodied activity and other forms of agency that are alien to, and excessive of, the "anthropine." The humanist hatred of animate instruments, including when it takes the form of machine-breaking and delay, may well be a semi-secular bulwark against the slipping away into the horror of ontological groundlessness, and with it, into the inhuman terrains of the body, the sensual, the vegetative.

Allowing animate instruments to become too dominant, to grant them freedom, would pose not only ontological troubles but social ones too. No longer embodying the superior humanity of the Greek city-state, the aristocratic elements who benefited so much from Aristotle's naturalist theory of inequality would lose their exclusive rights whereby some can dedicate themselves to the *paideia* of enlightenment and political debate, while others, lesser humans, are reduced to fixed capital. This is the crucial problem for *homo humanus:* As a constitutive outside, the animate instrument is both a necessary limit point *and* the relentless possibility of its undoing. Technology becomes animated, the slave revolts and becomes free, rupturing not simply the secure status of the human but presenting, however temporarily, a glimmer of a new social reality. And thus, as a preventive measure, the Greeks hold onto their techno-negativity. Centuries later, another set of actors—Christian humanists in medieval Europe—were also aware of technology as a potential terrain for onto-political exploits, carving their own unique paths into techno-negativity.

Chapter 2

Prohibition

Medieval Demonology of Machines

> How varied are the pursuits of man, how diverse his practices. But all have one end and the same result: toil and vexation of spirit.
>
> —Pope Innocent III, *On the Misery of the Human Condition*

> Our industrial park is the Devil's late progeny.
>
> —Vilém Flusser, *The History of the Devil*

In his *Gesta regum anglorum,* published in 1125, the monk and historian William of Malmesbury narrates the demonic biography of a bishop named Gerbert of Aurillac. According to legend, the bishop discovered the secret skills of sorcery while studying astrology and mathematics in Seville and Córdoba. In these two Muslim cities, Gerbert of Aurillac acquired "the art of calling up spirits from hell."[1] We learn that the bishop put these arts to use in his ascent to the papal throne. He summoned the Devil to enter into a pact with the demon Meridiana, who helped him build "for his own purposes, the head of a statue [that] pronounced the truth either in the affirmative or negative,"[2] allowing him to perfect his plans for papal power. Gerbert's reputation as a necromancer, as a trickster of demonic depths, was in part constructed by the many clerical opponents he faced. But the connections it establishes between the demonic and machinery also betrays a sharp fragment of techno-negativity cutting across a wider Christian appraisal of technological objects.[3]

In writing a theory of demonology, influential writers at the core and fringes of the Catholic Church pushed techno-negativity beyond the ontological claims made by the ancient Greeks in the previous

chapter, and into the sphere of theology.[4] What Greek philosophers had theorized as an ontological concern with human exceptionality now became imbued with a theological undertone: how to evaluate technology in the face of a divine cosmos?

A number of historians and philosophers of technology have argued that the European Christianity dominant throughout the Middle Ages needs to be understood as a crucial shift away from Greek techno-negativity, fueling an intense pursuit of technological inventions in monasteries and elsewhere.[5] What drove this pursuit? The contempt for manual labor that animated the Greek disdain for *technē,* they argue, began to vanish. "Prayer" and "work" were placed, increasingly, onto an equal footing, as expressed most forcefully by Saint Benedictus and his *ora et labora*. For the historian Jacques Le Goff, it is the new socioeconomic pressures of an era increasingly reliant on commerce and merchants that facilitated this equation.[6] Both Hannah Arendt and Lynn White, by contrast, argue that the cause of the vanishing of disdain for manual labor is to be found within theological scripture itself.[7] Arendt maintains that the medieval Christian emphasis on "the sacredness of life" translated into an appreciation of the laboring activity necessary to sustain and further biological processes.[8] Two of the most prominent figures in Medieval Christianity developed this idea. In the influential works of fourth-century theologian Saint Augustine, labor transformed from a punishment for sin into a law of nature. In a reversal of the Greek tradition, Saint Augustine also centered *vita activa* over *vita contemplativa* through a series of influential reinterpretations of Christ's words.[9] If Aristotle's troubled relationship to manual labor became decreasingly popular, his natural philosophies, when they were translated into Latin in the late Middle Ages, exerted a great influence on medieval understandings of the natural world. Against pagan animisms that see a living spirit in all places and objects, in Aristotle theologians such as Thomas Aquinas found scientific theories of matter as inert, and motion as localized, opening the nonhuman world to human intervention, manipulation, and creation—that is, to technological pursuits.[10] Together, Augustinian and Aristotelian philosophies, Lynn White suggests, helped bring into the world "a mood of activism," a Christian humanism in which God, as Creator, "commands man to rule the world and to help to fulfill the divine will in it as a creative cooperator with him."[11]

In order to worship God, the maxim goes, we need to imitate him; such is God's will for humanity.

This maxim, White proposes, only truly caught on in Western Christianity where the invention and use of technology were taken as "divinely sanctioned activity," while the Byzantian Christianity of Eastern-Southern Europe remained much more closely tied to the contemplative ethos of Aristotle and Plato steeped in techno-negativity. But other historians, including George Ovitt and Elspeth Whitney, are rightfully more careful. They have argued that even the "Western Church" is, in its relation to the question of technology, riddled with contradictions and ambivalence.[12] In many ways, the Catholic celebration of the mechanical arts was matched by a severe, techno-negative disdain. Ovitt and Whitney are correct, but in their (and other historians') emphasis on shifting evaluations of labor, they overlook the stubborn recurrence of one particular cause of trouble: the demon.

In this chapter I trace a prevalent refrain of hesitation in the practice and thought of techno-negative Christians to whom technology presents itself, threateningly, as a sinful temptation, even (at times) for the "activist" Saint Augustine.[13] As we will see, on the one hand, the divinity of God's creation is ruptured through its artificialization in the form of mechanical productions. On the other hand, the mechanical arts are a threat to the divinity of spiritual life, a blockage on the way to spiritual salvation. In both instances, the mechanical arts present a potential transgression into a sinister territory shuddering with demons: the deadly sin of Pride. This chapter particularly traces how the figure of the demon came to be associated with the mechanical arts in the Christian Catholicism of medieval writers both at the heart, and on the edges, of the church. With it, as will be argued, techno-negativity took on a life at odds with that of the ancient Greeks, attaining a judicial ground tied up with what Michel Foucault refers to as pastoral power. Adopting these logics, techno-negativity came to function as a defensive measure—the protection from diabolical influence—and an active weapon—the extension of God's influence. In the hands of influential Catholics, techno-negativity effectively continued its life as a model of power, turning the Greek admiration for the aristocratic *homo humanus* into an ontological theology centered around extending God's authority over the Catholic and non-Catholic world through a reassertion of God-human

divisions. The result was more than philosophical debate and religious polemics. Propelled by some of the most influential theologists of the medieval period (such as Pope Innocent III and Peter the Chanter), in important Catholic quarters technological crafts and objects were banned and practitioners severely punished.

First, however, we need to approach the demonology of machines in light of the particular place of the demon in Christian theology. Getting there requires a brief return to ancient Greece. Where poets and philosophers examined *daimōn*—"supernatural, guiding spirit"—it was, commonly, as a spiritual being providing fortunes or destinies. In Hesiod's pre-Platonic poem *Work and Days,* this spirit appears only at the moment when a human soul passes away, emerging as an incorporeal reincarnation sustaining connections to the gods.[14] Plato's *Symposium* tells a different story. In his rendering, the demon is assigned to an individual mortal at birth to function as a higher version of the "self," an invisible intermediary tasked with "interpreting and conveying all that passes between gods and humans: from humans, petitions and sacrificial offerings, and from gods, instructions and the favors they return."[15] Like Hesiod's, Plato's demons provide assistance and advice to mortals. What connects pre-Platonic and Platonic conceptions of demonology in ancient Greece is an understanding of demons as, simply, messengers. Their morality straddles between the evil and the benevolent, never quite settling on either.

With the rise of Christian demonology, we lose this ambiguity.[16] The spiritual category of the *daimōn* fractures into two: "angels" and "demons." The latter, as "fallen angels," lose their neutral connotation and acquire a distinctively negative status. Unlike angels, they can never be mediators between mortals and God. In fact, whether thought of as immaterial or quasi-material,[17] what they share is a diametrical and diabolical opposition to God. Rather than serving God, they hold, as Aquinas claimed in the thirteenth century, a "common wickedness whereby they hate men, and fight against God's justice."[18] He wrote that their will is resolutely "obstinate in evil" and by no means "confirmed in good."[19] A crucial source of inspiration for Aquinas, Saint Augustine had already explained that demons have sinned through their own initiative—their excessive Pride—rather than being tempted by any external force or subject. As a result, they are irredeemably tied to their self-love: They want the Devil to be worshipped like God. In their mission to fulfill this central desire,

they seduce humans to sin, that is, to "a word, deed, or desire in opposition to the eternal law of God."[20]

To do this, demons conduct a rupture: They transgress what is eternal (God's functions, attributes, territories),[21] and in doing so, they devaluate it. They do not only test mortals' faith in God; they aim to eliminate divine influence altogether in their "tyrannical hostility to the City of God."[22] The souls of mortals who are swayed are occupied and then annihilated. This is the first operation of demonology: the human lured into sin by the external world of an inhuman force, the supernatural spirits that are the Devil's demons.

But there is a second operation of demonology that cannot be overlooked, one approached by Vilém Flusser in his *History of the Devil*.[23] Like the first operation, it is demonic in aim, seeking the banishment of God's influence over earthly life. But unlike the first operation, it is not, strictly speaking, demonic in method. If each of the church's "seven deadly sins"—Pride, Lust, Envy, Greed, Gluttony, Wrath, and Sloth—can tempt a human through external intervention by an actual demon, they can also manifest themselves by way of one's intimate world. In such instances, the Flesh and the Soul present an internal impetus toward sinning. The sinning body does not always require demons then; it can, through its own diabolical tendencies, become demonic. Thus, beyond a phenomenology of the *demon*, demonology announces, equally, a phenomenology of the *demonic*.

Through its double operation, demonology pertains at once to the human and the inhuman in its urge to impact the human world, displacing it toward sin. It is in this general sense of the demon as an abstract concept—rather than purely a concrete phenomenon—that we must conceive of the meaning of the term. In this chapter, then, demons present a speculative figure jumping across various worldly manifestations—human or inhuman, natural or supernatural, corporeal or unbodied, disguised or overt—on a trajectory toward its supreme goal: freeing this world from God's domination.

Protecting God's Civilization

But how did the demonic come to be associated with technology? How did technology become a worldly manifestation of Satan's evil in the eyes of prominent Catholic writers? One possible answer lies in a text written around 850 AD. The author of this text, a Catholic

teacher named Martianus Hiberniensis, left Ireland and went in exile, starting work at a school in Laon, North of France. Over the years, he became an important annotator, translator, and collector of works in literature, poetry, and philosophy. Most importantly, the book that earned him modest fame was *Scholica Graecarum Glossarum,* an extensive compilation of Greek words, definitions, and etymological origins. One of these Greek words was "artes mechanicae." In the reading of Hiberniensis, *mechanicus* derives not from *mēkhanē*—machines—and instead from the Greek *moikhós,* and the Latin *moechus,* both of which mean "adulterer." He writes: "'Moechus' means adulterer, a man who secretly pollutes the marriage bed of another. From 'moechus' we call 'mechanical art' any object which is clever and most delicate and which, in its making or operation, is beyond detection, so that beholders find their power of vision stolen from them when they cannot penetrate the ingenuity of the thing."[24] For Hiberniensis, the sinful life of mechanical arts is so entrenched that it is built into its etymological foundations. Sinfulness is the hidden condition of technology. But it is sinful in a particular theological sense. In calling the mechanical arts "adulterine," Hiberniensis appears to evoke the long-established bond between desire and sin that runs back to the Bible. Technology restages the biblical struggle between God and Satan that animated Adam and Eve, causing them to eat the forbidden fruit from Satan's tree. Not only were Adam and Eve punished by God for falling prey to Satan's seductive methods, casting them out from the Garden of Eden; their sin, in fact, became what Saint Augustine calls the "original sin,"[25] the sin that would effectively introduce sin into the world. Because of this sin of all sins, original innocence is lost, and all following generations are born with "disobedient flesh": a generalized disposition toward sinfulness. If, according to Saint Augustine, the original sin is inherited by all of human life through concupiscence—that is, via the sin of Lust, sexual and otherwise—then technology presents one such terrain fraught with dangerous seductions, at once humanmade and induced with evil potential, moving us into a state of arousal. Like Satan's tree of forbidden fruits, the mechanical arts lure us away from God's eternal law and into a psychosexual economy unrestricted by the divine activities of prayer or contemplation, where we are at our most vulnerable to Satan's sway, to the secrets and tricks, the half-truths and outright lies, that tricked Eve. Similarly, and not

unlike the partner of the adulterer, the beholders of the mechanical arts, Hiberniensis notes, "find their power of vision stolen."[26] The adulterer finds in the mechanical arts a companion made to her or his measure, an impure operation made to deceive and distract. To Hiberniensis, the genealogy of technology is a demonic one, a history of sin. Despite being debunked as factually incorrect centuries later,[27] Hiberniensis's etymological slippage had brought a dangerous connection—between sinfulness and technology—into the world that would shadow the Catholic relation to artificial objects at crucial moments in the Middle Ages.

Three Catholic figures would come to play an important role in defining this demonization of technology. The first emerged from a group of disgruntled monks who, displeased with their own Order of Saint Benedict, traveled to Dijon in eastern France to found a new abbey. The aim of their Cistercian Order was a much stricter pursuit of the *Rule* of Saint Benedict. The *Rule,* written by Benedict of Nursia in 516, was a book of instructions for Christian monks living communally in monasteries that centered around the virtues of humility, austerity, and obedience. For the Cistercians, these virtues translated into a harsh suspicion of technological frivolity.

As historians have carefully argued, this is not to be confused with an outright rejection of technical means. F. T. Evans shows that water engineering, ironmaking, and agriculture, for instance, proved to be technical domains the Cistercians actively developed and excelled at in the 1200s.[28] At the same time, he notes, many of the crafts in the Order of Saint Benedict were subject to strict control and numerous prohibitions. To understand this, most historians of the medieval Cistercians point toward a specific text: Bernard de Clairvaux's *Apologia*.[29] In this text, the eleventh-century mystic and primary voice among the Cistercians launches an assault on the Cluniacs, an earlier monastic order following an alternative reading of Saint Benedictine. In the eyes of Saint Bernard, the Cluniacs had wrongfully embraced technological excesses, from the advanced manufacturing of frivolous garments to the building of overfurnished churches and lavish monasteries. Speaking of excessive decorations in monasteries, Saint Bernard writes: "Good Lord! If we aren't embarrassed by the silliness of it all, shouldn't we at least be disgusted by the expense?"[30] As Jane Burton and Julie Kerr explain, Bernard de Clairvaux's claim must not be understood as simply an

aesthetic inclination.[31] Instead, and on a first level, it is a spiritual argument against the threat technological excesses might pose to the sanctity of contemplation. To Saint Bernard, this risk is most severe in sites of prayer. He writes: "I say nothing of the enormous height, extravagant length and unnecessary width of the churches, of their costly polishings and curious paintings which catch the worshipper's eye and dry up his devotion. . . . so many and so marvelous are the various shapes surrounding us that it is more pleasant to read the marble than the books, and to spend the whole day marveling over these things rather than meditating on the law of God."[32] The problem was that technological advancements in architecture and elsewhere were seductive to the point that they distract from spiritual life. Against the Cluniacs' ostentatious habits, he proposed—in line with the Cistercian principles of ascetism, austerity, and modesty—that the spaces monks inhabited were "to subdue the senses and focus the mind, thereby aiding contemplation."[33] The Cistercian General Chapters, based on his writings, tended to prescribe low-technological environments, banning stained glass windows, figurative carvings, colored ink, and more in Cistercian churches and monasteries, and punishing transgressors.[34]

On a second level, Bernard de Clairvaux's case against technological whims present them as more than a distraction from contemplation; they actively risk seducing monks to the worst of deadly sins: Pride. The described technological lavishness of churches, for instance, was taken to be a case of vanity, the self-obsession of humans enamored with bodily and aesthetic enjoyment.[35] Its allure reached far beyond the space of prayer, however. As workers the monks could equally, and wrong-headedly, be driven toward feelings of Pride through the employment of technical crafts. In his *Rule*, Saint Benedict had written: "If there are skilled workers in the monastery, let them practice their crafts with all humility if the abbot permits it. But if anyone of these workers is so proud of his expertise that he thinks he is a great gift to the monastery, he should be removed from his work."[36] With self-love, formalized in technology, came a threat to the true humility of monastic life.

But the Cistercian Order was, by no means, the only Catholic force that saw in the rise of the mechanical arts the looming threat of Pride. A second figure needs to be introduced. The historians John Baldwin and Elspeth Whitney point toward another promi-

nent twelfth-century theologian who equally harshly condemned the superfluidity and vanity of technological luxuries: Peter the Chanter.[37] This cleric had worked his way up in the French Church, becoming the second-highest-ranking member (and choir leader) of the Notre-Dame Cathedral. We encounter his techno-negative commentary in *Verbum Abbreviatum,* a thousand-page tome offering practical moral guidance for Parisian clerical life and bringing together, among other divergent lines of thoughts, careful notes on reading the scriptures in the New Testament with fierce arguments against ostentation, yielding to family affection, and, at some point, the acting profession.[38] In one particularly sprawling chapter, he turns—not unlike Saint Bernard and his *Apologia*—to the demonic aspirations of architectural excess. The central target is his place of work: the newly built cathedral. To him, the Notre-Dame was, as John Baldwin argues, first and foremost a symbol of "ostentatious pride."[39] Looking up at the enormous early monument of Gothic architecture, the Chanter asked: "Why do you want your houses so tall? What is the use of your towers and ramparts? Do you believe that the devil cannot scale them? Nay, I saw that thereby you will become the neighbor and companion of demons."[40]

Pride, here rather literally, is the bedfellow of demons and it is technology that launches us into its sinful grasp. Adoring their own technological skills, the churches replicate and extend the Pride of the demon, that is, of the fallen angel who, swayed by moral self-sufficiency and spiritual superiority, was led astray from God. This reverses the logic proposed by Hanns Sachs to explain the paradox of *technē* in ancient Greece.[41] If with the Greeks an overinvestment in the human ego seems to have caused a horror of uncanny machines, and with it, a delay in inventions, then here this same overinvestment, this all-too-human Pride, becomes the driving logic of technological preoccupations. In Peter the Chanter's condemnation, technological excess is the affirmation, rather than the antithesis, of human Pride.

Yet it was a third figure—Lothario dei Segni—who was perhaps the most vehement medieval thinker of Catholic techno-negativity, and who, reigning over the church as Pope Innocent III between 1198 and 1216, truly carried it into the core of church power. One of his most well-known works is *On the Misery of the Human Condition,* a pessimist treatise that, as historians have correctly pointed out, must

be understood as an early work that—given its angry denouncement of worldly pursuits—belongs resolutely to the Christian *de contempt mundi* tradition.[42] In line with that tradition, Lothario dei Segni sets out the aim of his book: "To put down pride, the chief of all vice, I undertook to write, as best as I could, something about the vileness of the human condition."[43] After declaring all human life is misery—for the rich and the poor, the serfs and the masters, the married and the single—the future pope turns to the mechanical arts as one crucial expression of human vileness, of our misplaced, almost grotesque inclination toward human Pride. Lothario writes: "[Mortals] hammer metals and melt them, carve and polish stones, fell timber and hew it; they set the loom and weave, cut and sew garment, build houses and plant gardens, till the soil, cultivate the vineyard; they kindle ovens, they build mills, they fish, hunt, and trap birds . . . And all this, too, is but toil and vexation of mind."[44] He added, quoting Solomon: "And when I turned myself to all the works which my hands had wrought, and the labors at which I had worked in vain, I saw in all things vanity, and vexation of mind, and that nothing was lasting under the sun."[45] Vanity and Pride—these are the sins condemned by Pope Innocent III, Peter the Chanter, and the Cistercian Order, with each identifying the mechanical crafts as one of their fiercest expressions.

Techno-negativity enables these Catholic writers to present themselves as protectors of God's civilization and, with it, to portray technology as a potential flattening of the God-human distinctions central to Christian humanism. In the onto-theologies of medieval Christian humanism, the *humanitas* of the human can only ever be seen in contradistinction to what it is not: the transcendent *Deitas* (God) who is, Heidegger explains in reference to Thomas Aquinas's notion of God as "first mover," "the highest being in the sense of the first cause of all beings."[46] The human is the being whose essential relationship to *Deitas* is that of a Child who hears, and accepts, the call of the Father in Christ,[47] and whose access to divinity, to the transcendental, is only ever through that paternal relationship. Not, in other words, through the obliteration, or reversal, of that relationship implied in the technological. Once humanity identifies itself as divine, by way of the creative force of technology, the admissible relation of the human to God's boundless superiority—as "prime mover"—is under threat. Like the Devil's, the technologist's sin is Pride,[48] seizing happiness

through one's own creation and resources in a fashion that removes God as the master of fate. God loses his monopolistic hold on the world as Creator of the world.

For the Cistercians, Innocent III, and Peter the Chanter, alongside their predecessor Saint Augustine, technological freedom is wickedness—the right to devour God and his transcendence over this world. In response, hoping to reinstate the God-human division, they underscore the second-rate order of the mechanical arts. In his damning of statues, Innocent III writes,[49] in a manner reminiscent Aristotle and Plato for whom *technē* was a weak imitation of the real—whether the "real" is thought of as "nature" (as in Aristotle's *Physics*) or "soul" (as in *The Enneads* by Neoplatonist Plotinus)—that "an artificial countenance is plastered on, the natural face covered up, as if man's skill could surpass the art of his Creator. Not so, not so."[50] He added: "When the face is painted it takes on an abominable stench."[51] Technology is a demonic attempt at redesigning God's creation in our image. As the philosopher Vilém Flusser summarizes, "the Devil's intention was to prepare the human mind for pride with the instruments of technology. Man as the creator of reality."[52]

But even if the mechanical arts could never, in actuality, live up to God's creative splendor, they may still trigger a false confidence—the effect of Pride—of having elevated to the status of God, as if not everything was already created, perfectly, in God's celestial machine of heavenly bodies. Imitating God's creation is akin to imitating God. What is at stake is ontology: the nature of being, that is, the nature of God's, and by extension, humanity's place in the universe. As Saint Augustine wrote, believing that humanity can fashion its "own deities according to the likeness of his own countenance" means ceasing to believe in humanity as a bounded organism: "It is easier to compare a man to cattle if, for all his human dignity, he lacks understanding than to prefer a work of man to a creation of God, made to His own image, that is, to man himself."[53] Only the nonhuman animal prefers his own creations over that of the Creator. He profanes the divine sphere at the exact moment when he consecrates, in a dangerous expression of Pride, himself to the level of God. And so, the Devil, ecstatic, lurks from the shadows, watching eagerly as humanity conducts the work of demons, dragging itself, propelled by its own technical passions, into the Devil's embrace.

Demons Without God

So far, the demonology of machines I have been describing has pertained the use of technology in European Catholic societies: sinful uses in churches (Peter the Chanter), monasteries (Cistercian Order), and among the general population (Pope Innocent III). But there is a second demonization of technology at play among prominent Catholic figures, one traveling beyond the European continent.

When Saint Augustine—who we have encountered earlier—denounces the worshipping of mechanical inventions, he is in fact speaking of a particular set of pagan technologies in Egypt. Pagans, he writes, are so far removed from respect for God's supremacy that they elevate their Pride to the point of imitating God.[54] Centuries after Saint Augustine's writings, on their voyages to China and Babylon, Western travelers would demonize the technical inventions of non-Catholic populations on the same grounds. These voyages were the mythical material of influential legends and tales, tying technology not simply to the sinful behavior of mortals but to the actual voluntary correspondence between mortals and supernatural demons.

The twelfth-century "chanson de geste" *Aymeri de Narbonne* is exemplary. In the song, the army led by Charlemagne—the King of the Franks—encounters a Muslim-controlled town in the South of France. After the army manages to conquer the town, two Muslim kings escape to Babylon, where they seek reinforcements from the caliph, hoping to reclaim their town of Narbonne. The Muslim caliph is said to have owned a range of automatons "so wondrous that I will have a hard time recounting them to you."[55] Beautiful artificial birds sit on a mechanical tree, singing with a voice so pure and beautiful it surpassed that of real birds. But these technological achievements, according to the writer, are not only the result of Muslim technical prowess, or even any demonic inclinations. They are the products of *actual* necromancy and diabolical aid. It is the Devil himself, rather than Muslims with a craving for the demonic, who is responsible for these technological marvels. But if the caliph may have diabolical assistance, and thus supreme technological achievements, on their side, the Christians have something of an altogether different order: God. If it exceeds in technological ability, the Muslim order only does so through a proportional lack of spiritual capacity, collaborating with demons in their attempt at outsmarting God's creation. Unlike

the Muslim leaders in these tales, the Christian army preserves its role within the divine order. The Muslim caliphate, through the use of demons, replicates nature, even enhancing and perfecting it, in a gesture that defies God's unique ability for creation. Only a people in correspondence with demons, the tale suggests, would dare consider themselves Godlike. Having stayed on God's side, the moral tale concludes, Charlemagne's Christian army wins the battle, and Narbonne stays free from Muslim influence.

Stories about demonic automatons, variously underpinned by a sense of racial and religious supremacy,[56] flourished in the twelfth and thirteenth centuries. In the tales, some fictional and others historical, non-Christians are the builders of copper knights, mechanical bulls, artificial birds, magical fountains, spinning castles, and speaking heads.[57] The Christians who encountered them were witnesses to a process whose functioning was not simply unimaginable but thoroughly sinister in its capacities. Upon encountering a spinning castle in China, for instance, Charlemagne fell to the ground, covering himself in fear. These technical objects are lifelike, impeccable in form and force, to the point that they cannot but be produced with the aid of demons. It requires a Christian hero to hunt and banish them. In the *Legenda Aurea*, a twelfth-century collection of hagiographies, we learn about Christian saints encountering mechanical idols. Among these is St. Longinus, who "breaks up the idol in a heathen temple with an ax, whereupon the devils come out and enter the bodies of bystanders. Longinus carries on a dialogue with them, finally expelling them. The people are converted."[58] St. Simon and St. Jude conducted similar assaults on crafted objects. Statues "are brought into a temple, where the demons cry *per energumemons* . . . The apostles command them to come out and to break each one his image. Two Ethiopians, black and naked, issue out, break the idols, and depart with raucous cries. This result is the conversion of the city."[59] In these scenes, the Christian hero destroys the mechanical objects, banishes the demons and converts the non-Christians to Christianity. The demonization of non-Christian technology turns into a tool of religious expansion, the protection of divinity into an offensive weapon.

So far in this chapter I have detailed how technology came to be associated with diabolism in at least two ways, either by way of an internal diabolical faculty (e.g., as per Lothario dei Segni or Peter the

Chanter) or through an actual interaction with supernatural demons (as in the tales of Charlemagne). In each case, technology presented a threat to the humility demanded of Christians, and thus to God's civilization. Only sinners would dare approximate, or dare claim to approximate, the creative potential of God, diminishing his influence over his earthly creation.

Of Pastors and Demons

That prominent Catholic figures would, in their wars on technological Pride, announce the necessity of humility in the face of God needs to be understood as an expression of what Michel Foucault defines as "pastoral power."[60] Emerging as a historically specific model of power in the third century AD, pastoral power is identified by the principle of transcendence as its primary feature. In this model, God—the ultimate shepherd—entrusts his people to subordinate shepherds (pastors) who, in turn, are each responsible for a flock of people. Three secondary features further separate it from the Greek model of the city-state. First, power is exercised over a flock of people in movement, rather than over a fixed territory. Second, power is taken to be fundamentally beneficent. Because its primary objective is the salvation of the flock, "its only raison d'être is doing good."[61] Third, because the shepherd knows each member of the flock individually, pastoral power is a force of individualization. Each person is treated as an individual, according to their own characteristics, rather than as a universal citizen with rights. The third quality (knowing each member singularly) is the condition of the second ("doing good"). It is only by way of "an art of monitoring"—the pastor's extensive observation of the material, spiritual, and social lives of the individual members of his flock—that pastoral power can promise to be a guide to salvation. Surveillance becomes a condition of spiritual liberation.

But how, under the vigilant eye of the pastor, can the Christian mortal hope to progress on the path to salvation? For Foucault, the answer is simple: through complete subordination. Salvation can only be earned through a total submission to the shepherd who, in turn, represents "the order, command or will of God."[62] Foucault goes as far as to say that pastoral power is the perfection of obedience, where an order is followed not because it is reasonable or has a clear aim, but for the mere sake of submission. And thus in Saint Benedict's

Rule, the founding inspiration of the techno-negative Cistercian Order we encountered earlier, we read the following words: "When obedience involves harsh, hostile things or even injustice of some sort, one embraces them patiently with no outcry."[63] Obedience is, in other words, pursued for its own sake, the end point of which is that most worthy of Christian virtues—humility. Under the banner of pastoral power, humility takes on a precise meaning that separates it clearly from simple modesty. As the antithesis to Pride, it consists "in feeling oneself the least of men, in taking orders from anyone, thus continually renewing the relationship of obedience."[64] Above all, it requires renouncing one's own will. Again in the words of Saint Benedict: "It is imperative that we beware of evil desire, for death lurks near the gateway of pleasure."[65] In this vision, being humble is, Foucault notes, understanding that any will of one's own is, ultimately, a bad will.

Through the prism of pastoral power, humility is the total subordination to divine authority. The stakes are high: Its concern isn't simply with moral conduct but with salvation, that core goal of Catholic life. This puts the assumed threat of mechanical arts, as a sinful expression of humility's counterpoint (Pride), into stark relief. Despite the individualizing logic of pastoral power, where each member is taken care of individually by a shepherd, the impact of the sinful actions (such as technological excesses) of an individual extends far beyond an individual's life, in at least two ways.

First, in embracing the mechanical arts, a mortal threatens both her own path of salvation, and that of the flock as a whole. Indeed, the shepherd takes on the responsibility of the entire flock. What harms the individual sheep threatens the salvation of the whole flock and its shepherd. Saint Benedict describes it as such when he writes that the "one diseased sheep [could] taint the whole flock."[66] In other words, the dangers of technology are collective, its damage seeping into and threatening the salvation of the entire flock. Salvation is, however, not all that is at stake.

Second, by introducing an illusionary Godlike Pride and thus devaluing Christian humility, the mechanical arts threaten to take away the very logic upon which pastoral power is able to legitimize itself. On the one hand, these arts are antagonistic to the Christian prioritization of humility. On the other hand, in their embrace of Pride, they posit the potential of human creation. Through this double gesture,

technology poses a risk to the sustained validity of pastoral power: On the basis of what raison d'être can pastoral power assert itself when its central promise of attaining salvation by way of humility is devalued? Techno-negativity, in its medieval-Catholic expression described here, is concerned with protecting legitimate God-human relationality *and* the normalized model of pastoral power found therein.

Despite its stated embrace of humility, its distaste for the Pride that comes with social domination, the Catholic clergy denouncing technology had little interest in abandoning its own worldly influence, its own lust for authority. This is the hidden contradiction at the heart of the Catholic demonology of technology. It had to merge, in a paradoxical attempt, the humility required for salvation with a mode of power that required, at its very core, the creation and subordination of flocks of people. In the name of divine authority, the pastorate deepened (rather than refused, as per Benedictian doctrine) its own will. Thus, protecting the mantra of humility in God's name, it extended its own sinful Pride, the rule over flocks of people. Without this contradiction, the pastoral mode of power would disintegrate, losing its identifying qualities. Technology and its negation became an important terrain for pastoral power, where it could, at once, further its fundamental beneficence while cementing, even expanding, its sphere of domination.

Anti-diabolical Methods

Essential to such attempt at safeguarding and extending religious domination is what Flusser refers to as the "anti-diabolical propaganda" of the church.[67] Alongside practices of witch-hunting and exorcism, the Catholic assault on technology is a method allowing the church to reveal its capacity to identify, govern, and, most crucially, offer protection against the field of demonic circulations and flows—the strict pursuit of what philosopher Eugene Thacker calls a "biopolitics of life-beyond-life, a supernatural biopolitics."[68] The more convincing its protection against diabolism, the argument goes, the more attractive Catholicism becomes to existing and potential believers. That is because protection, of course, comes with a caveat. If one wishes to live a life free of demons, a life that will lead to salvation, one must, Saint Augustine is at pains to emphasize, incorporate

oneself into the scriptures of the Bible.[69] One must, in other words, become a devout Christian.

To truly showcase their defense against diabolism, important elements of the Catholic Church took their techno-negativity explicitly beyond the methods of discourse and propaganda. In the Cistercian Order, as we read in the twelfth-century theologian Hugh of Saint Victor's *Didascalicon,* books on technology were forbidden.[70] Supplementing Saint Benedict's *Rule,* in the thirteenth century the Cistercian General Chapter wrote the *Libellus Definitionum* (Book of Definitions), a legal guide forbidding "Superbia" (pride) and "Superfluitas" (abundance), leading to a law that banned sculptures and paintings in the monasteries.[71] Similarly, in a move reminiscent of J. G. Ballard's short story *Chronopolis,* the Orthodox Eastern Church decided on a strict ban of clocks in churches. To the Eastern Church, clocks represented not capitalist control over workers, as it would centuries later with demonstrators shooting at church clocks during the 1817 Paris Commune,[72] but a pollution of God's creation: Time could not be allowed to contaminate the Eternity of God. As a result, clocks were banished from places of prayer by law.

These laws mark a significant turning point in the history of techno-negativity.[73] Before this moment, the condemnation of technology remained largely outside of judicial practice. The city-states of ancient Greece lacked a legal framework for taking on technology. If in the institution of slavery, cemented in Greek "human law," we find a cultural disdain for manual labor and technological crafts, this failed to address technology head-on through prohibition via legal prescriptions. In entering the realm of the Catholic Church, techno-negativity was institutionalized for the first time, becoming a principle of law. This provided critics of the mechanical arts with the legal legitimacy missing in the Greeks' techno-negative protection of *homo humanus*.

With these institutional foundations, the presence of technology ceased to be a question of Socratic dialogue, a discursive dialectics of technology that would gather conflicting viewpoints in the progression of thought, and the social rejection and material delay such dialogues might help engender. Instead, the institutional framework provided only two positions: conformity or deviation. At the Cistercian Order, monks could be banished, even excommunicated, upon their failure to embrace the legal principles found in the *Libellus*

Definitionum. This idea of active exclusion undergirds the pastoral mode of power. The resistant sheep, the demonic black sheep that is a cause of scandal, can and must be sacrificed if it threatens the salvation of the flock. With the institutionalization of techno-negativity, the responsibility of a challenging sacrifice is cast away from the pastor and brought to the level of divine law, where it is automatically decided beyond the grasp of any individual pastor. In short, active exclusion becomes a deindividualized principle of law, not a singular shepherd's moral responsibility.

But this institutionalization exceeded the bounds of the church as an institution, and bled into Catholic society more broadly. We find the claim of protecting against demons in the highest ranks of Catholic society, where, again, it materialized in law. One figure who became a victim of this institutionalized demonology was Konrad Kyeser. Born in 1366, Kyeser was an engineer typical of his age. He was tasked by medieval monarchs to design and build a rich cast of artificial devices, from fortifications and elevators to hydraulic engines and defensive fireworks. What made him stand out, however, was his reputation as a Devil worshipper,[74] one whose sorcery involved making use of demons for the purpose of machine building. He did full justice to this image with the publication of *Bellifortis*, a visual celebration of real and mythical machines. Readers of the book (including centuries later, Leonardo da Vinci) might have, understandably, been perplexed. What they encountered was a blend of cunning engineering—a movable bridge, a heavily fortified "Trojan horse," a fifteen-foot crossbow—and quasi-mysticism—Devil-shaped battering rams, mechanical wings to use in battle, flame-throwing demons, and a weaponized mechanic dog. While he seemed to embrace his reputation as a demonic sorcerer, it would also come to signal the end of his engineering career. A few years before publishing the book, he had been "abruptly dismissed from the imperial court" amid accusations of having worked with demons in his technological pursuits.[75] As with Gerbert of Aurillac, with whom I started the chapter, and various other prominent engineers, technological expertise came to be seen as a symbiogenesis of *homo sapiens* and *daimon infernalis,* the engineer and the demon cooperating in their shared goal of sweeping God off his throne, a pact that would ultimately lead to Kyeser's persecution. The Catholic attack on technology served the church as much as it did the courts, both of which found in it a way

to safeguard and intensify their hold on Catholic society, portraying their commitment, and their capacity, to prosecute worldly manifestations of the Devil.

What we have encountered, in this chapter, is a stubborn case of techno-negativity that condemned crucial technological advances of the High Middle Ages. Prominent Catholics painted a dark picture of innovations in the mechanical arts, following their every move and often recommending their banishing. The result was a strict demonology of machines that bound many of the mechanical arts to Pride, that vice of all vices. We have traced it in monasteries and in the work of early theologians, in the highest orders of the papacy, and among Catholic kings and the imperial courts. What we found there was not a clean discontinuation of the Greeks' ancient refusal of technology. Even if the benefiting classes shifted (from the ruling classes in ancient Greece to the Catholic clergy in medieval Europe), techno-negativity continued to be enrolled in the service of maintaining and extending relations of domination. In the centuries to follow, important socioeconomic upheavals will set techno-negativity on novel paths, loosening it from strategies of sovereignty and launching it into the turbulent terrains of insurrection and revolt.

This page intentionally left blank

Part II

Revolt

This page intentionally left blank

Chapter 3

Breaking

State Luddites, Predators, and a Capitalist Theory of Law

> No craftsman shall think up or devise any new invention, or make use of such a thing, but rather each man shall, out of citizenly and brotherly love, follow his nearest and his neighbor, and practice his craft without harming another's.
>
> —King Sigismund I of Poland, *Edict*

On February 19, 1685, smoke hung over Hamburg's central square. Its source, an immense fire, lit up the darkening sky and the eyes of the crowd that had gathered. To passersby, it may not have been an entirely unfamiliar sight. Like many cities in the region, Hamburg had a reputation for boisterous public burnings. Pirates, witches, criminals, heretics—all figures who had formerly been stripped of their clothes, tortured, covered in wax, and, finally, been set alight, during public rituals of punishment. In such "theatres of hell," as Foucault darkly describes them, some were strangled first, others were burned alive, and even others underwent a slow process of torture before being torched.[1] Their corpses were often further mutilated, dragged on hurdles to be exhibited, or their ashes were thrown to the winds, refusing them the calm of subterranean rest. It was a sinister spectacle to which the crowds were not a witness as much as an internal component, their encouraging jeers cutting almost as deep as the knives, pincers, and fire used by the executor.

But on this evening in Hamburg, the attentive passerby would have quickly noticed something was missing. Usually, one could hear the victim screaming wildly with, often interchangeably, cries for forgiveness or damning insults hurled at the torturer. But this time

it wasn't human flesh that the spectator saw burning. As Karl Marx drily and succinctly recounts in *Capital,* something much more solid, and more mechanical, was the victim: a newly invented loom for weaving.[2] What could be heard were not the yelps of a human body in agony but the crackle of burning wood. The culprits were not, however, dismayed workers destroying the machines that were soon to replace them. Sure enough, workers had attacked, since at least the sixteenth century, and would continue to attack, the mechanization of their labor. This time the burning took place not at the hands of the workers but, as Marx tells us, "in public by order of the Senate."[3] In other words, it was the officers of the state itself, as it had been with the public executions of the criminalized, that had dragged the victim into the middle of the square, covered her in hay, and thrown a flame. Over a century before the Luddites famously initiated their offence in 1811, when they set flames to the machines and workshops of factory owners, the Council of Hamburg paved the way for a material assault on the machines of labor.

Starting in the fifteenth century, Western and Central European governments had become a techno-negative force to be reckoned with, giving a statist life to the refusal haunting technological histories. One century before the spectacle in Hamburg, and five hundred miles East, the Prussian Council of Dantzic dealt with the arrival of new machinery on its own terms. It first tried to suppress the ribbon-loom. When that failed, it turned its eyes on the inventor himself. Avoiding the publicity of a machine-burning, the Olivetan scholar and monk Secondo Lancellotti wrote at the time, it instead "caused the inventor to be privately strangled or drowned."[4] This was not a German craze, however. Between the sixteenth and eighteenth centuries, the King of England Edward VI banned gigmills;[5] the Dutch Council of Leyden prohibited weaving machines;[6] the Crown illegalized engine looms;[7] a Dutch decree forbade ribbon-looms,[8] an English Imperial decree was announced against ribbon-looms (and was renewed by Charles VI in 1719);[9] and the Council of Vienna signed a generalized prohibition of new machinery.[10]

This chapter considers state techno-negativity as a deepening of the long-standing interest of the dominant in refusing technology as a manner of solidifying, or extending, their own hold on sovereignty. Here we encounter not the political theology of the pastoral that seeks to sustain itself, as in the previous chapter, but a mercantilist

protectionism in the face of signs of an insurrectionary population rioting against unemployment, hunger, and poverty. But this protectionist impulse, as we will see, would be short lived. By the early nineteenth century, at the same time when Ned Ludd took up his weapons, states across Western and Central Europe began embracing the antiprotectionist economics promoted by a capitalist theory of value, labor, and production. Such a theory would still require a state, and its penal instruments, but only one that centered the worker as the political and ontological embodiment of illegalism, that is, as a possible "predator" upon surplus value. The state became less concerned with squashing technology, and instead with crushing its refusal by workers. With it, technological refusal took on a new life: Detached from the state, it became an insurrectionary instrument against the technological reign of capital. Marking a significant turning point in its histories, techno-negativity became, for the first time explicitly, a tool not in alignment with but in antagonism to dominant interests. Beyond a narrow struggle against economic precarity, this would soon spiral into an ontological assault on machinic degeneration and the *homo economicus* that embodied it.

The State Luddism of Mercantilism

Hamburg's public burning of a loom in 1685 needs to be understood in light of the mercantilist theories of economics that informed both state policy and economic practice during that era. As later famously critiqued by Adam Smith in *The Wealth of Nations* (published in 1776), such theories arose in sixteenth-century Europe at a time when colonies were being established for the extraction of raw materials. The central aim of mercantilism—or "merchant capitalism"—is to outcompete other colonizing nations by gaining trade surplus, that is, by maximizing a country's exports while minimizing imports.[11] But how to do so? In answer to this question, and unlike the laissez-faire capitalism promoted by someone like Adam Smith, mercantilism pursues strict state control over production and trade. Its proponents—prominent European economists including Sir Thomas Mun, Antonio Serra, and Jean-Baptiste Colbert—developed mercantilism as a range of theories of protectionism that, we will see, facilitated an environment conducive to state techno-negativity.

For the mercantilists, two actors were particularly in need of state protection. First are the guilds, whose functioning, power, and status merchant capitalism aims to secure.[12] In guilds, handicraft workers are organized by trade (e.g., wool-working, locksmithing, doctoring), and tend to collaborate closely with local state authorities to exert control over their crafts, economic strength, and, ultimately, their profits. To the state, protecting guilds meant elevating industrial production to maximize exports while attaining the highest possible levels of state income through taxes and levies. The profit of guilds, in this formula, is identified with the national good, with a strong state capable of manifesting itself in global affairs.

Beyond the guilds, and toward the same end, mercantilism prioritizes protection of the laborer, particularly with an eye on keeping them in work and maximizing employment numbers. The English economist Charles Davenant argued in a 1699 essay that it is not territory but "Numbers of Men well employ'd" that contributes most greatly to the "general Stock of England," and thus to a "Powerful Country."[13] In the mercantilist logic, full employment means the growth of three measures of a country's wealth: production levels, trade surplus, and state income.[14]

Through an arsenal of protective laws, often in intimate alliance with guilds, state authorities wrote a mercantilist analytic of the law that, around Europe from the sixteenth century onward, deeply regulated attempts at technological innovation. But why? Would the machinization of labor tools not, in the logic of nationalist mercantilism, augment the measures presumably indicative of a country's wealth? Does automated machinery not, as fixed "capital,"[15] promise the kind of drop in cost of labor and a boost in surplus value that would contribute to national economic expansion? The difficulty, in the eyes of the mercantilist state, is that technological innovation would simultaneously augment national wealth and bring large populations into unemployment and thus poverty. In a 1666 statute for cloth-weaving, the authorities of the French city Amiens wrote: "If a cloth-weaver intends to process a piece according to his own invention, he must not set it on the loom but should obtain permission from the judges of the town to employ the number and length of the threads that he desires, after the questions have been considered by four of the oldest merchants and four of the oldest weavers of the gild."[16]

Others turned regulation into direct prohibition. In 1412, the City of Cologne responded to uprisings of low-ranking guild workers against silk mills.[17] In an official decree, the city wrote: "many persons who earn their bread in the guild in this town would fall into poverty, for which reason the town council agreed that neither this mill nor in general any similar mill shall be made or erected, either now or in future."[18] Two centuries later, following complaints by the ribbon weaving guilds about "engines for working of tape, lace, ribbon, and such, wherein one mand doth more amongst them than seven English men can doe," the English Crown banned the machines.[19] Not unlike the ribbon-loom of the strangled inventor in Dantciz, which was said to be capable of weaving at six times the speed of a manual worker, the silk mill, cloth looms, and ribbon engines would all, it was feared, put workers on the streets. Doing so, mercantilist states reactivated the ancient Greek commitment, expressed most clearly by the first-century AD emperor Vespasian, to ensuring that the lowest classes, at all times, remain in employment, gaining enough funds to provide food for themselves.[20] Guided by the imperative of labor protection, the state outlawed technological excess.

