Introduction

This book is a revised compilation of essays previously published in a number of academic journals over roughly the first decade of the twenty-first century. Collectively they have been concerned with the elaboration and development of a critique of capitalism as it has been adapted/transformed by the invention of digital technologies, most especially the new forms of production specific to the automated and autonomous systems that technology makes possible. It is a critique that began with a materialist examination of the ways that digital technology has “magical” properties, seemingly allowing production without consumption of resources: the aura of the digital provided an entry point for what had grown into an examination of the frameworks of authority, production and domination specific to the digital at the end of the twentieth and beginning of the twenty-first centuries.

These essays, with appropriate revisions and expansions, present a single coherent critique of how digital technology dominates the horizons of possibility. Central to this consideration is the illusion of production-without-consumption enabled by digital technology and automation. It enables a colonization of social relationships—a valorization of social activity and human behavior—as well as the substitution of
immaterial production based in semiosis for productive activity based in facture. Apparent in the breach that now lies between the virtual domain of the digital and the reality of physicality is the ideology of automation, the aura of the digital, the aura of information, an aspiration to the state of information, and finally digital capitalism itself. All these developments have a common basis in an immaterialism—without-limits that stands apart from, and superior to, the physical; however, this lacuna is an illusion. The digital is not a realm without boundaries: capital scarcity sets the limits for the immaterial production characteristic of digital capitalism, a point of extension beyond which the political economy must inevitably collapse.

The ‘authorship’ phenomenon common to social media and digital commerce is a symptom of this colonization of social relations by digital technology. In the process, it reveals an aspiration to achieve a complete awareness of all informational possibilities (the aspiration to the ‘state of information’) in a specific transformation of previously non-commercial activities that might produce a commercial action (such as browsing in a store), into a commodity in themselves. It is a dramatic change, drawing continuous surveillance and perfect recall together into a new, immaterial commodity that comes into being as surveillance—the totalizing description of human action. This transformation of activity to commodity depends on the semiotic, recombinative power of digital technology. Immaterial production is characteristic of digital capitalism, and (equally characteristically) presents itself as something other than a commodity form: the impact of the aura of information. This aspiration is digital capitalism’s attempt to create a complete description of all information as instrumentality (data) where the disconnected, contextless dimensions of all activities performed within the digital realm become equally valid, and valuable, to immaterial production as commodities. This ‘material’ (data) is the ‘value’ contained by social networks, and is the reason these companies are perceived to be valuable even when they produce no revenue.
Immaterial commodities, via the *digital aura*, enable the oxymoronic claim of a manifest immateriality—of the state of information being realized in a direct, tangible form—via a digital instrumentality. The contemporary application of digital computers to information gathering, storage, and processing necessitates considering a novel theory of knowledge that, through reification, gains agency as the *aura of information*. It is inherently immanent in the interlocking conditions that are digital capitalism. By being a reification of the capitalist acquisitive demand for continuous growth, while at the same time being an imagined end to “scarcity,” it reveals a utopian impulse where the aura of the digital stands as proof of an immaterial order, suggesting both the triumph, and the dissolution, of capitalism itself. These dualities are paradoxical; contradictory impulses emerge in digital capitalism as a central part of its expansive procedure: demanding, and then justifying the general deployment of immaterial, semiotic production as the primary method for wealth generation.

The foundations of the aura of information lie, like the digital aura, in the nature of computer technology itself. Crucial to their function is the fragmentation of the continuous, physical world into discrete blocks of data—samples—whose storage, manipulation, and recombination follows a semiotic procedure governed by ‘rules’ that constrain the digital computer to a strict instrumentalist function, separate from the meaning and/or historical context of the materials being accessed, sorted, combined. This reification transforms digital technology into the embodiment of an immaterial realm where production is a *recombinant* procedure—fundamentally a semiotic function—that creates an immaterial “product.”

The technical capabilities of this computer technology obscure the nexus of capital, human agency, social reproduction, and physical production; thus, the denial of physicality that is specific to the aura of the digital, and apparent in the evolution from hand-labor to the automation characteristic
of ‘digital capitalism,’ is inherent in how this technology has been deployed. The nineteenth century “protestant work ethic” is the conceptual starting point for this development, merging the ‘ideology of autonomous achievement’ with digital technology to create a new ‘ideology of automation.’ It appears in the social realm through fantasies of autonomy—the “self-made man”—independent of the social reproduction that makes their success and survival possible. This imaginary autonomy elides human labor from production, apparently rendering human agency obsolete in the digital information economy, and authorizing the valorization of social behavior. The active principle for these transformations is the ‘aura of the digital,’ which reifies capitalist ideology by masking the role and importance of an underlying physical reality. In its place is a corrosive fantasy that digitality has opened up a magical realm beyond physical constraints, where the duality of production/consumption is resolved to allow growth without limit—the continual expansion of wealth—beyond the constraints of production, materiality, and labor.

Due to the steady development and expansion of digital technology over the course of the twentieth century, sampling has achieved a central, even dominant position both culturally and technologically. The sample is as necessary for digital technology as it is for celluloid motion pictures—making it a fundamental technique of contemporary mediated cultures. However, it is clearly on view in a much older, historical