This cannot, however, be read as simply the protection *of* the worker, but needs to be understood as much as the protection *from* the worker. To purely center workerist concerns in judicial acts of mercantilist techno-negativity would be to forget that state authorities themselves had a profound stake in keeping their populations fed. The anguish that emerges from unemployment, the mercantilist states reasoned, may create a breeding ground for a workers' conspiracy against the state. The economist Charles Davenant warned that in times of soaring unemployment, workers may become "bad Men [who] will endeavour to subvert this Constitution."[21] Many had, if not seen, at least heard of the vigor, the violent urge toward destruction, that could easily sway workers in desperation. During the 1758 workers' unrest in the West of England, Karl Marx writes, the first water-powered shearing machine "was set on fire by 100,000 people who had been thrown out of work."[22] A hungry population is a dangerous population, threatening the national good. What good is a competitive national wealth when the country is, due to domestic instability, about to fall in on itself? Kaiser Francis I, the Emperor of Austria, figured this much when he prohibited the import and use of new machinery in the opening years of the nineteenth century.

Confronted with a new invention, he said: "No, no, I will have nothing to do with it, lest the revolution might come into the country."[23] Mercantilist authorities sought to delay insurrection via techno-negativity, one legal ban, public burning, or private strangulation at a time.

Extending the techno-negative thrust of the medieval Catholics we encountered in the previous chapter, mercantilist states effectively widened the judicial ground of technological refusal with an eye on solidifying their sovereignty over a particular geographical and political region. As with Christianity's deployment of pastoral power, they pursued those ambitions with a paradoxical blend of care for, and subjugation of, a population.[24] To techno-negative mercantilists around Europe, automation's promise of rising national wealth was annulled by the threat of a population hungry for food and regime change. Even if their very logics of refusal differed, with workers enacting it as a method of bargaining (to stay employed) and states as a counter-insurrectionary measure, we can discern a secret affinity binding together workers and state into a series of practices antagonistic to the mechanization of labor technologies. This unspoken pact would, however, begin to fray with the turn into the nineteenth century.

A Capitalist Theory of Law

While workers had sporadically broken and burned mechanic tools of labor since at least the middle of the seventeenth century, workers' fiercest and longest assault would begin only on March 11, 1811. On that day, framework knitters gathered for a protest in Nottingham to resist the replacement, and the wage devaluation, of their skilled labor by machines. What began as a peaceful protest soon turned violent. The protesters made their way into the knitting factories "belonging to the hosiers who had rendered their names obnoxious by giving reduced prices,"[25] and singled out those machines—wide frames—that had placed them out of work. In total, sixty-three frames were destroyed. The protesters made their way out through a window on the third floor and, via an adjacent building, escaped long before authorities arrived. In the weeks that followed, a hundred more frames were demolished in Ashfield, Woodborough, Bulwell, and Mansfield. Knowingly or not, they had thrown the first punches in a six-year

period of battles against machinery in the Midlands, Northwest, and Yorkshire areas of England. This was, of course, the birth of that most infamous of episodes in the history of techno-negativity: the Luddite Revolts.

What was unique about the Luddites was not simply their size, intensity, or level of organization. What interests us most, in this chapter, is less the Luddites themselves, who have rightfully gained much notoriety and scholarly attention,[26] and more the state that persecuted them. From the Luddites' first attacks in March 1811 onward, the English state employed a rich arsenal of repressive methods against what it called the Luddite "outrages."[27] Local "Special Committees" were founded across England, collaborating with the national government wherever machine-breakers arose. In an attempt to break the "oath of silence" workers had taken to join the ranks of the Luddites, the Committees soon pursued tactics of infiltration,[28] and offered rewards to anyone willing to share information about individuals or planned attacks. At the peak of Luddite activity, the authorities sent in the army. Twelve thousand soldiers arrived at the factories with weapons drawn. Many were killed during these confrontations; others were arrested and became subject to new emergency laws.[29] In 1812, among other laws, authorities approved the Frame Breaking Act, making it a capital felony to break or otherwise destroy factory machines.[30] Mass hangings soon ensued.[31] As a result, the social historian E. P. Thompson writes, "Luddism ended on the scaffold."[32] The charitable state of mercantilism had shed its sympathy for the refusal of technology, replacing it with a newfound legal-discursive regime. With it, the state function earlier thinly veiled as care for workers gave way to open prosecution—protectionism turned into bloodshed. This was a shift in state strategies for dealing with potential ruptures, with what Deleuze and Guattari call "lines of flight." The state, as Deleuze and Guattari remind us, is defined as much by what fixes it as by what escapes it.[33] Much of its ability to endure relies on bringing lines of escape back into its productive fold.[34] It is this capacity for reterritorialization that is transformed in the state prosecution of the Luddites. If the mercantilist state pursued soft strategies of containment as their preferred manner of redirecting lines of escape, then the response to the Luddites revealed a much harsher variant: violent repression through weapons, prosecution, and infiltration. The result is a new

theory of counterrevolution, one with its own tactical weapons and its own temporal logics. Less the preventive counterrevolution of protectionism—containing workers by securing their work—and more what might be called a *vengeful* counterrevolution, striking *after* the seeds of revolution have been sown.

But how might we make sense of such a transformation? How did the public burning of machines convert into the public execution of machine-burners? One might argue that state repression is the logical result of techno-negativity reaching an unforeseen point of intensity. With the Luddites, the material assault of machines threatened, in a way that it likely never had previously, to bleed into a workers' insurrection. The ingredients for such a deep revolt were there: the numerous chapters of the Luddites were well organized internally and were connected to one another in such a way that enabled a certain alignment in theory and practice; they enjoyed widespread (if tacit) support among the working population inside, and far beyond, the factories;[35] by raiding militia depots and demanding weapons from local inhabitants, they had gained a large access to weapons, and they were more than willing to put them to use.[36] So when the Luddites broke into factories on March 11, what the state heard was the rousing cry of a dangerous insurrection beyond the point of return. Violence, legal and material, was all that was available to it.

Yet, the question still remains as to why the state had decided, consciously or less so, to let the Luddites' fierce techno-negativity arise in the first place. It could have, in line with mercantilist protectionism, preemptively prohibited the wide enrolment of machinery into manufacturing, keeping workers at work, off the streets, and containing the passion for insurrection. But despite the Luddites' numerous calls for penal intervention—including for "an Act to put down all Machinery hurtful to Commonality"[37]—the state hadn't. This means that the counterrevolutionary response was not only different in quantity (a more intense response to a more intense situation) but, having largely left behind the protectionist logic of containment, distinct in quality too.

Animating the qualitative shift was something very precise: the changing status of worker illegality, with workers becoming increasingly prone to legal prosecution. To understand this, we need to turn to Foucault and his genealogies of criminality.[38] Foucault argues that,

between the sixteenth and nineteenth centuries, a streak of illegality ran across the various social strata of European societies and was both recognized and tolerated as such by the mercantilist state. This illegalism was so systemic and conditional to the life of the different social strata that it was "almost a mode of functioning of the whole of society."[39] It had at least four faces, each with its own logic and sense of coherence.[40] First, the lower classes (e.g., apprentices and day laborers in guilds, domestic servants) enjoyed access to irregular work, a life away from their masters, and so on, because a large range of decrees were, simply, never implemented. Second, representatives of the state (police lieutenants, intendants, subdelegates) would often intervene to reduce, or even fully withdraw, the fines of those transgressing the law. Third, the privileged classes (aristocracy, landowners) escaped the reach of law through the tolerance or exception that came with being deeply embedded within the social circuits of government. Fourth, and finally, the merchant classes (e.g., the guild masters with their own businesses) commonly entered into agreements outside of the official market, thereby evading the taxes imposed by either the lord or by the state. Each of these four illegalisms was conditional to the very life of the respective social strata. For instance, without entry into this tolerated illegalism, a sizable portion of the working classes would not be able to survive. But of the four modes of illegalism it was that of guild merchants that would come to benefit a social class with the greatest force.

Looking to extend the monetary benefits of their own illegalism, the merchant classes developed a crucial distinction between attacks on material property (e.g., worker theft and sabotage) and assaults on rights (e.g., merchant fraud and tax refusal) by promoting new legal regulations that deepen the criminalization of the former and lessen that of the latter. A double movement of proletarianization, at the end of the eighteenth century, drove this legal reconfiguration. First, Foucault notes that the end of the late eighteenth century saw, in numerous European countries (and in France coinciding with the end of the French Revolution), an important property transfer—where land became part of the contractual logic of property—that would deepen the dispossession of the working classes. Second, and happening around the same time, "through the installation of the base of the capitalist economy, [the] lower strata, shifted from craft industry to wage labor."[41] The crucial consequence of this twofold

proletarianization is that lower-class illegalism, once affecting all social strata, now turned into a much narrower field of antagonism—one between two classes: worker and capitalist.[42]

The problem for the new capitalist class was that its wealth is invested in property (tools of labor, land, raw materials, commodities) that is directly accessible to workers materially, and is thus excessively susceptible to the illegalisms of theft, counterfeiting, and sabotage. "Consequently," Foucault writes, "when the bourgeoisie registers the transfer of [lower-class] illegalism onto its property, and dreads its effects, it will need to repress it."[43] Without violent repression, the merchants' argument goes, the free labor market and accumulation of property essential to the novel capitalist relation to profit is vulnerable to attack. By the end of the eighteenth century, the worker illegalisms the dominant classes of mercantilism had once tolerated now became intolerable. The new mantra: "Every worker is a possible predator."[44] Charles Comte, an influential French lawyer and economist, expressed this clearly when he wrote in 1826 that in the eighteenth century "a large proportion of criminals still belonged to the middle and upper classes of society. Today, . . . nothing is rarer than finding criminals there; they almost all come from the lowest ranks of the social order."[45] It was the worker who became, for the first time explicitly, the delinquent par excellence, and who needed to become the central pivot around which to align the procedures of law. The new capitalist jurisdictions needed, first and foremost, to guarantee the legal overrepresentation of the worker, giving form to a "class dissymmetry" in law and justice.[46] To implement such dissymmetry, the merchant classes developed legal and extra-legal tactics, from bribery and the active promotion of merchant illegalism to vigorously working their way into the halls of the state and publishing texts on the validity of legal reform away from state intervention.[47]

The result was a capitalist axiom of law. It singularized the double protectionism of state mercantilism—securing trade and full employment—into the protection of trade. Employment became not only a personal responsibility but a crucial site of illegalisms that needed to be repressed. So when the Luddites set fire to looms, mills, and frames, they were confronted with a changed legal framework, one that, by default, considered them as predatorial on the new capitalist logics of profit, labor, and value.

The workers no longer in need of protection, the defiant laborers were now, as the Regent of the York Special Commission set up to quell machine-breaking would write, "ill-designing and wicked Men" who are not just engaged in the "Destruction of the various Kinds of Machinery now most beneficially employed in the Manufactures of this Kingdom," but are in fact "destructive of the good Order and Happiness of Society."[48] Antagonizing the new ideals of capitalism, they deserved to be prosecuted by "the severest penalties of the law."[49] In the name of the "Protection of Persons and Property," it may in fact become necessary, he continued, to revert to those "Chastisements of the Law" that the Age of Enlightenment had come to deplore: repressive instruments of corporal punishment. And thus a new anti-Luddite Act is announced: "If any person or persons, by day or by night, enter into any house or shop to destroy, or shall destroy any woollen weft, or warp, etc., or shall break and destroy any of the tools and machinery used in the manufacture of the same, such person or persons convicted thereof, shall be guilty of felony, and suffer death, without benefit of the clergy."[50] The destruction of capitalist property, it seems, triggered the reactivation of elements of pre-Enlightenment models of law. The theory of the perpetrator had been reversed: Unlike Hamburg in 1685, within the capitalist logic of law it was the machine-breaker, not the machine, that was to be publicly sacrificed.

Intellectual Barnacles, or Degenerate Humanity

So far, we have seen how underpinning the state's shifting relation to techno-negativity (from enacting to prosecuting it) was the introduction of capitalist forms of jurisdiction. Propelled by eighteenth-century proletarianization and its perceived threat to capital, these forms were organized around a neat distinction between two classes: the working class and the owning class. This distinction is, however, not just found in the order of quantity, with one class legally overrepresented in the conduct of crime. The important theoretical invention of capitalist law was to bring the separation into a moral scheme, one that would justify the overpenalization of workers. The lawyer Guy-Jean-Baptiste Target, central to French legal reform in 1804, wrote that there was a distinguishable set of classes that make up society:

> some enlightened by knowledge, improved by education, softened by sociability, ennobled by moral sentiments; others, degraded by poverty, debased by contempt, and long matured in the habits of crime or sin; every day one will see there the distressing contrast between the most honorable virtues and lowest vices. There, close to the loftiness of courage, generosity, and heroism one will note with disgust egoism, insensitivity, abjection, and atrocity itself. There, hard, dry, inflexible souls, devoid of moral ideas, will obey only their coarse sensations; idleness, debauchery, greed, and envy will show themselves irreconcilable enemies of wisdom and work, of economy and property.[51]

Two classes: one that is enlightened, sociable, courageous, heroic; another: bodily, immoral, greedy, criminal. In short: A class of virtue versus one of vice. Central to Target's declaration are two components that would have likely surprised moral philosophers, and most certainly legal scholars, of preceding decades and centuries. The first is the insistence on one class being "enemies of property" by way of greed, envy, debauchery. The other is that to be "enemies of work"—understood as the refusal of wage labor—is to fall victim to the same immoralities. Combined, these two theses point toward a strictly capitalist morality in which to be without, or worse even, to actively refuse property—of land and machinery but also of one's labor power—is not only to lack certain social, material, and economic privileges; it is to be robbed of any reasonable claim to the honorable classes.

But this is more than a moral evaluation. Legal scholars such as Target and Bure, and economists such as Smith and Mill, would translate it into an ontological figuration, one that announces a new ordering of being based around the ideal of *homo economicus*. At the heart of this ordering is the belief that, as Adam Smith claims in his *Theory of Moral Sentiments,* "every man is, no doubt by nature, first and principally recommended to his own care; and as he is fitter to take care of himself than of any other person, it is fit and right that it should be so."[52] *Homo economicus* is that being who embraces this principle of bio-moralism according to which, because the human is self-interested by nature, actions and thoughts that prioritize self-interest are morally justified. They are that self-interested being who

acquires wealth, and who enters into an exchange of wealth with another, in order to satisfy, through a rational logic of utility, personal needs and desires.[53] In this theorization, self-interest is defined by two precise qualities. As John Stuart Mill writes, the self-interest of *homo economicus* has, first, a precise target—they are the being "who desires to possess wealth"—and, second, a precise method—the being "who is capable of judging the comparative efficacy of means for obtaining that end."[54] Two measures of humanity, then: property and reason.

To lack property in the form of wealth, or to deny one's ownership of one's labor, is to fail the defining criteria of *homo economicus*. Likewise, the being who misses or escapes rationality, who "has no occasion to exert his understanding," Adam Smith claims, "naturally loses . . . the habit of such exertion, and generally becomes as stupid and ignorant as it is possible for a human creature to become."[55] By way of these two defining vectors, moral evaluation had begun to slip into a newfound ontological policing, casting the properly human (*homo economicus*) against its lesser Other. To deny self-interest or one of its two defining features was to find oneself at odds with a new ontological ordering. It was the manual worker, and even more so the *defiant* manual worker, who—with no perceived access to the luxuries of self-interest: property and reason—ended up embodying, most forcefully, the constitutive limit of *homo economicus*, propping up what Target called the "enlightened race."[56] Its proper ontological home? That of the "degenerate race."

To many of those disobedient workers, capitalist economics prompted very different ontological questions. In an 1812 proclamation stuck up in Radford, framework knitters warned of "the discreadit and utter ruin of Our Trade" that capitalist machinery brought into the world.[57] "Colts," those low-paid workers who had not taken the usual the seven-year apprenticeship, could weave, knit, mill, with the turn of a hand, the flick of the foot, thereby bypassing the delicate skill and experience demanded by handicraft. For the techno-negative Luddites, the lament for lost handicraft skills may have been one for their own plummeting ontological status, from workers wielding hand tools to managers of machines. With "tools," understood here as "the technical object enabling one to prolong and arm the body in order to accomplish a gesture" common in eighteenth-century labor, Gilbert Simondon argues that

"the human individual remained a technical individual among his tools of which he was both the center and bearer."[58] This level of progress associated to the tool is, according to Simondon, a source of joy for the worker, who experiences through it a renewed dynamism, an extension of kinesthetic and vibratory sensibilities that forms into a new capacity of force, speed, and precision. This sense of progress, Simondon notes, becomes clouded with the arrival of machinery in the capitalist factory: It is "no longer centralized with the individual as the center of command and perception in the adapted action. The individual [worker] becomes the mere spectator of the results of the functioning of the machines."[59] The new role of the human, for Jacques Ellul and Anders Gehlen, is that of the "recording device" or the "functionary" of the machine.[60]

This reverses the agential relationship of the human-machine dyad. Reduced to the status of functionary, Hannah Arendt argues, the human body no longer determines but is determined by the rhythm of the machine.[61] The result, for Karl Marx, is the machinic mutilation of the body: "While simple co-operation leaves the mode of working by the individual for the most part unchanged, manufacture thoroughly revolutionises it, and seizes labour-power by its very roots. It converts the labourer into a crippled monstrosity, by forcing his detail dexterity at the expense of a world of productive capabilities and instincts; just as in the States of La Plata they butcher a whole beast for the sake of his hide or his tallow."[62] Injured by the machine, the worker becomes subordinate to it, functioning purely as the conscious organ of an other-than-human technical system. If we can still call the worker alive, it is only to the extent that it serves as a "living appendage" to an otherwise "lifeless mechanism"[63]—a living dead whose posthuman subjectivity is not amplified but destroyed by its human-nonhuman entanglement.[64]

Writing a decade after Marx's *Capital* was published, the zoologist Ray Lankester theorized what is at stake in this physiological regression. In *Degeneration: A Chapter in Darwinism*, he traces the points at which varying species degenerate by way of "a gradual change of the structure in which the organism becomes adapted to *less* varied and *less* complex conditions of life."[65] Whenever food and safety are easily attained, he suggests, "there is *suppression* of form, corresponding to the cessation of work."[66] His favorite figure to demonstrate this degenerative tendency is the parasite: "Let the

parasitic life once be secured, and away go legs, jaws, eyes, and ears; the active, highly-gifted crab, insect, or annelid may become a mere sac, absorbing nourishment and laying eggs."[67] But Lankester did not stop there. Translating his theory of degeneration into a series of propositions on human affairs, Lankester asks whether, for all its celebration of convenience and artificial tools, should modern civilization not fear that it too, like the parasite, may be in the process of decay, shedding its organic functions, and slowly drifting "to the condition of intellectual Barnacles or Ascidians"?[68] Surpassed by and parasitic on machines, the human body can only ever enter into an atrophic relation to technology. The natural consequence: The body escapes the path of organic evolution, and regresses into a sinister, inhuman shadow of itself.

In summary, the Luddites, at the time of their assaults, were experiencing a double ontological displacement. The intellectual and legal environment emergent out of capitalist theories of economics degraded them to the status of the degenerate being, outside of *homo economicus,* while the experiential life of machinization deepened that mutilation, taking away the ontological potential of *homo laborans* by which they may have previously founded a proper sense of humanity. This is an ontological double bind from which it would be hard to emerge, for the capitalist relation required a worker with no or limited access to fulfilling its self-interest. As wage laborer, it was not to have access to property ownership, while as mere appendix to the machines of labor, it was denied the grandeur of intellectual activity. In other words, the worker was denied the features deemed constitutive of the properly human. The Luddite, it seems, was doomed for the ontological peripheries of *homo economicus,* for the terrain of mutilated being and intellectual barnacles.

Still, the Luddites struck, again and again, over an extensive period of six years, despite the horrors of state prosecution and war. Seemingly unwavering in their commitment to techno-negative practice and thought, they stood tall and proud even when the odds were clearly stacked against them and when they were told, through weapons no less than words, to shed their outdated beliefs and make room for a new, techno-capitalist era. In the inhumanity of capitalist logics, the Luddites had found a crucial resource for their own theories and practices, founded not upon the principles of self-interest and property but on the antagonistic spirit of a collectivism that honored

personal sacrifice—for themselves, for their fellow workers, for the future of their crafts and the worlds those embodied.

In doing so, they signaled an essential point of divergence in the history of technological refusal. The techno-negativity that was once largely a matter of extending dominant interests (social, religious, political) was now stretched to function, progressively, as a method of antagonizing them. But machine-breaking also signaled, historically, a second tendency. The embrace of capitalist machinery as a measure of humanity so central to the demonization of machine-breaking would only be solidified, and be extended toward new extremes, with the expansion of primitive accumulation into the New World. Techno-negativity would no longer be a matter of finding oneself isolated at the peripheries of humanity, but of falling outside its bounds entirely—a question not of depreciation but of ontological death.

Chapter 4

Indifference

Techno-Colonialism, Onticide, and the Limits of Posthumanism

In the early nineteenth century, a consul for the British government landed on the shores of Cape Coast in contemporary Ghana. After a long journey through rain forests, Joseph Dupuis finally arrived at the palace of Osei Bonsu, the ruler of Ashanti. Dupuis unpacked a number of mechanical presents that he anticipated would win over the ruler. The gifts would, Dupuis expected, help open up the city of Kumasi to new British-Ashanti trade arrangements. Osei Bonsu had the presents laid out for inspection. His eye fell on a lathe, a machinic tool employed for cutting and drilling that was of great British pride. But, Dupuis writes in his *Journal of a Residence in Ashantee*, Bonsu "could not be prevailed upon to value it at a high estimation. It seemed to him too mechanical a royal present."[1] A watch and musical box similarly failed to impress the ruler. Dupuis complained that these "required a degree of care foreign to the comprehension of the king."[2] For Dupuis, Bonsu's indifference was ultimately proof of Africa's vast distance from Western technological mastery,[3] the continent's standing as the antitechnologist par excellence. Despite the glorious palace and the lush surroundings, Joseph Dupuis saw in Bonsu but one figure: the "savage" that dominated the Western imagination of the African world.

Bonsu's refusal of British technology, and his subsequent condemnation by the British Consul, needs to be understood within the colonial context that started three centuries earlier when the mercantilist nations of Portugal and Spain set sail for the lands of western and northern Africa. From its very beginnings, Western conquest of Africa and the Americas was deeply technological. Technology

supported the insatiable drive toward exploration and domination, providing navigators, consuls, empire-builders, missionaries, and slave hunters with the necessary tools and crafts. Iron-pin compasses, astrolabes, portolanic maps, all-sails vessels, printing crafts, and later gun powder, railways, telegraphs, steamships; these are but a few elements of the extensive technological arsenal that enabled and sustained the very possibility of deep colonial expansion.[4] Technology served a wide range of purposes, from navigating oceanic journeys and maintaining contact with the domestic governments in Europe, to intimidating, capturing, or exterminating colonized communities.

But beyond being practically facilitated by technological inventions, colonial conquest was also thoroughly technological in a second manner. Europeans hoped colonial endeavors would facilitate the diffusion of their tools and crafts. In the eyes of the colonial powers, the Americas and Africa presented unforeseen markets that could be flooded with Western technologies and goods.[5] At least two paths were pursued. First, it was common practice for consuls like Dupuis to present rulers with tools and machines that, they hoped, would be embraced, and help pave the way for favorable economic agreements. Second, at missionary schools and workspaces settlers showed off their telescopes, watches, guns, and compasses, sometimes simply for the enjoyment received from the locals' bewilderment, but more commonly in the hope that they would take up these tools themselves for pleasure or work.

Underlying these attempts at technological diffusion was the assumption that, once presented with the colonizer's technology, local peoples would drop their technological habits and take on the colonizer's. This strong confidence sparked the "quick replacement" theory at the heart of many histories of technological diffusion.[6] According to this theory, when indigenous communities and societies in Africa and the Americas entered into contact with colonial powers, they encountered superior technologies by which they were so enthralled that they rapidly adopted them, shedding their own technological past and moving into a more "civilized" future. Technological expansion, in this narrative, is a one-way road—a story of quasi-seamless progression that has as its logical endpoint the technological enlightenment of "backward" societies.[7] This is commonly presented as propelled by a certain unavoidability: Because Western technologies are more efficient, they will automatically be embraced. In the process,

the colonized, culturally, scales up on the ladder of civilization, edging a little closer to the European at the top.

This logic of quick replacement fails to consider the technological dialogue that took place in the colonies, ignoring the many innovations that marked the colonies, as well as their uptake by Western powers (including medicinal plants, narcotics, well-sinking techniques).[8] In this view, the anthropologist Patricia Rubertone writes, "it is the [colonized's] society and their culture that are the open systems, not that of the colonists."[9] The quick replacement theory also misses the significant alterations made to Western technologies, and thus how their logic and uses were subverted to fit the social and material context of the colonized.[10] Most importantly, it leaves no space for Bonsu and his indifference toward the technologies the British were so proud of. Through the prism of a "quick replacement," we miss out on how, again and again, technological diffusion was hindered by the communities that were expected to embrace it. To omit the omnipresence of techno-negativity is to bury the violence technological expansion relied upon.

To trace this omission, this chapter examines how techno-negativity—both in terms of adopting a lifestyle indifferent to Western technologism, and in the form of active resistance to technological diffusion—came to be judged and denounced by colonial powers, and how this, in turn, helped perform a narrative of "civilization through technology." But this narrative could, ultimately, only be justified and sustained through a series of discursive-institutional discourses. Adapting Sylvia Wynter's terminology,[11] I will call these discourses "theo-centric," "ratio-centric," and "bio-centric," and will showcase how across these, in distinct ways, technology became a marker in the ontological exclusion of the savage from the category of Man, where it was rendered variously subhuman: either as "less than human" or as a "lesser human." Theorizing technology as one vector of "onticide"—ontological murder[12]—the chapter argues that the colonial history of technology is one bound up with the animalization and thingification of non-European Others who end up functioning as a limit-concept capable of constructing, and legitimizing, the category of Man. Along the way, technology became both an ontological marker in the creation of the figure of "the savage" and a technique of coercion for their management.[13] In its second half, the chapter leaps into our present to argue that taking seriously

technology as a violent marker of (sub)humanity necessarily means departing from the prevailing embrace of *post*humanist theories of technological subjectivity that conceptualize the human and technology as, universally, recursively co-constituted.[14] We must begin, however, by traveling back in time to the philosophers and scientists of the early Enlightenment.

Subhumanism

Theo-Centricity

The sixteenth century saw European theologians draw an ontological line between divine Self and nondivine Other. Within the monotheistic conception of "Man," the non-European Christians encountered in the Americas and Africa were conceived of as driven by a willing divergence from Man in the image of God. As opposed to the European Christians who occupied the figure of a "True Christian Self," colonized peoples were subhuman "Enemies-of-Christ."[15] What Christian theologians took as an absence of technology among Indigenous populations—which, as historians have long confirmed, was a deeply flawed assumption—[16] functioned as a particularly important designator of the drawn ontological lines. To these writers, the lack of European technologies signaled a deep attachment to the environment, to the untouched wilderness, a landscape they considered to be "the dwelling place of Satan,"[17] and one that the "savage" failed or refused to shape to their needs. Puritan Christians, in particular, considered it to be their divine goal to subvert any techno-negative tendency, by force if necessary. They understood themselves to be on an evangelizing mission, "heeding God's injunction for man to turn the earth into his garden."[18] Technology became one path of redemption: a step in the direction of salvation away from a subhuman existence toward a Christian image of the human.[19]

Christian missionary centers across the Americas and Africa arose to fulfill this supreme goal, teaching the European arts, sciences, and technology in an attempt to root out Devilish ills and open the world to Godly influence. Spanish and English colonizers aimed to restrict nomadic modes of existence and to transform those into sedentary communities based on agriculture. A lifestyle centered on agriculture enabled, Christian Europeans believed, the uptake of superior tools (e.g., mattocks, hoes, and later plows) for working and exploiting,

more fully, the rich lands of the Americas. Such a technological injection would elevate the savage not only above nature but also above their own very subhuman nature. Colonizers invoked the notion of *terra nullius:* "Empty lands" (i.e., not in the hands of a Christian prince) belong to anyone until they are cultivated.[20] Refusing the colonizer's techno-colonialism—backed up by weapons—was, then, only an option if one is willing to sacrifice the lands that sustain one's very existence.

Ratio-Centricity

With the conquest of the "New World" in the sixteenth century, a second set of discourses on the nature of the "savage" Other rapidly emerged. At this point, the purely theo-centric conception of the human determined by divine law began to encounter resistance and slipped into the field of the ratio-centric. What came to be known as the "Valladolid debate" helps illustrate what was at stake. Shortly after his arrival on American shores, the Spanish King Charles I created a jury to settle an important moral score in front of the Spanish court: Are the indigenous populations of America capable of self-governance? On one side of the debate sat Bartolomé de las Casas, a leading member of the Christian humanist movement who supported the theo-centric image of Man and the missionary movement that accompanied it. He argued that because rationality was part of the Amerindian nature, self-determination was to be pursued. By contrast, for the Spanish philosopher Juan Ginés de Sepúlveda it will "always be just and in conformity with natural law that these people be subjected to the rule of more cultivated and humane princes and nations."[21] But what is this "natural condition" that demands that some command while others obey?

With de Sepúlveda, who is generally described as the "winner" of the debate due to the lasting influence of his position, Amerindian populations appear outside of a naturalized, or "ratio-centric," theorization of the human. De Sepúlveda had effectively redrawn the ontological demarcations between the human European and subhuman Other. They became, at least partially, secularized, a question no longer of religion/irreligion but one of a binary between rationality and irrationality. In his *Democrates Alter,* the philosophical chronicler of the Spanish empire extends Aristotle's claim that slaves are "designed by nature" to be slaves,[22] existing without the capacity for

intellectual mastery, reduced as they are to their bodily instincts. They are, he suggested, as easily swayed by "their primitive and evil ways" as Aristotle's slaves.[23] De Sepúlveda presents us with an image of Amerindian populations as, by essence, "barbarous and inhuman peoples, foreign to civil life and to peaceful customs."[24] They are *homuncul*, diminished "men," "monkeys" almost "in whom hardly a vestige of humanity remains."[25] In the spirit of Aristotelian logic described in chapter 1, they are by nature "animate instruments" possessed by someone else, the master, and are thus defined by their *subjection by nature*. It is, by the same token, nature that renders the Spaniards more human, and therefore not only naturally free but as given the right to govern.

Not for all writers was the gap between "rational life" and "savage life" that clear cut. Early critics of Spanish conquest denounced the colonizer's enactment of brutish immorality through manhunts, torture, and slave-taking, their becoming-savage, or, to use Aimé Césaire's term, their de-civilization.[26] But even among the early critics, a line is drawn between *acting* savage versus *being* savage, savage by exception versus savage by nature. The European, mirroring the savage's contra-rational customs and habits, temporarily approximates the position of the savage, but never fully inhabits it. What qualifies the savage is their full subjection to the condition of savagery, their default uncivil state.

A defining criterion of this ontological disjunction between the irrational Other and the reasoned European within the writings of many—but not all[27]—writers of the early Enlightenment is, as it had been in the discourse of the Christian theologians, the presence/absence of technology. Writing one century after de Sepúlveda's *Democrates Alter,* Hobbes speaks of Native Americans as governed by nothing but "natural lust," an "ill condition, which man by mere nature is actually placed in."[28] He continues: "In such condition, there is no place for industry . . . consequently no culture of the earth; no navigation, nor use of the commodities that may be imported by sea; no commodious building; no instruments of moving, and removing such things as require much force; no knowledge of the face of the earth; no account of time; no arts; no letters; no society."[29] The perceived absence of science and technology, their living in a "state of nature," renders it unimaginable for "the savage people of many places of America" to join the ranks of civilization, unless they were

to submit themselves to the authority of an absolute ruler.[30] But the Other is defined not only by the assumed failure to produce advanced technologies but also by their very incapacity to do so in the first place. For instance, Thomas Harriot, an ethnographer and astronomer tasked with collating information about the New World, wrote that the burning glasses, mathematical instruments, guns, and other tools that the colonizers brought along on their conquest of the Wanchese and Manteo peoples of North America were "so straunge unto them, and so farre exceeded their capacities to comprehend the reason and meanes how they should be made and done."[31]

If in ancient Greece and among the Christian techno-demonologists technology appears as an onto-theological threat to a particular humanism, in the writings of the early Enlightenment we witness a reversal: Technology becomes humanism's very measure, its secure grounding. Without the drive of technology, it seems, the human slips into a register of unreason that is altogether bestial. "Scarcely protected from the wind and rain of [a] tempestuous climate," writes Charles Darwin, the peoples of the Americas "sleep on the wet ground coiled up like animals."[32] He adds: "Viewing such men, one can hardly make oneself believe that they are fellow-creatures, and inhabitants of the same world."[33] Without the assumed leverage of technology, the Amerindian suffers a repulsive attachment to nature as a site of both passion and vulnerability.

Bio-Centricity

Following the onto-theological circumscriptions of American peoples by way of technology in theo- and ratio-centric discourses, attempts were soon made to provide a more secure footing attuned to the deepening secularization taking place in parts of western Europe.

The first push towards the scientification of the discussed discourses can be found in seventeenth- and eighteenth-century social evolutionism, which classified and hierarchized races and regions according to their respective stages of Savagery, Barbarianism, and Civilization, and, employing polygenetic theories, according to their assumed different origins in the history of humanity. If there was a generalized distinction drawn between people in Europe and colonized peoples, the latter were assigned varying degrees of subhumanity within the Western classificatory treatment. Black Africans, notably, were lesser humans, and thus assigned to the lowest rank

in the Chain of Being, below the Amerindian *homunculi* described by de Sepúlveda, where, as Sylvia Wynter notes, they occupied "the 'missing link' position . . . between rational humans and irrational animals."[34] But Black being was understood as not only below but also before rational European Man; that is, where they once were.[35] As media philosopher Armond R. Towns notes, within this classificatory, social-Darwinian logic "humans developed in (technological) states, and some were further along ("detribal," i.e., no longer tribal) than others (tribal, i.e., "backward," behind the detribal)."[36] As the most tribal, the Black African found themselves furthest removed from European Man, temporally and ontologically.

By the nineteenth century, philosophers and anthropologists began to claim that taxonomies of (sub)humanity could be based on "the sacred facts of science."[37] The ability to work, length of railway tracks, marking time, and other numerical criteria were all said to provide a universal standard for assigning categories of (sub)humanity to peoples. But only with the birth of phrenology did practicing (pseudo)scientists get involved. Only at this point, and further secularizing the theo-centric and ratio-centric conceptions of human-technology relations, we fully enter the terrain of bio-centrism.

The bodies of those inhabiting the bottom ranks of (sub)humanity, phrenologists claimed, were innately techno-negative. Traveling zoologists fixated on and compared the brains and skulls of Africans, apes, and Europeans. In 1830, an anonymous author writing in *The Phrenological Journal* summarizes one such study conducted by the anthropologist Julien-Joseph Virey. The anthropologist "compared the capacities of Negro skulls and European by filling them with fluids, and the latter exceeded the former sometimes even by nine ounces. . . . The hemispheres are smaller, and the cerebellum is proportionately larger, as well also as the spinal cord."[38] These deviations are all signs, Virey wrote, of "a degradation towards the *ape genus*."[39] The uncanny resemblance to the ape's spine-brain-skull triad explained the underdevelopment of the Other's faculty of reason, their less-than-human intelligence. By extension, the Other fails to achieve the rise above bodily instincts necessary for self-reflection, "never achieving the distance required in order to contemplate the self."[40]

James Hunt, a fellow adventurer in the racist science of phrenology and a self-proclaimed "anti-abolitionist," argued that the bio-

logical fault of the "savage" body lay in the "premature union of the bones and skull."[41] The result: The savage Other is a biological victim of arrested development, their skull and brain incapable of advancing beyond the age of puberty. In fact, Hunt suggests, contrary to European craniological development, "the older [Africans] grow, the less intelligent they become."[42] The Africans' biological curvature is that of a collective unconscious regression. It was no surprise then, phrenologists like Hunt and Virey declared, that the Other lacked the ability to invent or master technical devices beyond their seemingly infantile creations. What the Other reveals in its strong mental capacity for temporal return—"showing great powers of memory"[43]—it lacks in futurity. Their gaze is biologically directed toward the past. But also toward the ground: Unlike the European "celestial plant" of Plato, who stands erect, gazes up at the sky, and lives by the head, that "sanctuary of the soul," the African, with an ape-like gait, Virey suggests, "stoop[s] humbly towards the earth, to feed and remain on it," as if falling away from bipedalism, that triumph of anthropogenesis.[44] In the phrenologist's hands, the African Other's assumed technological inferiority thus became less a question of religious or social discourse and more one of zoological inscription; techno-negativity as spinal, cranial, cerebral, endocrine, and glandular. The ancient nature of the colonized, once again, resembles a pretechnological animal.

Technological Onticide

The discussed discursive-institutional measures (theo-centric, ratio-centric, bio-centric) each, according to their own particular functioning, instrumentalize Western technology within the logic of "ontological murder," or "onticide" to use Calvin Warren's term, of African and Amerindian life.[45] Like Divinity, Reason, and Intelligence, technology is weaponized as a violent negation, as the rupture from the existential coordinates and ontological grounds foundational to any claim to humanity, for any relation to Being.[46] But unlike this trio, technology has an immediate material form. As a result, it serves a unique contribution to onticide: "Observable" via travelogues and "measurable" through lists and taxonomies, technology stands out as materially quantifiable, and this, I want to argue, helps explain its status as a dominant vector of ontological policing—facilitating

ontological distinctions between the human and its negative Others—within colonial writings. In the eyes of the colonizer, technology gave analytical access to what Zakiyyah Iman Jackson terms the "ontological zero," the subhumanity of a people, giving it a material form that could be observed, noted, mapped, and compared.[47] Its status as an ostensibly measurable determinant of (sub)humanity made technology influential in animalizing and objectification discourses. As we have seen, for Darwin, without the grandeur of technology (i.e., European technology), the Other remains in a bestial state—living at the mercy of nature, in all its overwhelming force, incapable of rising above it in a humanist feat of mastery.

But more than facilitating this destructive impulse, as one mode of ontological policing, technological onticide helped solidify the colonized Other as negatively constitutive of the category of the human. As a limit-concept, technology enables the human to be constructed by way of negating what it is not. In tracing the bounds of what it means to be human, technology gives it form. Without its ontological negative, its "ontological counterpoint,"[48] Man would encompass all and any form of existence, and would thereby render itself at once all-encompassing and redundant. In other words, European humanism, in its colonial figuration, needs its (techno-negative) Other to sustain itself.[49]

For this reason, if its origins and modes of operation are philosophical, the results of technological onticide are profoundly material. Not only does it legitimize and sustain its physical variant—the theft and murder of both land and people, alongside the forced submission to European models of life, technology, and commerce. Importantly, it also justifies its status as being *without ending.* Technological onticide starts from the indigenous community's obligation to collaborate in the duty to technologize, but, at the same time, as we have seen, is underpinned by the belief that there is a (divine, spiritual, or biological) innate failure to do so. Dupuis's condemnation of Bonsu's refusal of European devices, with which this chapter opened, makes this clear. Bonsu was offered a clock and organ, but the British Consul seemed already aware that he would lack "a degree of care" required to make use of the tools. Because his presumed techno-negativity is considered to be ingrained, Bonsu would logically fail to appreciate the technical objects. This paradox—of expecting collaboration *and* its failure—is not a challenge to technological onticide, but part of

its driving logic: the implicit understanding that the European civilization mission would never come to a logical conclusion, bound as it is by what Zimitri Erasmus calls "the infinite deferral of the savage's graduation to 'becoming 'Man.'"[50] The colonized would always remain less than human or, at the very least, a lesser human. In short, in presenting the possibility of elevation *and* its undoing, technology needs to be understood as one weapon in the making-permanent colonial subordination.

Posthumanist Subjectivity and Constitutive Correlation

In underscoring the ontological exclusion of certain humans by way of technology, the notion of technological onticide shows that human-technology relations cannot be taken for granted as simply a matter of "causality" (as means to an end), "extension" (as prosthetics), or "domination" (as tools of mastery). As such, it poses significant challenges to existing ways of understanding technological subjectivity.

Much contemporary scholarship on technological devices, artificial intelligence, machine learning, algorithmic cognition, and other digital phenomena tends to approach, more or less explicitly, the figure of the human via varying posthumanist theories of subjectivity. While marked by considerable internal differentiation, those theories each pursue the displacement of liberal humanist figurations of the human subject as a unified, sovereign, and exceptional entity.[51] In this universalist figuration, which Hui refers to as "naturalist" and I have in the introduction referred to as a matter of "causality," the human subject exerts rational control over, while maintaining its separation from, technology in order to dominate nature.[52] The human subject of liberal humanism is a "one" whose cohesion and autonomy remains intact despite the extensive use of technology.[53] Against such universalist theorizations, posthumanisms tend to propose their own theories of subjectivity in which the human no longer belongs solely to itself, shattering what Sadie Plant refers to as "Man's illusion of immunity and integrity."[54]

For all their divergences, what binds posthumanist accounts of subjectivity together is an insistence on what I call the "constitutive correlation thesis": the conceptual argument for the human subject and technological nonhumans (including technical objects,

interfaces, codes, algorithms) as recursively co-constituted. More than underscoring the deep material connections between human subjects and technical devices (e.g., in practices of infusing or implanting), the thesis foregrounds their inextricable co-emergence on two levels.[55] On a first level, the thesis is granted a transcendental standing. For Derrida, it enjoys an originary status: "The natural, originary body does not exist: technology has not simply added itself, from outside or after the fact, as a foreign body. Certainly, this foreign or dangerous supplement is 'originarily' at work and in place in the supposedly ideal interiority of the 'body and soul.'"[56] In this reading, subjectivity can only ever be thought of as always already imbued with technological objects that co-constitute it. On a second level, the thesis is historicized. N. Katherine Hayles, for instance, acknowledges that the constitutive correlation of human-technology is originary, while simultaneously positing its contemporary specificity, where "the integration of humans with intelligent machines [becomes] more extensive and at the same time more diverse in its implementations, effects, and significance."[57] For Hayles, it is particularly the cognitive systems of cybernetic computation that deepen the constitutive correlation of the human and technology.[58] Likewise, in Haraway's and Plant's argument, while none of the human-technological partners ever preexist their relational ensemble, cyborg subjectivity announces a renewed dynamism in which the body escapes the "formal organization, the organized organs which modernity has taken for normality."[59] Subjectivity, in this argument, is engendered increasingly in the interplay of human and digital life. Echoing Haraway and Plant, Braidotti posits subjectivity as a collaborative effort that takes place transversally, in the in-between of nature/technology and sociality/materiality divides, in ways that are both transcendental, and intensified by the digital era of "high technological mediation."[60]

By way of their transcendental-historical accounts of the constitutive correlation thesis, posthumanist theories trouble any theory of the subject as an autonomous self—independent from the technical environment—and propose, instead, a symbiotic theory in which subjectivity is commonly referred to as emergent from the "entanglement,"[61] "collaboration,"[62] "coupling,"[63] "mediation,"[64] and "cooperation"[65] of human life and technical objects. Conceptualizing subjectivity in terms of the constitutive coemergence of the human

and the technical is presented as a crucial assault on the colonial subhumanization described in this chapter. For the geographer Gillian Rose, posthumanist theories of subjectivity offer "a necessary corrective to centuries of Western philosophizing that attributes agency only to a specific kind of human: the male, white, heterosexual sovereign subject, capable of rational thought unencumbered by material objects, whether tools or his body."[66] The constitutive correlation thesis, in this argument, promises to displace the fantasy of the autonomous and sovereign human at the heart of the theo-centric, ratio-centric, and bio-centric separations from, and political domination over, subhuman "Others." Against the liberal theory of the human that makes possible discursive-institutional practices of subhumanization, posthumanists such as Cary Wolfe, Rosi Braidotti, and Donna Haraway propose a radical theory of subject formation centered on ontological codependence, one that, in turn, translates into an ethics of more-than-human interconnectedness and shared vulnerability.[67] If subjectivity is constitutively correlational—that is, emerges only in relation with technical others—then our ethics, too, must start from, and seek to promote, the primacy of relations.

The premise of posthumanist theories of subjectivity as engendering a disruptive force at odds with the violence of liberal humanism is appealing, but partial. The ontological and bloody erasure enabled by technological onticide presents a powerful challenge to the universalist impulse behind the constitutive correlation thesis. Underpinning the latter's theory of subjectivity is, as we've seen, a conception of relations between the human and technology as always and necessarily a matter of co-constitutive emergence. From the viewpoint of technological onticide, however, the co-constitutive nature of human-technology relations cannot be assumed. Technology at times appears as exactly the reverse of constitutive correlation: as enabling a destituent relation to the human, as the casting away of the human. To be more precise, in the case of technological onticide, the encounter of human and technology features not as the co-production of subjectivity but as subjectivity's radical negation that ends up functioning as a constitutive ontological outside for Man. What is a component of recursive co-constitution of subjectivity for some is the destitution of subjectivity for others. When posthumanist scholars write of the originary technicity,[68] or contemporary

technicity,[69] of human life, they fail to acknowledge that technology is only ever selectively—rather than universally—co-constitutive of subjectivity.

This conceptual lacuna facilitates two universalist tendencies in posthumanist theories of subjectivity. The first tendency pertains to relations among humans. Ignoring technological onticide leads to the assumption that, despite subjectivity's co-constitution, there remains a shared ontological ground for the human. But the human has onto-biological lives: A life can be both onto-epistemologically and biologically human, yet this simultaneity is not a given. Alongside Calvin Warren's theorization of Black ontology, we can think of the insistence on a shared foundation ("being human") as a tentative conflation of human "being" (ontology) and human "existence" (biology).[70] As theories of onticide (technological or otherwise) show, what has a human existence does not universally have human being or, in Tyrone Palmer's terms, has access to Being-in-the-World.[71] For Warren, the Black enslaved and colonized constitute "a laboratory that functions biologically, but is dead ontologically."[72] In conflating the biological and the ontological substrate, existence and being, posthumanist theories of subjectivity run the risk of engendering their own universalism, even if their noted aim is to render such a humanist tendency inoperative. The attempt to inoperationalize the problematic legacies of Man can be found most clearly within the important acknowledgment of the differentiation of technological experiences, affects, perceptions, and meanings; what Gillian Rose, following Stiegler, terms a "posthuman diversity" enacted by the "difference-in-repetition . . . through technics."[73] By troubling the constitutive correlation thesis, technological onticide challenges us to push beyond the recognition of purely lived, material, or experiential distinctions at the heart of technological life, and to venture into the realm of onto-epistemological separation. There is an urgent need to refuse the containment and reduction to sameness of radical alterity, in this case ontological alterity: the difference between being and existence.

Not accounting for the destitution of technological onticide leads to a second universalist tendency in posthumanist theories of subjectivity, one that unfolds with regard to the question of human-nonhuman relations. Posthumanist theories of subjectivity are commonly articulated as an ethical challenge to the liberal humanist

theories of the autonomous and rational self and, specifically, their reliance on the Cartesian legacy of human/animal distinctions. Alongside "reason," "creativity," and "responsiveness," Bruce Braun argues, it is "tool-making" that is operationalized within the liberal humanist legacy as an external "supplement" to separate the human from the beast.[74] The latter, here, has a connection to the technological only to the extent that it is "machinic," operating without capacity for thought, consciousness, and speech. Extending earlier critiques of the human as "tool-animal" by Lewis Mumford and others,[75] posthumanist theorists of subjectivity take clear aim at the structures of thought enabling this mechanization of animal life and the discourses of human exceptionalism, sanctity, and self-containment that spring forth from them.[76] But what is forgotten, and technological onticide foregrounds, is Jackson's insight that not "all humans are privileged over all animals by virtue of being included in humanity."[77] As a force of subhumanization facilitating the presentation of the presumably techno-negative Other as naked animal at the mercy of "wilderness,"[78] technology helped put the colonized and enslaved to labor as animals, as machines, or as "object-commodities."[79] The technological subhumanization of the colonized, as onto-epistemological tropes in the service of theft and enslavement, precludes their inclusion within the category of speciesist humans that Braidotti and other posthumanist theorists of subjectivity argue requires "decentring" through an emphasis on ontological interdependency.[80] They were, already, decentered. In light of technological onticide, strategies of ontological displacement outlined by posthumanist scholars lose their connection to an emancipatory premise. What Braidotti calls "becoming-animal" or "becoming-machine" ceases to be a strategy of liberation underpinned by "an ethics of joy and affirmation that transforms negative into positive passions" that "engenders possible futures."[81] Such a strategy is not inherently flawed and is presumably a distinctly ontological one, but it needs to carefully ward against conflating animality with emancipation by working through how it can account for technological onticide. Ultimately, the conceptual work that requires undertaking, but is currently wanting, is a detailing of what the decentering—by asserting ontological co-constitution—of Man might look like for those who never experienced the privileged access to humanity in the first place. Without a confrontation with the negative ontological labor of technology, we

will fail to acknowledge and work through the specific technological dimensions of past colonial expansion.

What's more, we run the risk of overlooking and thereby failing to understand and undermine the contemporary violence of technological onticide. Racialized populations continue to be much more likely to be treated as machines, waste, or data. On the one hand, our contemporary moment extends the historical logic of technological onticide we have thus far encountered in this chapter, wherein the presumed absence of technology is conflated with the presence of subhumanity. For instance, the "African/nature" coupling, to use Towns's term,[82] and the imagination of a nontechnological indigeneity it fuels, continues to justify, in (neo)extractivist economies on the African continent, the dispossession of peoples as waste and surplus alongside the presentation of their lands as open to appropriation.[83] On the other hand, technological onticide is also diversifying its techniques. To give just one example: The oversaturation with, rather than the presumed lack of, technological objects has become a vector of ontological murder, as when, following Long T. Bui's argument, techno-Orientalist imaginations treat Asian populations as, simultaneously, the embodiment of technological advancement (i.e., as superhuman) and as themselves machinic or robotic (i.e., less than human), "behav[ing] like numbed automata bereft of deep feeling, spontaneous thought, and human consciousness."[84]

Across its various manifestations, the presence and transformation of technological onticide facilitates the sustained, but uneven production of a subhuman Other to be extracted, disposed, or contained for the benefit of the profit, development, safety, and pleasure of a human Self.[85] By omitting technological onticide and these ongoing material afterlives, liberal humanist theories of Man and posthumanist theories of subjectivity both lack the tools for working through and against the full scale of the ontological violence of coloniality in the past, present, and future.

Savage Ontologies

The aim of drawing out conceptual challenges in this chapter has not been to disqualify that posthumanist theories of subjectivity can ever be decolonial in thought, methodology, and epistemology, let alone to reassert the human as a figure that requires clean delineation,

but to force into view some of the complex problems posed by technology as a vector of ontological exclusion. The chapter has argued that posthumanist theorization, in looking to "correct" the liberal humanist idea of Man, ends up producing its own universalist tendencies. First, it fails to take the idea of "differentiation" among human life beyond the experiential and affective into the ontological distinctions between human "being" and human "existence" enabled by technological onticide. Second, it insufficiently considers the way that "decentering" the human is only ever emancipatory as a process of animalization or thingification for those not at the receiving end of onticide.

Working through these two tendencies offers a way of circumventing the lure of universalism that posthumanist theories of the human claim to work against. If posthumanism is a challenge to humanist Man (white, male, able-bodied), then what remains unclear is how the "posthuman" works through, and more importantly, *against* the ways technology, alongside other vectors of onticide, facilitates the radical rejection of subjectivity, historically and in the present. The path offered to us by most posthumanist thought on the digital is an extension, or "correction," of the category of the human to include not only nonhuman co-constitution, including the technological, but also those forms of human existence that have, traditionally, been eradicated from access to humanity.

What is uncertain, however, is how this, on the one hand, actively confronts the past violence and contemporary afterlives of this exclusionary category and, on the other hand, does not simply temporarily displace the ontological boundaries of the human in order to police a universalist ontological line elsewhere, for instance by conflating human existence with human ontology, or by conceptualizing all humans as tied up in the category of speciesist humanity. This is important as the human, as we have already seen, always requires an Other as a limit-concept in order to sustain and legitimize itself, in order to keep its "metaphysical world intact."[86] What might it mean to offer a deeper conceptual fracturing of the category of the human, one that wards off the threat of new onticidal universalisms by refusing the emergence of new forms of ontological policing? By extension: What might a technological politics look like that takes the necessity of such fracturing seriously? As I will explain in the conclusion of this book, to avoid the pitfalls of ontological policing, what may

be needed is less a renewed *post*humanism, and more the destituent experimentation with *counter-, un-, non-,* or *in*humanist tendencies.

For initial inspiration, we need to look no further than the colonized's refusal of Western technologies. When European colonizers sought to take over Central and South Africa from the sixteenth century onward, they encountered the Bantu indigenous communities and hoped to enroll them into civilization schemes. Besides quickly becoming renowned as expert traders with exquisite geographical knowledge and language skills, helpful to the colonizer, some of the Bantu peoples were also notoriously unwilling to pick up the Europeans' tools. One people in particular, the Kongo, were so suspicious of the Europeans' technologies that "if they were offered a present they refused it; they wished for no object of European manufacture," aside from a handful of tools.[87] The Akamba, another Bantu people, conducted their own collective refusal: They were unwilling to use iron in cultivating their lands. In fact, across the continent, the anthropologist Roderick Urwick Sayce shows, many of the European technologies persistently failed to be integrated into the colonized's technological habits.[88]

To the colonizer, we can only speculate, these events may have been yet another proof of the savage's techno-negative nature, and by extension, of their ontological inferiority. The savage will have emerged as less than human or a lesser human. One prefix we would definitely not have heard uttered from their mouths would be "*post-*." But to the contemporary anthropologist Eduardo Viveiros de Castro, posthumanism is exactly the ontological terrain of the "extramodern," his term for the colonized.[89] The colonizer was correct to sketch an alter-ontology of the savage, but failed to predict that this ontology perhaps settled not far away from where European ontologies would themselves land centuries later. For Viveiros de Castro, the counteranthropologies of the extramodern are at the epistemic level of twenty-first-century anthropology, and we may add here, of much of cultural studies, human geography, media theory, political thought, and science and technology studies. For de Castro, the savage is a posthumanist *avant la lettre,* before even the intellectual tradition of Enlightenment humanism had fully taken hold.

But if it is a posthumanism at all, it is one that takes the human as always already threatened by its own destitution: antagonism, loss, irreconciliation. When the Akamba rejected iron, they did so because

they believed that iron would keep away the rain, with drought destroying the potential of future crops. Mastery always begs a response. Akin to the Amerindian peoples in de Castro's anthropologies, they see themselves "as entangled in a cosmic web," and are therefore "extremely wary of the consequences of their actions."[90] Theirs is an intricate cosmology of inanimate subjects, animate objects, and human spirits.[91] If there is an excessive liveliness of the nonhuman in such a cosmology, this does not, by default, translate into a generosity toward human life, meaning, and interests. The earthly response to human mastery may not only be incalculable or even entirely unknowable. It may also create a world that is indifferent and even hostile toward human concern. The Akamba's lands dry out; the food rots. Nonhuman life turns against the living and the savage's ontology slides into what we may call a "darkened vitalism,"[92] one that is inconceivable to the colonizer's anthropocentric episteme of nature as "natured nature" (as an object to be manipulated), as well as to the posthumanist conception of nature as "nattering nature" (as a lively subject).[93] This sad vitalism would emphasize nature as "denaturing," that is, as that movement of withdrawal that Hannah Arendt, in a rare moment of explicit epistemological pessimism, identified when she speaks of the horrifying confrontation with a nature that escapes us and any of our tools of representation.[94] Indifferent to human intention, the nonhuman world turns hostile, and for all its mediative promise, technology can only ever accomplish so much. At times, deepening a break in human-nonhuman relations, further separating them out from one another, technology renders the world uninhabitable. Unlike posthumanism, the *in*humanism of savage ontologies refuses to assume any constitutive relation of the technological and the human.

Its techno-negative weapons, as we've seen, are manifold, shifting from the indifferent "I would prefer not to" of the Akamba to cries for an all-out anticolonial war on European technologies, as when the Native American leader Tecumseh urged for an antiagricultural fight in 1813: "Do not work, destroy the wheels and the looms, throw away your ploughs."[95] Binding them together is a deep suspicion of technology as in service of Man. In one sense then, the colonial writers were correct: The savage is indeed on the side of the nonhuman or sub-human. But not for the Europeans' reasons discussed in this chapter. Theirs was a different ontological war, with the savage

emerging not as *of* but *for* nonhuman nature. Their techno-negativity is, then, the material manifestation not only of resistance against a vast and brutal process of technological conquest, but also of an expansive ontological abyss between the colonizer and the colonized.

Around the same time, back in Europe, the history of techno-negativity took a different turn, engaging in yet more struggles for a proper humanity. What emerges is the same suspicion toward refrains of Enlightenment humanism, but with even sharper weapons for fighting.

Chapter 5

Extinguishing

Vandals and Epistemics on Black Boulevard

> Darkness itself glows in me.
>
> —Emil Cioran, *On the Heights of Despair*

Karl Marx is an unlikely figure to introduce into a history of techno-negativity. After all, he has long been praised as an austere believer in the emancipatory potential of technology. In machinery, Marx recognizes the promise of a tilt away from alienating labor toward workers' own personal, artistic, or scientific development.[1] His is a conception of the human as *homo faber*—the born fabricator, the tool maker. And yet, on a winter night in 1850s London, we witness another Marx, an almost promiscuous Marx, acting under the sway of night. In a matter of hours, he became the protagonist in a series of assaults on state technology.

The story is narrated to us by Wilhelm Liebknecht, a prominent German socialist and one of Marx's companions for the night. It begins in a pub on Tottenham Court Road in Central London. Liebknecht and Marx, alongside the Hegelian political philosopher Edgar Bauer, were reaching the end of their "beer trip" through the city. The three Germans were laughing and drinking with a crew of Englishmen until the conversations, regrettably, turned to politics. Triggered by a silly remark, the trio started firing away at the Englishmen and their beloved country. Liebknecht ridiculed the English, saying the only difference between their respective nations was that "we Germans knew our public affairs were miserable, while the Englishmen did not know it, whence it were apparent that we surpassed the Englishmen in political intelligence."[2] Marx multiplied the ridicule, claiming that England had no musical masters, while

even Germans, who had been prevented "by the miserable politicians and economical conditions from accomplishing any great practical work," still had been able to produce such masters as Beethoven, Mozart, and Handel.[3] The English drinkers were visibly unimpressed. More so, they were furious; "damned foreigners," they snapped. Threatening words escalated into violent gestures until Marx, Bauer, and Liebknecht considered it their safest bet to simply leave the premises. Once on London's nocturnal streets, they needed to cool their heated blood. Bauer found a pile of paving stones and found no better use for it than to hurl it toward the sky: "Clash! Clatter! A gas lantern went flying into splinters."[4] Marx and Liebknecht soon gave in to the contagious joy, leaving in their tracks a trail of shattered lanterns. A police officer heard the explosive clangs and prompted a chase. Showing "an activity that I should not have attributed to him,"[5] Marx sprinted into the night. Escaping via an alleyway, they outsmarted the police who kept pursuing, unknowingly, three of the world's most influential thinkers. Their search was in vain. The Germans were already on their way home, still panting, but laughing and buzzing with excitement.

The target of Marx's boisterous night out—gas lanterns—had arrived in London five decades earlier. Before functioning gas-lighting systems were installed in London and other large English towns, the cities had been illuminated not by the state but by house owners. Since at least the fifteenth century, in England, and Europe more broadly, owners of ground-floor dwellings had been legally obliged to attach oil lamps to the facades of their homes.[6] The upper classes paid servant lantern-bearers to accompany them on nocturnal travels. Those walking the streets without lanterns were regarded with suspicion, and, in Paris and elsewhere, "could run the risk of being arrested and imprisoned by the night patrol."[7] Paris was the city that first moved away from these forms of citizen illumination, installing thousands of public lanterns by the mid-seventeenth century. The private lanterns were replaced by a standardized lantern, a candle inside a glass box, suspended six meters above the street by cables spread between buildings. The state employed professional lamp-lighters to ensure the city was lit at all times. Later, the Parisian authorities installed much-brighter oil lanterns (called *réverbères*) on top of lamp posts, before finally, a few decades after London, turning to gas lights. Only in this moment when streetlights became a technology associated

with the state—rather than being privately owned and managed by citizens—did they become an enticing object for "vandals" around Europe.[8]

That means that if the alcohol, camaraderie, and nocturnal landscape had helped give rise to a darker Marx, it also placed him at a point in the history of technological refusal when a new dynamic began to emerge. At this time, techno-negativity was becoming animated by *an intensifying process of publification,* one that has two different lives. First, in the hands of the lantern smashers, the target of techno-negativity is property owned and managed by the state. This separates it from the negation of privately owned technologies we have witnessed among the Luddite machine-breaking, anticolonial assaults, and medieval rejection of "demonic" machines. Second, and further carving out a space of distinction, lantern smashing signals techno-negativity's democratization. As the historian Wolfgang Schivelbusch has shown with regard to France, the news reports, travel accounts, and legal documents of the eighteenth and early nineteenth centuries are brimming with descriptions of the public throwing stones and sticks at public lanterns.[9] A public form of techno-negativity was becoming rampant, turning each lantern into a potential target. Expanding it beyond the site of a limited few—whether those are workers, religious clergy, or those bearing the brunt of European colonization—techno-negativity begins to assert itself as a popular practice alluring to populations across the many sections of society.

What drives this double publification whereby techno-negativity turns into a popular assault on state property? This question is particularly pertinent given lantern smashing's harsh condemnation by both the press and the public authorities. To writers and witnesses, they were the sons and daughters of broken homes, the "children without fathers" who find solace in wandering the streets together brazenly, causing mayhem wherever they travel; who personify the drama of failed education and lacking discipline, sacrificing themselves and, most importantly, sacrificing others on their mad pursuits through the city. For European authorities, lantern extinguishing became somewhat of a contagious pest, blamed on the young: kids, teenagers, or students with presumably too much time on their hands.[10] Parisian law referred to the smashers as "persons of bad life and disturbers of public peace and security."[11] In Leipzig, they

were "wicked persons."[12] Governments responded with severe punishments for cutting the cables of lanterns, smashing them off their posts with stick, or, Marx-style, throwing objects at them. What in England cost you a shilling could cost you your right hand in Vienna according to a law written in 1688. In Paris, a servant was beheaded for shattering a lantern.[13] Despite the possible charges, the nocturnal hobby continued.

The crucial question this raises and this chapter begins to address is: Given the penal stakes, what made the public return, again and again, to those small boxes of light, those public technologies of seeing illuminating their city? Lantern smashing is irreducible to the need, exemplified by Marx, to cool down after a drunken night out, and has, in fact, many contradictory lives. As we will see, what is for one group of extinguishers a source of nocturnal revelry is for another a tactic of defending oneself, in the heated moments of revolution, from state control, or even an escapade into the sense of freedom that darkness propels. It is amid the awkward coming-together of such divergent affects—pleasure and hate, desire and fear—that lantern smashing ends up asserting itself, willingly or not, in antagonism to the emergence of what I will call a "policing epistemics" and its ideals of the properly human as "enlightened" subject. Through this antagonism, we can speculate, lantern extinguishing reflects a clash between contradictory legacies of the Enlightenment and, more precisely, of how these materialize into conflicting visions of the ideal state, one fought out in the streets. Before we get there, we need to first enter the affective life of lantern smashing.

Troubled Affects, Libidinal Nights

The words of the witnesses, journalists, and writers confronted with lantern smashing expressed a deep sense of frustration. Perhaps as much or even more so than the cost of repair, it was the seeming pointlessness of these actions that puzzled them. Like the streets they ravaged, the motivations of vandals were cloaked in darkness. Unlike the careful declarations, fragmentary writings, and feisty manifestos of the techno-negative actors we have encountered so far in this book, the vandals left behind neither statements of intent nor a written comprehensible demand or future visions. It was not a lack of communication per se—after all, they spoke in actions—but

something more akin to an excessive speech, reminiscent of what the philosopher Maurice Blanchot identifies as "a speaking beyond, going beyond, spilling over."[14] Their actions are thus *end-less* in a double sense of the term: without resolvable demand or aim (e.g., a change in lantern laws), and, as a result, without foreseeable termination. There will be no ending, no final blow, no concluding shattering.

One theory of lantern extinguishing might simply propose that the pointlessness is, precisely, the point. Inspired by the Irish poet and journalist David Carey, it would proclaim that there is enormous potential for joyfulness in aimless play. Carey, in his 1822 satirical travelogue *Life in Paris,* narrates how he and his companions found themselves in a deserted city after a night of drinking "with great animation," with an eye on adventure.[15] "As is the custom in Paris," he wrote, "it was suggested that the immediate demolition of the friendly réverbère should be the object of their ambition."[16] Using their wooden walking sticks, they began waving at the lantern, as if it were a game of shuttlecock. The first victims fell: "Away went the dangling glimmerer like a shot star in the dark immensity of space."[17] Carey and his fellow Irishmen were ecstatic: "Dick was in high glee at the ruin of the unfortunate lantern, the Squire chuckled at the frolic, 'And the Irishman all in his glory was there, With his sprig of shillelah and shamrock so green.'"[18] This is smashing's promise of joy: the subsumption of negative passions (destruction) into the contagious circulation of positive affects without recourse to any external end. The theorist of aimlessness-as-aim might turn to Giorgio Agamben, and his notion of "pure mediality," to argue for the pleasure inherent in the liberation of objects and activities from an economy of ends.[19] Likewise, this theorist of pleasure may offer a Nietzschean reading that simply sees, in the trashing of lanterns, a confirmation that the "affirmation of annihilation and destruction" is inherently joyous.[20]

As it stands, the "pleasure theory" is incapable of answering the question: Why was it the lantern, and not another component of street furniture, that became such a crucial site of techno-negative attention? Shifting toward a psychoanalytic timbre, Schivelbusch offers us a second theory in response, suggesting that the destruction of streetlamps "confers a feeling of omnipotence" akin to "urinating on the fire."[21] The lantern extinguishers, in this libidinal theory, found in "the loud splintering of breaking glass" the possibility to experience "a symbolic sexual release."[22] This is Freud's premise too:

The kindling of fire is homo-eroticism. Because fire represents sexual excitement (the active phallus), the attempt to extinguish it presents a pleasurable battle with another phallus—"an enjoyment of masculine potency in homosexual rivalry."[23] An alternative psychoanalytic reading may follow Gaston Bachelard's *Psychoanalysis of Fire* where fire's disproportionate allure lies, in part, in it being an object of parental prohibition: "what we first learn about fire is that it must not be touched."[24] In reaching out to—and extinguishing—the light, the lantern smasher takes oedipal revenge on the restricting Father. If this is the case, the history of technological refusal has, at least here, a libidinal pulse.

Neither of the two pleasure theories offers a satisfactory level of analytic precision, for theirs is a speculation on a band of actors whose very aim appears to have been to be without a neat, articulable aim. Even if we were to acknowledge that the theories might still hint at some potential logics animating the popular allure of the practice, they do, quite clearly, fail to explain why the practice only began to emerge with such intensity, and at such scale, at the moment when lanterns became state property.

What they do show, however, is that we are, undoubtedly, far removed from the clerical prohibition of an excessive technological life impeding onto God's territory, or earlier, Plato's likening of machines to the debased level of slaves. Despite their destructive impulses, the smasher appears to propose, by contrast, an *affirmative* theory of refusal. After all, lantern smashers such as David Carey spoke of the lantern lovingly: It was "friendly"; its destruction "unfortunate" yet "exhilarating."[25] Likewise, Liebknecht recalls the overwhelming thrill, excitement, and laughter that accompanied his nocturnal adventure with Karl Marx.[26] This affirmative atmosphere would begin to fade, however, in the first decades of 1800s Europe, when lantern extinguishing turned from a nocturnal pastime into a praxis of revolution. At this point, the scene darkens, joy dissipates, and, most threateningly, revenge is on the horizon.

Cloak of Darkness

On July 22, 1789, the French public servant Bertier de Sauvigny found himself in the middle of a large Parisian square surrounded by an armed mob. He was to blame, the crowd argued, for the food short-

ages crushing Paris. Rather than taking responsibility, he had made the claim that those in hunger should, simply, eat grass.[27] The revolutionaries were thirsty for revenge. One of them pointed upward, and shouted a phrase that would become a rallying cry of the revolution: "À la lanterne!"[28] With a rope tightened around his neck, de Sauvigny was lifted up to the closest lantern. He hanged there until his body, lifeless, was dragged through the streets—a bloody warning to the aristocrats, state representatives, and clergy defending the ancient regime.

By the time the nineteenth-century revolutions arrived, lantern hangings had ceased to exist. What did remain, however, was the lantern's revolutionary function. These were the scenes described during the 1830 July Revolution by an English journalist: "The people were assembling, and with large clubs were destroying all the lanterns or réverbères."[29] Unlike the small groups of vandals in search of a nocturnal adventure we have encountered thus far in the chapter, the perpetrators of assaults on lanterns here were revolutionaries. With many of the revolutionaries being *sans-culottes*—the poorest in society—striking at gas lanterns became a practice of lower-class antagonism. They embarked on smashing sprees of a scale unseen until that point. After just two evenings of rioting during the 1848 February Revolution, one newspaper told its readers, not only had the revolutionaries built 1,512 barricades, each using an average of 845 paving stones, they had also destroyed 3,704 illumination devices and smashed the glass of 2,576 lanterns.[30] These anti-lantern raids were of a such an intensity that they plummeted the city into darkness. A journalist wrote: "All the street lanterns are smashed; . . . Silence and solitude reign everywhere."[31]

Most commentators, at the time, saw the lantern riots in the same light as they had the lantern extinguishing by vandals: a regrettable development in urban transgression. The French writer Maxime Du Camp wrote: "During the rebellions . . . street lanterns were like a red rag to a bull for all those good-for-nothings who are glorified in literature these days. Whenever a crowd gathered, that lot—all they deserved was the whip—would appear and swarm around like bees around a honeypot. They would throw stones at lanterns, breaking the glass. The worst of them would climb onto the shoulders of their comrades and cut the ropes on which the lanterns hung."[32] It was, for one fighter of the counterrevolutionary army Garde Nationale,

emblematic of the "stupidity" that reigned over Paris during the nineteenth-century upheavals.[33]

But these readings may have missed an important point. Achille Tenaille de Vaulabelle, a journalist and politician who shared the *sans-culottes'* hatred of the monarchy, presented the lantern smashing during revolutions as a clever strategy of imperceptibility. The revolutionaries knew that, lacking the funds, weapons, and infrastructures held by the Garde Nationale, they were engaged in asymmetrical warfare. They also knew, however, that their city was theirs. They knew the back alleys, the surprising shortcuts, the hiding spots, the abandoned sites—an intimate spatial orientation unmatched by that of the counterrevolutionaries trained around the country. The crucial insight: "The night is a greater friend to the guerrilla than to its enemy."[34] The exploitation of this tactical advantage could be maximized under the right spatio-temporal conditions—the darker the night, the greater the tactical gain.

To extinguish public illumination, in this early logic of urban guerrilla warfare, is to weaken the government's "visual hold" on the landscape, evening out what the geographer Pip Thornton calls the "asymmetries of vision."[35] Without the cloak of darkness, the militants would have been deeply exposed to the overwhelming force of government troops.[36] Their darkening of the city facilitated two types of cover. First, it functions as a tool of camouflage. By carving out a time and space for the preparation of antagonistic practice, it enables, to use de Vaulabelle's phrase, a "profound obscurity" from which to silently erect barricades throughout the city, from which to prepare their weapons, manufacture their cartridges.[37] Likewise, it camouflages their movements. The revolutionary, with intimate knowledge of the urban terrain, is able to move through it without technologies of light. The rioter may slip away unnoticed, changing attire to escape the suspicious eye of government forces, or the rioter may reappear behind them, surprising them, weapon in hand. Second, it serves as a mode of disidentification. Darkness turns the rioters into an indistinguishable mass of bodies-without-faces. This heightens their ability to arrive at, move across, and escape from sites of fighting, exploiting the density of urban life while reducing chances of being captured. Camouflaging and disidentifying, the darkening of the night made the revolutionary indistinguishable from the material landscape and the social body that populates it. If the revolutionary

movements were to survive, staying in the dark and ramping up their vigor, street lighting was to be destroyed.

But, as it had been with the pleasure theories of lantern smashing, it would be too easy to reduce the rioters' assault on light to one narrow urge, the need for tactical refusal. That would mean overlooking an important contradiction: Smashing also took place at times when there was no immediate tactical benefit. Bands would venture onto the streets, trashing lights, when the Garde Nationale had already been kept at bay, or when there was no sign of armed struggle taking place or anticipated for later in the day. We may well learn that a deeper suspicion drives lantern smashing, one in excess of either affective joys or tactical needs. As with the tactical withdrawal into darkness, the target is again a technique of the state. The register of this target shifts, however. Less the state's narrow application of armed conflict, and more its generalization of new vectors of policing. To this end, we now transfer our attention from weapons to epistemics.

Utopia of Light

The revolutionary smashers held a troubled relation to the Enlightenment, the intellectual era influential in the social, scientific, and political climate during which they were active. In many ways, they embodied the spirit of Enlightenment rationale, craving to turn the era's ethos of democracy, liberty, and reason into a political reality. In rioting against the monarchist rule of King Charles X in 1830, theirs was an assault on the ancient regime, and the close ties it continued to hold with the Roman Church. To the rioters, these affiliations were a betrayal of the maxim of 1789: *Liberté, Egalité,* and *Fraternité*. Charles X had discredited the promised shift of power from the church to the state, keeping intact the divine rule he should have been replacing with rational democracy. The rioters fought, in other words, for a radicalization of the Enlightenment as a set of political-epistemological imperatives, and for a deepening of their lived application.

At the same time, they also hesitated. They appeared particularly wary of how certain ideals driving Enlightenment reason were being translated into new techniques of the state. This comes into view when we consider that the revolutionary extinguishers of lighting

did not denounce illumination technologies, tout court; their techno-negativity was not a categorical rejection of one or more technologies—of the kind we have seen various versions of thus far in this book—but a strict refusal of precise social uses. The ones who destroyed street lighting were also those who, during revolutionary victories, happily illuminated Paris with celebratory fireworks, even roaming the streets forcing households to lighten up their homes.[38] How to reconcile these contradictions? What is it about their different uses (illumination versus celebration) that prompts an alternative response?

As a technology of illumination, lanterns reflect the epistemological imperatives of their era.[39] For Michel Foucault, the European late eighteenth century is haunted by nyctophobia; it is dazzled by its "fear of darkened spaces, of the pall of gloom which prevents the full visibility of things, men and truths."[40] Thinkers of the Enlightenment, often referred to as the *lumières,* commonly conceptualized their politico-intellectual endeavors negatively, as the exit from "the unlit chambers" where the political plots of tyrants and priests, arbitrary political activities, and repressive laws reigned alongside citizens' bad conduct, misguided religious superstition, and the illusions of ignorance.[41] Continuing a long-standing scriptural tradition, they embraced the Catholic image of darkness as a site of devilish temptation and social immorality.[42] During the dark night, witches meet not only one another but Satan himself, to perform their curses and their illicit pacts; it presents the moment when criminals hide in the dark, hungry for your property, or, worse even, your life. But in the hands of the *lumières,* the terror of darkness also took on new lives, ones that were more explicitly epistemological. Darkness became a marker of unreason, false superstition, and failed logic, one that, it was argued, they encountered most clearly in religious fanaticism and spiritual imposture. Against the darkness of religious superstition, "those who had judged poorly because they only consulted their books," Voltaire juxtaposed those who "judged well because they followed the lights of reason."[43] By Kant's definition, the Enlightenment entails an "Ausgang," an exit, from what he terms the "immaturity" of accepting someone else's authority (the spiritual leader's, the doctor's, the book's) when, in fact, what is called for is the use of one's own abilities for reasoning.[44] Despite the often-fierce conflicts between its prominent thinkers, the epistemological project of the

Enlightenment tended to center human reason as the primary path into true knowledge. And it was "only the man who is himself enlightened, who is not afraid of shadows," in Kant's logic, that was up to this task.[45]

This is where the smashers' target makes its entrance. The emergence of new illumination technologies, such as gas lanterns, facilitated the ability to act upon, in novel ways, Kant's epistemological dream of "a general enlightenment," away from "self-imposed tutelage."[46] Not only did key figures of the Enlightenment, including Diderot and Voltaire, experiment with and write on technologies of light; they also sought to promote their application within the domain of urban rationality. Lighting could help create new spaces of reason. With the introduction of street lighting, cafés, salons, and restaurants were able to stay open longer, sustaining a public culture of enlightened discussion and reasoned debate. This held the potential to alter humanity's relation to the night. Blanchot explains this shift in his conception of the "first night."[47] Enlightenment reason, he argues, is guided by "the great promise of the dialectic."[48] Within the dialectic of the night, we oppose night with day only to instrumentalize it, to make it "day's night." This assumes a balancing, where the night functions as a site of repose, reverie, recreation, and, most importantly, reason; it lightens day and seeks to work it, "to make night the job of the day, to make night a task and an abode."[49] The aim: to render the night welcoming. Not, then, to destroy it, but to appropriate it. By way of illumination, the day suppresses the night as a site of danger, chaos, and superstition, while introducing it as a novel terrain of rationality.

The revolutionary smashers would unlikely have taken issues with the production of new urban spaces of reason or, more generally, with the path of enlightenment promised by reason, given how committed they were—to the point of putting their bodies on the line—to a rationalist mode of political organization distinct from divine and monarchic rule. They were not, then, enemies of Enlightenment reason.

Instead, I want to propose, they fought against the precise ways the state was translating these *epistemological* principles into *epistemic* tools of governance. For the state, beyond creating a new urban rationality, lighting could be turned onto the "body" itself, in both its social and individual sense. Illumination technologies allowed the state to turn the *lumières*' preoccupation with the body—variously

understood in organicist, vitalist, or mechanistic terms[50]—as a scientific question into a political one. In his 1772 utopian novel *Memoirs of the Year Two Thousand Five Hundred,* Louis-Sébastien Mercier exemplifies this politicization of Enlightenment epistemologies.[51] He describes leaving the theater at night in his future utopia: "I beheld the streets perfectly light; the lamps were placed against the walls; and their united lustre left no shade; nor did they cast a reverberated glare that was dangerous to the sight."[52] This fully exposed city has abolished the criminality hiding in the shadows. All bodies are visible; all are known. Confusion, error, and secrecy are rendered impossible. The assumed aim: "perfect knowledge of everything that happens."[53] The all-knowing God has, first, been beheaded, and then returns, secularized, in the state's project of illumination. What we are left with is a secular fantasy of a fully transparent social body, devoid of secrets, crimes, and superstitions.

This fantasy translates epistemological urges into state epistemics, or more precisely, into what we may call "policing epistemics"—a material-discursive regime in which the epistemic urge to know the body coincides with a state institution (the police). With policing epistemics, it is no longer the sovereign itself that needs to be seen, as was the case in premodern models of sovereignty according to Foucault. Thriving within a disciplinary environment, it reverses this logic, centralizing a principle of "compulsory visibility" whereby "it is the subjects who have to be seen."[54] Its logical foundation, then, is more or less fixed: the belief in the knowability of the populace, and the necessity of its pursuit, as essential to the proper functioning of the state. Its necessary material foundations are more flexible, ranging from secret informers and police officers to identity documents and population statistics.

As one such foundation, street lighting in Paris was, from the beginning, both installed and managed by the police as an organ of the state. The installation of street lighting was so closely associated with the police that, as Walter Benjamin points out in *The Arcades Project,* police officers started being referred to as *bec de gaz* (gas lanterns).[55] From its origins in the second half of the seventeenth century, under the guidance of King Louis XIV, the French police was operationalized as "a secular power able to mobilize knowledge of the most intimate desires of the heart."[56] It took up the formula of

"power through transparency," which had proven successful in other domains—the hospital, the school, the prison—and scaled it up to life in towns and cities.[57] Early treatises on the police, such as the internationally influential *Traité de la Police* by the eighteenth-century police commissioner Delamare, explained the need for a "sufficiently detailed examination" of the most minuscule particles of a social body—behaviors, attitudes, possibilities, suspicions—and their interplay.[58] Street lighting needs to be understood as one crucial vector instrumentalized in this "permanent, exhaustive, omnipresent surveillance, capable of making all visible" that policing epistemics make possible.[59]

While policing epistemics is perhaps *capable* of making all visible, its actual pursuit of full transparency is unevenly distributed. In line with the emergence of capitalist theories of law described in chapter 3, it was the lower classes—the *sans-culottes* escaping the category of *homo economicus*—who were under the greatest scrutiny by the gaze of policing epistemics. Petty criminals, prostitutes, beggars, and those laboring in unusual or precarious conditions; those were the brightest spots in the utopia of light. The idea was that the way to get rid of poverty was in two steps (illuminate, then criminalize), paving the way for the kinds of class asymmetry in law that tightens the interests of the capitalist classes to those of the state.

When the lantern smashers conducted their assault, theirs may have been about more than the pursuit of joyful adventures or tactical needs, as described in the previous sections; it may also have involved a revolt against those who, enamored with policing epistemics, performed practices of knowing set out to exclude and criminalize them. The extinguishers, I suggest, may have therefore seen policing epistemics as the problematic introduction of new vectors of control, whereby epistemics enters into an uncomfortable alignment with interests that were scarcely beneficial to them. They may have realized that, in the hands of the state, the Enlightenment can have contradictory legacies, where it can survive as an emancipatory political formation, *and,* armed with new technical means, as a series of new techniques of power. Extinguishing illumination technologies, they took a clear position in this battle of competing discourses. If they were going to embrace the age of the *lumières,* then it would have to be, paradoxically, on their own, darker terms.

Dark Epistemics

The lantern smashers turned off the utopia of light, creating their own nocturnal landscapes. But what did they seek in the dark? Their techno-negativity is not simply a project of rejection, even if this appears to be a crucial component. As they strain away from an epistemics centered on compulsory visibility, they leave behind, possibly unknowingly,[60] their own darker variants, hinting at what we can think of, if we allow ourselves the speculation, as an "epistemics of opacity," and do so across at least three levels.

First, they open up the strategic-affective possibilities of a politics of the unknown. In denying the field of visibility, they generate spaces for opacity as a tactical venture, enabling a politics of conspiracy. Like the joyful vandals introduced earlier in this chapter, the revolutionary smashers inhabit an elusive subjectivity, preferring the anonymity, illegibility, and secrecy of darkness. Here they can strike; here they can evade criminal prosecution. In that most unreasonable of acts—destruction—they thus found strategic repose from the weight of compulsory knowability: the joys of militant freedom.

Second, they carve out a space for epistemic modesty. Their actions remind us of a lesson gifted to us by Enlightenment philosophers, but forgotten by the state actors and supportive writers of policing epistemics: that any epistemic project is haunted by the possibility of its undoing. In his transcendental idealism, Kant, for instance, brought us into the world of the *noumenon*—that which recedes from intelligibility—as that which simultaneously makes possible, and threatens to undermine, the validity of reasoning.[61] Without making any grand epistemological claims, the smashers found comfort in spaces of unknowability, ceaselessly retreating into, and producing, patches of darkness in the confident project that is the utopia of light, while feeding the unreason biting away at the posture of knowability.

Third, their techno-negative acts hint at a conception of human life unwedded to any overrepresentation of the reasonable and the reasoned. What is lost when taking rationality as the principle around which to orientate one's theories of the human? The smashers began to probe at the problematic of exposure that E. M. Cioran would turn to more than a century later in their city of Paris. The pessimist philosopher wrote: "In paradise, objects and beings, assaulted

by light from all sides, cast no shadow. Which is to say that they lack reality, like anything that is unbroached by darkness and deserted by death."[62] Like an overexposed photograph, the utopia of light plunges each shadow into white. If Cioran is right, then overexposed life is an unspoiled life, a life already transparent, already known—which is to say: a life not worth living. In the reasonable life, there is little space for vulnerability, for temptation, for transgression, for death—in other words, for that which not only underpins life, is literally a part of it, but makes it desirable in the first place. As the novelist Clarice Lispector might put it in agreement, it is a life that, regrettably, "lacks a demon"—the lifeless terrain of a flattened world.[63]

Across these three scales, the smashers traced a vision of the Enlightenment separated from its cooptation by the state. But the epistemics of opacity they hinted at does open one up to a new host of threats. To evade the light in an era of policing epistemics is to escape the ontological security that it brings. Policing epistemics tends to bleed into ontological policing, introducing and managing new borders between that human life which is proper, and that which is not. It starts from, and produces, the human subject as "knowing" (enlightened), "knowable" (transparent) and "to be known" (policed). In the logic of policing epistemics, the ideal subject is the enlightened subject, the transparent being with nothing to hide, happily exposing herself to the state's technologies of visibility.

The result is the arrival of new, and the reproduction of old, human/nonhuman delineations. On a first level, cities that failed to illuminate their streets were, many nineteenth-century commentators agreed, unworthy of that proper human, the enlightened subject who lives in the modern, European city.[64] Again, as in the previous chapter, a presumed technological absence is taken as a negative determinant of an other-than-human. On a second level, in illuminated cities, those who inhabit darkness, like the witches and demons before them in the Catholic image, continued to fall outside of the category of the human. Most notably, as Simone Browne has shown in her historical treatise of Black surveillance, in Jim Crow America it was the Black subject who was taken as in-visible in the city and, as a result, was theorized as a being that "does not look human."[65] To be denied, or to actively deny, the treasure of light is to escape the luxury of humanity. In nineteenth-century France, it was the (mostly white) lower classes who, as workers in a newfound

regime of capitalist economics (as explained in chapter 3), found themselves on the peripheries of the "enlightened race."[66] Those workers who struck back, attacking the Garde Nationale and smashing lanterns, risked being expelled even further. They were spoken of as the "wicked men" who reject the transparency and reason associated with the new theories of the properly human. Policing epistemics helped solidify the (obedient and disobedient) lower classes as a convenient limit-concept to "enlightened man."

Still, it was those same lower castes who had long inhabited the shadows, who lived in the underbelly of the Enlightenment, that, stone and iron bar at hand, were the first to strike at illumination technologies during the French revolutions. Doing so, as we have seen, they carved speculative trajectories into alternative—opaque—visions of the Enlightenment, troubling any easy conflation of enlightenment (illumination) with Enlightenment (reason). With them, we have witnessed a publification of techno-negativity, away from both society's dominant classes (e.g., the state, clergy, intellectuals) and from a narrow set of the working classes (e.g., loom workers), while introducing state-owned property as an important target of assault. Techno-negativity had launched into a revolution against the state and its close association with technological expansion. But the insurrectionary spirit of the nineteenth century would soon give way to a politics not of destruction but of escape, folding a new set of actors, and a new set of dynamics, into the histories of techno-negativity.

Part III

Withdrawal

This page intentionally left blank

Chapter 6

Exodus

Phobia and (Techno-)Rationalism in an Epoch of Planetary Technicity

> The electric light bulb is nothing more than a failing expression of the sun.
>
> —John Africa, *The Guidelines*

> Machinery has begun to desolate Europe. Ruination is now knocking at the English gates. . . . If the machinery craze grows in our country, it will become an unhappy land.
>
> —Mahatma Gandhi, *Hind Swaraj*

> Lord, this place would be a paradise, were it not for the airplanes.
>
> —Luce Irigaray, *To Be Two*

On May 13, 1985, a long-lived experiment in techno-negativity came to an explosive ending. A Police Department helicopter hovering above 6221 Osage Avenue in West Philadelphia made history: It dropped C-4 explosives, making it the first time a US city bombed itself. The bomb killed eleven people, including five children, and burnt out sixty-one houses as fire raged through the residential area. The Police Department had known people were inside. In fact, they were its very target.

Those murdered were all members of MOVE, a collective founded in 1972 that set out to live in accordance with what its founder, John Africa, calls "Natural Law," embracing a vitalism in defiance of Western-centric, technologized existence. Living such a life, John Africa argued, required the banishing of electricity, machinery,

running water, processed food, and products of inorganic origins.[1] According to John Africa's eight-hundred-page *The Guidelines*,[2] the only technology worthy of usage is the one crafted into a techno-negative weapon: "If you have to use the airplane to blow up the airplane factory then use it."[3] More than a temporary attempt at techno-negative living, it was a communality whose permanence MOVE was willing to defend, by arms and life if necessary, against the mounting aggression of the state and its anti-Black counterrevolution. With members including Mumia Abu-Jamal, the Minister of Information at the Philadelphia Black Panther Party, MOVE was directly inspired by the armed militancy of Black Power movements, seeking self-defense through armed protests and, if attacked, police shoot-outs. In tune with the by-now-familiar fate of those engaged in the Black radicalism of the 1960s and 1970s, many members of MOVE ended up in jail and others faced the unthinkable: The violence of a state set out to obliterate any trace of you and your political experiments, by bombs if necessary.

On one level, MOVE is an anomaly in the history of techno-negativity. The centering of African Christian cosmologies, and the ties to armed militancy, set MOVE apart, eschewing any neat overlaps with earlier, contemporaneous, or later modes of technological refusal. At the same time, however, its insistence on a sustained withdrawal from one's technological environs resonates with a wider range of intentional communities. The defining logic these share is that of "exodus." This functions as a logical reversal of an energetic hostility—toward, for instance, the tools of labor (Luddites), Western exports (colonized peoples), or state policing (French lantern smashers)—into an ethos of disconnection and withdrawal. It is a nonrelational politics at odds with the struggle for the delay of inventions, legal prohibitions, or direct attack that we have already witnessed in the refusal of those for whom techno-negativity is either a technique for wielding social-religious power (as it had been in chapters 1 and 2) or an insurrectionary war on select technologies (as with the Luddites and French revolutionaries of, respectively, chapters 3 and 5). A politics of exodus is entirely different; it aims neither for the embrace of nor for the assault on a technological form, but for its keeping-at-bay; neither accepting nor rebelling against it, they flee. Along the way, the Italian philosopher Paolo Virno writes, a politics of exodus attempts "to modify the conditions within which

the conflict is played instead of submitting to them."[4] This renders a politics of exodus explicitly nondialectical in nature because, in Gerald Raunig's words, it "hinges on the para-logistic principle of *tertium datur*: a third way beyond any dialectical movement, an asymmetrical third possibility."[5] Only by exploring the uncharted third path of flight, technological exodus suggests, can we begin to prefigure a time and space for communal living without the devices, machines, and habits of industrial modernity at large.

Compared to modes of techno-negativity concerned with either extending sovereignty or enacting struggle, these communities of technological exodus are a relatively recent phenomenon. A boom occurred with the turn into the twentieth century when the communities of Kibbo Kift (1920), Atarashiki (1918), and Degania Alef (1910), among plenty of others, were founded.[6] The historical specificity of this boom is no coincidence.

It comes at a time when a crucial shift in capitalism's technological management of the world takes places, instantiating what Bernard Stiegler, with a nod to Heidegger's notion of "planetary technicity," calls "planetary industrial technics."[7] This phase of technical evolution is propelled by a precise technical invention: the shift from coal to electricity as dominant global energy sources.[8] More than a purely technological shift, however, planetary industrial technics announces a more profound transformation: Previously separate spheres now become more actively interdependent. We witness this on two scales. First, in this period emerges "a totally new relation between science and technics (and politics), established by way of the economy."[9] The domains of scientific institutional practice and technical invention obtain a smooth state of interdependence, reducing the transfer time from the former to the latter. As Bertrand Gille shows, if before the twentieth century a hundred years had lapsed between the discovery of photography as a physical phenomenon and its application to photographic practices, twentieth-century capital arranges the acceleration of techno-scientific alignment, requiring only thirty-five years for radio, twelve years for television, fourteen years for radar, and five years for the transistor to move from scientific possibility to technical application.[10] Rather than waiting for social and economic conditions to become favorable, the regime of planetary industrial technics actively inserts legal and economic measures—including working toward capital investment and against the flourishing of

workers' rights—to ensure the becoming-compatible of the technical and the scientific in ways that enable an ever more rapid transformation of technological life.[11]

Alongside techno-scientific correlation, in planetary industrial technics we find a second crucial scale of interdependency. For Simondon, the move away from preindustrial technology is a story of what he calls "concretization": the process of making-compatible a technological object and its environment by allowing them to interact in new ways through a series of technological advancements.[12] Technical evolution is the gesture away from "abstract" objects—a utensil, hammer—composed by single-function elements whose interaction is limited and which need to be sealed from the environment to secure their functioning. Twentieth-century planetary technicity is defined, by way of the possibilities enabled by its electrification, not by technical abstraction but by "concrete" objects—electrical power infrastructures, mass-produced cars with internal combustion engines, commercial telephone communications—that incorporate pluri-functionality, internal resonance, and interaction with the external milieu. To everyday users, concretization manifests itself poignantly in the technologization of everyday life, where technical objects (e.g., a telephone), because they interact heavily with their external milieus, are themselves dependent upon other technical objects and systems (e.g., power substations). The result is an everyday environment saturated with technical objects, linkages, and systems, in which, as Simondon and Stiegler explain, the "human" finds herself increasingly sidelined in the acting-thinking procedures of technical systems.[13] The traditional relation of the human to the technical is shifting. No longer the guiding agent of technical force (as when a human uses a hammer), the human becomes, gradually, simply one component among "all the resources,"[14] intensifying a process of de-agentialization already noted by the nineteenth-century Luddites. The physio-psychological result of this sidelining, for Simondon, is alienation, understood here less in Marx's terms as the affective depletion characteristic of lacking a property relation to the instruments of labor, and instead as the absence of "a true relation" emergent from knowing, constructing, and adjusting the technical.[15]

Ever more omnipresent, and knowable only to a few (engineers, maintenance workers, inventors), planetary technics renders technological refusal increasingly inconceivable. To reframe a question

introduced in the introduction of this book: How to assault the technical systems that one's very survival depends upon, systems that are decreasingly "out there" and progressively "a part of us"? And how to do so if one has little knowledge of these systems in the first place? To become techno-negative in the twentieth century, one needed new weapons that understand the seeming futility of direct antagonism in an era of planetary technicity. This helps us explain the birth of MOVE: Like the vast number of experiments in technological exodus that sprung up in the twentieth century—and have continued to spring up ever since—MOVE forms a critical exit from the selective material-legal assault that was still possible in earlier modes of techno-negativity. To become techno-negative now required a deeper withdrawal from technological life.[16] The result was a rejection of direct confrontation, opting instead for the distant politics of the commune.

The crucial question that remains unanswered, however, is how a commune centering such a nonantagonistic politics—besides immediate self-defense—could face such a brutal death on that spring evening in 1985. How could this unthinkably lethal response be justified? In this chapter, I show that it needed to be provided with a particular set of theories and legitimations. As we will see through an examination of founding texts employed by three intentional communities (John Africa's MOVE, Gandhi's Tolstoy Farm, and Sri Aurobindo's Auroville), it is particularly the trope of the "technophobe" that has long sustained, and continues to sustain, in dubious ways the (at times lethal) rejection of techno-negative exodus. Through appeal to a precise definition of "reason," self-proclaimed techno-rationalists in particular employed the category of "phobia" as an Other against which to define the proper path of technological politics. But against the comforting notion that techno-phobia is an irrational anomaly, we may ask: What if techno-negative exodus can be accorded a rationality of its own? And what if, for all its resounding confidence, it is perhaps the embrace of techno-rationalism that falls prey to the depths of a fearful subjectivity?

Phobia and Unreason

Those reading newspapers in the years and days leading up to the 1985 bombing would have encountered MOVE as a band of savages

in need of taming. In a renewal of the long histories of technological onticide (see chapter 4), it was techno-negativity that secured the subhumanization of MOVE and, with it, laid the legitimizing grounds for material violence. Journalists spoke of "uncouth" and "ungroomed" savages who cleaned their teeth using roots instead of toothbrushes, refused running water, and only ate raw vegetables.[17] They quoted neighborhood members calling MOVE members "a pack of pigs."[18] But what grounds this, by now familiar, conflation of techno-negativity and animality?

In tune with many of the procedures of ontological policing we have been tracing across techno-negative histories, it is again (un)reason that functions as a vector determining one's measure of humanity, with technological "irrationality" setting MOVE apart from civilized human life. On the one hand, it was their abilities for reasonable logic that were questioned. After the deadly explosions, rather than reflecting on the immensities of police brutality, one journalist wrote: "Cult members believe in being close to nature, but choose to live in the nation's fifth-largest city. They don't believe in technology, but they mounted a loudspeaker on their house to threaten police and neighbors."[19] On the other hand, the capacity to be "reasonable," that is, to express thoughts, feelings, and imaginations "coherently" and "politely," is challenged by those who declared MOVE were "boisterous, profanity-spewing radicals."[20] In this ratio-centric vision of the human, a presumably irrational relation to technology serves simultaneously as a condition, and symptom, of intellectual backwardness.

But rather than irrationality in general, it was fearfulness that presumably overwhelmed the headquarters at 6221 Osage Avenue. Both explicitly and implicitly, media commentators saw in MOVE's "near fanatical commitment" to techno-negativity an expression of fear: the irrational inability to embrace Progress's promise of emancipation.[21] Rejecting electric currents, running water, and more, MOVE's techno-phobia lodges it firmly not simply in the past but in an animal past, giving rise to a community whose access to the status of humanity is about as a real as that of the pigs MOVE keep on their premises, and whose lives are, by extension, about as worthy of preservation.

MOVE is by no means the only community of technological exodus to be stigmatized as, and reduced to, the figure of the technophobe. In the early 1910s, a South African community had already

encountered the same fate. The founder of Tolstoy Farm was none other than the Indian anticolonial scholar and lawyer Mahatma Gandhi, who one year earlier had published his *Hind Swaraj,* a thorough rejection of Western techno-colonialism and its "ingenious devices" in which he declared that he "cannot recall a single good point in connection with machinery."[22] A named dedication to Leo Tolstoy's pacifist philosophies of resistance and his advocacy of Schopenhauerian asceticism, the eleven-hundred-acre farm served a double function. First, it was a safe hub and organizational headquarters for Indians in the face of anti-Indian segregation in apartheid Transvaal. Second, it became an experiment in techno-negative exodus, transforming the theoretical inquiries of *Hind Swaraj* into lived practice. At Tolstoy Farm, one would be hard-pressed to find any of the European technical objects dismissed by Gandhi. It was mandatory for members to engage themselves in the handicrafts, manual labor, and agriculture, facilitating significant self-sufficiency—what Gandhi, following Tolstoy, called "bread labor."[23] To Gandhi, this is a matter not of personal preference but of moral duty: "He has no right to eat who does not bend his body and work."[24] To eat without performing bread labor, to wear clothes without making them, is to become "a thief and sinner."[25] Gandhi's theory of bread labor fed his denunciation of urban life as the segregation of the poor who work under beastly conditions in factories from the wealthy working only with their minds. A society in which only a few perform bread labor is, for Gandhi, a society set up for vice and misfortune. At Tolstoy Farm, "the obligation of Bread Labour" was carefully lived by.[26] It forbade the uptake of any technologies that would reproduce the segregating effects of urban machinization, preferring instead the tools of nonmachinic crafts (e.g., spinning, weaving, smithery, tilling the soil) that recenter human labor and its immediate fruits for the farm's community.

Despite MOVE and Tolstoy Farm holding distinct qualities, not least their respective urbanism and anti-urbanism, they encountered a singular indictment: that of being victims of techno-phobia. Gandhi in general and his Tolstoy Farm in particular have long been condemned for holding in a fatally phobic relation to technological life.[27] By such reasoning, the refusal of technology equals a fear of technology. What interests me in accusations of techno-phobia is less whether they are right to condone Tolstoy Farm's and MOVE's

techno-negativity, and more the work that this subtle but crucial labeling of "techno-phobia" does by reducing to a singular affective quality a divergent set of complex techno-negative lifeworlds. What is at stake in leveling the diversity of techno-negative affects (frustration, anger, disgust, fear, sadness, boredom, indifference) into the singularity of "phobia"?

A first problem is that while techno-phobia, as a pejorative designator, is commonly uttered,[28] it is rarely defined. It is assumed to function on its own, with reference only to itself. It falls into the fallacy of circular reasoning, whereby phobia is immoral because it is wrong, and it is wrong because it is immoral. The result is a concept devoid of signification on its own terms. Along the way, phobia has been stripped entirely of its clinical origins and psychoanalytic definitions. In psychoanalysis, phobias are qualified by a chronic anxiousness that has roots in sexual neuroses, where "an entrenchment against an external danger [now] represents the dreaded libido."[29] Further, at least in Freud, phobias have multiple stages, and themselves take on multiple forms; there are common phobias—"an exaggerated fear of things that everyone detests or fears to some extent"—and contingent phobias—"the fear of special conditions that inspire no fear in the normal man."[30] Which expression of phobia do accusations of techno-phobia insist on? What, if any, are techno-phobia's libidinal investments? How do those separate it from, for instance, what we may call techno-*mysia* (the active hatred of technology) or techno-*neurosis* (a more general mental aversion toward technology)? The critics of "techno-phobia" offer us no leeway into such questions. But that which makes it doubtful as a concept—its inconsistency—is also what becomes an advantage when employed as a matter of demonizing an adversary. Without reference to either its defining qualities or specific expressions, the label "phobia" can be applied almost anywhere while losing little of the severe moral evaluation that appears inherent to it.

This moral judgement is based upon a vague definition of "techno-phobia" by way of what is it not. When the economics journalist Henry Hazlitt coined the term in his 1946 *Economics in One Lesson*, it was as part of his antileftist attack on unions looking to safeguard jobs in the face of automation. The defining feature of techno-phobia, in this work, is the lack of rational logic: "The technophobes, if they were logical and consistent, would have to dismiss all this progress

and ingenuity as not only useless but vicious. Why should freight be carried from New York to Chicago by railroads when we could employ enormously more men, for example, to carry it all on their backs?"[31] Techno-phobia was, from its beginnings, simply a means of describing a presumed antithesis to technological rationality. Multiple decades later, in the philosopher Alan Drengson's typology of technological attitudes, techno-phobia is again defined as, first and foremost, becoming saturated with negative affects that exist outside of "reasoned awareness."[32] To be phobic is to be swayed by not just fear but *irrational* fear. To paint technological refusal with the brush of irrationality in this way is to psychologize it. Techno-negativity becomes a question of a psychological disposition, emerging from within the psyche and only then reaching outward, rather than as a force always already originating within a social alignment of the psyche, the embodied, the cultural, and the spatial. Techno-phobia becomes a case of personal lack, not collective deliberation. In labeling technological exodus a case of phobia, critics have effectively rendered its claims and positions unworthy of rational consideration.

This condemnation of techno-negativity by psychologizing it as an irrational phobia perfectly extends the long-standing Western habit of vilifying fear as the privileged site of unreason. According to Foucault, since at least the seventeenth century, philosophers have argued that, if we are to avoid superstition, mystification, and dogma, we will do well to distance ourselves from the shackles of fear.[33] In his *Ethics,* Spinoza defines fear as "an inconstant sadness, born of the idea of a future or past thing whose outcome we to some extent doubt."[34] This doubt, he continues, is the ultimate expression of "a mind lacking in power."[35] He thus qualifies fear as indicative of "imagination" as an inferior mode of knowledge, one that is, as opposed to the two other modes of knowledge ("reason" and "intuition"), capable only of producing an "inadequate idea" of internal and external nature. In Spinoza's ethical framings, one cannot be free without displacing the attraction of fear. In the works of Descartes, too, fear occupies the space separating beast—as a being led by sensation—from rationalist Man who, placing his hopes in deduction, can attain knowledge.[36] Precisely because of its reliance on this centuries-old moral demarcation of the rational from the irrational can "techno-phobia" undertake its destructive work of delegitimization.

As we have seen thus far, the long-standing vilification of fear fulfills a connotative function, allowing the insult to conduct its destructive ontological labor simply by psychologizing a critical social practice into a question of individual fearful subjects failing to live up to the demands of rationality. Ontological policing, in this case, does not require a narrow definition of an Other. In fact, it is extra powerful precisely because it requires this little analytical precision; labeling a human subject as fearful can, in theory, be sufficient to challenge that subject's humanity (they are "savages," a "pack of pigs") and thus their legitimacy.

However, ontological policing, as we have already noted, is also always productive. The aim of the insult is not only to delegitimize techno-negativity but also to employ it as a means of a particular technological humanism saving itself or bringing itself into being—a battle for a dominant conception of the human. This is because to conduct ontological policing—here in the form of uttering an insult—is always to enact a discursive act of bringing oneself into presence by way of negation: the "I" who is the "not-you." The question arises: Who exactly is this "I"? I will propose that what is at stake in twentieth-century critiques of "techno-phobia"—and survives in contemporary critiques[37]—is the struggle for a theory of the properly human as that being marked by a precise technical relation: that of a muscular rationality, what Herbert Marcuse and Lewis Mumford call a "technological rationalism."[38] But, as chapters 3 and 4 show, stating one's own reason and the unreason of an Other is never a neutral act. Narratives of rationality tend to hide their own specific philosophical conditions and their at times violent material effects. For all the proclaimed rationality, self-reflection is often hard to come by. As we will see in the next section, techno-rationalism claims to inhabit "reason" in its totality, but, in reality, can only rightfully claim a narrowly bounded expression of it.

Digital Formalism

As one of its harshest critics, Martin Heidegger helps us understand the precise logics and boundaries of "reason" that underpin the technological rationalism he, alongside Marcuse, sees as defining twentieth-century European societies. In 1966, he gave an interview to the magazine *Der Spiegel* in which he states, famously, that, in the

face of the impotence of philosophy, "only a God can save us."[39] What does this "us" need saving from? It is certainly not, in Heidegger, the recurring threat of fascism, for in the interview he continues to, gracelessly, excuse his own support for National Socialism. Instead, it is the "planetary technicity"—"the planet-wide movement of modern technicity"—whose power, magnitude, and influence can hardly be overestimated.[40] The ultimate question, the one only God can help us with, is how "any political system—and which one—can be adapted to an epoch of technicity."[41]

In the decades leading up to the interview, a central concern of Heidegger's oeuvre had been to investigate what, exactly, the essence of modern technicity is. In the interview, he states clearly that it is not a question of "tools" (a means to an end) or a question of something humanity masters with its own power (a human activity). Against these instrumentalist and anthropological definitions, he identifies the essence of technicity as a metaphysical question of what he calls 'revealing': the process of something coming into being, manifesting itself. His argument, most explicitly articulated in the essay *The Question Concerning Technology,* is that the present epoch of planetary technicity—which has conceptual roots in the seventeenth century but only truly comes into full force in the first half of the twentieth[42]—manifests itself as the becoming-dominant of a unique, and uniquely dangerous, type of revealing.[43]

To help us understand this, he offers a cluster of concepts, beginning with a distinction between two modes of technological "revelation." The first is what he calls "bringing-forth." Heidegger defines bringing-forth as the setting something free in its own presence, as the grasping "beings as emerging out of themselves in the way they show themselves, in their outward look . . . and, in accord with this, to care for beings themselves and to let them grow."[44] This "letting appear" is characteristic of natural phenomena (*physis*), such as a blossom blooming, but also of the mode of revealing that we find in the *technē* of earlier technologies (e.g., the windmill).[45] Modern technicity's mode of revealing, by contrast, is not a "bringing-forth," but a "challenging-forth." This involves "setting-up" nature, rather than letting it appear. As Heidegger summarizes it, challenging-forth "puts to nature the unreasonable demand that it supply energy that can be extracted and stored as such."[46] Heidegger gives the hydroelectric plant as an example. As opposed to the windmill, which

has sails that turn in the wind but does not store energy, the plant unlocks the energy concealed in nature, transforms it, then stores it and, finally, distributes it. The crucial danger of this challenging-revealing, and this is Heidegger's central argument about modern technicity, is that it leads into a twisted process of "enframing" wherein both the human and nature can only ever be encountered as "standing-reserve," that is, as something "to be immediately at hand, [standing] there just so that it may be on call for further ordering."[47] In other words, planetary technicity, as the epochal response to the challenge of enframing, names a problem of metaphysics—we lose the openness of Being when the coming-into-presence (revealing) of something is now thinkable only in terms of its possibility as something that can be ordered, stored, enrolled, distributed, that is, as standing-reserve. Put simply, planetary technicity is the disappearance of existing in relation to self and nature beyond the measure of instrumentality. This is why Heidegger can say, in his interview with *Der Spiegel*, that "it is no longer upon an earth that man lives today."[48]

What animates, and is in turn animated by, this intensification of enframing is, for Heidegger, a particular expression of rationality: modern physics. The latter, which Heidegger dates back to seventeenth-century Europe, does not question nature, he suggests, but rather sets it up in such a way that it can only reveal itself as "a coherence of forces calculable in advance."[49] However, to understand the historical novelty of modern physics, and the specific type of reason it introduces, we must turn to one of Heidegger's students: Herbert Marcuse.

In classical Greek philosophy, Marcuse tells us, reason exists as the cognitive faculty to distinguish what is true from what is false.[50] In Plato, for instance, what is true is that which is real, and what is false is what exists in distortion, limitation, or denial of its real nature. In this philosophical schema, falsehood is not simply a diversion from the real but a potential threat to it. Reason's task is, first, to understand the facts of this antagonist nature of reality and, then, to intervene into it by saving reality from the potential destruction that is falsehood.[51] This requires an "intuitive" conception of reason centered on "the mediation of concrete experience,"[52] prioritizing things themselves—their essential qualities rather than their definitions—as they appear directly before the mind.

In the seventeenth and eighteenth centuries, what Marcuse takes as Enlightenment thinking—and in which Heidegger emphasizes modern physics—formed a significant threat to this intuitive reasoning. Considering the philosophical and practical values of the latter insufficient in guiding the potential organization of society and transformation of nature, they articulated a "formal" notion of reason.[53] Formality, claims Marcuse, takes the form of a mode of thought that is increasingly indifferent toward the concrete objects of experience: "Whether they are mental or physical, whether they pertain to society or to nature, they become subject to the same general laws of organization, calculation, and conclusion—but they do so as fungible signs or symbols, in abstraction from their particular 'substance.'"[54] What Marcuse is describing here is the form of rationality that embodies the process of enframing—the reduction of nature to standing-reserve—loathed by Heidegger. We can helpfully think of it as *digital* formalism.[55] Although often exemplified by it, such a mode of reason is not limited to the digital capture, aggregation, and evaluation of data points. Digital formalism needs to be understood as a mode of thinking that is digital in logic rather than method. It is fueled by the principle of distinction. In Alexander Galloway's definition, such a principle makes it at once possible and desirable "to differentiate between formerly indistinguishable things, prompting variations and contrasts to become evident."[56] In its simplest form, digital reason is the one divided into two—subject and object, self and world, human and animal, idea and matter, presence and absence, private and public, substance and attribute—by way of various transcendentalisms: separation, extension, opposition, alienation, exteriorization, and individuation. This transcendental division allows digital reason to proceed in three steps: cut, separate, instrumentalize. First, it allows digital reason to decompose, and cut up, the world into usable things.[57] Second, it separates those usable things from how they reveal themselves in their independent substance, making sure "the metaphysical 'being-as-such' gives way to 'being-instrument.'"[58] Third, cut up into useful parts and stripped off material qualities and features, beings and entities are schematized in such a way that render them exposed to unrestrained instrumental control, facilitating the world as what Marcuse calls "the stuff of total administration."[59]

Suprarationality

According to the techno-rationalist, there is only mode of rationality (digital reason); all other relations to technology are a matter of "phobia" and are thus deeply inferior. Like Marcuse and Heidegger, advocates of technological exodus appear highly critical of what this presumably "superior," rational relation to technology enables. For them, as for Marcuse but unlike Heidegger, its danger is explicitly political rather than predominantly metaphysical in nature.[60] That is to say: It facilitates conditions of domination.

The proponent of technological exodus is particularly suspicious of how digital reason enables separations across two vectors. The first vector of separation denounced by technological exodus is the ontological line drawn between human and nonhuman planes of existence. In the Indian intentional community Auroville founded by Mirra Alfassa in 1968—largely based on her own writings and those of Hindu philosopher Sri Aurobindo—the partial abstinence of technology was guided by a spiritual belief in "a monist ontology, affirming the divinity of all levels of existence,"[61] in which consciousness is inhuman: "What difference is there between the human body and the body of a tree? In truth, there is none: the consciousness which animates them is identically the same."[62] To ontologically divide reality by way of transcendental principles, as digital reason requires, is to forget the principle of *brahman,* which states that, in Aurobindo's words, "there is only One existence, one Reality in apparent multiplicity."[63] In a Christian-inflected rather than Hinduist-Vedantic monist refrain, members of MOVE, the community bombed by the Philadelphia Police Department, argued that if "each individual life is dependent on every other life," then to sour human-nonhuman relations by way of technical mastery (domestication, hunting, pollution) is to announce either alienation or death.[64] For MOVE, digital thinking and practice inserts a layer of deadly abstraction—orderings, logical systems, statistical methods—into what John Africa calls "the common expression of [the] absolute," that is, of the totality of organic-inorganic relations that sustain the world.[65] They produce voids between different forms of life which are One (Sri Aurobindo) or Absolute (John Africa) and, in doing so, are introducing a conception of nature as that which the human subject is "to dominate, to rape if necessary, by fixing it in front of himself, or by swooping down on it like a bird of prey."[66]

A second vector of separation challenged by technological exodus is the one digital reason introduces between different human lives. The problem of digital reason is not for humanity in its totality, as it is for Heidegger, but cuts across humanity in uneven ways.[67] One point of unevenness reveals itself when we pay attention to Gandhi's notion of "bread labor." As introduced earlier in this chapter, it is a critical response to what Gandhi sees as the divisions of human life into those engaged with material, embodied labor and those occupied with technological, more abstract labor. While the former (workers) toil away on the land or in dark factories, often in beastly conditions, the latter (factory owners and middle managers) become both rich and helpless, having no ability to provide for their own needs. Against the machinic division of human life, Gandhi asserts the leveling capacity of bread labor: "If all worked for their bread distinctions of rank would be obliterated; the rich would still be there, but they would deem themselves only trustees of their property and would use it mainly in the public interest. . . . Scavenging, thus intelligently taken up, will help one to a true appreciation of the equality of man."[68]

For John Africa of MOVE, noncapitalist modes of production would not resolve the problem of separations between groups or classes. Socialism, communism, imperialism, capitalism—all are economic models dedicated to enforcing and sustaining the separating-out, and hierarchizing, of modes of human life, undermining our originary oneness. Speaking in equally general terms, and not sparing any words, Sri Aurobindo calls technological rationalism "a colossal battering-ram of aggression, ruin and slaughter" wielded by the powerful against the poor.[69]

The call for technological exodus asserts itself as a critique of digital reason, taking it as the reduction of the more-than-human world to units to be managed and dominated, ensuring a "technical mastery over the totality of what is."[70] As a politics of escape, it is an experiment in withdrawing from digital reason and the world of planetary technicity it heralds. This is not, strictly speaking, a Heideggerian move. The German philosopher insisted that enframing is not something one can immunize oneself against by removing modern tools, for it is technology that responds to the challenge of enframing, rather than vice versa. Heidegger, instead, turns to the fine arts and poetry as modes of *technē* capable of introducing expressions of "bringing-forth" back into the world. Technological exodus is much closer to

the ethos of Luce Irigaray who, in *To Be Two,* locates in the absence of modern technologies an antidote to the enframing of digital reason. Announcing a poetics of technological exodus, she writes: "All that remains for me to do is to find a roof and a few clothes, but the rest comes from her: the fruits of the earth are sufficient to live. I praise whoever respects their natural growth, whoever cultivates them and gathers them when the sun or the rain permit it."[71] Such embodied experiment in exodus should by no means be mistaken for a refusal of reason. To do so would require playing the game of the techno-rationalist, delimiting reason to a narrowly bounded conception of it. Despite techno-rationalism's denouncements, its characterization of exodus as an irrational "techno-phobia," exodus does not turn its back on rationality tout court. Its monist ontologies articulate the conditions and possibilities of their own rationality, one outside of the purview of techno-rationalism's obsession with the carving and cutting of digital reason, but also outside of Herbert Marcuse's humanist calls for a return to "individualistic rationality."[72]

Technological exodus explicitly counters the digital reason of planetary technicity with an immanent orientation toward rationality. An immanent theory of reason proposes a cognitive faculty capable of staying with Life understood as existing, to use philosopher Henri Bergson's monistic terminology, "in a single indivisible embrace."[73] We find this immanent conception of reason most coherently developed in the writing of Auroville founder Sri Aurobindo who, in his own acknowledgment, produces a Hinduist metaphysics that echoes core tenets of Bergson's vitalism.[74] Like Bergson's critique of Kantian reasoning as reducing human knowledge to "intellect," thereby depreciating "intuition" as a mode of knowledge,[75] Sri Aurobindo's writings are concerned with the rationalities excluded from modernist thought. In *The Human Cycle,* he writes that we need to "give to this word, reason, a wider meaning than it possesses and include in it the combined wisdom of all our powers of knowledge, those which stand below and above the understanding and logical mind as well as this strictly rational part of our nature."[76] Besides what Aurobindo simply calls "reason"—which, like digital reason, "can act only by definition, division and limitation"—the suprarational (above reason) and infrarational (beneath reason) "are present, but with an infinitely varying prominence in all our activities."[77] Suprarationalism is an immanent theory of reason in its purest form.

Aurobindo writes that the suprarational "is always turned at its heights towards the Absolute; in its extension, living in the luminous infinite, its special power is to realize the infinite in the finite, the eternal unity in all divisions and differences. Our spiritual evolution ascends therefore through the relative to the absolute, through the finite to the infinite, through all divisions to oneness."[78] Without the suprarationalism aimed at an immanence of the One, Aurobindo suggests, reason finds itself in service of the sterilization and petrification of human existence. What is lost is the possibility of "gnostic community"—a transindividual state of collective integration emergent from an information transfer between different levels of being.[79] Such a procedure of suprarationalism, Aurobindo explains in his "Comments on Terms Used by Henri Bergson," "depends not on thought but [on] a sort of mental direct contact with things."[80] While "collective yoga" is crucial to such a process of "integration" and "universalization"—a becoming-cosmic—at Auroville technological exodus is equally essential in facilitating the expansion into oneness demanded by suprarationalism. As a regime of division and mastery, the digital reason of techno-rationalism leaves little room for inter- and intra-being expansion, and with it, for agential enlargement. Suprarationalism is a genre of reasoning aimed not at separation but at convergence. For those engaged in technological exodus, it is the refusal, rather than the embrace, of modern technological life that promises an expanded affective capacity—the buzz of more-than-human oneness.

Anxious Subjects

In this chapter, I have shown how the technological exodus of intentional communities has long been labeled with the insult "technophobic," suggesting an absence of a rational attunement to technical objects and forms of life. As I have argued, however, technological exodus does not omit reason; it carves out its own nondigital articulation centered on a principle of immanence. The aim has not been to propose, let alone blindly accept, an immanent ideal of reason as superior to the rationalist human-technology relations promoted by techno-rationalism, but to reveal the logics of the latter's narrow demarcation of what constitutes "reason" as well as the tactics of exclusion that facilitates. But this still leaves techno-rationalism's

claims to muscular reason intact. We need to push further and ask: What if its presumed monopoly on rationality is, in fact, pierced through with the simmering presence of fearfulness it identifies, and so fiercely condemns, in the advocates of technological exodus?

At first glance, the techno-rationalist does seem to embody a theory of the proper human subject as devoid of fear. They are the sovereign subject confronting the world with eyes wide open. Not bound by the superstition and dogmatic thought of a church, monarch, or state, they venture into terrains previously off-limits—unknown lands, dangerous inventions, sacred ideas. Rather than shying away from these in fear, they tackle them with the cold precision of digital reason. The result is a profoundly humanist being, that is, a subject both self-possessive, working as the controlling author of their self and their own meaning, and alter-possessive, mastering their environs. Propelled by confidence, this is a human willing to, and capable of, asserting themselves, ordering the world to their own liking and to the exercise of their own freedom. In many ways, they appear to inhabit the fold of rationality and the absence of fear that they claim for themselves.

And yet, that very project of possession and autonomy can never be fully detached from an undercurrent of fearfulness that co-constitutes it. In the ultimate humanist gesture, the techno-rationalist can only encounter, and confront, the world through their technical instrumentalization of it. In approaching the world this way, they come to fear the reverse possibility: the possibility of the nonhuman sneaking up on them, piercing them, engulfing them or, simply, withdrawing from them. Because they can grasp human-nonhuman relationality only in terms of the rationalist control of enframing, the aim of the techno-rationalist is to hold up the sanctity of the human. As a result, they come to witness the nonhuman world (material and natural, organic and inorganic) as a site of anxiety that needs to be ordered and managed. The technical taming of the nonhuman is a desperate attempt at blunting what the ancient Greeks called *tuche,* that ungovernability of nonhuman worlds that, for the ancients (and, as we have seen in chapter 1, for Plato in particular), needed to be resolved or reduced to their most unthreatening form through *technē*. In this manner, and despite its self-proclaimed orientation toward the future, techno-rationalism has a deep connection to the technological horror that animated the ancient Greeks. Both give

in to the anxiety of ontological corruption, as if the nonhuman may encase the human and confront them with a groundlessness from which they may never recover. And so the more-than-human kinship characteristic of the MOVE headquarters—one that explicitly aimed at minimizing a relation of domestication—could only ever, in the eyes of the techno-rationalist, be read as a fall from civilization.

But techno-rationalism is fearful of social worlds too. The idea of a social life in excess of enframing fills the techno-rationalist with anxiety. Only by way of a technocratic ordering of social worlds can it resolve the threat of a sociality no longer distinguishable into separate units to be managed. This is more than a metaphysical fear; it is an anxiety in the face of a social mass (political or everyday), one always on the verge of threatening the very dominance of social worlds techno-rationalism demands. If that is the case, and I return to this in the conclusion, perhaps the techno-rationalist turns out to have counterrevolutionary tendencies, fearful of radical change and tying themselves resolutely to the promise of a technocratically reformed present. An incalculable and possibly insurgent sociality looking to escape the reach of enframing—such as that praised and lived by the technological exodus of John Africa—is one whose potential could not only never live up to the techno-rationalist's idea of the political; it is a threat to its very existence.

In a twisted way, then, the techno-rationalist has, for all their allergic reactions to techno-phobia, their own fearful slant. But fear is not the only contested negative affect in the history of techno-negativity. In the early 1980s, the emergence of cybernetic computation would give rise to another affective fragment of technological refusal; not fear, but hatred: the techno-*mysia* of workers setting fire to the computational assault on life.

This page intentionally left blank

Chapter 7

Arson

An Entropic History of Computation

> What could be more ordinary than throwing a match on a package of magnetic tapes? Anybody can do it!
>
> —CLODO, "CLODO Speaks"

> I am no longer anything. Or with the cybernetic body, a black box, another total nothingness.
>
> —Michel Serres, *The Five Senses*

Late one evening in April 1980, the French newspaper *Libération* received a cryptic press release. "We are neither Cubans, nor Libyans, nor Martians," it read.[1] "We are IT workers, and are therefore well placed to understand the current and future dangers of IT and telematics." It continued: "In an increasingly unlivable society, we are a group of rebels like there are hundreds of them." These were not empty threats. Two days earlier, the Toulousian offices of Philips Informatique had been set alight. An anonymous collective had snuck in via a tilted window on the ground floor, collected computer programs and magnetic data cards, and then burned those in the restrooms using a match and some newspapers. On their way out, they'd trashed the computers and stolen all the personnel files. They had entered and left with the swiftness of a seasoned burglar, leaving behind no traces. "An intelligent act of sabotage, realized by neither amateurs nor vandals," the director of the company was quoted as saying.[2] Two days later, another computational target was struck. This time it was CII-Honeywell-Bull that had gone up in flames. On the burned-out walls of their offices, the police could read the words "Out with Computers," but the collective had, again, already

vanished into the night. It was only with *Libération*'s printing of the communiqué that authorities came to know with certainty that a new anticomputer cell had arrived on the militant scene of Southern France, and that it came with a name, CLODO—Committee for the Liquidation or Subversion of Computers.

With its double attack, CLODO forcefully introduced the 1980s as the decade that would take techno-negativity to its most explosive stage. Its bangs resonated, with armed attacks on computational facilities spreading across the European continent and beyond. The company Honeywell stands as an exemplary case. Just a few years after being attacked in Toulouse by CLODO in 1980, the firm's Düsseldorf offices were bombed by the Revolutionäre Zellen, its New York branch by the Unit of the United Freedom Front, and its Brussels offices by the Cellules Communistes Combattantes as part of an "October Anti-Imperialist Campaign." Further helping to give rise to a decade of fiery techno-negativity, in 1980 members of the Italian Red Brigades wrote from their prison cells to call upon armed groups for a deepening of assaults on computational infrastructures. In their pamphlet *The Bee and the Communist,* they urged: "strike at all levels the analysts and programmers of the information centers, . . . bombar[d] computer systems, data banks and computer networks with bazookas."[3] Each computational innovation, they imply, will give birth to a techno-negative actor ready to strike, by weapons if necessary.

If we notice within computer arson the destructive legacies of the nineteenth-century machine-breakers and lantern smashers, it also rendered them widespread in ways that had previously been unthinkable, with individual and collaborative attacks taking place across European borders and damage ramping up to unprecedented heights. With this resurgence, the arsonists supplemented the tide of nonrelational modes of techno-negativity pursued by intentional communities—many of which would vanish in the 1990s—with a renewed offensive dynamism of direct relationality, albeit a negative one: the closest antagonism thinkable.

To understand this weaponization of techno-negativity, we need to unpack the negative affective economy driving it. It will not be the human shame in the face of perfect machinery—a Promethean shame—that Günther Anders identifies as driving the commonplace unease felt in the encounter with advanced technological devices.[4] Nor is it the phobia commonly assigned to those inhabiting techno-

negativity, as unpicked in the previous chapter. Instead, the computer arsonists exemplify an assertive affective logic, that of hatred: when a technology becomes thought of as so violent that immediate violence becomes the only acceptable answer, so abysmal that only the rage of destruction, robbing something of its very presence, can match its horrors. In matching one violence with another, in turning it in on itself, the computer arsonists embrace a politics of revenge.

But what is the conceptual connection between the computer's violence and that of the retaliator? To approach this, we will need to trace the computer arsonists' targets within their respective history, that of a capitalist index of cybernetics. There we will find a mode of violence that is temporal in nature, a cybernetic time invested in reducing futurity to the stabilization of the present, restraining the subject's access to the Deleuzian terrain of virtuality. Against the loss of futural alterity, the arsonist does not conduct a personal revenge between individuals, of the kind the philosopher Francis Bacon famously denounced as a misplaced "wild justice,"[5] but a specific form of public revenge, one that forces into the public eye the time-based violence of computation while asserting its own scandalous version of futurelessness. Along the way, they turn one violence inside out in order to give rise to another, a darker twin embracing the cosmic entropy of mechanical life.

Cybernetic Dreams

The targets of the computer arsonists were not the personal computers we know today—which only became popular household goods throughout the 1980s—but bulky mainframe computers put to use by large corporations, state institutions, and the research labs of universities. To adequately understand the violence computer arsonists ascribe to them, they need to be approached as instantiations of *cybernetic* computation, that is, as heirs to Norbert Wiener and his Anti-Aircraft Predictor.

Early on in World War II, the American physicist and mathematician Wiener and his team began dedicating much of their time to the war effort. One central problem faced by the Allies was the mounting speed and agility of German bomb-carrying aircrafts. Classical methods of anti-aircraft weaponry had become incapable of tracking, let alone shooting down, enemy planes. What was missing was

"a fire-control system that enables the gunner to know the target's position at all times, estimate its future position, apply corrections to the gun controls, and set the fuse properly, so that it will detonate the projectile at the right instant."[6] But how does one, as Wiener asked, "shoot the missile, not at the target, [but] in such a way that missile and target may come together in space at some time in the future"?[7] The solution offered by Wiener and his team was to treat the question as a mathematical problem of probability. While the pilot may be able to zigzag, alter elevation, or change speed, they remain bound by natural laws (e.g., time it takes to change direction at high speed), mechanical laws (e.g., delay between pilot pressing button and the engine firing into responsive action), and emotional laws (e.g., the pilot affected by stress). Because the pilot-plane duo is vulnerable to patterning, and therefore not entirely open to random fluctuation, Wiener's experiments were premised on producing a predicting machine, one served with input from lab experiments and flight tracking data. The promise: a machine capable of merging past and real-time patterns into a prediction that closes the gap between past and future behavior. Despite all efforts, the resultant Predictor would never manage to outperform the older models of prediction developed by the engineer Hendrik Bode,[8] but its potential had been far from exhausted; in fact, it would serve as a prototype for what Wiener would, after the war, announce as a new science: "cybernetics."

Wiener's scientific model—as comprehensively outlined in his influential *Cybernetics, or Control and Communication in the Animal and the Machine*—merged engineering, neurophysiology, psychopathology, and other disciplinary endeavors into a unified theory of systems as the perpetual management of inputs and outputs. Far exceeding the modest ambition of his World War II predicting machine, Wiener's proposal is for a science of everything. Its central claim is that mechanical, nervous, social, societal, and animal systems are all held together by a common tendency toward self-regulation through informational feedback. In each of the varying systems, Wiener writes, "there exists a special apparatus for collecting information from the outer world at low energy levels, and for making it available in the operation of the individual or of the machine."[9] In Wiener's specific definition (one not shared by all cyberneticians),[10] "information" is what allows a self-regulatory system (e.g., a human, an

animal, a company, a machine) to control its own behavior, providing it with a capacity that is lacking in inanimate elements and objects (e.g., a stone, hammer). To be able to cut across distinct domains, Wiener had to offer a conception of information that is only tendentially connected to a given material context, medium, or body.[11] Offering a quantitative view of information, one that prefers patterns over individual bodies, cybernetics sought to develop a stable value capable of understanding and modelling how diverse systems, internally and interactively, manage to sustain themselves. But cybernetics is the study not only of complex systems but also of their control.

The primary concern of the pragmatic cyberneticist lies with the problem of entropy. This problem, for Wiener, had long been inadequately accounted for, especially in the Newtonian physics dominant in the seventeenth, eighteenth, and nineteenth centuries. Newton's universe is one in which, Wiener claims, everything happens precisely according to fixed causal laws. The result is "a compact, tightly organized universe in which the whole future depends strictly upon the whole past."[12] It is the physicist Willard Gibbs who clears the path with what Wiener calls the greatest revolution of twentieth-century physics, inserting chance—or more precisely, "probability"—into the equation: Each universe is but one of many possible universes. In Gibbs's physics, we no longer deal with what is going to happen, but with "what will happen with an overwhelming probability."[13] Crucially, for Gibbs such probability of something occurring in a system is not a constant since the natural tendency is for entropy to increase as a system grows older. With the passage of time, a closed system deteriorates from an organized state of differentiation into a chaotic state of sameness: Energy dissipates, bodies decompose, societies unravel. Overwhelmed with expanding entropy, a system eventually knows only death. This "irrationality in the world" is, to Wiener, a form of Evil, an inescapable horror that threatens any system and that the cybernetician, like the Freudian psychoanalyst with a desire to systematize the deep irrationality of human conduct, aims to place under control.[14]

The control principle of cybernetic sciences is the feedback loop. Rather than taking entropy as the irresolvable dissipation of energy, Wiener turns it into a problem of noise that can be battled through informational feedback. Take the case of the Anti-Aircraft Predictor. As historian of science Steve Joshua Heims explains, "information

from a radar screen is processed to calculate the adjustments on gun controls to improve aim; the effectiveness of the adjustment is observed and communicated again via radar, and then this new information is used again to readjust the aim of the gun, and so on."[15] Likewise, a nervous system can temporarily counter entropy through an extensive informational exchange with its external milieu, neutralizing the ruptures of "positive feedback" and embracing the stabilization offered by "negative feedback." A successful system—organic, social, mechanical—is one that is able to freely pursue an optimal level of informational feedback so that it can creatively adjust its parts and temper the general tendency of entropy to rise.[16] Information, in Wiener's view, is negative entropy: the creation of ordered systems of feedback.[17] Only by pursuing negentropy is a system able to realize the cybernetician's dream of homeostasis, however temporarily.

Temporal Closure

If this dream of equilibrium appears as an ethically sound response to the Evil of chaos and disorder, or very least, appears neutral, then the computer arsonists urge us to look a little harder. Pierce the smooth surface of the cybernetic promise and what you'll find, the arsonists appear to tell us, is a violent urge for control, one you find forcefully expressed within the computers of the 1970s and '80s. In the words of the feminist armed group Rote Zora—written in a communiqué after bombing Siemens in 1983—they want to "scratch this beautiful façade" of corporate imagery covering over the terror of computation.[18] But what, precisely, is the violence the computer arsonist speaks of? What terror guides their desire for revenge? What is at stake, I want to suggest, is a mode of control that garners its force through cybernetic processes of temporalization.

The cybernetician's mode of governance is to translate a given system, body, or event into time-relations that can be acted upon. The precise temporal logic of Wienerian cybernetics, with its deep concern for countering entropy through informational feedback, is that of futural anticipation. Uninterested in describing the present world, cyberneticians like Wiener aim to understand—and shape—what it might become. The media theorist Orit Halpern highlights the double temporality of this theory of control.[19] First is the insistence

on memory, understood as the capacity to hold a record of the past and use it with an eye on predicting the future. Second is the concern with perception as a manner of selecting only the information that is relevant for acting upon the future, cutting out the noise. By way of memory-perception, cybernetic temporalization actively acts upon the past—abstracting historical data into useable essences—for future operations through ongoing informational feedback. The result is a philosophy of time in which past and future are considered together as part of the same conditions of potentiality, marked only by shifting degrees of probability and chance.[20]

To makes his claims, Wiener explicitly draws upon philosopher Henri Bergson's notion of "duration," understood by Bergson as "the continuous progression of the past, gnawing into the future and swelling up as it advances."[21] Bergson argued that the radical mechanism inherent to the evolutionary hypothesis of his era had a fatal tendency toward spatializing time, that is, toward cutting its progression up into distinct states that replace each other.[22] The central logic of such a theory of time, he suggests, is that of a mechanical clock that can only approach time as the succession of homogenous intervals. By contrast, Bergson's notion of duration emphasises time as a qualitative, heterogenous multiplicity that is not only continuous but also accumulative. He writes: "All that we have sensed, thought, and desired since our earliest childhood is there, leaning over the present that is about to join up with it, pressing against the door of consciousness that would prefer to leave it outside."[23] In this Bergsonian vision, the present never exists as a self-contained temporality. Instead, as Elizabeth Grosz writes, "it straddles both past and present, requiring the past as its precondition, while oriented towards the immediate future."[24] One of the defining mechanisms of this straddling is the interpenetration of memory and perception. Bergson notes in his *Matter and Memory* that the past survives into the present through both habit-memory (a nonimage memory that settles into the nervous systems through repetition and produces motor mechanisms) and memory-images (the recollection of past events and its emergence in present consciousness).[25] Perception in the present is always "completed" by the past living on through these two orders of memory.

Norbert Wiener moves Bergson's theories of duration and memory away from the philosopher's psychological and increasingly

metaphysical concerns and translates them—not without significant reworking[26]—into a temporal dynamic to be actively put into practice. His cybernetic logic seeks to mechanize memory-perception by turning it into a computational project of anticipation, whereby historical records are brought together with present perception in order to anticipate future behavior. As such, Wiener's cybernetic time is that of a temporal closure: recursively tying the past and future together in the present.

To understand what the computer arsonists see as the violence of this cybernetic time, we need to carefully distinguish between two interconnected dynamics of temporal closure. The first dynamic maps onto what has been called "first-order" cybernetics, the scientific modeling characteristic of Wienerian cybernetics. In this order, the future is foreclosed by neutralizing difference, bringing back a state of equilibrium. The second dynamic corresponds to "second-order" cybernetics. Like "first-order" cybernetics, its logical foundations emerged out of World War II research. However, it only grew into maturity from the 1960s onward with the writings of an interdisciplinary cast of thinkers including the mathematician Heinz von Foerster, the biologist-philosopher Francisco Varela, and the sociologist Niklas Luhmann. Despite their divergent interests—from von Foerster's and Luhmann's focus on inserting reflexivity into the cybernetic paradigm to Varela and Maturana's theories of systems as autopoietic—second-order cyberneticians share a vision of systems as emerging not despite chaos, as per Wiener's first-order, but because of it.[27] As von Foerster wrote, a "self-organizing system feeds upon noise."[28] Less inclined to simply pursue homeostasis, this order of cybernetics opens systems up to turbulent and unexpected flows, looking to steer these toward desirable ends. If first-order cybernetics neutralizes difference, then the second order tends to embrace it.[29] Put differently, the first is a measure of what we may call repressive temporalization (canceling turbulence and difference), the second of integrative temporalization (productivizing turbulence and difference). Despite dissimilar modi operandi, the two dynamics are aimed at a shared goal of expanding the present into the future, warding off any radical break, any "fatal disequilibrium" (to use Tiqqun's term), of a given system.[30]

For the computer arsonists, cybernetic theories of time problematically translate into *political* theories of governance. While both

integrative and repressive temporalization are at play in the cybernetic computation of the arsonists' era,[31] they particularly saw in computers a new political expression of repressive control. Let's take the Nixdorf 8000 Series computers as an example. The armed collective Rote Zora set fire to these computers for their use by German police departments. In a communiqué, they denounced how "the vision of horror of a State monitoring and controlling everything must take away from men all the courage to live and fight."[32] After their earlier attack on Siemens, they wrote of cybernetic computation as a novel instrument in the conduct of war, both internal and external, whose logic is that of computer files, new technologies of surveillance, and identity control measures.[33] Likewise, in their *Resolution of the Strategic Directorate,* the Red Brigades describe the "the organization of a multiplicity of controls via 'information systems'" as an "insidious enemy" that holds computerized files on revolutionary groups, trade unions, avant-garde collectives, and grassroots organizations.[34] They write, "the 'brain' of the Ministry of the Interior alone stores ten million ballots."[35] They were correct; since the late 1970s, European authorities were amping up their investment in cybernetic computation, increasingly turning policing from a matter of reactive crime-fighting into one of prognostic indication. Their obsession was the left-wing militant. Computerizing data collection and processing alongside developing cross-European filing systems, policing departments became an anticipatory force, hoping to intervene before a left-wing crime actually occurs. Horst Herold—president of the Federal Criminal Police of West Germany in the 1970s and initiator of the computerized manhunt of the Red Army Faction—theorized this most aptly when he wrote that raw data is "more meaningful than coal and steel a hundred years before," taking it as the perfect foundation for the "preventative planning of a cybernetically steered society."[36] This ideal society is one whose turbulences—in the shape of political antagonisms and otherwise—have been neutralized and thus rendered toothless.

The result of this dream, for the computer arsonists, is a newfound knitting of policing and cybernetic computation into the pursuit of what members of the Red Brigades call "a predictable universe in precarious equilibrium," neutralizing (or productivizing) "all disruptions to the programs system established by the executive."[37] The future was to be a reproduction of the present, with a clear aim:

cutting the social body off from radical antagonism, and thus, from the potential to be radically different. To the computer arsonist, the violence of cybernetics is in the cut, in the reduction of the flow of time to the straitjacket of the sociopolitical present: over-determined concepts, familiar social forms, dogmatic cultural norms, the self-same. What is undone in cybernetic governance is the radical alterity of a future time, a people to come, that cannot yet be articulated for it escapes any image of the past or present.

The computer arsonist's weapons attempt to fracture the temporal logic of cybernetics, its closure of the gap between past and future through the memorization of historical data, and its processing alongside perceptual information. We are not surprised, then, when CLODO, having bombed the computer center of the French prefecture of Haute-Garonne, conceptualize their own attack as facilitating memory loss: "Last night, at more than 6000 meters/second, a fraction of the state's memories dissipated into air at Colomiers. Catalogues of offences, alerts and objects; . . . catalogues of migrant workers; the embryo of an anti-terrorist catalogue. The prefecture of Haute-Garonne experienced memory loss when its computer center was shaken."[38] In the same communiqué sent to the newspaper *01 Hebdo*, CLODO struck at the wider temporalization of cybernetics. Ours, they suggest, is a "society of 'IF . . . GO TO'—squared, codified, aligned, controlled—this society where we connect like trains in a rail yard, desperately hoping to reduce chance . . . this society in which we live is unbearable and inhuman."[39] In writing these words, the group suggests that the temporal terrain of interest of cybernetics far exceeds the repressive-integrative regulation of the dark edges of the social body discussed so far—the militant groups CLODO, Rote Zora, and Red Brigades were particularly keen to protect. To CLODO, the temporal closure of militant futures expands into a generalized impoverishment of human temporality, to which we now turn.

If . . . Go To

If, as we have seen, one reader of Henri Bergson—Norbert Wiener with his mechanization of "duration"—helped inspire and ground the temporal closure at the heart of cybernetics despised by the computer arsonists, another reader allows us to contest it. Gilles Deleuze

provides us with the conceptual tools needed to deepen our understanding of the cybernetic neutralization of the future.

What Deleuze finds in Bergson is an understanding of time as profoundly creative. As Bergson says, "no two moments are identical in a conscious being."[40] The reason, as already noted previously, is that duration is accumulative; through memory, each present moment is added to all the moments conserved from the past. The future, Bergson writes, "concentrates in its very indivisibility all that had previously been perceived along with what the present adds to this."[41] Any attempt at anticipating the future is, for this reason, doomed to fall short, for it underestimates duration as "the continuous development of the absolutely new."[42]

In his *Bergsonism,* Deleuze extends Bergson's examination of duration's creativity. He draws a crucial distinction between two philosophies of time: one centered on "realization" and another around "actualization."[43] Philosophies of "realization" explain the progression of time by way of the "possible" passing into the "real." In this schema, the possible is something that pre-exists, a potential waiting to come into existence. As Deleuze notes, while we encounter it across philosophical thinking, we find this theory dramatized in preformist conceptions of evolution—popular in Western European biology until at least the seventeenth century—where organisms are thought to have developed from miniature but fully formed versions of themselves. In this theory, the entire development of an organism—for example, a human—involves an expansion in size and growth of the body already-present in the sex cells. Deleuze explains that theories of "realization" are governed by a double rule. The first is the principle of "limitation," whereby the possible moves into the real through the delimitation and thwarting of some possibilities, and the passing into the real of others. A second rule—that of "resemblance"—claims that, because the possible preexists the real, it can be read back, and thus deduced, from the real. As Deleuze writes, it is "retroactively fabricated in the image of what resembles it" like some kind of "sterile double."[44] The result is a conception of the "possible" as an inferior domain because it is, simply, the real minus existence.

Against the theory of "realization" and its double principle, Bergson's duration offers, for Deleuze, a conception of time based not on the "possible" but on the "virtual." Becoming is thought of as

the flow from the virtual to the actual, but the former must not be perceived as preceding the latter, as it does in realization. Instead, Deleuze writes, "the actual and the virtual coexist, and enter into a tight circuit which we are continually retracing from one to the other."[45] As coexisting spheres, the transition from virtuality into actuality is not able to proceed by way of limitation. Its processual logic is that of generation and differentiation. The result is an actuality that does not resemble a preexisting possibility but, by contrast, develops its own creative line. This is why Deleuze can write that actualization is "genuine creation."[46]

What emerges from the realization/actualization distinction is two distinct images of futurity. The image of the future heralded by realization is that of a preexistent plan concretized, while that of actualization is one opened to the unpredictable lives of virtuality.[47] With realization, the "real" of the future is, in Deleuze's words, "readymade, preformed, pre-existent to itself, [passing] into existence according to an order of successive limitations. Everything is already completely given."[48] To embrace it is to foreclose the ability of enabling a future unbound by the past or present, a future unrecognizable and thus unpredictable. It is, in other words, to make space for cybernetic time.

As I see it, cybernetics does not, as some scholars have suggested, expand the virtual,[49] but kills it off precisely by colonizing its terrain. Cybernetics blunts virtuality by insisting on reducing it, and the future-becoming it enables, to a procedure of "realization." What it appears to pursue is an image of the future as an impoverished extraction from the past-present. By centralizing the accumulation of information about the past and present, and bringing it into optimal circuits of feedback, cybernetics can only ever imagine the future through the prism of past times. This means cybernetics exists in an inverse relation to virtuality. The increase of one signals the diminishment of the other. What cybernetic time prioritizes is stabilization, that is, the fixing of space through time. What it renders impossible is the procedure of duration through the kinds of abrupt radical change that render the future unrecognizably, unfamiliarly other. We have lost creative invention, that hallmark of duration celebrated by both Bergson and Deleuze.[50] With cybernetic realization, then, we have handed the future over to the past, allowing it to function only as a poor resemblance.

These are the frustrations we hear when listening to CLODO condemning cybernetic computation for "connecting us like trains in a railyard" and having us "locked in the ghetto of programs and organizational platforms," or when listening to Rote Zora suggesting that the world has been reduced to "the design principle of social reality."[51] Cybernetics has closed off the openness of futurity and thus virtuality itself. For some of the computer arsonists, this turns cybernetic computation into a killing machine not only because of its enrolment into warfare, as per Wiener's Predictor, but because a life whose relationship to virtuality has been canceled is not a life worth living. Such a life has lost all connection to what Deleuze—echoing Bergson—describes as a privileged feature of humanity's relation to time: that "man is capable of rediscovering all the levels, all the degrees of expansion and contraction that coexist in the virtual Whole."[52] Humanity has been robbed of its expansive connection to the virtual. Not just the militants looking for a break with the present, then, but the general population, too, fall under the temporal violence of cybernetics.

Cut loose from access to virtuality, the human experiences a certain subjective death. We need to be careful, however, to not confuse this death with the technological onticide facilitated by European colonization, as described in chapter 4. In the face of their ontological removal from the category of the human, the colonized had neither future nor present. Populations within cybernetic societies may not have the former, but they do have the latter; in fact, they have too much of it—the cage of a present that knows only how to represent itself.

But cybernetics also announces a second death of the subject; rather than through de-temporalization, it is one that occurs by way of de-materialization. In her influential *How We Became Posthuman,* which skillfully traces the complex links between "humanism" and "cyberneticism," N. Katherine Hayles shows how the human loses its status of ontological exception when engaging (the logic of) cybernetic systems. When all is leveled to pockets of information, the lines between the organic and inorganic, human and nonhuman, machinic and social, are not only put into question but actively blurred. As Hayles notes, cybernetics had to produce a discursive field that treats machines, animals, and machines as corresponding cybernetic systems.[53] One of the earliest commentators to notice

this was the German philosopher Hans Jonas. In his 1953 *Critique of Cybernetics,* he wrote, disapprovingly, that: "now is offered, for the first time, a mechanistic model which, it is claimed, applies to material and mental phenomena at once, not only equivalently but identically—that is, without involving passage from field to field. This would indeed mean an overcoming of the dualism which classical materialism had left in possession by default: for the first time since Aristotelianism we would have a unified doctrine, or at least a unified conceptual scheme, for the representation of reality."[54]

In the cybernetic vision of Wiener's Anti-Aircraft Predictor, the enemy pilot, airplane, and rocket are all agents within the same system, without any fixed ontological hierarchization. Without this ontological flattening, cybernetics would not be able to prioritize the stable value of information required for the smooth functioning of systemic feedback loops. It had to come into being as a science of form, rather than matter, interested as it is in pattern/randomness rather than presence/absence, in information rather than embodiment.[55] Hayles argues this leads to "an estrangement of the flesh," the separation of the individual from its bodily emergence and material entanglements.[56]

Two cybernetic assaults on the liberal human, then: her detemporalization and her dematerialization, signaling a double death in the form of an ontological flattening. To members of the Red Brigades, this death takes the form of the vanishing of the "individual," and the emergence of the "dividual," "a plural subject with a plurivocal identity in space-time."[57] As such, if cybernetics was initiated in service of killing machines, as its military origins imply, it also pertains to a wider ontological death.

But what is often forgotten, and Hayles repeatedly accentuates, is that cybernetics is also liberal humanism's multilayered rebirth. We notice this tension when we start paying attention to Wiener's own fears. On a most basic level, Wiener would later in his life actively turn against his own involvement in the development of cybernetic war machines on the basis of humanist values.[58] His wider worry was, however, that, pushed to their logical conclusion, any cybernetic system could displace the liberal subject as the locus of control. Cybernetic science, at least in its Wienerian expression, responds to this threat with two conceptual bulwarks, each based on a categorical distinction. First, he draws a clear line between "good"

machines that are flexible enough to allow for human autonomy, and those "bad" ones that allow for insufficient human maneuverability. Second, a distinction is made between "autopoietic" systems capable of producing their own components and self-organization, and "allopoietic" ones that lack such abilities and are instead aimed at a goal externally set for it. Wiener—and other cyberneticians such as Maturana and Varela—wanted machines to largely stay within the realm of allopoiesis, with the autopoietic human piloting the ship. At the heart of this double gesture sits the desire to design the cybernetic machine in such a way that it did not, as Hayles says, undermine "the autonomous, self-regulating subject of liberal humanism."[59] The result is not an implosion of the liberal subject but its recalibration from a self-possessive individual into a self-regulating system capable of respecting the boundaries separating it from other autopoietic entities. In other words, cybernetic computation announces the renewal of exercises in ontological policing.

In the face of these struggles over the human subject, the computer arsonists do not articulate their own theory. Nor do they demand a return to the classic liberal subject of a precybernetic era. "We know," CLODO wrote, "that it's stupid to try and turn back the clock."[60] Theirs is not a call for a rematerialization of the individual subject, its restoration in the chain of being above both animal and mechanical life.[61] Nor crucially, as we will now see in the final section of this chapter, does the computer arsonist seek to retemporalize subjectivity, regranting humanity privileged access to the virtual. Their unique violence lies in their refusal to substitute cybernetic futurelessness for an alternative horizon of futurity, however radically open it might be to duration's creative impulses. Rather than restoring futurity to its proper (i.e., virtual) place, the computer arsonists embody its terrifying negation.

Entropic Time

The computer arsonists respond to the violence of cybernetic computation—the cancellation of virtuality I have been describing—with a politics of revenge, matching it with their own pursuit of violence. They are traders in destruction and attack. But what appears most violent is not their material destruction of state and private property by way of explosive weaponry, their deep antagonism

to the industry of cybernetics, or even their wider confrontation with the "democracies" of Western Europe. Perhaps most scandalous is that, in their rejection of both cybernetic time and virtual time, they deny us the comfort of futurity.

The arson flies in the face of what we can think of as the duty of futuring, a moral horizon shared by cyberneticians across the political spectrum. After CLODO's arson at Philips Data Systems, some journalists were alarmed that the perpetrators had sought to deprive society of its "collective memory."[62] This was not incorrect; materially causing the dilution and loss of information, the arsonists disrupted cybernetic mechanisms of regulated memorization.[63] Worse still, in the most anticybernetic of gestures CLODO does so without recourse to an alternative time, a different futural trajectory that the imagination can begin to formulate; there were no demands, just fire. But CLODO's temporal refusal infuriated more than journalists and cyberneticians. The assault at Haut-Garonne's computer center, in particular, drove leftist organizations toward a condemnation, loud and clear, of computer arson. The French Communist Party claimed that "there can be no justification for 'breaking' the tools of labor. It is not progress that is the enemy of the workers, but the misguided use that is made of it."[64] A second collective, a trade union within the computational industries, called the CLODO's "an act of cowardice" that runs counter to the interests of workers and urged authorities to launch a police hunt.[65] In the hands of the worker, the socialist cyberneticians argue, computation becomes a weapon of emancipation, a rupture from the exploitation of the present. In response, CLODO mocks the "ecstatic bliss" of the socialists enamored with "the magical computer potion that will be the change of society!"[66] The naivety of the cybernetician, they suggest, lies in thinking that giving cybernetics a future will ever do anything different than extending the horror of present conditions: a life devoid of alterity, chance, surprise. In refusing the comfort of predictive futurity, CLODO escapes the moral obligation of holding out a new future, the cathartic moment offering a way out, and, consequently, made abundant enemies along the way.[67]

The alternative temporal structure—or antistructure—it provides us with is deeply anticybernetic. Its modus operandi is the weaponization of what Bergson called "the most metaphysical of the laws of physics": entropy.[68] In the systems-thinking of the cybernetician,

entropy is the temporal enemy that requires either neutralization or productivization. By contrast, the computer arsonists not only welcome the Evil so feared by Norbert Wiener but actively accelerate it to its logical conclusion: the death of a system, the dissipation of future time. As computer rebels, they do not look for cracks to be exploited in a cybernetic system, as a hacker might, and instead engage the temporal refrain of the system as such, its cosmic tendency toward disorganization. They seem to inhabit the negative temporality of positive feedback unleashed. Not cybernetic time, then, but what I want to call "entropic time" is the temporal antistructure we are forced to confront in the bombs and fire launched at 1980s computation.

With entropic time, we are also far removed from the durational logic of "actualization" celebrated by the promoters of virtual time. What specifically sets entropic time apart is its disjunctive relation to the epistemological dead-end of futurity. Like Gilles Deleuze, the computer arsonist is comfortable with the future as the profoundly impenetrable, as the actualization of a virtual that, while conceptually bound to one another, forever escapes and exceeds its final appearance in the actual. In refusing the epistemological closure of the future, both detach it from any image of the present. Where the arsonist departs from virtual time, however, is in the path carved toward maintaining the future as the time of radical alterity. The promoter of virtual time takes up Deleuze's view that "life is production, creation of differences" and translates it into a practice of futuring that prioritizes "the highest affirmation of the arrival of the future in its difference."[69] The nocturnal actions of the computer arsonists seem indifferent to such variations from the status quo, as indexical of future "becoming," that might be affirmed. They inhabit the negative passions that virtual time, in its generative ontologies, has little patience for. For an unrecognizable future to emerge, they tell us, the present must first be abolished. If not, we will remain bound to the conditions that gave rise to the present to begin with.

If this is the aim, then a crucial pragmatic question emerges: How does one abolish without offering the cybernetic system with fresh pockets of information of use to the procedures of predictive futuring? What lines of destabilization can be fueled that escape both cybernetic neutralization and productivization? In other words, what do *fatal* disequilibria look like? For some of the arsonists, the

imperative is an eschatological one, in which striking at the "weak link" of cybernetic capitalism—that is, its centralized computer nodes—will make the whole come tumbling down, providing us with a catastrophic time from whose ruins a different society might spring.[70] For others, like CLODO who speak in a less Marxist-Leninist tenor, this imperative—and its explication in strategic documents—is still providing the cybernetic networks with too many inputs, too much informational feedback. They take seriously Deleuze's insight, penned two decades after the publication of *Bergsonism,* that "repressive forces don't stop people expressing themselves but rather force them to express themselves" holds especially truly in a world of cybernetics.[71] We cannot communicate our way out of this world. CLODO, without extensive written strategic declarations and in contradiction to the Marxist-Leninists, withdraws much more deeply into the silence of entropic time.

Now we can understand why these computer arsonists rejected the practices of technological exodus discussed in the previous chapter. In cybernetic rather than "electric" capitalism, abstinence fails to cut because passive resistance—that is, difference in the shape of a prefiguration of an alternative lifestyle—too easily ends up serving the continuation of a technological system. To be up to the challenge of cybernetic technologies, withdrawal had to become offensive; techno-negativity had to stop making offerings. It had to start searching for what the philosopher Michel Serres calls the language of ignorance, or in cybernetic parlance, "a black box, another total nothingness," reducible to neither 0 or 1.[72] Where CLODO speaks at all, it is in the language of informational noise: molten magnetic tapes, smoked-out office walls, fiery graffiti scribbles, and oblique communiqués; that is, speaking to us only in extreme tension, in words and actions that generate incoherence and disarray, yoking forward toward something other than their meaning: the movement of their own incessant dissolution. They know that, in a cybernetic world, speech only delays the event of terminal collapse. Impatient, all they do is accelerate the entropy that is already there, in every cybernetic system, waiting only for the stroke of a match.

Conclusions

Against a Humanist Politics

Techno-Abolitionist Beginnings

Techno-negativity is a deeply resilient and malleable weapon. Technological inventions, both modest and major, are confronted with an onslaught of calls for, and enactments of, their undoing, taking an almost endless array of shapes, from carefully prescribed prohibitions to vengeful arson. This offense offers a timely reminder: However violent a particular technological present, however brutal or ignorant its managers and benefiters, techno-negativity can take root and grow in the shadows, looking for ways to set things ablaze.

Heeding techno-negativity's historical endurance across a diverse terrain of political, economic, and philosophical contexts is to fracture commonplace tales of technological progress. It is to refuse the narrative fantasy of a technological realm driven onward by a locomotive of world history, traveling at full throttle toward a forever-receding horizon. The counter-story: Each technological object is—and remains—inscribed by a kernel of its undoing. What I have argued throughout this book is that techno-negativity—as the brute refusal of technological objects and sites—haunts the history of technology. One cannot speak of technical innovation without defining, and conceptualizing, the resistant assemblages that inventions are simultaneously co-constituted and opposed by. Without taking seriously that technological histories are as much genealogies of refusal as they are of invention, we fall into the trap of neat but ultimately misguided teleological histories that present them as quasi-natural, inexorable transitions from the primitive into the civilized, from the superstitious into the age of reason. By centering genius invention or obedient usage, we flatten out the messy, contested, and oft-contradictory (but not necessarily dialectical) field that is technological life.

The book has shown that such complexities remain unintelligible as long as techno-negativity remains either unthought or is, pejoratively and mistakenly, reduced to the uniform models of Luddism, primitivism, or phobia. When we pay close enough attention, we find that refusal is a deeply multifaceted thread weaving in and out of technological histories, from medieval Christian monasteries institutionalizing techno-negativity as a model of pastoral power to ultra-leftist armed assaults on capitalist computation. Each variant of refusal explored in this book assembles its own unique arrangement of acting subjects, methods of attack, driving impulses, affective logics, and techno-negative imaginations. This has not meant that each formation of technological refusal ever occurs either arbitrarily or in a homogeneous form across time and space, as if unaffected by the push and pull of situated social, material, and political life.

Not least, we have seen how political-institutional contexts shape techno-negative responses to inventions. Two socioeconomic upheavals are of central importance, with each reshaping the relations between dominant social, religious, and state interests, and the role technologization plays within those. In the first three chapters, techno-negativity asserts itself first and foremost as *a technique of sovereign power*, whereby the rejection of technological forms secures an uneven process of development. To the techno-negative protagonists of ancient Greece (chapter 1), the delay of *technē* functioned as a means of grounding and sustaining—among other social asymmetries—naturalist theories of inequality in the city-state, while the legal prohibitions found in medieval Christianity helped solidify divine rule in the shape of pastoral power (chapter 2), and the prosecutions of loom inventors, and the public burning of their inventions, from the sixteenth century onward facilitated the statist prevention of social revolt (chapter 3). The emergence of (colonial) capitalism—as a first socioeconomic upheaval—would trigger a crucial set of transformations in techno-negative histories. Exceeding the terrain of sovereignty, technological refusal became, progressively, *a weapon of revolt*. The tightening triangulation of capital, the state, and technological innovation meant that the interests of the dominant (the state, the religious order, and the bourgeois) in technological refusal began to show signs of fading. The Luddite (chapter 3), anticolonial (chapter 4) and lantern-smashing (chapter 5) revolutionaries emerged precisely at a moment when refusing technology

became a method not of securing but of directly confronting dominant regimes of sovereignty. With, first, the electrification (chapter 6) and, second, the cybernetification (chapter 7) of capitalism in the twentieth century, the further deepening of planetary technicity corresponds to techno-negativity's heterogeneous embrace of *a politics of withdrawal*, one that is variously prefigurative or destructive, defensive or offensive. In short, then, techno-negative histories are driven, progressively, by three political incentives: securing, confronting, and withdrawing from mechanisms of power. The logic of these transformations is not one of neat chronological substitution but of a generative expansion in expressions of technological refusal in line with the shifting configurations and contradictions of power.

With these mutations in mind, what will the future of techno-negativity hold? By extension, what does my book offer to those committed to keeping contemporary technological violence at bay? These are urgent questions given that the power dynamics inextricable from today's reigning technologies present themselves so clearly. Think, for instance, of the popularization and proliferation of artificial intelligence technologies. The increasingly autonomous and "intelligent" systems that make up AI are energizing those with a fierce lust for domination, whether it is Silicon Valley CEOs, the military-industrial complex, or political leaders with totalitarian tendencies. In AI's powerful computational technologies, these groups find hyped promises of, respectively, workforces devoid of humans, entire armies of disembodied killing machines, and automated, algorithmic governance. At the same time, AI's dependence on computation is accelerating environmental crises through the mass extraction of raw materials (often rare minerals), intense use of water and fossil fuels, and the production of hazardous e-waste, while automating existing, and introducing new, forms of bias, categorization, and surveillance. At the heart of today's reigning technologization we find this primary violence: the intoxicating promise of financial, political, and military gain for the few paired with the toxication of the environmental and social landscapes of the many. As critical scholars of AI Dan McQuillan and Yarden Katz have shown, this fracture plays out along, and solidifies, already existing classed, gendered, and racialized differentiations,[1] with automation (alongside other machine logics) providing them with a renewed dynamism under the guise of "efficiency," "convenience," and "progress."

In the context of such deepening asymmetries, the contemporary stakes of probing refusal anew are high. To begin, we will need to learn to think technological violence as a question of ontology. Drawing together threads from across the chapters, in this conclusion I argue that what holds dominant strands of contemporary technological politics—in the shape of technological reformism, technorationalism, and posthumanism[2]—together, despite their seemingly divergent tendencies, is their inability to overcome the lure of ontological power, of what I have been calling "ontological policing." Against the violent afterlives of the humanisms it secures, we will need to take a leap, broach the unknown, and begin to conceive an abolitionist politics of technology.

The Humanism of Techno-Politics

As long as we approach techno-politics only in terms of the potential infringement upon rights, and as the reproduction of existent models of socioeconomic discrimination, we will fail to track—let alone confront—the scope of violence inscribed within contemporary technological worlds. Tracing an alternative trajectory, this book has brought into focus technology as a terrain of ontological struggle.

Techno-Negative took up Simondon's conviction that "every ethical, technical or scientific invention" is first of all not only "a means of liberation," but, crucially, a "rediscovery of man."[3] This rediscovery, I have argued, is not an innocent adventure in metaphysics, a playful reconfiguration of philosophical interest in the subject, selfhood, or subjectivity, but instead a production of, and regulation over, divides demarcating human from nonhuman life with profoundly material effects. These "boundary-making practices," to use Karen Barad's term, ensure that "the human" and its "Others" are unequally delineated and defined.[4] I have referred to these mechanisms—which take on discursive, social, and institutional lives—as "ontological policing," presenting them explicitly as the political ordering of "being." Technological invention is, in this reading, the capacity to intercept, model, secure, orient, or control the space and boundaries of the figure of the human, but always with an eye on producing an outside or periphery that constitutes it as its Other. The *homo barbarus,* the slave, the demonic, the poor, the colonized savage, the unreasoned,

the invisible subject, the phobic; these are but a few of the names of the inclusively excluded Others we have encountered.

But what are the stakes? The problem, as Lee Edelman has argued, is that ontological imperatives are always tied up with social organization.[5] On a basic scale, technology's onto-policing delimits the space of subjective transformation for the excluded, producing normative injunctions and all manners of barred thought, feeling, and action. More crucially, its ontological violence actively serves as a basis to justify and extend the power of some at the expense of others who, as Foucault explains in his critique of humanism, are prohibited "the desire for power" and excluded from "the possibility of power being seized."[6] Ontological policing is, from this viewpoint, always the social and political mastery of an inclusively excluded Other. We encounter this clearly, for instance, in European techno-colonialism where the presumed absence of technology became a measure of the Other's sub-humanity and, by extension, an important vector legitimizing colonial violence (chapter 4). Likewise, but this time inverting the technology-human relation, the techno-negativity of the medieval Christians (chapter 2) served as a manner of reasserting, by way of demonology, a clean distinction between the human and its divine Others. What has emerged across technical inventions and their unyielding refusal is a sustained but heterogeneous and messy political struggle for a dominant theory of the properly human. Put differently, we have read the histories of technology as a relentless battle for an updated order of being, for a renewed "humanism" that all too often, in practice, animates new mechanisms of domination.

Far from having receded, and despite—as we will see—claims to the contrary, the habit of ontological policing has found a new life in the humanisms of contemporary technological politics. In tracing its afterlives across three overlapping tendencies, I now provide a spectrum of humanisms.

The Reformist

The reformist responds to technological injustices—in the shape of, for instance, uneven access to digital tools, racist discrimination, surveillance of workers, and environmental degradation—by resorting to the grammar of improvement, presenting a call for more secure and more democratic, less harmful and less biased futures. They

speak in a modest tone: If we had sufficient regulation, we could contain the most damaging habits of our technological present.

Underpinning the reformist's grammar is a conception of the human as an agential force in its own right, whose social action is able to produce, operate, and control technologies while remaining ontologically distinct from them.[7] The technological object is something "out there," an instrument used by the human whose cohesive, autonomous principle of selfhood remains intact despite this extensive usage. Those technologies may extend our ownness, allowing us to become expanded selves, but they may also threaten it. This grounds both the anxiety of the reformist *and* their belief in the possibility of ontological policing, of mastering and managing the incursions of the technological.

A small number of the twentieth century's most prominent critics of technology encountered in this book are at least partially wedded to this form of technological humanism. The problem for these philosophers is the moment at which the technology ceases to be a tool and becomes a machine—a previously inanimate instrument (*technē*) that has transgressed into the exclusive domain of vital life (*physis*) by taking on a self-organizational logic. Under the banner of humanist values, Hannah Arendt, for instance, condemns how automation involves the "unchain[ing] of natural processes" in such a way that extinguishes "the time-honored protective dividing line between nature and the human world."[8] In the ontological policing of Arendt, the artificial is a required inclusive outside that props up the human as, uniquely, a self-organizing being. Likewise, Langdon Winner and Jacques Ellul mourn the loss of an originary human whose true nature "was created with a certain essential unity" and autonomy, but who is now under threat by a self-organizing technological domain that "governs its own course, speed, and destination."[9] Seeking to halt what Ray Lankester calls technological degeneration[10]—the withering of the human body into a mere parasitic appendage upon the machine—techno-reformists offer an analysis of technological autonomy as the threat of an impersonal will that needs to be reined in based on humanist values.

The logic of the reformist's ontological policing is securitization: doubling-down on the dividing lines of humanity and artificiality, the organic and the inorganic. Such humanism, which Simondon would call "facile humanism" for its failure to ontologically think human

culture technically,[11] aims to reassert technology in its proper place where it is to be contained and mastered by the human, that highest of values. Thus Jacques Ellul and Hans Jonas,[12] among others, appeal to the individual as a moral ground, while Heidegger theorizes the individual human, that being with privileged access to Dasein, as a "safe-keeper" in want of a renewed sense of "responsibility" in the face of enframing.[13]

From pro-privacy organizations to AI Ethics boards, this reformist humanism has helped reduce popular discourse on techno-politics to the terrain of fixing shortcomings and biases. We encounter it in all kinds of well-meaning efforts: attempts to rebuild AI models through less discriminatory data sets, calls for better regulatory frameworks ensuring citizen privacy, and the work of "oversight mechanisms" for digitally produced content; all humanist bulwarks against the invasive logics of an alien, digital Other. These efforts hold onto the comforting fantasy of a preconstituted self, while ignoring the violence of a humanism set on producing the human at the expense of an excluded Other that such a fantasy inevitably requires. As long as we continue this quest for a lost humanity, the regulatory labor of ontological policing will stay with us, pushing ahead at full throttle.

The Posthumanist

The posthumanist rejects the ontological terms through which the reformists organize their technological projects. If there is a driving logic that binds together the divergent strains of thought that make up posthumanist philosophies, it is, as outlined in chapter 4, the deep suspicion of any naturalized image of the human. They take the human—Man—as a violent fantasy. Why a fantasy? Because the humanist insistence on self-possession neglects the originary technicity of human life. Humanism forgets that technology is not what is added to the human as an external appendage but constitutes the very "interiority" of the human body, soul, and spirit. This fantasy is violent in its partiality, excluding nonhuman Others from the luxury of agency. Against any humanist conception of Man, the posthumanist theorizes the human subject as neither external to, nor *postea* to, but recursively co-constituted by its technological environs. In simple terms, as Haraway says in her *Cyborg Manifesto,* "the machine is us."[14]

One would be hard-pressed to find a posthumanist mourning the loss of the human in the face of planetary and cybernetic technicity,

even less Ellulian calls for a restoring of the "essential unity" of Man. A posthumanist techno-politics celebrates the very unsettling of any coherence and promotes the decentering of subjectivity. It tends to appeal to a particular politics of relationality: the proliferation, as per Haraway, of "an extraordinary array of post-cyborg symbioses" augmenting the collective capacity to affect.[15] If the machines are us, their possibilities for synergy need to be neither quelled nor dominated but welcomed with open arms.

At first glance, then, having severed the fallacy of human selfhood, a posthumanist politics of technology negates the ontological policing of humanism. But while it is true that the inclusive exclusion of the nonhuman appears to have been worked away, it in fact returns by way of a renewed dynamism. This takes on two forms. On a first scale, as Nicholas Gane has shown, at times the posthumanist has a tendency to recenter human embodiment as a superior, primary domain, as when N. Katherine Hayles argues against the disembodying tendencies of cybernetics forgetting the distinct materialities of human life.[16] On a second scale, and more generally prominent, the posthumanist fails to confront the way technological objects are only ever selectively co-constitutive of human subjectivity as they often end up radically undermining, by way of what I have called "technological onticide," access to "being."

Across these two scales, by holding onto a biological—that is, materially embodied—conception of a shared humanity, the posthumanist articulates their own universalist humanisms, forgetting that technology is only ever partially—rather than universally—coproductive of the human. A politics of machinic becoming, of symbiotic relationality, can only ever be a flourishing by way of discursively omitting or excluding the ontological violence of technology, the "inhumanity" that cuts across biological human lives. For all the emphasis on a co-constitutive conception of human-technology worlds, the posthumanist ignores the human's constitutive outsides. The subject-object pole of humanism has not, strictly speaking, been banished but simply shifted; the call of humanism is shown to persist even as it appears to be overcome.

The Techno-Rationalist

Like the posthumanist, the techno-rationalist denounces the reformist theorization of the human as a self-possessive figure whose unique

condition is to be kept intact. This figure has, according to the prominent rationalist Ray Brassier, for too long relied on a transcendental-theological argument for an equilibrium between "the given" (the cosmological, historical, or biological order of the world) and "the made" (the worlds humans produce through their own resources).[17] The techno-rationalists argue that such a desire tends to bleed, as we have seen in chapter 6, into a phobic tendency—the anxious desire for immunity from technoscientific artificialization, based on a denial of our indeterminate nature.[18] Death, finitude, suffering, and other "givens" are neither fundamental constants of human life, nor irreplaceable resources for meaning-making (sense, purpose, orientation). Against Arendt and others who, according to Brassier, start from "a ready-made world whose order is simply to be accepted as an ultimately unintelligible, brute given," techno-rationalism proposes "the project of re-engineering ourselves and our world on a more rational basis."[19] The human is to be denaturalized from any "given" coordinates and radically opened up to the possibilities of a technological manipulation—activity governed by digital reason—that supersedes the opposition between given and made, organic and inorganic, order and disorder, assembling them instead, like a Wienerian cybernetician, into collaborating flows of information to be experimented with through communicating networks. Dehumanization is no longer a threat to be cast off but a promise to be actively conjured.

The premise is convincing in its relentless rejection of any naturalized image of the human and its sociomaterial conditions. What the techno-rationalist forgets, however, is that technological invention does not always break-up the constraining limits of "the human." As we have noticed in this book, at times it helps underscore or redraw the securing lines between human and nonhuman worlds, as when the technologization of the European colonial era carved out renewed theorizations of a bio-centric, theo-centric, and ratio-centric human in the service of dominating the colonized. Not all technological experimentation "blurs" human-nonhuman worlds.

But even where one might convincingly conceptualize technology as the ontological hybridization of the human and the nonhuman at odds with liberal humanism, the technological orientation of the rationalist, unlike that of the posthumanist, does not dispel another defining feature of humanism: the drive to mastery. This is the tension—or more precisely, the paradoxical injunction—at

the heart of techno-rationalism: how to hold together the longing for dismantling the liberal human subject while reasserting its driving logic of human sovereignty? The response rests on a conceptual trick: shifting mastery from its grounding in "Man" to its flourishing in the cybernetic ensemble. Rather than a posthumanist opening-onto, or a reaching out toward, nonhuman agency, techno-rationalism pursues the distribution of human will across cybernetic networks of human bodies, cloud servers, undersea cables, data packets, microchips, internet protocols, rare lithium minerals, and other socio-technical components. This is both the deepening and the generalization beyond the individual, of the humanist urge for commandment, for reducing nonhuman beings and objects to the inclusive outside of humanity. So when the techno-rationalists pride themselves on having surpassed "the human," they can only do so while remaining determined to manage the general order of things.[20] Benjamin Noys is therefore correct when he characterizes left-wing accelerationism—one mode of techno-rationalism excited by the promise of banishing the limits of the human ego—as ironically nostalgic. For all its talk of bright futures, techno-rationalism remains firmly rooted, often self-consciously, in Enlightenment ideals of the human as a privileged locus of control, having merely updated these for the distributed architectures of cybernetic capitalism.[21]

Its ontological policing is distinct from the reformist's securitization and from the posthumanist's radically co-constitutive dynamic, and instead is focused on human-nonhuman relations in terms of an "extended will," whereby the human is disemboweled but its sovereignty recovered and enlarged. The techno-rationalist abolishes one core tenet of humanism (self-possessiveness) while extending another: the alter-possessiveness of human mastery of the more-than-human.[22] The logic of mastery has been applied to a widened circuit of agency, effectively creating a superior humanism unspoiled by the burden of the individual.

Abandoning the Human

In their own respective ways, posthumanism and techno-rationalism conduct a crucial assault on technological humanism. On one level, they share a poignant critique of humanism's ontological conception of technology as the self-extension of the autonomous subject. On

another level, they tend to merely shift the coordinates of humanism, rather than dispelling them altogether—a distinction the techno-rationalist and posthumanist appear to remain largely blind to.

Differences notwithstanding, across the spectrum of technological humanisms we encounter a surprisingly consistent ontological apparatus in which the human is cast, again and again, as a totality that gives safe access to the real. The lingering humanism is a search for ontological closure and security, whereby the drawing and redrawing of boundaries around the human is meant to foreclose the possibility of an outside. This outside, this nonbeing, presents the threat of the undoing of the human as a site of unity, comprehension, and identity, and as such, needs to be kept at bay as a constitutive outside.[23] And thus, the reformist rejects animate instruments, the posthumanist ignores the ontologically dead, and the techno-rationalist casts out nonhuman agency. What the posthumanist and techno-rationalist fail to take seriously is the insight that humanisms, time and again, delineate and define a "human" (a "subjective" internality) that can only realize itself at the expense of a constitutive Other, an "objective" outside that bears, as Edelman says, "the burden of figuring nothing."[24] If the human today remains the highest value, then finding oneself outside of its reach is to be ontologically denied access to an existence that is neither predetermined nor overdetermined. This is no neutral process—colonization, slavery, and speciesism are all vectors of ontological policing that bring humanity into being and allow the "human" to think technology in terms of supplementation, extension, or co-constitution.[25]

Techno-politics needs to start from, rather than omit, this ontological violence of contemporary orientations toward technology. In their contemporary omission, humanisms delimit and constrain in advance the very technological, cultural, and political possibilities they claim to open up. If a techno-politics is to become truthful to its emancipatory claims, it needs to more resolutely reject the humanism that has installed itself insidiously into techno-political discourse as its necessary foundation.

What might it mean to dismantle the humanism that propels reformism, techno-rationalism, and posthumanism toward their logical conclusion? We can either continue the investment in a humanist future for technology or seize the passionate spirit of the techno-negative protagonists—their relentless insistence on refusal—who populate

this book. But how might we begin to reject the humanist ontological separations through which we organize our technological existence? In closing this book, I offer a couplet of abolitionisms, presenting an initial conceptual vocabulary for *an abolitionist politics of technology* that will benefit from further elaboration in subsequent writing.

Techno-abolitionism dismantles any axiological commitments to the human as the constitutive ontological scheme of technological politics. The abolitionist does not take technology as a risk that ought to be managed by the human, but instead, in reverse, starts from the techniques that bring this "human" into being in the first place as a site of violence and domination. Any new conception of the human is, in the eye of the abolitionist, a dialectical violence that first establishes and then sustains a new law. To the abolitionist, it is the humanist, not the antihumanist despised by much modern thought, that is deeply invested in a politics of violence. The abolitionist agrees with Heidegger when, in a retortion to a critic, he wrote, sarcastically: "Because someone criticizes 'humanism', people suspect a defense of the inhumane and a glorification of barbaric brutality. For what could be more 'logical' than to suppose that, for one who has said no to humanism, only the affirmation of inhumanity remains?"[26] For the techno-abolitionist, the dismantling of humanism is the bulwark against the horror of brutal domination. Against humanism, the abolitionist asks, paraphrasing Claire Colebrook: What happens if we entertain forms of technology that radically withdraw from fetishizing one's humanity?[27] Likewise, taking seriously Sarah Sharma's proposal, they ask: What might it mean to embrace the status of "broken tool" commonly assigned to classed, sexed, and raced bodies in technological regimes?[28] And following Helen Hester, the abolitionist question is raised: What might become possible if we liberate technology from any naturalized "human" that can only ever think itself in terms of a possession of the self and the Other?[29] To articulate its responses, the abolitionist may find inspiration in a series of companion thinkers.

One collective—the very communities colonized by de Sepúlveda and his armies of soldier-missionaries, as described in chapter 4—provide the techno-abolitionist with grounds for an *in*humanist theory of subjectivity that does not start from the human, technological, and nonhuman as elements coproducing or extending subjectivity, but instead begins from an impersonal "soul" that brings

worlds into being.[30] Rather than correcting theories of "the human," certain Amerindian epistemologies take as their cosmological starting point a web of animate instruments, prosopomorphic prototypes, and natural phenomena with humanoid masters. An *in*humanist framework would foreground such "cosmotechnics," looking to overcome the humanist immunization of culture from technics[31] while refusing the posthumanist or techno-rationalist celebration of, respectively, human-nonhuman co-constitution or extension.

We encounter a second inspiration within the ontological pessimism of an *un*humanist orientation that suspends the perspective of the human altogether. Within such an unhuman conception of life, the human loses its salience as site of meaning in the face of the overwhelming indifference of the cosmos.[32] For Eugene Thacker, as long as we fail to grasp the unintelligibility at the heart of human and nonhuman life, any conception of the human is ultimately already compromised. The *un*humanist opens up the possibility of impossibility, of a "posthuman" that has neither ground nor destiny, and that is, ultimately, but a speck of agency in the *un*humanity of our (technologized) world. Rather than mourning the loss of the human, the *un*humanist would embrace "a general artificiality that does not extend life but continually undermines any possibility of 'a' life."[33]

*Non*humanism offers the techno-abolitionist a third resource. In François Laruelle's *non*human philosophy, the human is no longer restricted to its singular expression in the human being, and instead, with humans taken as "subjects-without-predicates,"[34] can be found throughout the whole of the real in all its (non)human expressions. *Non*humanism presents an extreme anthropomorphism that, by rejecting any definite features of the human and the nonhuman, undercuts its own conditions of possibility.[35] Technology becomes a marker of humility, rather than exceptionalism, that might serve the establishment of a "black world of radical equality":[36] the humanization of the nonhuman and the nonhumanization of the human.

A fourth group consists of those thinkers within the Black radical tradition who propose a *counter*humanist position.[37] Instead of reworking and stretching the humanist conception of Man and its subsequent reconfigurations by European thinkers by underscoring ontological interdependence or the possibility of extending "human" will, these writers draw from an alternative lineage of early twentieth-century Black critical theory and arts practices. At

least two divergent paths into *counter*humanism could be carved. On the one hand, against the universalist idea of a shared humanity—biological or ontological—the *counter*humanist proposes, with Sylvia Wynter, a conception or "genre" of the human that does not just include but actively starts from those negated from its scope, thus taking ontological negation as the ground from which to construct anew.[38] On the other hand, another *counter*humanist approach would suspend the urge of conducting conceptual labor, of initiating a new grounding for subjectivity, arguing that what is required is, first and foremost, the unspeakable destruction of the world that makes ontological exclusion a possibility in the first place.[39]

Each of these paths into techno-abolitionism can only ever add up to an impure politics, to a disposition rather than a program, because ontological policing, as this book shows, has a strange habit of resurfacing in new guises. For this disposition to be truly abolitionist (which I argue it must be) its techno-negativity must exceed the dismantling of the human as stable ground for emancipatory technopolitics. Beyond their conceptual labor of in/un/non/counterhumanisms, might the abolitionist need to deepen their nondialectical negation through a second set of undoings to develop an abolitionist relation to the very technological world humanism has given, and continues to give, rise to?

From *within* this technological world, whose conditions of humanism remain intact, we can perhaps only ever expect to extend the present. A techno-abolitionist politics is suspicious—in theory and in practice—of any conception of the present as boundlessly open to reappropriation toward ends that are noncapitalist, nonpatriarchal, nonracist, nonspeciesist, or nonableist. For it is only through a conception of technology as pure matter—thought and approached on the level of abstraction—that the reformist, posthumanist, and techno-rationalist can believe in the ideal of a boundless potentiality, an unlimit, of technology; a theorization of technology, in the words of Günther Anders, as "nothing but 'means' which can be judged *ad libitum* as 'noble goals.'"[40] To think of technology as neutral, as form without content, is to undertake the impossible task of severing it from the present. It is to make the mistake of thinking technology outside of its historical conjuncture.[41] Taking this as an impasse for technological politics, techno-abolitionism—like the powerful movements of police, family, and prison abolition it is indebted to[42]—

pursues not the refunctionalizing but the defunctionalizing of currently existing regimes—the dissolution of the technological given.[43]

To the abolitionist, then, there is insufficient hatred for this technological world. Instead, what we encounter again and again in techno-politics is a humanist optimism: that the world of artifice, treated correctly, will finally become ours—the completion of our all too human dreams. Dissatisfied, the abolitionist crafts a techno-negativity taken to its logical conclusion, letting it spread like fire across social, discursive, and material plains. The technological present and its conditional humanism in ashes, the space of technological imagination is, once again, pried open.

This page intentionally left blank

Acknowledgments

Any project—however negative in ethos, scope, or politics—is formed out of a collective. *Techno-Negative* is no different. The book has greatly benefited from support by a wide-ranging network of individuals, groups, and institutions.

The British Academy financially supported the first four years of this project with a Postdoctoral Fellowship hosted at Royal Holloway University and provided me with the time and freedom to pursue, at a healthy pace, the philosophical and archival tours and detours that later proved to be essential to weaving the book together. At Royal Holloway and the Centre for the GeoHumanities, I found an intellectual environment committed to experimentation and politics, made up of exquisite colleagues, including Oli Mould, Sasha Engelmann, Phil Crang, Veronica della Dora, and William Jamieson. I am especially grateful to Harriet Hawkins for being an exceptional mentor of early career scholars, for intellectual enthusiasm, and for incisive comments on the majority of the book's chapters. Aberystwyth University generously hosted me as an Anniversary Fellow and granted me the luxury of finishing the book while surrounded by smart colleagues. I particularly want to thank Mitch Rose for the mentorship, for companionship in pessimism, and for making this small town on the Welsh coast instantly feel like a home. I am indebted to a third mentor, Bradley Garrett, for initially opening my eyes to the world of academia, and for showing me (and so many others) that it can be a place of true exploration and excitement.

Along the way, geographers have proven to be extraordinary colleagues, and I thank the many whose insights, interests, and kindness nourished this book, including Vickie Zhang, Thomas Jellis, Paul Harrison, Anna Secor, Casey Lynch, David Bissell, Mikko Joronen, Nick Clarke, Emma Roe, Adam Badger, Thomas Keating, Pip Thornton, Peter Merriman, Jonathan Pugh, Carl Olsson, Katie Oliver, Ben Anderson, Adam Searle, Mark Whitehead, and Jonny Turnbull. At those moments when I needed to put my energies elsewhere, the

following dear friends were always there, keen to embark on adventures: Juan-Manuel Palomo, Kieran Toms, Theo Kindynis, Wayne Chambliss, James Gott, Brett Zehner, Morteza Samanpour, Barney Francis, and Craig Clark. I further thank Andrew Culp, accomplice in negativity. Our collaborations, including our techno-negative documentary *Machines in Flames,* offered much inspiration and courage at a time when chronic illness drew me to dark places.

Without the support of CRAS (Centre de Recherche pour l'Alternative Sociale) in Toulouse, I would have never been able to locate many of the crucial, historical traces of anti-computer sabotage (chapter 7). I appreciate the archivists for their invaluable work in preserving radical histories, and for their time and generosity in sharing with me their personal experiences of 1980s South of France.

At the University of Minnesota Press, I have had the pleasure of working with the excellent editor Leah Pennywark, whose expertise, encouragement, and patience were essential in bringing out the best in *Techno-Negative*. I am also excited to acknowledge the invaluable production team, marketing team, and copyeditor Natalie Jones, for shepherding this project from written words into its material, polished form.

Throughout, and for as long as I can remember, my family has provided me with indispensable infrastructures of love and trust. My parents Rik and Karline have managed to create environments that made the pursuit of my personal ideas and desires both thinkable and possible, unfailingly putting themselves behind me, even when they (like me) were not always sure where I was heading. Wouter and Charlotte, Sofie and Jago: thank you for being the caring and generous people you are, for helping me to keep going on through it all.

Finally, this book is dedicated to my *opa* Robert, who sadly passed away while I was writing this book, but whose insistence on collective flourishing lives on through it. And one more dedication: to Antje—for your contagious energy, curiosity, intellect, tireless encouragement, for living your politics (despite everything), and for your bravery, facing the waves, eyes wide open.

Notes

Introduction

1. Polizei Berlin, "Brandanschlag auf die Mörschbrücke." The arson was later claimed by a group calling itself "Vulkangruppe" (Volcano Group). In March 2024, they made international headlines after setting fire to the pylons electrifying Tesla's "gigafactory" in Berlin.

2. Zielinski, *Deep Time of the Media,* 3.

3. Heidegger, *The Question;* Ellul, *The Technological Society.*

4. Alvares, *Homo Faber.*

5. Plant, *Zeros + Ones.*

6. Heidegger, *The Question,* 25–26.

7. Mbembe, "The Power of the Archive and Its Limits."

8. Sharpe, *In the Wake.*

9. Neyrat quotes Von Neumann: "the prohibition of technology (invention and development, which are hardly separable from underlying scientific inquiry), is contrary to the whole ethos of the industrial age" (Neyrat, *The Unconstructable Earth,* 95).

10. Berlant, *Cruel Optimism.*

11. The distinction I draw between components, devices, and systems chimes with Simondon's helpful introduction of differences between three sets of technological objects: technological elements, technological individuals, and technological ensembles. These differences are marked not by scale or usage, but by the degree of interaction with a technological object's "umwelt" (Simondon, *On the Mode).*

12. In centering the constitutive dimension of artificiality, this book's definition of "technology" is broadly posthumanist in tenor and is most closely connected to the French philosopher Jacques Derrida and the philosopher of technology Bernard Stiegler for whom human life is always already artificial life (MacKenzie, *Transductions,* 9; Stiegler, *Technics and Time, 1*). Such posthumanist theories of technology counter liberal humanist figurations of the subject as a unified, sovereign, and exceptional entity uncontaminated by its extensive engagement with artificial matter (Hayles, *How We Became Posthuman).* Later in this book (chapter 4 and conclusion), I return to, and problematize, the lingering humanism in posthumanist theorizations of artifice.

13. Ferguson, *The Big No.*

14. For these scholars of the "negative," certain institutions and concepts are too broken—that is, too tied up with violence—to be fixed or

recuperated. For the afro-pessimist, it is "the world"—constituted as it is by Black objectification and negation—that is beyond saving (Wilderson, "We're Trying to Destroy the World"); for the crip-negativist, it is the category of "disability" and the discourse of "access" that are fatally counter-emancipatory (Smilges, *Crip Negativity)*; and for the queer-negativist, the contemporary social order and its investment in "reproductive futurity" cannot but reenact the social and material violence of heteronormative or homonormative regimes (Edelman, *No Future)*. Crucial differences across and internal critiques within notwithstanding, these figures share with the techno-negativist a deep skepticism in the face of inclusion and resolution as fruitful entry-points into alternative futures. Compared to its "crip," "queer," and "afro" companions, however, my theory of techno-negativity is not as easily mappable—in concept and practice—onto an emancipatory project dedicated to abolishing existing power formations. As we will see in the next three chapters, techno-negativity is not wedded to a specific political intention and has in fact often been wielded by the powerful in service of their own survival.

15. As Virilio notes, the accident does not unexpectedly befall a technology or product, but instead is immanent to it. In this logic, every invention is "the production of a specific failure, or even a partial or total destruction. Oceangoing vessels invented the shipwreck, trains the rail catastrophe, fire the forest fire" ("The Primal Accident," 212). But the accident must be understood not only as the inescapable entropy of what is invented, as per Virilio, but also as the inevitable pockets of refusal by human actors. The invention of the first machine was also the invention of the machine-breaker.

16. We find this most explicitly in Aristotle where, as Heidegger shows, *technē* is opposed to *physis,* and where the latter does, and the former does not, have an "efficient cause" in itself. Heidegger writes that *technē* "reveals whatever does not bring itself forth and does not yet lie here before us, whatever can look and turn out now one way and now another" (*The Question,* 13).

17. Gehlen, *Man in the Age of Technology.* Anders summarizes this thesis when he writes: "in order to be at home, man is forced to superimpose on the natural world an artificial world, arrested and constructed by him. . . . He shows undoubtedly that he is not cut out for the natural world" ("Pathology of Freedom," 303).

18. Kapp, *Elements of a Philosophy of Technology;* McLuhan, *Understanding Media*.

19. Lankester, *Degeneration;* Alsberg, *Das Menschheitsrätsel.*

20. Ellul, *The Technological Society;* Mumford, *Technics and Civilization;* Winner, *Autonomous Technology.*

21. Heidegger, *The Question,* 5; see also Agamben, *The Use of Bodies,* 66–79.

22. Arendt, *The Human Condition,* 264.

23. Simondon, *On the Mode;* Ihde, *Technology and the Lifeworld*.

24. Hayles, *How We Became Posthuman;* Stiegler, *Technics and Time, 1*.

25. Joronen and Häkli, "Politicizing Ontology."

26. Esposito, *Instituting Thought,* 2. Likewise, Giorgio Agamben writes: "Politics and ontology, ontological apparatuses and political apparatuses are in solidarity, because they have need of one another to actualize themselves" (*The Use of Bodies,* 132).

27. Heidegger, "Letter on Humanism," 225.

28. Agamben, *Homo Sacer;* Wilderson, *Red, White & Black;* Edelman, *Bad Education;* Irigaray, *This Sex Which Is Not One;* Mbembe, "Necropolitics"; Arendt, *The Origins of Totalitarianism*. These are by no means homogenously taken up by their respective fields of study; they remain a point of controversy. Judith Butler, for instance, questions Irigaray's "circumscription of the feminine as that which monopolizes the sphere of exclusions," while Lee Edelman argues, against Frank Wilderson III, that "Black persons, despite the history that places them inextricably in relation to slavery, are not, in any given world, the singular or exclusive embodiments of ontological exclusion" (Butler, *Bodies That Matter,* 42; Edelman, *Bad Education,* 19).

29. In Agamben, the "wolfman" is the Roman figure who, banned from their community on the basis of a certain crime, cannot be killed officially (state punishment), but can be murdered by any member of the community without impunity. In this state of "bare life," wolfman inhabits "a threshold of indistinction and of passage between animal and man, physis and nomos, exclusion and inclusion. . . . the werewolf, who is precisely neither man nor beast, and who dwells paradoxically within both while belonging to neither" (*Homo Sacer,* 105). See also Mbembe, "Necropolitics," 40.

30. Warren, *Ontological Terror.*

31. In his book *Manhunts,* Chamayou mentions the term briefly to describe the violence of cynegetic power as "a violence whose aim is to maintain the dominated in correspondence with their concept, that is, with the concept that the dominant have imposed on them" (10). While my use of the term is inspired by Chamayou's, I develop it to account for the wider ontological labor of drawing and maintaining boundaries between different orders of being, most notably the human and its nonhuman Others.

32. The term "ontological policing" is also a nod to the enduring connection between police forces and the material enactment of ontological exclusions, their deadly rejection of the claim that "Black lives matter."

33. Edelman, *Bad Education,* xix.

34. Judith Butler writes: "It is not enough to claim that human subjects are constructed, for the construction of the human is a differential operation that produces the more and the less 'human,' the inhuman, the humanly unthinkable. These excluded sites come to bound the 'human' as

its constitutive outside, and to haunt those boundaries as the persistent possibility of their disruption and rearticulation" (*Bodies That Matter,* 8).

35. Mbembe, "Necropolitics," 26.

36. Foucault, "The Dust and the Cloud."

37. Foucault, "Nietzsche, Genealogy, History." Similar arguments are found in Lorimer, "Caught in the Nick of Time"; and Ginzburg, "Microhistory."

1. Delay

1. Plutarch, *Plutarch's Lives V,* 479.
2. Plutarch, 479.
3. Ellul, *The Technological Society.*
4. Roochnik, *Of Art and Wisdom;* Angier, *Techne.*
5. Angier. The merging of "craft" and "craft-knowledge" is at its clearest in Aristotle's *Nicomachean Ethics* when he writes: "Since building is one of the skills (*technē*), and is essentially a productive state involving reason, and since there is neither any skill that is not a productive state involving reason, nor any such state that is not a skill, skill (*technē*) is the same as a productive state involving true reason" (106).
6. Angier. Aristotle asks whether the logic of instrumentality at the heart of dominant definitions of *technē* also posit it as antagonistic to human flourishing, because "to seek for utility everywhere is entirely unsuited to men that are great-souled and free" (*Politics,* 645).
7. Sachs, "The Delay of the Machine Age." See also Agamben, *The Use of Bodies;* and Schuhl, *Machinisme.*
8. Schuhl; Gies and Gies, *Cathedral, Forge, and Waterwheel.*
9. Seutonius, *The Twelve Caesars,* 259.
10. Plato, *Protagoras,* 18.
11. Plato, 19.
12. Plato, 20.
13. Plato, 21.
14. Aeschylus cited in Angier, *Techne,* 34.
15. Nussbaum, *The Fragility of Goodness.*
16. Roochnik, *Of Art and Wisdom.*
17. Tausk cited in Roazen, *Brother Animal,* 127.
18. Pfeiffer, *Sigmund Freud and Lou Andreas Salomé Letters,* 98.
19. Pfeiffer, 99.
20. Tausk, "On the Origins."
21. Tausk, 191.
22. Tausk, 191.
23. Sachs, "The Delay," 417.
24. Sachs, 420.
25. The classicist Werner Jaeger makes a similar argument when noting that the Hellenic age of the Greeks signaled a departure from the problem

of the gods (still apparent before Socrates) to the problem of "Man" (Plato, Aristotle). Jaeger, like Sachs, points to anthropomorphic gods and humanlike statues as crucial expressions of this transformation. But also like Sachs, Jaeger is prone to grand generalizations, stating, for instance, that "other nations made gods, kings, spirits: the Greeks alone made men" (Jaeger, *Paideia,* xxiii).

26. Sachs gives the example of the inventive delay of the mechanical loom, the steam hammer, and the locomotive. While he does not explicitly detail what separates these from the devices invented in ancient Greece that were also automated, including the water clock, it appears that, for Sachs, the difference lies in the degree of "humanity" ascribed—unconsciously—to an automated mechanical device. Arguably, the water clocks of Greece—advancing those of Babylon, Egypt, and Persia (some of which were in use sixteenth century BC) through a feedback control symptom—produced abstract cycles without enabling the "uncanniness" of human movement, discourse, or sound.

27. Tausk, "On the Origins," 206.

28. Sachs, "The Delay," 418.

29. The very limited references to Platonic or Aristotelian texts do not play in Sachs's favor here.

30. Stiegler, *Technics and Time, 1,* 1.

31. Aristotle cited in Stiegler, 1.

32. Heidegger, *The Question,* 13.

33. Agamben, *The Use of Bodies,* 7.

34. Freud, *The Uncanny,* 135.

35. Jentsch cited in Freud, 135. In the cited text, Jentsch offers a psychological reading of the horror tale "The Sandman" written in 1817 by E. T. A. Hoffmann. The short story has as its protagonist a human being who has fallen in love with a mechanical doll. According to Jentsch, the terrifying uncanniness of the tale is located in the transgressions across the commonly distinct categories of the animate and the inanimate.

36. Inanimate humans are a recurring theme in Greek mythology, indicating a complex mix of fascination and suspicion. For instance, the craftsman Daedalus installed voices in his statues, Prometheus created Pandora out of clay, Pygmalion fell in love with a statue he carved, and Hephaestus shaped the giant humanoid Tales from bronze as protection for the gods.

37. Heidegger, "Letter on Humanism," 200–201.

38. The metaphor for education as physically molding the human into an ideal like a craft is Plato's, as Jaeger has shown. See Jaeger, *Paideia*.

39. Aristotle, *De Anima*.

40. Agamben, *The Use of Bodies*.

41. Aristotle cited in Agamben, 202.

42. Arendt adds that, until at least Socrates, this separation maps onto a

distinction between the "human" and "animal" within the human species itself, whereby those desiring bodily sensation are deemed animalistic in nature: "only the best (aristof), who constantly prove themselves to be the best . . . and who 'prefer immortal fame to mortal things,' are really human; the others, content with whatever pleasures nature will yield them, live and die like animals" (*The Human Condition,* 19).

43. The Stoics and Roman traditions in ancient Greece, in particular, held a more nuanced (and positive) view of manual labor. See Passmore, *Man's Responsibility for Nature.*

44. Aristotle, *Politics,* 639. These short passages have given rise to extensive interpretations. For Arendt, calling technical arts "banausic" implies a vulgarity of thinking and an acting in terms of practicality—the reduction of all things into mere means, and with it, the removal of intrinsic value independent of humanity. *Technē* is the corruption of thinking.

45. Aristotle, *Politics,* 639.

46. Ihde, *Technics and Praxis.*

47. Chamayou, *Manhunts.*

48. Aristotle, *Politics,* 37.

49. Aristotle, 5, 21.

50. Aristotle writes that "the usefulness of slaves diverges little from that of animals for the necessities of life is forthcoming from both, from slaves and from domestic animals alike." *Politics,* 22.

51. Angier, *Techne,* 52.

52. Angier.

53. Agamben, *The Use of Bodies,* 78.

54. As we will see in chapter 4, and in a strange reversal, during European colonialism and the transatlantic slave trade an even more severe form of "technological onticide" will animate the legitimization and maintenance of master-slave dialectics.

2. Prohibition

1. William of Malmesbury, *The History,* 151.

2. William of Malmesbury, 157.

3. Gerbert's image was attacked most vehemently during the Investiture Controversy, a struggle between advocates and opponents of the church's political independence from secular authorities which would eventually lead to a fifty-year civil war in Germany (see Truitt, "Celestial Divination and Arabic Science in Twelfth-Century England"). A supporter of Henry IV's political control over the church aimed to discredit the current and past popes by portraying them as sorcerers in the hands of the Devil.

4. We find early iterations of theological concerns in the tale of Prometheus narrated in the previous chapter, wherein, specifically in Plato's telling of the story, the protagonist's fate is cast as a punishment for his rupturing of the line separating the human from the divine.

5. Le Goff, *Time, Work and Culture;* White, *Medieval Religion and Technology*.

6. Le Goff, *Time, Work and Culture*.

7. Arendt, *The Human Condition;* White, "Cultural Climates."

8. Arendt, *The Human Condition,* 316.

9. White, "Cultural Climates," 190. However, while Arendt acknowledges the significant reconsiderations of labor and the natural world that animate medieval Christianity, she argues that the Greek prioritization of contemplation over activity remains. See Arendt, *The Human Condition*.

10. Whitney, *Medieval Science and Technology*.

11. White, "Cultural Climates," 187.

12. Ovitt, *The Restoration of Perfection*. For Ovitt, and against both Le Goff and White, the twelfth and thirteenth centuries do not signal a positive reappraisal of technological life as part of a theology of labor that thinks it as conducive to spiritual practice. Instead, he maintains, that same period marks a "secularization of labor" that incrementally separates it from any divine call. For an insightful overview of these debates, see Whitney, "Paradise Restored."

13. At the same time, I remain wary of any straightforward reversal of the arguments made by White, Le Goff, and Arendt that would present the medieval Western Church as strictly, and in its entirety, adverse to technological advancement, as proposed by Jacques Ellul (see Ellul, *The Technological Society)*. Instead, as a conceptual tool, demonology allows us to trace a narrow but influential thread of opposition to technology of significance to the extensive history of technological refusal.

14. Hesiod, *Theogony and Works and Days*.

15. Plato, *The Symposium,* 39.

16. For an in-depth account of Christian demonology, its scriptural origins, and its shifting spheres of influence, see Almond, *The Devil*. A closer reading of the Devil in the Middle Ages can be found in Russell, *Lucifer*.

17. This is a debate that continues today among philosophers of theology but has its clearest roots in the conflicting arguments by Saint Augustine and Thomas Aquinas. Writing in the fifth century, Saint Augustine argued that demons are quasi-material "aerial bodies" inhabiting the "misty air near earth," where they are vulnerable to the suffering that fire inflicts (*The Literal Meaning of Genesis,* 84). Thomas Aquinas, by contrast, argues in *Summa Theologica* that demons, like angels, have no matter or form and do not depend on it either. Instead, they can imitate, artificially, certain vital operations, *opera vitae,* such as sounds or movements, without the interference of the material world. In other words, they can animate but are not, themselves, animated. See Aquinas, *Summa Theologica*.

18. Aquinas, Part I Q109 A2.

19. Aquinas, Part I Q64 A2.

20. Saint Augustine cited in Aquinas, Part 2 Q71 A6.

21. We therefore need to understand the "diabolical" in its original Latin sense as *Diaballein:* "throw[ing] across into disarray" (Flusser, *Vampyroteuthis Infernalis,* 26). Deleuze's writing helps us understand this: "Demons are different from gods, because gods have fixed attributes, properties and functions, territories and codes: they have to do with rails, boundaries and surveys. What demons do is jump across intervals, and from one interval to another" (Deleuze and Parnet, *Dialogues II,* 40).

22. Saint Augustine, *City of God,* 154.

23. Flusser, *The History of the Devil.*

24. Hiberniensis cited in Hugh of Saint Victor, *The Didascalicon,* 191.

25. Saint Augustine, *City of God.*

26. Hiberniensis cited in Hugh of Saint Victor, *The Didascalicon,* 191.

27. Chenu, "Arts 'mécaniques' et oeuvres serviles."

28. Evans, "Monastic Multinationals."

29. Evans; Lekai, *The Cistercians;* Burton and Kerr, *The Cistercians in the Middle Ages.*

30. Bernard de Clairvaux, "Apology."

31. Burton and Kerr, *The Cistercians.*

32. Bernard de Clairvaux, "Apology."

33. Burton and Kerr, *The Cistercians,* 76.

34. Lekai, *The Cistercians.*

35. Burton and Kerr, *The Cistercians.*

36. Saint Benedict, *Benedict's Rule,* 457. That the worship of crafts is bound to lead monks astray was also suggested by Saint Augustine (not a Cistercian) when he notes, in his treatise on demons, that nothing was more wicked than "a man controlled by his own creations" (*City of God,* 63).

37. Whitney, "Paradise Restored"; Baldwin, *Masters.*

38. Sanford, "The Verbum Abbreviatum of Petrus Cantor."

39. Baldwin, *Masters,* 68.

40. Peter the Chanter cited in Baldwin, *Masters,* 68.

41. Sachs, "The Delay of the Machine Age."

42. The phrase *de contemptu mundi* refers to the homonymous poem by Bernard de Cluny. In this poem, the latter, a twelfth-century Benedictine monk, contradicts the impermanence of material desires and pursuits to the permanence of spiritual accomplishments. The sentiment of this and similar works would gain significant traction between the twelfth and seventeenth centuries, leading to a number of publications held together by a shared emphasis on the vanity of earthly pursuits, the corruption of the human body, and the vices of the social order (Howard, "Introduction"). The prominent historian writing on Lothario dei Segni—John Moore—places (among others) all three of the medieval Catholic figures so far discussed in this chapter—Lothario dei Segni, Peter the Chanter, Bernard de Clairvaux—within this tradition given their shared "contempt of the world" (Moore, "Innocent III's De Miseria Humanae Conditionis," 554).

It has been noted that Peter the Chanter was one of Lothario dei Segni's teachers in Paris who heavily influenced his outlook on the human condition vis-à-vis the divine world (Sayers, *Innocent III*).

43. dei Segni, *On the Misery,* 3.

44. dei Segni, 15–16.

45. dei Segni, 16.

46. Heidegger, "Letter on Humanism," 252. Aquinas's argument for God as "first mover" is one of his five ways of proving the existence of God. He maintains that without a first cause, put into motion by no other motion, there could be no motion, and given that there is motion, there must be a first mover, one that is eternal (God). See *Summa Theologica*. According to this Aquinian principle, "everything that exists or occurs in the cosmos is the direct result of God's will, except only the moral acts of free-will creatures" (Russell, *Lucifer,* 196). Evil can only emerge, as a result, as the effect of a human will voluntarily or involuntarily causing sinful acts. Creatures with no free will, Aquinas argues, can therefore never sin and embrace evil.

47. Heidegger, "Letter on Humanism," 224.

48. That Pride is the Devil's key sin is an argument made by Aquinas, but countered by Duns Scotus who maintained that Lust, among other sins, drives the Devil to evil. See Russell, *Lucifer,* 201–2.

49. Besides echoing the Cistercians, Bernard de Clairvaux, and Peter the Chanter, Pope Innocent III is also in alignment with a range of theologians who sought to defend God (Muslim or Christian) against the practices and practitioners of alchemy. The physician and theologian Avicenna, for instance, wrote that "art is weaker than nature and does not overtake it, however much it labors" (cited in Newman, *Promethean Ambitions,* 37). Likewise, in his *Contra Alchimistas,* the Catholic theologian Nicholas Eymerich suggested that "art imitates nature insofar as it can" (cited in *Promethean Ambitions,* 91). However, even if we may consider alchemy to present a philosophy of technology, as argued by Newman, I do not expand on it in this chapter because most critics of alchemy most commonly embraced the promise of technology, simply not its alchemist variant. See Newman, "Technology and Alchemical Debate," 423–24.

50. dei Segni, *On the Misery,* 64.

51. dei Segni, 64.

52. Flusser, *The History of the Devil,* 128.

53. Saint Augustine, *City of God,* 62, 64.

54. Saint Augustine.

55. de Bar-sur-Aube cited in Truitt, *Medieval Robert,* 31.

56. These stories demonizing technology, including Gerbert of Aurillac's assumed learning of diabolical arts in Muslim Spain, are inseparable from the blend of exoticization and racism that marked Western Christian views of other religions and societies.

57. Truitt, *Medieval Robert*.
58. de Varagine cited in Dickson, *Valentine and Orson,* 193.
59. de Varagine cited in Dickson, 193.
60. Foucault, *Security, Territory, Population*.
61. Foucault, 126.
62. Foucault, 167.
63. Saint Benedict, *Benedict's Rule,* 133.
64. Foucault, *Security, Territory, Population,* 177.
65. Saint Benedict, *Benedict's Rule,* 133.
66. Saint Benedict cited in Foucault, *Security, Territory, Population,* 187.
67. Flusser, *The History of the Devil,* 6.
68. Thacker, "The Shadows of Atheology," 148.
69. Saint Augustine, *City of God*.
70. Hugh of Saint Victor, *The Didascalicon*.
71. Turcuş and Turcuş, *At the Edges of Christendom,* 23, 35.
72. Walter Benjamin reported that on the first day of the Paris Commune, people gathered with guns, to fire bullets not at the representatives of state power but at public clocks on churches, palaces, and wherever else they could be found. According to Benjamin, the assault on mechanical clocks was, at once, a symbolic assault on the time-continuum represented by the regulation of labor and a spectacular announcement that a new—revolutionary—time is coming. See Benjamin, *Selected Writings*.
73. We still encounter legal regulations in Christian communities today, most notably in Amish populations who carefully regulate (rather than straightforwardly ban) twenty-first-century technologies including mobile phones and internet infrastructures. In chapter 6, we will turn to techno-negative intentional communities in the late twentieth century, some of which are explicitly guided by Christian belief-systems.
74. Gille, *Engineers of the Renaissance*.
75. Eamon, "Technology as Magic," 190.

3. Breaking

1. Foucault, *Discipline and Punish,* 46.
2. Marx, *Capital,* 455.
3. Marx, 455.
4. Lancelloti cited in Beckmann, *History of Inventions,* 529.
5. Pickering, *The Statutes at Large,* 388.
6. Beckmann, *Beiträge,* 529–30.
7. Thornis, *The Luddites,* 14–15.
8. Cornelis, *Groot Placaet-boeck;* Beckmann, *Beiträge,* 527–31.
9. Thompson, *The Making of the English Working Class;* Beckmann, *Beiträge,* 531.
10. Jászi, *The Dissolution of the Habsburg Monarchy,* 80.
11. The precise defining principles of mercantilism remain a topic of

ongoing debate, with economic historians identifying at least three sets of heterogeneous models of mercantilist thought and their representative theorists (see, for instance, Ehrlich, "British Mercantilist Theories of Profit"). For the purposes of this chapter, I follow the historian Eli Heckscher who takes mercantilism as, at its basis, a set of economic policies (centered around protectionism), rather than as a specific coherent economic model with a strictly defined series of principles and ideologies. See Heckscher, *Mercantilism,* 19.

12. For an extensive history of the connections between merchant capitalism and guilds, see Ogilvie, *Institutions and European Trade;* and Ogilvie, *The European Guilds*.

13. Davenant, *An Essay,* 69.

14. For a similar argument, see Magnusson, *The Political Economy of Mercantilism,* 38.

15. "Capital" is surrounded by quotation marks here because, with mercantilism, we have not yet arrived at the propertied notion of labor and production that will only, strictly speaking, come to life with a capitalist mode of production. I return to this in the next section.

16. Heckscher, *Mercantilism,* 171.

17. This may have caused tensions within the guilds themselves given the internal hierarchies of labor. "Guild masters" directly benefited from an increase in productivity and profits, while "journeymen" (day laborers) and apprentices were reliant on staying in work.

18. Cited in Ogilvie, *Institutions and European Trade,* 38.

19. The Crown cited in Thornis, *The Luddites,* 14–15. In 1621, the same machine was banned in Leyden, Holland, in response to the revolts of workers. See Beckmann, *Beiträge,* 528–29.

20. Seutonius, *The Twelve Caesars,* 259; see also chapter 1.

21. Davenant, *An Essay,* 260.

22. Marx, *Capital,* 554. Similarly, in 1675 a large group of weaving workers destroyed machines in Spitalfields (see Binfield, *Writings,* 14). When over a century later, in 1790, Robert Grimshaw built a steam-weaving factory in Manchester and filled it with twenty-four of Cartwright's patented power looms, it was met with severe resistance. Two years later, a mob of handloom weavers set the factory on fire. See Thornis, *The Luddites*.

23. Cited in Jászi, *The Dissolution of the Habsburg Monarchy,* 80.

24. We need to be careful, however, to avoid fully conflating "pastoral power," in Foucault's vocabulary, with a more general pastoral logic centered around population well-being, health, and wealth. Not least, pastoral power requires the promise of posthumous salvation and is centered around the principle of humility (Foucault, *Security, Territory, Population*), both of which are lost when transposing the pastoral away from the religious and into the terrain of state authority.

25. Anonymous, "Riots of Nottingham," 947.

26. The histories, practices, and motivations of the Luddites themselves have been extensively documented. Much of this documentation has, most recently, been undertaken with an eye not only on countering popular accounts of the "Luddite" as an antimodernist romantic but also on recovering their potency as a figure to be reclaimed by contemporary technological politics. See Mueller, *Breaking Things at Work;* Merchant, *Blood in the Machine*.

27. Nottingham Corporation Committee cited in Binfield, *Writings,* 85.

28. Infiltration was, as Foucault tells us, a tactic rarely employed by the state before the nineteenth century. When it did occur, infiltration had largely involved "keeping watch," rather than actively obtaining information about and steering illicit activities. See Foucault, *Discipline and Punish*.

29. For an overview of these new measures, see Poitras, "The Luddite Trials."

30. Interestingly, no Luddite was ever hung on the basis of this act, but only on the grounds of laws that were already well established. See Walters, "Law, 'Terror' and the Frame-Breaking Act."

31. For instance, on January 12, 1813, fourteen Luddites were hung in York for the crime of robbery and machine-breaking. While steadfast in their prosecution, the official court documents acknowledged the unique violence of the scene: "The criminal records of Yorkshire do not, perhaps, afford an instance of so many victims having been offered, in one day, to the injured laws of the country. The scene was expressibly awful, and the large body of soldiers, both horse and foot, who guarded the approach to the castle, and were planted in front of the fatal tree, gave to the scene a peculiar degree of terror, and exhibited the appearance of a military execution" (Cowgill, *An Historical Account,* 129).

32. Thompson, *The Making of the English Working Class,* 495.

33. Deleuze and Guattari write: "From the viewpoint of micro politics, a society is defined by its lines of flight, which are molecular. There is always something that flows or flees, that escapes the binary organizations, the resonance apparatus, and the overcoding machine" (*A Thousand Plateaus,* 216).

34. As Andrew Culp notes, "societies should not be defined according to their mode of production but their mode of anti-production, which is to say, how they manage lines of escape. . . . the state's primary function is one of the katechon as restrainer of chaos and general prevention" (Culp and Dekeyser, "On Giving Up on This World").

35. Hammond and Hammond, *The Rise of Modern Industry.*

36. As Lord Byron wrote in his 1812 pro-Luddite poem: "breaking of frames, lead to breaking of bones" (cited in Binfield, *Writings,* 116).

37. Cited in Thompson, *The Making of the English Working Class,* 530. For the croppers, Edward VI's 1552 "Act for the Putting Down of Gig Mills"

meant that they were still, constitutionally, ought to be protected from machinic replacement. Others, as Thompson has shown, were aware of another Statute of Philip and Mary limiting the amount of looms that could be owned and used by an individual. In an attempt to revalidate these and similar legal measures, the Luddites pursued a number of strategies, including petitioning, writing opinion pieces in local newspapers, directly lobbying parliaments, and, of course, threatening with violence to property and people.

38. Foucault, *The Punitive Society.*

39. Foucault, 142.

40. Foucault, 82–83, 142–43.

41. Foucault, 148.

42. In following Foucault's history of capitalist law, I depart from Eric Lipson's influential economic history of England which takes the seventeenth century as the historical-political moment when the state begins to fall in line with the capitalist entrepreneur (*Economic History of England*). This is, then, for Lipson, the political birth of British capitalism. Instead, I align my argument with that of Foucault in *The Punitive Society* for whom we cannot speak of fully fledged capitalism until the described bourgeois takeover of the penal system in the early nineteenth century had provided proletarianization with a strong legal footing.

43. Foucault, *The Punitive Society,* 148. In *Discipline and Punish,* Foucault shows that this included not just the fear of systematic or large-scale smuggling, sabotage, or theft, but also all manners of long-standing "tolerated 'rights,'" including wood-collecting and the right of free pasture—all of which were now illegalized by the owners of capital who understood these activities as instances of theft. See Foucault, *Discipline and Punish,* 85.

44. Foucault, *The Punitive Society,* 152.

45. Comte, *Traité de Législation,* 49. Translation is mine.

46. Foucault, *Discipline and Punish,* 276.

47. New laws were written into existence; older ones were disbanded or redrafted. Most famously, in France and England the Chapelier Law (1791) and the Combination Act (1799) were formally introduced, officially banning worker collectives such as guilds and unions, and with it, prohibiting the right to strike. The result was a push against mercantilist policies and, slowly, an uptake of Adam Smith's original ideal of laissez-faire economics in which the state is not disbanded as such from the terrain of economic activity, but serves to enable, facilitate, and guard the capitalist relations of labor, value, and profit.

48. Cited in Cowgill, *An Historical Account,* 134.

49. Cited in Cowgill, 135.

50. Baron Thompson cited in Cowgill, 19–20.

51. Cited in Foucault, *The Punitive Society,* 163–64.

52. Smith, *The Theory of Moral Sentiments,* 139.

53. Foucault describes the genealogy of *homo economicus* with great detail; see Foucault, *The Birth of Biopolitics,* 225–72.

54. Mill, *Essays,* 312–13.

55. Smith, *Selected Philosophical Writings,* 170.

56. Target cited in Foucault, *The Punitive Society,* 168.

57. Binfield, *Writings,* 89.

58. Simondon, *On the Mode,* 130, 131.

59. Simondon, 132. For Lyotard, by contrast, it is exactly this violent displacement of the worker that brings us into the most intense scenes of jouissance. The experiential disappearance into the machine, alongside the wider ruptures brought along by the industrialization of labor, equals the release of libidinal energy, causing death to intertwine with joy: "[They] enjoyed the hysterical, masochistic, whatever exhaustion it was of hanging on in the mines, in the foundries, in the factories, in hell, they enjoyed it, enjoyed the mad destruction of their organic body which was indeed imposed upon them, they enjoyed the decomposition of their personal identity, the identity that the peasant tradition had constructed for them, enjoyed the dissolution of their families and villages, and enjoyed the monstrous anonymity of the suburbs and the pubs in the morning and the evening" (*Libidinal Economy,* 111).

60. Ellul, *The Technological Society,* 82, 93; Gehlen, *Man in the Age of Technology,* 147–53.

61. Arendt, *The Human Condition,* 147.

62. Marx, *Capital,* 568.

63. Marx, 503. In *The Out-Datedness of Mankind,* Günther Anders would similarly situate, without reference to Marx, the worker in the secondary position of the "appendix" (see Anders, *Die Antiquiertheit des Menschen*). Müller offers a useful summary of this position: "No matter how 'superhuman' such ability may be in comparison with what the body is actually capable of, the desired outcome is something *subhuman*. The 'actual human being' (if it cannot be eliminated completely) here merely becomes an unavoidable appendix to the machine, for the desired outcome of human engineering is a machine-function, a proficiency in an isolated 'skill'" (*Prometheanism,* 45).

64. This is a nod to the "constitutive correlation thesis" that I critically unpack in the next chapter as underpinning much posthumanist scholarship on technological subjectivity.

65. Lankester, *Degeneration,* 32.

66. Lankester, 32.

67. Lankester, 33.

68. Lankester, 60.

4. Indifference

1. Dupuis, *Journal,* 101.

2. Dupuis, 101.

3. Adas, *Machines.*

4. Arnold, "Europe, Technology, and Colonialism."

5. Adas, *Machines.*

6. Ehrhardt, *European Metals in Native Hands.*

7. Rodríguez-Alegría, "Narratives of Conquest."

8. Arnold, "Europe, Technology, and Colonialism."

9. Rubertone, "Archaeology, Colonialism, and 17th Century Native America."

10. Schaniel, "New Technology and Culture Change."

11. Wynter, "Unsettling."

12. I take the term "onticide" from Calvin Warren. See Warren, *Ontological Terror;* and Warren, "Onticide."

13. In employing the term "savage," I aim to convey both its original pejorative use within procolonial writing, and the possibility of the term's recuperation for emancipatory ends. Throughout, I play with the juxtaposition of these two potential meanings.

14. In outlining the limits of posthumanist ontologies, this chapter is inspired by Yuk Hui's critique of the ontological turn apparent in the work of Haraway, Descola, and others (see Hui, "Cosmotechnics as Cosmopolitics"; and Hui, "On Cosmotechnics"). For Hui, this work rightfully celebrates the ontological pluralism that has been endangered by Western technology's spread throughout the globe by colonization, but fails to address the question of technology. My own argument offers a divergence from Hui's claims, arguing that posthumanist scholarship does work through the question of technology—by way of a renewed emphasis on the ontological interdependence of humans, technology, and nonhumans—but neglects the ontological murder at the heart of techno-colonialism.

15. Wynter, "Unsettling," 265, 293.

16. Arnold shows that indigenous technologies (such as medicinal plants and well-sinking techniques) were not only abundant; they were widely taken up and implemented by colonial powers. See Arnold, "Europe, Technology, and Colonialism."

17. Adas, *Dominance,* 45. The terrain of sin thus tilted, between the twelfth and seventeenth centuries, from technological Pride—as we saw in chapter 3—to techno-negative Sloth. In turn, with the Christian embrace of techno-colonialism, then, pastoral power transformed from being a struggle against technological life to one for it, one that would awaken the non-Christian from their techno-negative stupor.

18. Adas, 45.

19. This is the method employed by Christian humanists to reconcile the ontological war on the savage with the Christian dogma of universal equality among races. In his *Democrates Alter,* de Sepúlveda goes to great lengths to base the subjection of the savage to European powers not just on the former's imperfect nature but as a means of humanizing them (see Chamayou, *Manhunts*). Aristotle's "slave by nature" is reworked by

de Sepúlveda to become a divergence from God's image of human nature; natural law becomes divine law. That the savage, through their subhuman habits and sinful connection to nature, departs from a divine image of humanity, rather than a strictly biological one, is sufficient for them to lose all sovereignty.

20. Wynter, "Unsettling," 291.

21. Cited in Chamayou, *Manhunts,* 32.

22. Aristotle, *Politics,* 203.

23. De Sepúlveda cited in Fernández-Santamaria, "Juan Ginés de Sepúlveda," 442.

24. De Sepúlveda cited in Chamayou, *Manhunts,* 32.

25. De Sepúlveda cited in Wynter, "Unsettling," 283.

26. Césaire, *Discourse on Colonialism*.

27. Most famously, and against his sixteenth-century contemporaries, Montaigne wrote in *Of Cannibals* of American Indigenous peoples as neither savage nor barbarous, showing instead how they had become a convenient deflection by which Western nations covered over their own cruel incivilities. See Montaigne, *The Complete Essays of Montaigne.*

28. Hobbes, *Leviathan,* 84, 86.

29. Hobbes, 84.

30. Hobbes, 85.

31. Harriot, *Briefe and True Report,* 27.

32. Darwin, *Journal of Researches,* 236.

33. Darwin, 235.

34. Wynter, "Unsettling," 301.

35. Towns, *On Black Media Philosophy.*

36. Towns, 7.

37. Reade cited in Adas, *Machines,* 145.

38. The Phrenological Journal, "Thompson Versus Montgomery on the Negroes," 401.

39. Virey, *Natural History of the Negro Race,* 3.

40. Jackson, *Becoming Human,* 10.

41. Hunt, *The Negro's Place in Nature,* 8.

42. Hunt, 8.

43. Hunt, 16.

44. Virey, *Natural History,* 100, 101.

45. Warren, *Ontological Terror.*

46. Warren, 130; Jackson, *Being Human*.

47. Jackson.

48. Bledsoe, "Neither Ground on Which to Stand, nor Self to Defend," 1299.

49. To Armond R. Towns, this effectively turns the Other, taken as a being lacking media technology, into itself a medium, a middle point between the human and nonhuman acting in service of Man's self-measure

of Western humanness. Through a specific focus on Black being, Towns shows that taking the Black-as-medium seriously means complicating the McLuhanite idea of media as "the extension of the human." What McLuhan's writings forget, Towns convincingly argues, is that the (Black) human itself can turn into a medium shaping what it means to be human: "There may be few media that have had such a drastic transformation on Western humanness than the Negro—that unnamed, ungendered medium, that normalized whiteness as an epistemological racialized relation, overrepresented as the human in Western scientific and philosophical grammars" (Towns, *On Black Media Philosophy,* 42).

50. Erasmus, "Sylvia Wynter's Theory," 59.

51. Hayles, "Refiguring the Posthuman."

52. Hui, "Cosmotechnics as Cosmopolitics."

53. Amoore, "Thinking with Algorithms."

54. Plant, *Zeros + Ones,* 177.

55. For instance, in his phenomenology-inspired strain of posthumanism, Peter-Paul Verbeek argues that "subject and object are not merely intertwined with each other but constitute each other" (*What Things Do,* 112). To Verbeek, a consideration of human-technology relationality in terms of a relation of mediation offers a counterpoint to Heidegger's insistence on technology as a force distinct from yet determining human access to the world, and to conceptions of technology in terms of value neutrality.

56. Derrida cited in MacKenzie, *Transductions,* 6; cf. Stiegler, *Technics and Time, 1.*

57. Hayles, "Refiguring the Posthuman," 311.

58. Hayles, *How We Think.*

59. Plant, *Zeros + Ones,* 177; Haraway, *The Companion Species Manifesto.*

60. Braidotti, "A Theoretical Framework," 43.

61. Hayles, "Refiguring the Posthuman."

62. Amoore, "Doubt and the Algorithm."

63. Hansen, *New Philosophy for New Media.*

64. Verbeek, *What Things Do.*

65. Braidotti, "A Theoretical Framework."

66. Rose, "Posthuman Agency," 782.

67. Wolfe, *What Is Posthumanism?;* Amoore, "Doubt and the Algorithm"; Braidotti, *The Posthuman.*

68. Mackenzie, *Transductions;* Stiegler, *Technics and Time, 1.*

69. Haraway, *The Companion Species Manifesto;* Hayles, "Refiguring the Posthuman."

70. Warren, *Ontological Terror.*

71. Palmer, "Otherwise than Blackness," 254.

72. Warren, *Ontological Terror,* 118.

73. Stiegler cited in Rose, "Posthuman Agency," 785, 784.

74. Braun, "Querying Posthumanisms."

75. Mumford argued in 1966 that technicity is by no means unique to *homo sapiens*. He writes: "If technical proficiency were alone sufficient to identify potential intelligence, man would for long have rated as a hopeless duffer alongside many other species" (*Technics and Civilization,* 306). However, in a move that posthumanists would be critical of, Mumford continues his argument by suggesting that when technology became a more thoroughly linguistic and aesthetic endeavor the human became, rightfully, capable of ontologically separating itself from other animals.

76. Haraway, *The Companion Species Manifesto;* Wolfe, *What Is Posthumanism?*.

77. Jackson, *Becoming Human,* 16–17.

78. Darwin, *Journal of Researches*.

79. Erasmus, "Sylvia Wynter's Theory"; McKittrick, "Mathematics Black Life," 17.

80. Braidotti, *The Posthuman*. See also Wolfe, *What Is Posthumanism?;* Haraway, *The Companion Species Manifesto*.

81. Braidotti, "Animals, Anomalies, and Inorganic Others," 530, 531; Braidotti, *Metamorphoses*.

82. Towns, *On Black Media Philosophy,* 49.

83. Yusoff, "The Inhumanities."

84. Bui, *Model Machines,* 3. At other times, the mere proximity to technological objects serves a similar function. For instance, racialized labor populations are disproportionally tasked with treating toxic e-waste only to find their own bodies treated as waste and dirt, that is, as inherently violable, expendable, and disposable. See Fevrier, "Informal Waste Recycling Economies"; Vasudevan, "An Intimate Inventory."

85. Vergès, "Capitalocene, Waste, Race, and Gender."

86. Warren, *Ontological Terror,* 6.

87. Sayce, *Primitive Arts and Crafts,* 185.

88. Sayce.

89. Viveiros de Castro, "On Models and Examples."

90. Viveiros de Castro, 299.

91. Viveiros de Castro and Hui, "For a Strategic Primitivism."

92. As in Jane Bennett's vitalism, in the Amerindian and Bantu worldviews nonhuman objects and bodies are "stuff that command[s] attention in its own right, as existents in excess of their association with human meanings, habits, or projects" (*Vibrant Matter,* 4). But because savage ontologies take as their starting point the possible inhospitability of the earth, it is perhaps most akin to what Ben Woodard terms a "dark vitalism." See Woodard, *Slime Dynamics*.

93. I take these terms from Neyrat, *The Unconstructable Earth,* 134.

94. Arendt, *The Human Condition,* 288.

95. Tecumseh cited in Nunez, "Creek Nativism," 14. Tecumseh became

a folk hero who resisted the colonization of Native American territory and who promoted the idea of a return to a nonagricultural lifestyle.

5. Extinguishing

1. This argument is made most clearly in an oft-debated section of Marx's *Grundrisse* that scholars commonly refer to as the "Fragment on Machines." In these twenty odd pages, Marx famously identifies machinery as capital's unintentional minimization of human labor that, inadvertently, "frees everyone's time for their own development," whether that be artistic, scientific, or personal, rather than for that of capital (708). Marx describes this as the contradiction inherent to capital that threatens to undo it. He writes: "Capital itself is the moving contradiction, [in] that it presses to reduce labour time to a minimum, while it posits labour time, on the other side, as sole measure and source of wealth" (706).

2. Liebknecht, *Karl Marx,* 149.

3. Liebknecht, 149.

4. Liebknecht, 150.

5. Liebknecht, 150.

6. Failing to do so was punishable by law.

7. Commandant Herlaut cited in Schivelbusch, *Disenchanted Night,* 82.

8. As will become apparent, I refer to lantern smashers as "vandals" in a subtle nod to Deleuze and Guattari's aberrant reading of the Vandals, the East Germanic group of tribes in the fifth century, on which the contemporary use of the term "vandal" is based. The Vandals fled into the Roman Empire after a series of battles with the Huns and Visigoths. The aggravating relation between the Romans and the Vandals erupted with the Vandals' ransacking and looting of Rome. The Romans, devastated by what they saw as "senseless destruction" of property and art, wrote texts that equated the word "Vandal" with barbaric destruction and defacement. Deleuze and Guattari turn this depiction into an alternative image. For them, the Vandals are an exemplary case of the war machine, the hero of *A Thousand Plateaus* (Deleuze and Guattari, *A Thousand Plateaus;* see also Culp, *Dark Deleuze,* 22). The migratory war machine of the Vandals produces "lines of flight," where the Vandals "come in off the steppes, venture a fluid and active escape . . . launch flows whose quanta heat up and are swept along by a Stateless war machine" against the violence of the "rigid segmentarity of the Roman Empire, with its center of resonance and periphery, its State, its pax romana, its geometry, its camps, its limes (boundary lines)" (*A Thousand Plateaus,* 222–23).

9. Schivelbusch, *Disenchanted Night.*

10. Koslofsky, *Evening's Empire.*

11. Commandant Herlaut cited in Koslofsky, 165.

12. Leipzig City Council cited in Koslofsky, 165.

13. Marperger, *Abermahliger Versuch.*

14. Blanchot, *Political Writings,* 103.

15. Carey, *Life in Paris,* 122.

16. Carey, 122.

17. Carey, 122.

18. Carey, 122. The joy was short lived. Unlike the German thinkers three decades later, Carey failed to escape the police chase that ensued. "The delinquents were conveyed before a commissary of police, where, from their character and the nature of the act, their offence was held of so serious a nature as to cause the whole three companions to be sent to a place of confinement, where our heroes had time to reflect on the rashness and wantonness of their conduct" (123).

19. Agamben, *Means Without End.*

20. Nietzsche cited in Deleuze, *Nietzsche and Philosophy,* 174.

21. Schivelbusch, *Disenchanted Night,* 98.

22. Schivelbusch, 98.

23. Freud, *Civilization and Its Discontents,* 50.

24. Bachelard, *The Psychoanalysis of Fire,* 11.

25. Carey, *Life in Paris,* 122.

26. Liebknecht, *Karl Marx.*

27. Godechot, "Quatre lettres sur les journées des 11-23 Juillet et 5-6 Octobre 1789."

28. One popular version of the Revolutionary song "Ça ira!" began with the words: "Ah! It'll be fine, It'll be fine, It'll be fine; aristocrats to the lamp-post; Ah! It'll be fine, It'll be fine, It'll be fine; the aristocrats, we'll hang them!" The pamphlet *Discours de la Lanterne,* written by Camille Demoulins from the perspective of a lamp post, became a popular read among Parisian antimonarchists. See Demoulins, *Discours de la Lanterne aux Parisiens.*

29. Hone, *Full Annals,* 55.

30. Les Antilles, "Saint-Pierre, le 17 Décembre 1850."

31. de Vaulabelle, "Histoire des deux Restaurations," 367. In response to the lantern smashing, the Parisian municipality published a communiqué calling on the city's "good citizens" to illuminate the fronts of their homes until the broken lanterns are replaced. See De Schonen, "La Commission Municipale aux Habitants de Paris."

32. du Camp cited in Schivelbusch, *Disenchanted Night,* 105.

33. Dabot, "Griffonages Quotidiens d'un Bourgeois du Quartier Latin."

34. Culp, *A Guerrilla Guide to Refusal,* 43.

35. Thornton, "The Meaning of Light," 576.

36. Lantern smashing was employed toward similar ends half a century later, and across the Atlantic, during the 1906 Atlanta "race riot." After two African Americans were indicted for allegedly raping various white women, white mobs invaded what were traditionally Black neighborhoods. They destroyed homes, businesses, and murdered at least twenty-five

people. Fearing for their lives, Black inhabitants attacked street lights with rocks and revolvers, both to express general anger and to make white invasion more difficult. See Crowe, "Racial Violence and Social Reform-Origins of the Atlanta Riot of 1906."

37. de Vaulabelle, *Histoires des deux Restaurations,* 222.

38. Garnier-Pagès, *Histoire de la Revolution de 1848;* Schivelbusch, *Disenchanted Night.*

39. The connections between Enlightenment (as philosophy) and enlightenment (as technology) have been explored by the historian Wolfgang Schivelbusch. He suggests that the "the philosophical need for enlightenment [may have] awakened an interest in real light" (*Disenchanted Night,* 4).

40. Foucault, *Power/Knowledge,* 153.

41. Foucault, 153.

42. For more on the metaphorical and material role played by light and darkness in the theological regimes of power of the European Middle Ages, see Buc, "A Backward Glance."

43. Voltaire cited in Matytsin, "Whose Light Is It Anyway," 67.

44. Foucault, "What Is Enlightenment?," 34.

45. Kant, "Was ist Aufklärung?," 18.

46. Kant, 35.

47. Blanchot, *The Space of Literature.*

48. Blanchot, 167.

49. Blanchot, 169.

50. See Lloyd, "The Discourse of Sensibility."

51. Mercier, *Memoirs of the Year Two Thousand Five Hundred.*

52. Mercier, 205.

53. Mercier cited in Siegert, "The Horrifying Ties," 367.

54. Foucault, *Discipline and Punish,* 187.

55. Benjamin, *The Arcades Project,* 837, 1009. This association is unsurprising; street lighting was indeed, arguably, the first technology instrumentalized on a large scale by the police.

56. Siegert, "The Horrifying Ties," 367.

57. Foucault, "What Is Enlightenment?," 154.

58. Delamare cited in Foucault, *Discipline and Punish,* 214.

59. Foucault, 214.

60. That the smashers would have been consciously aware of the epistemological labor of their work is, of course, unlikely. Theirs was not a careful statement, an argument to put forward in a debate at one of the many bourgeois cafés of nineteenth-century Paris.

61. When probing at the unknowable, however, Eugene Thacker claims, Kant drew away in horror. See Thacker, *In the Dust of This Planet.*

62. Cioran, *The Trouble with Being Born,* 195.

63. Lispector cited in Moser, *Why This World,* 167.

64. McMahon, "Illuminating the Enlightenment."

65. In eighteenth-century New York, Black communities were legally forced, through the introduction of "lantern laws," to carry a lantern at night. This lantern, as Browne writes, functioned as "a prosthesis made mandatory after dark, a technology that made it possible for the black body to be constantly illuminated from dusk to dawn, made knowable, locatable, and contained within the city" (*Dark Matters,* 79).

66. In this regard, there is a close connection between *homo economicus* and "enlightened man." Both ontological demarcations combine the desire for reason and the possession of wealth into a theory of the proper human. As a companion to both demarcations, that is, to both Capital and the Enlightenment, policing epistemics prioritizes the illumination of those who lack wealth (the lower classes) and those who are deemed unreasonable or secretive (the immoral classes, the criminal classes).

6. Exodus

1. Floyd-Thomas, "The Burning of Rebellious Thoughts."

2. Curiously, this founding text—which was dictated over the course of six years—was never published in full (Evans, *MOVE*). As Richard Kent Evans, author of *MOVE: An American Religion,* has revealed, a copy of the text does exist as a classified FBI file on MOVE but is not available to the public.

3. Africa cited in Evans, *MOVE,* 181.

4. Virno cited in Raunig, "The Heterogenesis of Fleeing," 56.

5. Raunig, "Modifying the Grammar."

6. The Amish, who first gathered in settlements in the eighteenth century, are a notable exception to this. Like the communities discussed in this chapter, Amish collectives put into question the taken-for-granted moral necessity assigned to modern technologies, leading to a very selective adoption and use (Ems, *Virtually Amish*). What sets the intentional communities of the twentieth century apart from the majority of their pre-twentieth-century predecessors is not only their sheer number, showing a clear intensification in both presence and distribution, but also, most importantly, their more explicit centering of techno-negativity in both their writing and everyday practices.

7. Stiegler, *Technics and Time, 1,* 31.

8. This is Lewis Mumford's argument about twentieth-century technologism, what he calls the "neotechnic phase." Crucially, for all their at times awkward investment in neatly periodizing complex social-technical histories, Mumford and Stiegler are quick to point out that periods co-constitute (rather than replace) each other. See Mumford, *Technics and Civilization,* 221.

9. Stiegler, *Technics and Time, 1,* 40.

10. Gille, *The History of Techniques.*

11. Stiegler, *Technics and Time, 1*.

12. Simondon, *On the Mode*. See also Dekeyser, "The Material Geographies of Advertising."

13. Simondon, *On the Mode;* Stiegler, *Technics and Time, 1*.

14. Stiegler, 24.

15. This means that, for Simondon, contra Marx, alienation befalls the machine worker *and* the machine owner to a comparable extent. Like the worker, the capitalist has little insight into "the technical functioning, maintenance, adjustment, and improvement of the machine" (*On the Mode,* 255).

16. One could argue that, in an era of planetary technics, the task of exodus is equal in challenge to that of attack. The proponent of techno-negative exodus might respond that it is easier to not use a phone than it is to take down—materially, legally, socially—the entire telephone network and the complex forms of infrastructure it relies upon.

17. Sanders and Jeffries, "Framing MOVE," 582.

18. Sanders and Jeffries, 577.

19. Curry, "MOVE."

20. Washington, "MOVE," 67.

21. Washington, 69.

22. Gandhi, *Hind Swaraj,* 99.

23. Gandhi, *From Yeravda Mandir,* 21.

24. Gandhi cited in Dasgupta, *Gandhi's Economic Thought,* 35.

25. Gandhi, "Speech on Birth Centenary of Tolstoy."

26. Gandhi, *From Yeravda Mandir,* 22.

27. See, for instance, Liu and Khan, "Nation Building"; Kool and Agrawal, *Gandhi and the Psychology of Nonviolence*.

28. Not only critics of techno-negative exodus announce the term to carve out their own distinct technological imagination. Even among critical engagements with the digital, one very commonly encounters statements that make sure one's position is not mistaken for techno-phobia. To give just two examples of prominent scholars: "I am not a technophobe," writes the philosopher Bifo Berardi ("Warming the Algorithm," 123), while the media scholar Joanna Zylinska affirms that her position is "by no means technophobic" (*AI Art,* 18). One notable exception, in which techno-phobia is partially reworked to function as a source of inspiration, is Dinello, *Technophobia!*.

29. Freud cited in Compton, "The Psychoanalytic View of Phobias," 219.

30. Freud cited in Compton, 211.

31. Hazlitt, *Economics in One Lesson,* 38.

32. Drengson, "Four Philosophies of Technology," 26.

33. Foucault, *Technologies of the Self.* Hobbes's book *Leviathan* is an important exception: Hobbes promotes fear as a political affect to be mobilized by sovereign powers for the purpose of governing populations.

34. Spinoza, *Ethics,* 106.

35. Spinoza, 141.

36. Descartes, *The Passions of the Soul,* 44.

37. I explicitly return to contemporary articulations of technorationalism (e.g., in the work of Ray Brassier and Benjamin Bratton) in the conclusion of this book.

38. Marcuse, *One-Dimensional Man,* 147; Mumford, "Technics and the Nature of Man," 304.

39. Heidegger, "Only a God."

40. Heidegger, 55.

41. Heidegger, 55.

42. In his interview, Heidegger refers to "the last 30 years" (i.e., 1930s onward) as the period during which planetary technicity has reached a point of clarity.

43. Heidegger, *The Question*.

44. Heidegger, *Basic Questions of Philosophy,* 155. See also Heidegger, *Poetry, Language, Thought,* 162–80.

45. Heidegger, 157.

46. Heidegger, *The Question,* 14.

47. Heidegger, 17.

48. Heidegger, "Only a God," 56.

49. Heidegger, *The Question,* 21.

50. Marcuse, *One-Dimensional Man*.

51. See Marcuse, 129.

52. Marcuse, 130.

53. Horkheimer makes a similar argument. He draws a distinction between "formal reason" (a positivist-utilitarian conception of reason) and "objective reason" (an ethical pursuit of reason). See Horkheimer, *Eclipse of Reason,* 3–39.

54. Marcuse, *One-Dimensional Man,* 140.

55. Here I am indebted to Alexander Galloway's useful conceptual distinction between "digital thinking" and "analogue thinking." See *Laruelle,* xviii–xxix, 52–58.

56. Galloway, xxix.

57. Feenberg, *Questioning Technology.*

58. Marcuse, *One-Dimensional Man,* 155.

59. Marcuse, 172.

60. In fact, Marcuse suggests that if it were solely a question of metaphysics, what we have been calling digital reason could even be repurposed toward liberatory ends in a noncapitalist world. He writes that "mechanization and standardization may one day help to shift the center of gravity from the necessities of material production to the arena of free human realization" ("Some Social Implications," 160).

61. Banerji, "Individuation," 248.

62. Alfassa cited in Banerji, 249.

63. Aurobindo, *The Complete Works, vol. 17,* 223. While Heidegger explicitly argued against pursuing Eastern philosophies as an intellectual resource in his *Der Spiegel* interview, in his essay *The Thing* he offers a metaphysical variant of Sri Aurobindo's argument. He offers the notion of a primal "oneness" as a way of theorizing the "world" as earth, sky, divinities, and mortals gathering into a "self-unified fourfold" which preserves the differences of its four elements (*Poetry, Language, Thought,* 176).

64. MOVE member cited in Moise, "MOVEing Beyond Anti-State to Anti-Civ," 61.

65. Africa cited in Evans, *MOVE,* 38.

66. Derrida, "The Principle of Reason," 10. This is Derrida's interpretation of the rationality of "representational man," critiqued by Heidegger.

67. This means Heidegger also fails to grasp Calvin Warren's and Giorgio Agamben's crucial insight that the "animate instrument" (the slave) is not only disproportionally reduced to "standing-reserve" but might well be its first and primary instantiation. As Warren writes, "the transatlantic slave trade occupies, or perhaps represents, a premier enframing of instrumentalization of nature as a standing reserve" (Warren et al., "Heidegger, Afropessimism, and the Harlem Renaissance," 116). Technological onticide, in the way I have been describing it, is most certainly not on Heidegger's radar. See also Agamben, *The Use of Bodies,* 72–79.

68. Gandhi, *From Yeravda Mandir,* 24–25.

69. Aurobindo, *The Complete Works, vol. 25,* 120.

70. Derrida, "The Principle of Reason," 10.

71. Irigaray, *To Be Two,* 101. Irigaray argues convincingly that Heidegger resubmits *physis* (nature) to *technē* through his insistence on remaining within human *logos,* and in doing so, replicates the problem of framing the world through *technē.* He forgets that "*physis* has a 'proper' *arché,* a proper space-time of unfolding, and that to submit it [elle] to man's *architechnē,* his language, amounts to bowing its destiny to an inappropriate form of unfolding, to suspending this destiny within a factitious blossoming, and to leaving *physis* out, a remainder still" (*The Forgetting of Air in Martin Heidegger,* 88). In writing this, Irigaray pushes Heidegger's notion of enframing beyond its stubborn anthropocentrism, opening up the space up for a technological politics centered on "letting nature appear."

72. Marcuse, "Some Social Implications," 140.

73. Bergson, *Creative Evolution,* 46.

74. Aurobindo, "Comments on Terms."

75. Bergson critiques Kant specifically for failing to take seriously "supra-intellectual intuition," "a knowledge from within, a knowledge that would grasp these facts [of knowledge] in their springing forth itself rather than taking them as already sprung" (*Creative Evolution,* 309). Intuition, in Bergson's account, may approximate—under the right conditions—an

understanding of the *élan vital,* the force or impulse of life that connects all, carrying it forward.

76. Aurobindo, *The Complete Works, vol. 25,* 114.

77. Aurobindo, 129.

78. Aurobindo, 127–28.

79. Banerji, "Individuation."

80. Aurobindo, "Comments on Terms," 374.

7. Arson

1. Libération, "Le 'Clodo' revendique 'l'attentat' de Toulouse." Translation is mine.

2. La Dépêche, "Action Directes?" Translation is mine. This newspaper article is titled after Action Directe, an ultra-leftist organization that formed out of various Maoist and Marxist-Leninist armed groups, and who had falsely claimed the attacks on Philips Informatique.

3. Gruppo di Studio Resistenze Metropolitane, *L'Ape e il Comunista,* 13. Translation is mine.

4. Anders, "On Promethean Shame."

5. Bacon, *The Major Works,* 347.

6. Baxter, *Scientists Against Time,* 212.

7. Wiener, *Cybernetics,* 5.

8. To the immense frustration of Norbert Wiener, who wrote in a 1943 to his collaborator Warren Weaver: "I still wish that I had been able to produce something to kill a few of the enemy instead merely of showing how not to try to kill them" (cited in Galison, "The Ontology of the Enemy," 245).

9. Wiener, *The Human Use of Human Beings,* 26.

10. See Bernes, *The Work of Art,* 96–100. Most notably, Wiener's description of information is distinct from that of Claude Shannon, the mathematician who, while working as an engineer at Bell Laboratories, was concerned with how to deal with the recording, processing, and transmitting of communications most economically in the context of telephone technologies. For Shannon, "the measurement of information had nothing to do with knowledge, at least as a measure of understanding. Quantity of information measured the number of selections, exclusions, and differences that produce a given message, particularly as those differentiations are produced by a machine" (Geoghegan, "Architectures of Information," 145). As such, high levels of information do not guarantee self-regulation, as Wiener would have it, but its inverse: the measure of a system's unpredictability.

11. Hayles, *How We Became Posthuman*. Bernard Geoghegan complicates Hayles's argument, noting that information theorists such as Wiener and Shannon do not radically dematerialize information (as per Hayles's argument). More precisely, for Geoghegan, they complicate a conception

of the human body, speech, and intelligence as metaphysically superior and do so by focusing on standardized material inscriptions across different media and the relations that exist between them. See "Architectures of Information," 156–57.

12. Wiener, *Human Use,* 7.

13. Wiener, 10.

14. Wiener, 11.

15. Heims, *John Von Neumann and Norbert Wiener,* 184.

16. Wiener, *Human Use,* 26–27; Hayles, *How We Became Posthuman,* 103.

17. Again, this is a specifically Wienerian interpretation of information. Contra Wiener, as per his definition of information mentioned previously, Shannon defined information as positive entropy. The more information there is, in Shannon's definition, the greater the levels of entropy. See Geoghegan, "Architectures of Information," 144–45.

18. Rote Zora, "Communiqué des Actions contre Siemens (1983)." Translation is mine. Inspired by the West-German New Women's Movement, the group emerged as an offshoot of the armed underground collective Revolutionäre Zellen. Their attacks targeted what they saw as centers of patriarchal, military, and pharmaceutical power.

19. Halpern, "Dreams for Our Perceptual Present."

20. Halpern, 290. See also Wiener, *Cybernetics,* 30–44.

21. Bergson, *Creative Evolution,* 11.

22. Bergson, *Matter and Memory,* 185.

23. Bergson, *Creative Evolution,* 12.

24. Grosz, "Deleuze's Bergson," 222–23.

25. Bergson, *Matter and Memory,* 78–91.

26. Wiener ignores Bergson's crucial insight that one can only ever be in contact with the continuous flow that is duration through "intuition," rather than "intellect" and "analysis," and Bergson would have therefore likely found Wiener's insistence on statistical mechanics as reproducing the very spatialization of time his theory of duration sought to contradict. For more on Wiener's partial misreadings of Bergson, see Hui, "On the Limit of Artificial Intelligence."

27. Bernes, *The Work of Art.*

28. von Foerster cited in Bernes, 103–4.

29. The literary scholar Jasper Bernes has shown how the two orders not only, broadly speaking, map onto two conflicting understandings of information emergent out of World War II research—Wiener's definition versus Claude Shannon's (see note 10)—but also, and more crucially for our purposes, coincide with a shift in theories of economic organization from the immediate postwar period to 1970s onward. He writes: "The first vision corresponds to the problems and organizational concerns of the immediate postwar period—the Fordist manufacturing concern and the Keynesian planner state—in which rigid organizations sought to

preserve structural stability through long-range planning, economies of scale, and a proliferation of controls. The second vision corresponds to the new organizational philosophy that reigns from the 1970s forward, in which productive dynamism and creative disorder are valued over stability and in which continuous restructurings, reassignments, mergers, and decompositions are celebrated as a way of remaining agile in the face of a volatile terrain marked by wild fluctuations in asset values and supply and demand" (*The Work of Art,* 100).

30. Tiqqun, *The Cybernetic Hypothesis,* 64.

31. One may argue that, in line with Bernes's argument (*The Work of Art*), it was integrative temporalization that was particularly growing in interest for economic planners at the time. However, while these logics are very apparent to us in hindsight, in the early 1980s their more radical expression (e.g., the recuperation of social movements, the faux-revolutionary mantra of a corporation like Apple) was only beginning to come into maturity. That said, CLODO briefly hints at integrative temporalization when they present the computer as yet another "instrument of profit maximization," with corporations rapidly adapting to shifting demands and tastes in the market ("CLODO Speaks," 36; translation is mine).

32. Rote Zora, "Action contre Nixdorf à Hanovre et contre la Verband der Vereine Creditreform à Neuss (1983)." Translation is mine.

33. Rote Zora, "Communiqué des Actions contre Siemens (1983)." Drawing a similar connection between information-capture and policing, CLODO graffitied the word "informaflics"—a portmanteau of "information" and "les flics," slang for police—onto the burned offices of Philips Informatique.

34. Red Brigades, "Resolution of The Strategic Directorate of the Red Brigades (February 1978)," 73. Translation is mine.

35. Red Brigades, "Resolution," 72.

36. Herold cited in Rosenfeld, "Militant Democracy," 574.

37. Red Brigades members Renato Curcio and Alberto Francheschini cited in Tiqqun, *This Is Not a Program,* 48.

38. CLODO, "Le Clodo addresse." Translation is mine.

39. CLODO.

40. Bergson, *The Creative Mind,* 164.

41. Bergson, *Creative Evolution,* 11.

42. Bergson, 17. Ansell-Pearson, in his reading of Bergson's philosophy of time, underscores the importance of memory for duration's inventiveness. More than a "glue" that attaches past to present, memory is a "disruptive and creative power" that exists in tension to consciousness ("The Reality of the Virtual," 119). The latter is concerned with the life of present praxis, while memory, indifferent to that very praxis, provides a kind of resistance. This resistance, according to Ansell-Pearson, may play an important role in generating new forms of thought, feeling, and action, for it

frees us from the laws of necessity. As a result, Bergson describes memory as "the inner energy which allows the being to free itself from the rhythm of the flow of things and to retain in an ever higher degree the past in order to influence ever more deeply the future" (*Matter and Memory,* 222).

43. Deleuze, *Bergsonism*.

44. Deleuze, *Difference and Repetition,* 212; Deleuze, *Bergsonism,* 98.

45. Deleuze and Parnet, *Dialogues II,* 150.

46. Deleuze, *Difference and Repetition,* 212.

47. Grosz, "Deleuze's Bergson."

48. Deleuze, *Bergsonism,* 98.

49. In his *World Philosophie,* for instance, Lévy suggests that cybernetic capitalism needs to be understood as a continuous growth of the virtual, whereby turbulences and accidents that threaten to undermine capitalism end up serving it. Brian Massumi, likewise, argues that "every time capitalism approaches its limit and is on the point of crashing once and for all, it finds a new way to capture the inventive, affective-volitional energies ('desires') that have begun to escape from it, and to use them to fuel its own passage across a threshold of consistency to a new phase of its own process" (*The Power at the End of the Economy,* 120). These analyses are not exactly wrong, with second-order-inflected cybernetics—as we have seen—deeply concerned with making order out of chaos, but they do tend to overemphasize its ability to productivize antagonisms and, as a result, give ontological primacy to "power." In doing so, they forego a more useful conception of cybernetic capitalism's functioning as a combination of integrative and repressive mechanisms of temporalization.

50. What both Bergson and Deleuze admired in duration—its essential inventiveness—Wiener impoverished. Wiener appears to have taken Bergson's insistence that, because of duration's true creativity, any attempt at anticipating the future is doomed to fail as a challenge, rather than a predicament. He ignores Bergson's argument that "no intellect, not even a super-human one, would have been able to foresee the simple and indivisible form that gives to . . . entirely abstract elements their concrete organization." Bergson continues: "That which has never been perceived, and which is at the same time unique, is necessarily unforeseeable" (*Creative Evolution,* 11). Along the way, it theorizes memory as a force for duplication, rather than disruption.

51. CLODO, "Le Clodo addresse"; Rote Zora, "Angriff gegen Scientific Control Systems." Translation is mine.

52. Deleuze, *Bergsonism,* 106.

53. Hayles, *How We Became Posthuman,* 93.

54. Jonas, "A Critique of Cybernetics," 175.

55. See, however, note 11.

56. Hayles, *How We Became Posthuman,* 99.

57. Curcio and Francheschini, *Gocce di Sole nelle Cita degli Spettri,* 273.

Translation is mine. Interestingly, when those words were written in 1982, Deleuze had not yet articulated his notion of the "dividual." As pointed out to me by Andrew Culp, it may be that the members of the Red Brigades developed the idea of the "in/dividual" as a political interpretation of Jacques Lacan's insight that the subject is split and inhabited by absence, arguing that what they call the "ideologies of control" give rise to an alienated, plurivocal subject. This is distinct from Deleuze's development of the concept where it refers to the informational codes organized in correlation to wider samples, data markets, or data banks in what he calls "societies of control." See Deleuze, "Postscript on the Societies of Control."

58. For instance, see Wiener, *Cybernetics,* 28.

59. Hayles, *How We Became Posthuman,* 86.

60. CLODO, "CLODO Speaks," 36.

61. Instead, they reject the individual as the locus of political intent and recognition, preferring instead the murky anonymity of a collective that undoes its targets as much as itself. If anything, the computer arsonists appear to deepen the ontological flattening to the point of seeking their own self-abolition. For an experimental exploration of this idea, see the documentary film *Machines in Flames* (2022; 50 min) I codirected and coproduced alongside media theorist Andrew Culp.

62. Recall that CLODO celebrated their assault on the computer center of Haute-Garonne for facilitating "memory loss."

63. This places their adventures in immediate antagonism to those of Bernard Stiegler, whose work on the "neganthropocene" involves a direct call for countering the entropic tendencies of contemporary life through "the production of negentropic bifurcation" with an eye on "re-establish[ing] a true process of transindividuation with digital, reticulated tertiary retentions and to bring about a digital age of psychic and collective individuation" (*The Neganthropocene,* 49, 51).

64. Le Parti Communiste cited in La Dépêche, "Le Parti Communiste Condamne Les Sabotages Dans L'Informatique." Translation is mine.

65. Force Ouvrière du Syndicat départemental de l'Informatique cited in Toulouse Matin, "Nouvel Attentat du CLODO." Translation is mine.

66. CLODO, "Le Clodo addresse."

67. For more on the comfort of what I call "worldly futuring," see Dekeyser, "Worldless Futures."

68. Bergson, *Creative Evolution,* 214. Bergson argues that living organisms resist the tendency toward the general increase of entropy (see *Creative Evolution,* 212–18). Not unlike Wiener, he shows how matter's entropic march toward homogeneity and stability is, however, only ever temporarily slowed down by the living organism. As he puts it, while "life is an effort to go back up the incline that matter descends," it is never capable of fully halting the general law of entropy (216). The reason, he suggests, is that life requires a material body that is inevitably subject to

the principle of degradation: "The life that evolves on the surface of our planet is attached to matter. If that life were pure consciousness, or better, supra-consciousness, it would be a pure creative activity" (216). Matter's entropy troubles life's tendency toward true creativity.

69. Deleuze, *Bergsonism,* 98; Ansell-Pearson, "Living the Eternal Return as the Event," 78.

70. This position, articulated most comprehensively by the Red Brigades, is a reinterpretation of the Leninist theory of the "weakest link."

71. Deleuze, *Negotiations,* 129. The Red Brigades share this insight when they argue for taking seriously a paradoxical injunction: "that in order to 'speak' one must give up 'communicating', that to 'communicate' one must give up speaking!" (cited in Tiqqun, *This Is Not a Program,* 48).

72. Serres, *The Five Senses,* 25.

Conclusions

1. McQuillan, *Resisting AI;* Katz, *Artificial Whiteness.*

2. I thank Andrew Culp for the terms "technological reformism" and "techno-reformism."

3. Simondon, *On the Mode,* 118.

4. Barad, *Meeting the Universe Halfway,* 136.

5. Edelman, *Bad Education,* xiii.

6. Foucault, "Revolutionary Action," 221, 222.

7. Wills, *Dorsality.*

8. Arendt, *The Human Condition,* 148, 324.

9. Ellul, *The Technological Society,* 325; Winner, *Autonomous Technology,* 16.

10. Lankester, *Degeneration.*

11. Simondon, *On the Mode,* 15. It is worth noting, however, that Simondon emphasizes the need for a renewed humanism later in his book. He writes that "every epoch must discover its humanism, by orienting itself towards the main danger of alienation" that is present in that specific epoch (118).

12. Ellul, *The Technological Society,* xxxiii; Jonas, *The Imperative of Responsibility.*

13. Heidegger, *The Question,* 33.

14. Haraway, *Simians, Cyborgs, and Women,* 180.

15. Haraway, 179.

16. Gane, "Radical Post-Humanism."

17. Brassier, "Prometheanism and its Critics."

18. Parisi, "Automate Sex."

19. Brassier, "Prometheanism and its Critics," 485, 487.

20. For a similar argument, see: Tiqqun, *The Cybernetic Hypothesis.* As noted in chapter 6, this desire is, despite the contemporary techno-rationalist's sustained rejection of techno-phobia, partially animated by a

fear of the nonhuman. See, for instance, Bratton, *The Revenge of the Real*, 30, 165.

21. Kant remains a crucial interlocutor for prominent theorists of techno-rationality, including Ray Brassier, Benjamin Bratton, and Reza Negarestani. Brassier writes: "Prometheanism stands to be rehabilitated from the vantage of an understanding of rationality which views it not as a supernatural faculty but simply as a rule-governed activity-rationality that is simply the faculty of generating and being bound by rules. This is precisely the account of rationality set out by Kant. The rules are not fixed in advance, they are historically mutable" ("Prometheanism and its Critics," 485–86). See also Negarestani, "The Labour of the Inhuman"; and Bratton, *The Stack*.

22. John Ó Maoilearca makes a similar claim about Brassier, particularly pertaining his inhuman conception of intelligence. He writes: "Intelligence may be rendered in synthetic and inhuman terms, yet it remains a model of human intelligence that has only been extended by degrees" (*All Thoughts Are Equal*, 286).

23. Edelman, *Bad Education*.

24. Edelman, 3.

25. Colebrook, "All Life Is Artificial Life."

26. Heidegger, "Letter on Humanism," 346.

27. I read the philosopher Claire Colebrook—alongside Sarah Sharma (see the next note)—as one of the first thinkers of technology to explicitly entertain an orientation that is neither humanist, nor posthumanist, nor techno-rationalist, in ontology and ethics. Her guiding question, one that resonates with that of my techno-abolitionist, is: "should we be trying to regain a relation to techne, becoming our greater selves through artifice, or should we allow the matters that compose bodies and objects to operate without the morality of the living body?" ("All Life Is Artificial Life," 8).

28. Sharma gives the example of feminists who "are rendered [as] an always already obsolete technology that isn't working" by the ontological policing of increasingly patriarchal digital regimes. In the eyes of the latter, the female feminist is a malfunctioning part, a "broken-down machine," incapable or unwilling to fulfill their role as caretaker or conforming subject. Rather than rejecting this status as "object," Sharma proposes a politics that co-opts and embraces it. The result is a focus away from of a digital politics of inclusion that would ask for better representation and a seat at the table. Instead, Sharma's is a powerful call for the proliferation of "broken machines" as "powerful purveyors of mayhem and confusion" ("A Manifesto for the Broken Machine," 173, 174).

29. Against a naturalist position that fixes the human body in its biological, social, and political place, Helen Hester argues for a "xenofeminist" embrace of "the fundamental mutability of bodies, identities, and the various processes that help to shape them" (*Xenofeminism*, 22).

30. Viveiros de Castro, "Perspectival Anthropology and the Method of Controlled Equivocation."

31. Hui, "On Cosmotechnics."

32. Thacker, *Infinite Resignation*. See also Dekeyser and Thacker, "Pessimism, Futility and Extinction."

33. Colebrook, "All Life Is Artificial Life," 8.

34. Laruelle, cited in Maoilearca, *All Thoughts Are Equal,* 32.

35. Laruelle's move is to hollow out the human to the point where the human is less extended than undone. Yet, we should remain wary of any generalization of the human and the linked forms of ontological policing that risk slipping back in.

36. Maoilearca, *All Thoughts Are Equal,* 293.

37. Erasmus, "Sylvia Wynter's Theory of the Human."

38. McKittrick, *Sylvia Wynter.*

39. Palmer, "Otherwise than Blackness"; Warren, *Ontological Terror.*

40. Anders, *Die Antiquiertheit des Menschen,* 99. Translation is mine.

41. The abolitionist would therefore likely agree with Giorgio Agamben when he argues that contemporary technological instruments "have incorporated in themselves the operations of the principal [human] agent and can thus 'obey' its commands" (*The Use of Bodies,* 77). What emerges in Agamben is an immanent conception of intentionality according to which the intentionality of the designer, manufacturer, user, and technical object can never be thought in separation from one another.

42. Davis, *Abolition Democracy;* Gilmore, *Abolition Geography;* Lewis, *Abolish the Family.*

43. While retaining an explicitly humanist tone, Langdon Winner begins to propose as much when he writes: "One conceivable approach to tackling whatever flaws one sees in the various systems of technology might be to begin dismantling those systems. This I would propose not as a solution in itself but as a method of inquiry. . . . Technologies identified as problematic would be taken apart with the expressed aim of studying their interconnections and their relationships to human need. Prominent structures of apparatus, technique, and organization would be, temporarily at least, disconnected and made unworkable in order to provide the opportunity to learn what they are doing for or to mankind" (*Autonomous Technology,* 330). But Winner almost instantaneously undermines his own statement by separating himself from those "Luddites" materially dismantling any pieces of machinery, and by articulating, instead, the gentler proposal "to let dying artifice die" (333). The techno-abolitionist might not feel the need for such modest distinctions and may encourage experimenting with dismantlings across a diverse range of social, discursive, and material terrains, and instigating a wide range of different forms. For initial propositions, see Ali, "Fugitive Decolonial Luddism"; McQuillan, *Resisting AI;* and McQuillan, "People's Councils for Ethical Machine Learning."

This page intentionally left blank

Bibliography

Adas, Michael. *Dominance by Design: Technological Imperatives and America's Civilizing Mission.* Belknap Press of Harvard University Press, 2006.

Adas, Michael. *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance.* Cornell University Press, 1989.

Ali, Syed Mustafa. "Fugitive Decolonial Luddism – A Hauntology." Paper presented at Intercultural Digital Ethics Symposium, Oxford Internet Institute, Oxford, December 2019.

Agamben, Giorgio. *Homo Sacer: Sovereign Power and Bare Life.* Translated by Daniel Heller-Roazen. Stanford University Press, 1998.

Agamben, Giorgio. *Means Without End: Notes on Politics.* Translated by Vicenzo Binetti and Cesare Casarino. University of Minnesota Press, 2000.

Agamben, Giorgio. *The Use of Bodies.* Translated by Adam Kotsko. Stanford University Press, 2016.

Almond, Philip. *The Devil: A New Biography.* Cornell University Press, 2014.

Alsberg, Paul. *Das Menschheitsrätsel.* Sibyllen, 1922.

Alvares, Claude Alphonso. *Homo Faber: Technology and Culture in India, China and the West from 1500 to the Present Day.* Martinus Nijhoff, 1980.

Amoore Louise. "Doubt and the Algorithm: On the Partial Accounts of Machine Learning." *Theory, Culture & Society* 36, no. 2 (2019): 147–69. https://doi.org/10.1177/0263276419851846.

Amoore, Louise. "Thinking with Algorithms: Cognition and Computation in the Work of N. Katherine Hayles." *Theory, Culture & Society* 36, no. 2 (2019): 3–16. https://doi.org/10.1177/0263276418818884.

Anders, Günther. *Die Antiquiertheit des Menschen: Über die Seele im Zeitalter der zweiten industriellen Revolution.* München: Verlag C.H. Beck, 1961.

Anders, Günther. "On Promethean Shame." Translated by Christopher John Müller. In *Prometheanism: Technology, Digital Culture and Human Obsolescence,* edited by Christopher John Müller. Rowman & Littlefield, 2016.

Anders, Günther. "The Pathology of Freedom: An Essay on Non-Identification." Translated by Katharine Wolfe. *Deleuze Studies* 3, no. 2 (2009): 278–310. https://doi.org/10.3366/e1750224109000658.

Angier, Tom. *Techne in Aristotle's Ethics: Crafting the Moral Life.* Continuum, 2010.

Anonymous. "Riots of Nottingham." In *The Scots Magazine, and Edinburgh Literary Miscellancy: Being A General Repository of Literature, History,*

and Politics for 1811, Volume 73, edited by The Scots Magazine. Archibald Constable & Company, 1811.
Ansell-Pearson, Keith. "Living the Eternal Return as the Event: Nietzsche with Deleuze." *Journal of Nietzsche Studies* 14 (1997): 64–97. https://www.jstor.org/stable/20717678.
Ansell-Pearson, Keith. "The Reality of the Virtual: Bergson and Deleuze." *MLN* 120, no. 5 (2005): 1112–27. https://www.jstor.org/stable/3840700.
Aquinas, Thomas. *Summa Theologica.* Translated by Laurence Shapcote. Benziger Bros, 1947.
Arendt, Hannah. *The Human Condition.* University of Chicago Press, 1998.
Arendt, Hannah. *The Origins of Totalitarianism.* Penguin Classics, 2017.
Aristotle. *De Anima.* Translated by Robert Drew Hicks. Cambridge University Press, 1907.
Aristotle. *Nicomachean Ethics.* Translated by Roger Crisp. Cambridge University Press, 2000.
Aristotle. *Politics.* Translated by Harris Rackham. Harvard University Press, 1932.
Arnold, David. "Europe, Technology, and Colonialism in the 20th Century." *History and Technology* 21, no. 1 (2005): 85–106. https://doi.org/10.1080/07341510500037537.
Aurobindo, Sri. *The Complete Works of Sri Aurobindo, vol. 17: Isha Upanishad.* Sri Aurobindo Ashram Press, 2003.
Aurobindo, Sri. *The Complete Works of Sri Aurobindo, vol. 25: The Human Cycle: The Ideal of Human Unity, War and Self-Determination.* Sri Aurobindo Ashram Press, 2003.
Aurobindo, Sri. "Comments on Terms used by Bergson." In *Letters on Yoga: Volume I,* edited by Ashram Press. Sri Aurobindo Ashram Press, 2012.
Bacon, Francis. *The Major Works.* Oxford University Press, 2008.
Baldwin, John. *Masters, Princes, and Merchants: The Social Views of Peter the Chanter and His Circle.* Princeton University Press, 1970.
Banerji, Debashish. "Individuation, Cosmogenesis and Technology: Sri Aurobindo and Gilbert Simondon." In *Critical Posthumanism and Planetary Futures,* edited by Debashish Banerji and Makarand R. Paranjape. Springer, 2016.
Barad, Karen. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning.* Duke University Press, 2007.
Baxter, James Phinney. *Scientists Against Time.* Little, Brown & Company, 1946.
Beckmann, Johann. *Beiträge zur Geschichte der Erfindungen.* Kummer, 1786.
Beckmann, Johann. *History of Inventions, Discoveries and Origins, Volume II.* Translated by William Johnston. Henry G. Bohn, 1846.
Benjamin, Walter. *The Arcades Project.* Translated by Howard Eiland and Kevin McLaughlin. Belknap Press of Harvard University Press, 1999.

Benjamin, Walter. *Selected Writings: Volume 4, 1938–1940.* Translated by Howard Eiland and Michael W. Jennings. Harvard University Press, 2006.

Bennett, Jane. *Vibrant Matter: A Political Ecology of Things.* Duke University Press, 2009.

Bergson, Henri. *Creative Evolution.* Translated by Donald A. Landes. Routledge, 2023.

Bergson, Henri. *The Creative Mind.* Translated by Mabelle L. Andison. Citadel Press, 1992.

Bergson, Henri. *Matter and Memory.* Translated by Nancy M. Paul and W. Scott Palmer. Zone Books, 1991.

Berlant, Lauren. *Cruel Optimism.* Duke University Press, 2011.

Bernard de Clairvaux. "Apology." Translated by David Burr. *Fordham University Sourcebooks Project,* 1996. https://sourcebooks.fordham.edu/.

Bernes, Jasper. *The Work of Art in the Age of Deindustrialization.* Stanford University Press, 2017.

Bifo Berardo, Franco. "Warming the Algorithm, and Possibilities for the Future: Franco 'Bifo' Berardi - Interview by Dillon Douglas & Thomas Szwedska." *Chiasma* 4 (2017): 105–24. https://ir.lib.uwo.ca/chiasmaasiteforthought/vol4/iss1/12.

Binfield, Kevin. ed. *Writings of the Luddites.* John Hopkins University Press, 2004.

Blanchot, Maurice. *Political Writings, 1953–1993.* Translated by Zakir Paul. Fordham University Press, 2010.

Blanchot, Maurice. *The Space of Literature.* Translated by Ann Smock. University of Nebraska Press, 1989.

Bledsoe, Adam. "Neither Ground on Which to Stand, nor Self to Defend: The Structural Denial (and Radical Histories) of Black Self-Defense." *Annals of the American Association of Geographers* 112, no. 5 (2022): 1296–1312. https://doi.org/10.1080/24694452.2021.1963657.

Braidotti, Rosi. "Animals, Anomalies, and Inorganic Others." *PMLA/Publications of the Modern Language Association of America* 124, no. 2 (2009): 526–32. https://doi.org/10.1632/pmla.2009.124.2.526.

Braidotti, Rosi. *Metamorphoses: Towards a Materialist Theory of Becoming.* Polity Press, 2002.

Braidotti, Rosi. *The Posthuman.* Polity Press, 2013.

Braidotti, Rosi. "A Theoretical Framework for the Critical Posthumanities." *Theory, Culture & Society* 36, no. 6 (2019): 31–61. https://doi.org/10.1177/0263276418771486.

Brassier, Ray. "Prometheanism and Its Critics." In *#Accelerate: The Accelerationist Reader,* edited by Mackay Robin and Armen Avanessian. Urbanomic, 2014.

Bratton, Benjamin. *The Revenge of the Real: Politics for a Post-Pandemic World.* Verso Books, 2022.

Bratton, Benjamin. *The Stack: On Software and Sovereignty.* Urbanomic, 2016.
Braun, Bruce. "Querying Posthumanisms," *Geoforum* 35, no. 3 (2004): 269–73. https://doi.org/10.1016/j.geoforum.2004.03.002.
Browne, Simone. *Dark Matters: On The Surveillance of Blackness.* Duke University Press, 2015.
Buc, Phillippe. "A Backward Glance: Light and Darkness in the Medieval Theology of Power." In *Let There Be Enlightenment: The Religious and Mystical Sources of Rationality,* edited by Dan Edelstein and Anton Matytsin. Johns Hopkins University Press, 2018.
Bui, Long T. *Model Machines: A History of the Asian as Automaton.* Temple University Press, 2022.
Burton, Janet, and Julie Kerr. *The Cistercians in the Middle Ages.* Boydell Press, 2011.
Butler, Judith. *Bodies That Matter: On the Discursive Limits of Sex.* Routledge, 2011.
Carey, David. *Life in Paris: comprising the rambles, sprees, and amours of Dick Wildfire . . . Squire Jenkins and Captain O'Shuffleton: with the whimsical adventures of the Halibut family: including sketches of a variety of other eccentric characters in the French metropolis.* John Fairburn, 1822.
Césaire, Aimé. *Discourse on Colonialism.* Translated by Joan Pinkham. Monthly Review Press, 2000.
Chamayou, Grégoire. *Manhunts: A Philosophical History.* Translated by Steven Rendall. Princeton University Press, 2010.
Chenu, Marie-Dominique. "Arts 'mécaniques' et oeuvres serviles." *Revue des Sciences Philosophiques et Theologiques* 29, no. 2/4 (1940): 313–15.
Cioran, Emil Mihai. *On the Heights of Despair.* Translated by Ilinca Zarifopol-Johnston. University of Chicago Press, 1992.
Cioran, Emil Mihai. *The Trouble with Being Born.* Translated by Richard Howard. Seaver Books, 1976.
CLODO. "CLODO Speaks." Translated by Maxine Holz. *Processed World* 10 (1984): 33–37.
CLODO. "Le Clodo Addresse une Lettre à 01." *01 Hebdo,* February 7, 1983.
Colebrook, Claire. "All Life Is Artificial Life." *Textual Practice* 33, no. 1 (2019): 1–19. https://doi.org/10.1080/0950236X.2019.1559478.
Compton, Allan. "The Psychoanalytic View of Phobias: Part I: Freud's Theories of Phobias and Anxiety." *The Psychoanalytic Quarterly* 61, no. 2 (1992): 206–29. https://doi.org/10.1080/21674086.1992.11927342.
Comte, Charles. *Traité de Législation, ou Exposition des Lois Générales Suivant Lesquelles Les Peoples Prospèrent, Dépérissent ou Restent Stationnaires.* Paris: A. Sautelet, 1826.
Conti, Thomas Victor. "Mercantilism: A Materialist Approach." *Scandinavian Economic History Review* 66, no. 2 (2018): 186–200. https://doi.org/10.1080/0ateria.2018.1465847.
Cornelis, Cau. *Groot placaet-boeck, vervattende de placaten, ordonnantien en*

de edicten van de Doorluchtige, Hoogh Mog. Heeren Staten Generael der Vereenaterialismlanden, en de van de Staten van Hollandt en West-Vrieslandt, mitsgaders vande Ed: Mog: Heeren Staten van Zeelandt. Heeren Staten Generael der Verneenighde Nederlanden, 1658.

Cowgill, John. *An Historical Account of the Luddites of 1811, 1812, and 1813: With Report of Their Trials at York Castle, from the 2nd to the 12th of January, 1813, Before Sir Alexander Thompson and Sir Simon Le Blanc, Knights, Judges of the Special Commission.* Cowgill Publisher, 1862.

Crowe, Charles. "Racial Violence and Social Reform-Origins of the Atlanta Riot of 1906." *The Journal of Negro History* 53, no. 3 (1968): 234–56. https://doi.org/10.2307/2716218.

Culp, Andrew. "Control After Cybernetics: Governmentality as Navigation by Homeostasis and Chaos." *symploke* 28, no. 1–2 (2020): 117–32. https://doi.org/10.5250/symploke.28.1-2.0117.

Culp, Andrew. *Dark Deleuze.* University of Minnesota Press, 2016.

Culp, Andrew. *A Guerrilla Guide to Refusal.* University of Minnesota Press, 2023.

Culp, Andrew, and Thomas Dekeyser. "On Giving up on This World: Andrew Culp, Interviewed by Thomas Dekeyser." *Society and Space,* February 27, 2018. https://www.societyandspace.org/articles/on-giving-up-on-this-world-andrew-culp-interviewed-by-thomas-dekeyser.

Curcio, Renato, and Alberto Francheschini. *Gocce di Sole nelle Cita degli Spettri.* Correspondenza Internazionale, 1982.

Curry, George E. "MOVE: A Back-to-Nature Group Whose Nature Remains an Enigma." *Chicago Tribune,* May 19, 1985.

Dabot, Henri. *Griffonages Quotidiens d'un Bourgeois du Quartier Latin, du Mai 1869 au 2 Décembre 1871.* Hachette Livre, 2017.

Darwin, Charles. *Journal of Researches into the Geology and Natural History of the Various Countries Visited by H.M.S. Beagle.* Cambridge University Press, 2009.

Dasgupta, Ajit K. *Gandhi's Economic Thought.* Routledge, 1996.

Davenant, Charles. *An Essay upon the Probable Methods of Making a People Gainers in the Balance of Trade.* James Knapton, 1699.

Davis, Angela Y. *Abolition Democracy: Beyond Empire, Prisons, and Torture.* Seven Stories Press, 2011.

De Schonen, Augustin Jean Marie. "La Commission municipale aux habitants de Paris." *Courrier Français,* July 31, 1830.

de Vaulabelle, Achille Tenaille. *Histoire des deux Restaurations jusqu'à l'avènement de Louis-Philippe, de janvier 1813 à octobre 1830, 1855–1856.* Perrotin, Editeur de Béranger, 1855.

Dekeyser, Thomas. "The Material Geographies of Advertising: Concrete Objects, Affective Affordance and Urban Space." *Environment and Planning A* 50, no. 7 (2018): 1425–42. https://doi.org/10.1177/0308518X18780374.

Dekeyser, Thomas. "Worldless Futures: On the Allure of 'Worlds to Come.'" *Transactions of the Institute of British Geographers* 48, no. 2 (2022): 338–50. https://doi.org/10.1111/tran.12579.

Dekeyser, Thomas, and Eugene Thacker. "Pessimism, Futility and Extinction: An Interview with Eugene Thacker." *Theory, Culture & Society* 37, no. 7–8 (2020): 367–81. https://doi.org/10.1177/0263276420907127.

Deleuze, Gilles. *Bergsonism.* Translated by Hugh Tomlinson and Barbara Habberjam. Zone Books, 1991.

Deleuze, Gilles. *Difference and Repetition.* Translated by Paul Patton. Continuum, 1994.

Deleuze, Gilles. *Negotiations, 1972–1990.* Translated by Martin Joughin. Columbia University Press, 1995.

Deleuze, Gilles. *Nietzsche and Philosophy.* Translated by Hugh Tomlinson. Continuum, 1992.

Deleuze, Gilles. "Postscript on the Societies of Control." *October* 5 (1992): 3–7.

Deleuze, Gilles, and Claire Parnet. *Dialogues II.* Translated by Hugh Tomlinson and Barbara Habberjam. Columbia University Press, 2007.

Deleuze, Gilles, and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia.* Translated by Brian Massumi. University of Minnesota Press, 1987.

Demoulins, Camille. *Discours de la Lanterne aux Parisiens.* Garnéry, 1789.

Derrida, Jacques. "The Principle of Reason: The University in the Eyes of Its Pupils." *Diacritics* 13, no. 3 (1983): 3–20. https://doi.org/10.2307/464997.

Descartes, René. *The Passions of the Soul.* Translated by Stephen H. Voss. Hackett Publishing Company, 1989.

Dickson, Arthur. *Valentine and Orson: A Study in Late Medieval Romance.* Columbia University Press, 1929.

Dinello, Daniel. *Technophobia! Science Fiction Versus Posthuman Technology.* University of Texas Press, 2005.

Drengson, Alan. "Four Philosophies of Technology." *Philosophy Today* 26, no. 2 (1982): 103–17. https://doi.org/10.5840/philtoday198226218.

Dupuis, Joseph. *Journal of a Residence in Ashantee: Notes and Researches Relative to the Gold Coast, and the Interior of Western Africa.* Henry Colburn, 1824.

Eamon, William. "Technology as Magic in the Late Middle Ages and the Renaissance." *Janus* 70 (1983): 171–221. https://doi.org/10.1086/355083.

Edelman, Lee. *Bad Education: Why Queer Theory Teaches Us Nothing.* Duke University Press, 2023.

Edelman, Lee. *No Future: Queer Theory and the Death Drive.* Duke University Press, 2004.

Ehrhardt, Kathleen. *European Metals in Native Hands: Rethinking Technological Change 1640–1683.* University of Alabama Press, 2005.

Ehrlich, Harold B. "British Mercantilist Theories of Profit." *The American Journal of Economics and Sociology* 14, no. 4 (1955): 377–86. https://doi.org/10.1111/j.1536-7150.1955.tb00612.x.

Ellul, Jacques. *The Technological Society.* Translated by John Wilkinson. Vintage Books, 1964.

Ems, Lindsay. *Virtually Amish: Preserving Community at the Internet's Margins.* MIT Press, 2022.

Erasmus, Zimitri. "Sylvia Wynter's Theory of the Human: Counter-, not Post-Humanist." *Theory, Culture & Society* 37, no. 6 (2020): 47–65. https://doi.org/10.1177/0263276420936333.

Esposito, Roberto. *Instituting Thought: Three Paradigms of Political Ontology.* Translated by Mark Epstein. Polity, 2021.

Evans, Richard Kent. *MOVE: An American Religion.* Oxford University Press, 2020.

Feenberg, Andrew. *Questioning Technology.* Routledge, 1999.

Ferguson, Kennan, ed. *The Big No.* University of Minnesota Press, 2021.

Fernández-Santamaria, José. "Juan Ginés de Sepúlveda on the Nature of the American Indians." *The Americas* 31, no. 4 (1973): 434–51. https://doi.org/10.2307/980012.

Fevrier, Kesha. "Informal Waste Recycling Economies in the Global South and the Chimera of Green Capitalism." *Antipode* 54, no. 5 (2022): 1585–1606. https://doi.org/10.1111/anti.12841.

Floyd-Thomas, Juan M. "The Burning of Rebellious Thoughts: MOVE as Revolutionary Black Humanism." *The Black Scholar* 32, no. 1 (2002): 11–21. https://doi.org/10.1080/00064246.2002.11431166.

Flusser, Vilém. *The History of the Devil.* Translated by Rodrigo Maltez Novaes. Univocal Publishing, 2014.

Flusser, Vilém. *Vampyroteuthis Infernalis.* Translated by Valentine A. Pakis. University of Minnesota Press, 2012.

Foucault, Michel. *The Birth of Biopolitics: Lectures at the Collège de France 1978-1979.* Translated by Graham Burchell. Palgrave MacMillan, 2008.

Foucault, Michel. *Discipline and Punish: The Birth of the Prison.* Translated by Alan Sheridan. Vintage Books, 1995.

Foucault, Michel. "The Dust and the Cloud." Translated by Rashmi Patni. In *French Studies in History, vol. 2,* edited by Maurice Aymard and Harbans Mukha. Orient Blackswan, 1990.

Foucault, Michel. "Nietzsche, Genealogy, History." Translated by Donald F. Bouchard and Sherry Simon. In *Language, Counter-Memory, Practice: Selected Essays and Interviews,* edited by Donald F. Bouchard. Cornell University Press, 1977.

Foucault, Michel. *Power/Knowledge: Selected Interviews and Other Writings, 1972–1977.* Translated by Colin Gordon, Leo Marshall, John Mepham, and Kate Soper. Pantheon Books, 1980.

Foucault, Michel. *The Punitive Society: Lectures at the Collège de France 1972–1973.* Translated by Graham Burchell. Palgrave Macmillan, 2015.
Foucault, Michel. "Revolutionary Action: 'Until Now.'" Translated by Donald F. Bouchard and Sherry Simon. In *Language, Counter-Memory, Practice: Selected Essays and Interviews,* edited by Donald F. Bouchard. Cornell University Press, 1977.
Foucault, Michel. *Security, Territory, Population: Lectures at the Collège de France 1977–1978.* Translated by Graham Burchell. New York: Palgrave MacMillan, 2007.
Foucault, Michel. *Technologies of the Self: A Seminar with Michel Foucault.* Tavistock Publications, 1988.
Foucault, Michel. "What Is Enlightenment?" Translated by Catherine Porter. In *The Foucault Reader,* edited by Paul Rabinow. Pantheon Books, 1984.
Freud, Sigmund. *Civilization and Its Discontents.* Translated by James Strachey. W.W. Norton and Company, 1930.
Freud, Sigmund. *The Uncanny.* Translated by David McLintock. Penguin Books, 2003.
Galison, Peter. "The Ontology of the Enemy: Norbert Wiener and the Cybernetic Vision." *Critical Inquiry* 21, no. 1 (1994): 228–66. https://doi.org/10.1086/448747.
Galloway, Alexander R. *Laruelle: Against the Digital.* University of Minnesota Press, 2014.
Gandhi, Mahatma. *From Yeravda Mandir: Ashram Observances.* Translated by Valji Govindji Desai. Navajivan Publishing House, 1932.
Gandhi, Mahatma. *Hind Swaraj.* G.A. Natesan & Co., 1921.
Gandhi, Mahatma. "Speech on Birth Centenary of Tolstoy." *Navajivan,* September 16, 1929.
Gane, Nicholas. "Radical Post-Humanism: Friedrich Kittler and the Primacy of Technology." *Theory, Culture & Society* 22, no. 3 (2005): 25–41. https://doi.org/10.1177/0263276405053718.
Garnier-Pagès, Louis-Antoine. *Histoire de la Revolution de 1848.* Bibliothèque Libérale, 1861.
Gehlen, Arnold. *Man in the Age of Technology.* Translated by Patricia Lipscomb. Columbia University Press, 1980.
Geoghegan, Bernard Dionysius. "Architectures of Information: A Comparison of Wiener's and Shannon's Theories of Information." In *Computer Architectures: Constructing the Common Ground,* edited by Theodora Varoudil and Olga Touloumi. Routledge, 2019.
Gies, Frances, and Joseph Gies. *Cathedral, Forge, and Waterwheel: Technology and Invention in the Middle Ages.* HarperCollins, 1995.
Gille, Bertrand. *Engineers of the Renaissance.* MIT Press, 1966.
Gille, Bertrand. *The History of Techniques.* Translated by P. Southgate and T. Williamson. Gordon and Breach Science Publishers, 1986.

Gilmore, Ruth Wilson. *Abolition Geography: Essays Towards Liberation.* Verso Books, 2022.
Ginzburg, Carlo. "Microhistory, Two or Three Things That I Know About It." *Critical Inquiry* 20, no. 1 (1993): 10–35. https://doi.org/10.1086/448699.
Godechot, Jacques. "Quatre lettres sur les journées des 11-23 Juillet et 5-6 Octobre 1789." *Annales Historiques de la Révolution Française* 202 (1970): 646–56. https://doi.org/10.3406/ahrf.1970.3993.
Grosz, Elizabeth. "Deleuze's Bergson: Duration, the Virtual and a Politics of the Future." In *Deleuze and Feminist Theory,* edited by Ian Buchanan and Claire Colebrook. Edinburgh University Press, 2000.
Gruppo di Studio Resistenze Metropolitane. *L'Ape e il Comunista: Il Più Importante Documento Teorico Scritto Dalle Brigate Rosse.* Pgreco, 2013.
Halpern, Orit. "Dreams for Our Perceptual Present: Temporality, Storage, and Interactivity in Cybernetics." *Configurations* 13, no. 2 (2007): 283–319. https://doi.org/10.1353/con.2007.0016
Hammond, John Lawrence, and Barbara Hammond. *The Rise of Modern Industry.* Methuen & Co., 1925.
Hansen, Mark. *New Philosophy for New Media.* MIT Press, 2004.
Haraway, Donna. *The Companion Species Manifesto: Dogs, People, and Significant Otherness.* Prickly Paradigm, 2003.
Haraway, Donna. *Simians, Cyborgs, and Women: The Reinvention of Nature.* Routledge, 1991.
Harriot, Thomas. *Briefe and True Report of the New Found Land of Virginia: The Complete 1950 Theodor de Bry Edition.* Dover Publications, 1972.
Hayles, N. Katherine. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics.* University of Chicago Press, 1999.
Hayles, N. Katherine. *How We Think: Digital Media and Contemporary Technogenesis.* University of Chicago Press, 2012.
Hayles, N. Katherine. "Refiguring the Posthuman." *Comparative Literature Studies* 41, no. 3 (2004): 311–16. https://doi.org/10.1353/cls.2004.0031.
Hazlitt, Henry. *Economics in One Lesson.* Harper & Brothers, 1946.
Heckscher, Eli. *Mercantilism.* Translated by Mendal Shapiro. George Allen & Unwin Limited, 1934.
Heidegger, Martin. *Basic Questions of Philosophy: Selected 'Problems' of 'Logic.'* Translated by Richard Rojcewicz and André Schuwer. Indiana University Press, 1994.
Heidegger, Martin. *Being and Time.* Translated by Joan Stambaugh. State University of New York Press, 1996.
Heidegger, Martin. "Letter on Humanism." Translated by Frank A. Capuzzi and J. Glenn Gray. In *Basic Writings,* edited by David Farrell Krell. Harper & Row, 1976.
Heidegger, Martin. "Only a God Can Save Us: The Spiegel Interview (1966)." Translated by W. Richardson. In *Martin Heidegger: The Man and the Thinker,* edited by Thomas Sheehan. Precedent Publishing, 1981.

Heidegger, Martin. *Poetry, Language, Thought.* Translated by Albert Hofstadter. Harper Colophon Books, 1975.
Heidegger, Martin. *The Question Concerning Technology; and Other Essays.* Translated by William Lovitt. Garland Pub, 1977.
Heims, Steve Joshua. *John Von Neumann and Norbert Wiener: From Mathematics to the Technologies of Life and Death.* MIT Press, 1980.
Hesiod. *Theogony and Works and Days.* Translated by Martin Litchfield West. Oxford University Press, 1999.
Hester, Helen. *Xenofeminism.* Polity Press, 2018.
Hobbes, Thomas. *Leviathan.* Translated by John Gaskin. Oxford University Press, 1998.
Hone, William. *Full Annals of the Revolution in France, 1830.* Thomas Tegg, 1830.
Horkheimer, Max. *Eclipse of Reason.* Oxford University Press, 1947.
Howard, Donald R. "Introduction." In *On the Misery of the Human Condition,* edited by Donald R. Howard. The Bobbs-Merrill Company, 1969.
Hugh of Saint Victor. *The Didascalicon of Hugh of Saint-Victor: A Medieval Guide to the Arts.* Translated by Jerome Taylor. Columbia University Press, 1961.
Hui, Yuk. "Cosmotechnics as Cosmopolitics." *e-flux* 86 (2017): 1–11.
Hui, Yuk. "On Cosmotechnics: For a Renewed Relation Between Technology and Nature in the Anthropocene." *Techné: Research in Philosophy and Technology* 21, no. 2/3 (2017): 319–41. https://doi.org/10.5840/techne201711876.
Hui, Yuk. "On the Limit of Artificial Intelligence." *Philosophy Today* 65, no. 2 (2021): 339–57. https://doi.org/10.5840/philtoday202149392.
Hunt, James. *The Negro's Place in Nature: A Paper Read Before the London Anthropological Society.* Van Evrie, Horton & Company, 1866.
Ihde, Don. *Technics and Praxis.* D. Reidel Publishing Company, 1971.
Ihde, Don. *Technology and the Lifeworld: From Garden to Earth.* Indiana University Press, 1990.
Irigaray, Luce. *The Forgetting of Air in Martin Heidegger.* Translated by Mary Beth Mader. University of Texas Press, 1999.
Irigaray, Luce. *This Sex Which Is Not One.* Translated by Catherine Porter. Cornell University Press, 1977.
Irigaray, Luce. *To Be Two.* Translated by Monique M. Rhose and Marco F. Cocito-Monoc. Routledge, 2001.
Jackson, Zakiyyah Iman. *Becoming Human: Matter and Meaning in an Antiblack World.* New York University Press, 2020.
Jaeger, Werner. *Paideia: The Ideals of Greek Culture. Volume I: Archaic Greece, the Mind of Athens.* Translated by Gilbert Highet. Basil Blackwell, 1946.
Jászi, Oszkár. *The Dissolution of the Habsburg Monarchy.* University of Chicago Press, 1929.
Jonas, Hans. "A Critique of Cybernetics." *Social Research* 20, no. 2 (1953): 172–92.

Jonas, Hans. *The Imperative of Responsibility: In Search of an Ethics for the Technological Age.* Translated by Hans Jonas and David Herr. University of Chicago Press, 1985.

Joronen, Mikko, and Jouni Häkli. "Politicizing Ontology." *Progress in Human Geography* 41, no. 5 (2017): 561–79. https://doi.org/10.1177/0309132516652955.

Kant, Immanuel. "Was ist Aufklärung?" Translated by Lewis White Beck. In *The Politics of Truth: Michel Foucault,* edited by Sylvère Lotringer and Lisa Hochroth. Semiotext(e), 1997.

Kapp, Ernst. *Elements of a Philosophy of Technology: On the Evolutionary History of Culture.* Translated by Lauren Wolfe. University of Minnesota Press, 2018.

Katz, Yarden. *Artificial Whiteness: Politics and Ideology in Artificial Intelligence.* Columbia University Press, 2022.

Kool, Vinod, and Rita Agrawal. *Gandhi and the Psychology of Nonviolence.* Palgrave Macmillan, 2020.

Koslofsky, Craig. *Evening's Empire: A History of the Night in Early Modern Europe.* Cambridge University Press, 2011.

La Dépêche. "Action Directes?." *La Dépêche,* April 9, 1980.

La Dépêche. "Le Parti Communiste Condamne Les Sabotages Dans L'Informatique." *La Dépêche,* April 18, 1980.

Lankester, Ray. *Degeneration: A Chapter in Darwinism.* MacMillan and Co, 1980.

Le Goff, Jacques. *Time, Work and Culture in the Middle Ages.* Translated by Arthur Goldhammer. University of Chicago Press, 1980.

Lekai, Louis. *The Cistercians: Ideals and Reality.* Kent State University Press, 1977.

Les Antilles. "Saint-Pierre, le 17 Décembre 1850." *Les Antilles,* December 18, 1850.

Lévy, Pierre. *World Philosophie.* Odile Jacob, 2000.

Lewis, Sophie. *Abolish the Family: A Manifesto for Care and Liberation.* Verso Books, 2022.

Libération. "Le 'Clodo' revendique 'l'attentat' de Toulouse." *Libération,* April 9, 1980.

Liebknecht, Ernest. *Karl Marx: Biographical Memoirs.* Translated by Ernest Untermann. Charles H. Kerr & Company, 1901.

Lipson, Eric. *Economic History of England. Vol. II: The Age of Mercantilism.* Oxford University Press, 1948.

Liu, James H., and Sammyh S. Khan. "Nation Building Through Historical Narratives in Pre-independence India: Gandhi, Nehru, Savarkar, and Golwalkar as Entrepreneurs of Identity." In *Warring with Words: Narrative and Metaphor in Politics,* edited by Michael Hanne, William D. Crano, and Jefferey Scott Mio. Psychology Press, 2014.

Lloyd, Henry Martyn. "The Discourse of Sensibility: The Knowing Body in

the Enlightenment." In *The Discourse of Sensibility: The Knowing Body in the Enlightenment,* edited by Henry Martyn Lloyd. Springer, 2013.
Lorimer, Hayden. "Caught in the Nick of Time: Archives and Fieldwork." In *The SAGE Handbook of Qualitative Geography,* edited by Dydia DeLyser, Steve Herbert, Stuart Aitken, Mike Crang, and Linda McDowell. SAGE, 2010.
Lothario dei Segni. *On the Misery of the Human Condition.* Translated by Margaret Mary Dietz. The Bobbs-Merrill Company, 1969.
Lyotard, Jean-Francois. *Libidinal Economy.* Translated by Iain Hamilton Grant. Indiana University Press, 1993.
MacKenzie, Adrian. *Transductions: Bodies and Machines at Speed.* Continuum, 2002.
Magnusson, Lars. *The Political Economy of Mercantilism.* Routledge, 2015.
Maoilearca, John Ó. *All Thoughts Are Equal: Laruelle and Nonhuman Philosophy.* University of Minnesota Press, 2015.
Marcuse, Herbert. *One-Dimensional Man.* Routledge, 1991.
Marcuse, Herbert. "Some Social Implications of Modern Technology." *Zeitschrift für Sozialforschung* 9, no. 3 (1941): 414–39.
Marperger, Paul Jacob. *Abermahliger Versuch zur Abhandlung einer nützlichen Policey-Materia, nehmlich von denen Gassen Laternen, Strand- und Wacht-Feuern, und andern nächtlichen Illuminationibus oder Erleuchtungen der Gassen und Strassen.* Verlegung des Authors, 1722.
Marx, Karl. *Capital: A Critique of Political Economy - Volume One.* Translated by Ben Fowkes. Penguin Books, 1976.
Marx, Karl. *Grundrisse.* Translated by Martin Nicolaus. Penguin Books, 1993.
Massumi, Brian. *The Power at the End of the Economy.* Duke University Press, 2015.
Matytsin, Anton. "Whose Light Is It Anyway." In *Let There Be Enlightenment: The Religious and Mystical Sources of Rationality,* edited by Dan Edelstein and Anton Matytsin. Johns Hopkins University Press, 2018.
Mbembe, Achille. "Necropolitics." Translated by Libby Meintjes. *Public Culture* 15, no. 1 (2003): 11–40. https://doi.org/10.1215/08992363-15-1-11.
Mbembe, Achille. "The Power of the Archive and Its Limits." Translated by Judith Inggs. In *Refiguring the Archive,* edited by Carolyn Hamilton, Verne Harris, Jane Taylor, Michele Pickover, Graeme Reid, and Razia Saleh. Springer Netherlands, 2002.
McKittrick, Katherine. "Mathematics Black Life." *The Black Scholar* 44, no. 2 (2014): 16–28. https://doi.org/10.1080/00064246.2014.11413684.
McKittrick, Katherine. *Sylvia Wynter: On Being Human as Praxis.* Duke University Press, 2015.
McLuhan, Marshall. *Understanding Media: The Extensions of Man.* Signet Books, 1966.
McMahon, Darrin M. "Illuminating the Enlightenment: Public Lighting Practices in the Siècle des Lumières." *Past & Present* 240, no. 1 (2018):

119–59. https://doi.org/10.1093/pastj/gty008.
McQuillan, Dan. "People's Councils for Ethical Machine Learning." *Social Media + Society* 4, no. 2 (2018): 1–10. https://doi.org/10.1177/2056305118768303.
McQuillan, Dan. *Resisting AI: An Anti-Fascist Approach to Artificial Intelligence.* Bristol University Press, 2022.
Merchant, Brian. *Blood in the Machine: The Origins of the Rebellion against Big Tech.* Little, Brown & Company, 2023.
Mercier, Louis-Sébastien. *Memoirs of the Year Two Thousand Five Hundred.* Translated by William Hooper. G. Robinson, 1772.
Mill, John Stuart. *Essays on Some Unsettled Questions of Political Economy.* Longmans, Green, Reader & Dyer, 1874.
Moise, Gillian. "MOVEing Beyond Anti-State to Anti-Civ: Black Lives Matter and the MOVE Organization Through the Critical Environmental Justice Lens." *Environmental Justice* 15, no. 1 (2022): 15–64. https://doi.org/10.1089/env.2021.0026.
Montaigne, Michel de. *The Complete Essays of Montaigne.* Translated by Donald M. Frame. Stanford University Press, 1958.
Moore, John C. "Innocent III's De Miseria Humanae Conditions: A Speculum Curiae?" *The Catholic Historical Review* 67, no. 4 (1981): 553–64.
Moser, Benjamin. *Why This World: A Biography of Clarice Lispector.* Oxford University Press, 2009.
Mueller, Gavin. *Breaking Things at Work: The Luddites Are Right About Why You Hate Your Job.* Verso Books, 2021.
Müller, Christopher John. *Prometheanism Technology, Digital Culture and Human Obsolescence.* Rowman & Littlefield, 2016.
Mumford, Lewis. *Technics and Civilization.* University of Chicago Press, 2010.
Mumford, Lewis. "Technics and the Nature of Man." *Technology and Culture* 7, no. 3 (1966): 303–17. https://doi.org/10.2307/3101930.
Negarestani, Reza. "The Labour of the Inhuman." In *#Accelerate: The Accelerationist Reader,* edited by Mackay Robin and Armen Avanessian. Urbanomic, 2014.
Newman, William. *Promethean Ambitions: Alchemy and the Quest to Perfect Nature.* University of Chicago Press, 2004.
Newman, William. "Technology and Alchemical Debate in the Late Middle Ages." *Isis* 80, no. 3 (1989): 423–45. https://doi.org/10.1086/355083.
Neyrat, Frédéric. *The Unconstructable Earth: An Ecology of Separations.* Translated by Drew S. Burk. Fordham University Press, 2019.
Nunez, Theron A., Jr. "Creek Nativism and the Creek War of 1813–1814." *Ethnohistory* 5, no. 1 (1958): 1–15. https://doi.org/10.2307/480669.
Nussbaum, Martha. *The Fragility of Goodness: Luck and Ethics in Greek Tragedy and Philosophy.* Cambridge University Press, 1986.
Ogilvie, Sheilagh. *The European Guilds: An Economic Analysis.* Princeton University Press, 2019.

Ogilvie, Sheilagh. *Institutions and European Trade: Merchant Guilds, 1000–1800.* Cambridge University Press, 2011.

Ovitt, George Jr. *The Restoration of Perfection: Labor and Technology in Medieval Culture.* Rutgers University Press, 1987.

Palmer, Tyrone. "Otherwise than Blackness: Feeling, World, Sublimation." *Qui Parle* 29, no. 2 (2020): 247–83. https://doi.org/10.1215/10418385-8742983.

Parisi, Luciana. "Automate Sex: Xenofeminism, Hyperstition and Alienation." In *Futures & Fictions,* edited by Henriette Gunkel, Ayesha Hameed, and Simon O'Sullivan. Repeater Books, 2017.

Passmore, John. *Man's Responsibility for Nature: Ecological Problems and Eastern Traditions.* Charles Scribner's Sons, 1974.

Pfeiffer, Ernst, ed. *Sigmund Freud and Lou Andreas Salomé Letters.* Translated by William Robson-Scott. Helen and Kurt Wolff Book, 1972.

Pickering, Danby. *The Statutes at Large, from the Thirty-Second Year of K. Hen. VII to the Seventh Year of K. Edw. VI. Inclusive.* Joseph Bentham, 1763.

Plant, Sadie. *Zeros + Ones: Digital Women + The New Technoculture.* Fourth Estate, 1997.

Plato. *Protagoras.* Translated by Benjamin Jowett. Library of Liberal Arts, 1956.

Plato. *The Symposium.* Translated by Margaret Howatson. Cambridge University Press, 2008.

Plutarch. *Plutarch's Lives V: Agesilaus and Pompey, Pelopidas and Marcellus.* Translated by Bernadotte Perrin. William Heinemann, 1961.

Poitras, Geoffrey. "The Luddite Trials: Radical Suppression and the Administration of Criminal Justice." *Journal for the Study of Radicalism* 14, no. 1 (2020): 121–66. https://doi.org/10.14321/jstudradi.14.1.0121.

Polizei Berlin. "Brandanschlag auf die Mörschbrücke." *Polizei Berlin,* April 19, 2018, https://www.berlin.de/polizei/polizeimeldungen/pressemitteilung.688200.php.

Raunig, Gerald. "The Heterogenesis of Fleeing." In *Deleuze and Contemporary Art,* edited by Stephen Zepke and Simon O'Sullivan. Edinburgh University Press, 2010.

Raunig, Gerald. "Modifying the Grammar. Paolo Virno's Works on Virtuosity and Exodus." *Artforum,* January 7, 2008.

Red Brigades. "Resolution of The Strategic Directorate of the Red Brigades (February 1978)." In *1978: A New Stage in the Class War? Selected Documents from the Spring Campaign of the Red Brigades,* edited by Joshua Depaolis. Kersplebedep, 2019.

Roazen, Paul. *Brother Animal: The Story of Freud and Tausk.* Knopf, 1969.

Rodríguez-Alegría, Enrique. "Narratives of Conquest, Colonialism, and Cutting-Edge Technology." *American Anthropologist* 110, no 1. (2008): 33–43. https://doi.org/10.1111/j.1548-1433.2008.00006.x.

Roochnik, David. *Of Art and Wisdom: Plato's Understanding of Techne.* Pennsylvania University Press, 1996.

Rose, Gillian. "Posthuman Agency in the Digitally Mediated City: Exteriorization, Individuation, Reinvention." *Annals of the American Association of Geographers* 107, no. 4 (2017): 779–93. https://doi.org/10.1080/24694452.2016.1270195.

Rosenfeld, Alan. "Militant Democracy: The Legacy of West Germany's War on Terror in the 1970s." *The European Legacy* 19, no. 5 (2014): 568–89.

Rote Zora. "Action contre Nixdorf à Hanovre et contre la Verband der Vereine Creditreform à Neuss (1983)." *Materialisme Dialectique,* https://materialisme-dialectique.com/.

Rote Zora. "Communiqué des Actions contre Siemens (1983)." *Materialisme Dialectique,* https://materialisme-dialectique.com/.

Rote Zora. "Angriff gegen Scientific Control Systems (SCS), Hamburg und den Mathematischen Programmier- und Beratungsdienst (MPB), Dortmund." In *Früchte des Zorns,* edited by ID-Archiv im IISG. ID-Verlag, 1993.

Rubertone, Patricia E. "Archaeology, Colonialism, and 17th Century Native America: Towards an Alternative Interpretation." In *Conflict in the Archaeology of Living Traditions,* edited by Robert Layton. Routledge, 1989.

Russell, Jeffrey Burton. *Lucifer: The Devil in the Middle Ages.* Cornell University Press, 1984.

Sachs, Hanns. "The Delay of the Machine Age." Translated by Margaret J. Powers. *The Psychoanalytic Quarterly* 4, no. 3 (1933): 404–24. https://doi.org/10.1080/21674086.1933.11925185.

Saint Benedict. *Benedict's Rule: A Translation and Commentary.* Translated by Terrence G. Kardong. The Liturgical Press, 1996.

Saint Augustine. *City of God, Books VIII–XVI.* Translated by Gerald G. Walsh and Grace Monahan. Catholic University of America Press, 1952.

Saint Augustine. *The Literal Meaning of Genesis (Vol. 2).* Translated by John Hammond Taylor. Newman Press, 1982.

Sanders, Kimberly, and Judson L. Jeffries. "Framing MOVE: A Press' Complicity in the Murder of Women and Children in the City of (Un)brotherly Love." *Journal of African American Studies* 17, no. 4 (2013): 566–86. https://doi.org/10.1007/S12111-013-9252-7.

Sanford, Eva Matthews. "The Verbum Abbreviatum of Petrus Cantor." *Transactions and Proceedings of the American Philological Association* 74 (1943): 33–48. https://doi.org/10.2307/283587.

Sayce, Roderick Urwick. *Primitive Arts and Crafts: An Introduction to the Study of Material Culture.* Biblo and Tannen, 1965.

Sayers, Jane E. *Innocent III: Leader of Europe 1198–1216.* Longman, 1994.

Schaniel, William. "New Technology and Culture Change in Traditional Societies." *Journal of Economic Issues* 22, no. 2 (1988): 493–98. https://doi.org/10.1080/00213624.1988.11504780.

Schivelbusch, Wolfgang. *Disenchanted Night: The Industrialization of Light in the Nineteenth Century.* Translated by Angela Davies. University of California Press, 1995.

Schuhl, Pierre-Maxime. *Machinisme et Philosophie.* PUF, 1947.

Serres, Michel. *The Five Senses: A Philosophy of Mingled Bodies.* Translated by Margaret Sankey and Peter Cowley. Continuum, 2008.

Seutonius. *The Twelve Caesars.* Translated by Robert Graves. Cassell & Company, 1957.

Sharma, Sarah. "A Manifesto for the Broken Machine." *Camera Obscura: Feminism, Culture, and Media Studies* 35, no. 2 (2020): 171–79. https://doi.org/10.1215/02705346-8359652.

Sharpe, Christina Elizabeth. *In the Wake: On Blackness and Being.* Duke University Press, 2016.

Siegert, Bernhard. "The Horrifying Ties, from Which the Public Order Originates: The Police in Schiller and Mercier." In *This Is Enlightenment,* edited by Clifford Siskin and William Warner. University of Chicago Press, 2010.

Simondon, Gilbert. *On the Mode of Existence of Technical Objects.* Translated by Cecile Malaspina and John Rogove. Univocal Publishing, 2017.

Smilges, J. Logan. *Crip Negativity.* University of Minnesota Press, 2023.

Smith, Adam. *Selected Philosophical Writings.* Imprint Academic, 2004.

Smith, Adam. *The Theory of Moral Sentiments; or, an Essay towards an Analysis of the Principles by which Men naturally judge concerning the Conduct and Character, First of their Neighbours, and then of Themselves.* Strahan and Prefton, 1812.

Spinoza, Benedict De. *Ethics.* Translated by Edwin Curley. Penguin, 1994.

Stiegler, Bernard. *Technics and Time, 1: The Fault of Epimetheus.* Translated by Richard Beardsworth and George Collins. Stanford University Press, 1998.

Stiegler, Bernard. *The Neganthropocene.* Translated by Daniel Ross. Open Humanities Press, 2018.

Tausk, Victor. "On the Origins of the 'Influencing Machine' in Schizophrenia." Translated by Dorian Feigenbaum. *Journal of Psychotherapy Practice and Research* 1, no. 2 (1992): 185–206. https://doi.org/10.1080/21674086.1933.11925189.

Thacker, Eugene. *In the Dust of This Planet.* Zero Books, 2011.

Thacker, Eugene. *Infinite Resignation: On Pessimism.* Repeater Books, 2018.

Thacker, Eugene. "The Shadows of Atheology: Epidemics, Power and Life after Foucault." *Theory, Culture & Society* 26, no. 6 (2009): 134–52. https://doi.org/10.1177/0263276409347698.

The Phrenological Journal. "Thompson Versus Montgomery on the Negroes." *The Phrenological Journal and Miscellany* 6, no. 11 (1830): 398–410.

Thompson, Edward Palmer. *The Making of the English Working Class.* Vintage, 1963.

Thornis, Malcolm. *The Luddites: Machine-Breaking in Regency England.* David & Charles Publishers Limited, 1970.
Thornton, Pip. "The Meaning of Light: Seeing and Being on the Battlefield." *cultural geographies* 22, no. 4 (2015): 567–83. https://doi.org/10.1177/1474474015595795.
Tiqqun. *The Cybernetic Hypothesis.* Translated by Robert Hurley. Semiotext(e), 2020.
Tiqqun. *This Is Not a Program.* Translated by Joshua David Jordan. Semiotext(e), 2011.
Toulouse Matin. "Nouvel Attentat du CLODO." *Toulouse Matin,* January 29, 1983.
Towns, Armond R. *On Black Media Philosophy.* University of California Press, 2022.
Truitt, Elly. "Celestial Divination and Arabic Science in Twelfth-Century England: The History of Gerbert of Aurillac's Talking Head." *Journal of the History of Ideas* 73, no. 2 (2012): 201–22. https://doi.org/10.1353/jhi.2012.0016.
Truitt, Elly. *Medieval Robert: Mechanism, Magic, Nature, and Art.* University of Pennsylvania Press, 2015.
Turcuş, Veronica, and Şerban Turcuş. *At the Edges of Christendom. The White Monks' Arts and Institutions in Transylvania.* Academia Romana, 2012.
Vasudevan, Pavithra. "An Intimate Inventory of Race and Waste." *Antipode* 53, no. 3 (2021): 770–90. https://doi.org/10.1111/anti.12501.
Verbeek, Peter-Paul. *What Things Do: Philosophical Reflections on Technology, Agency, and Design.* Pennsylvania State University Press, 2005.
Vergès, Françoise. "Capitalocene, Waste, Race, and Gender." *e-flux* 100 (2019): 1–11.
Virey, Julien-Joseph. *Natural History of the Negro Race.* Translated by J. H. Guenebault. Wiley & Long, 1837.
Virilio, Paul. "The Primal Accident." In *The Politics of Everyday Fear,* edited by Brian Massumi. University of Minnesota Press, 1993.
Viveiros de Castro, Eduardo. "On Models and Examples: Engineers and Bricoleurs in the Anthropocene." *Current Anthropology* 60, no. 20 (2019): 296–308. https://doi.org/10.1086/702787.
Viveiros de Castro, Eduardo. "Perspectival Anthropology and the Method of Controlled Equivocation." *Tipití: Journal of the Society for the Anthropology of Lowland South America* 2, no. 1 (2004): 3–22.
Viveiros de Castro, Eduardo, and Yuk Hui. "For a Strategic Primitivism: A Dialogue Between Eduardo Viveiros de Castro and Yuk Hui." *Philosophy Today* 65, no. 2 (2021): 391–400. https://doi.org/10.5840/philtoday2021412394.
Walters, Karly. "Law, 'Terror' and the Frame-Breaking Act." *The Economic History Society* 67 (2004): 23–28.

Warren, Calvin. "Onticide: Afro-pessimism, Gay Nigger# 1, and Surplus Violence." *GLQ: A Journal of Lesbian and Gay Studies* 23, no. 3 (2017): 391–418. https://doi.org/10.1215/10642684-3818465.

Warren, Calvin. *Ontological Terror: Blackness, Nihilism, and Emancipation.* Duke University Press, 2018.

Warren, Calvin, Michelle Banks, Robert Savino Oventile, and Yuliana Samson. "Heidegger, Afropessimism, and the Harlem Renaissance: An Interview with Calvin Warren." *Diacritics* 50, no. 2 (2022): 112–21. https://doi.org/10.1353/dia.2022.a900906.

Washington, Linn. "MOVE: A Double Standard of Justice." *Yale Journal of Law and Liberation* 1, no. 1 (1989): 67–82.

White, Lynn. "Cultural Climates and Technological Advance in the Middle Ages." In *Volume 2 Viator: Medieval and Renaissance Studies,* edited by The Center for Medieval and Renaissance Studies. University of California Press, 1972.

White, Lynn. *Medieval Religion and Technology: Collected Essays.* University of Chicago Press, 1978.

Whitney, Elspeth. *Medieval Science and Technology.* Greenwood Press, 2004.

Whitney, Elspeth. "Paradise Restored: The Mechanical Arts from Antiquity Through the Thirteenth Century." *Transactions of the American Philosophical Society* 80, no. 1 (1990): 1–169. https://doi.org/10.2307/1006521.

Wiener, Norbert. *Cybernetics: Or Communication and Control in the Animal and the Machine.* MIT Press, 1985.

Wiener, Norbert. *The Human Use of Human Beings: Cybernetics and Society.* Free Association Books, 1989.

Wilderson III, Frank B. *Red, White & Black: Cinema and the Structure of U.S. Antagonism.* Duke University Press, 2010.

Wilderson III, Frank B. "'We're Trying to Destroy the World': Anti-Blackness and Police Violence After Ferguson." In *Shifting Corporealities in Contemporary Performance: Danger, Im/mobility and Politics,* edited by Marina Gržinić & Aneta Stojnić. Palgrave Macmillan, 2018.

William of Malmesbury. *The History of the Kings of England of His Own Times.* Seeleys, 1854.

Wills, David. *Dorsality.* University of Minnesota Press, 2008.

Winner, Langdon. *Autonomous Technology: Technics-out-of-Control as a Theme in Political Thought.* MIT Press, 1978.

Wolfe, Cary. *What Is Posthumanism?* University of Minnesota Press, 2010.

Woodard, Ben. *Slime Dynamics: Generation, Mutation, and the Creep of Life.* Zero Books, 2012.

Wynter, Sylvia. "Unsettling the Coloniality of Being/Power/Truth/Freedom: Towards the Human, after Man, Its Overrepresentation – An Argument." *CR: The New Centennial Review* 3, no. 3 (2003): 257–337. https://doi.org/10.1353/ncr.2004.0015.

Yusoff, Katherine. "The Inhumanities." *Annals of the American Association of Geographers* 111, no. 3 (2020): 663–67. https://doi.org/10.1080/24694452.2020.1814688.

Zielinski, Siegfried. *Deep Time of the Media: Toward an Archaeology of Hearing and Seeing by Technical Means.* Translated by Gloria Custance. MIT Press, 2006.

Zylinska, Joanna. *AI Art: Machine Visions and Warped Dreams.* Open Humanities Press, 2020.

This page intentionally left blank

Index

This page intentionally left blank

Thomas Dekeyser is lecturer in human geography at the University of Southampton.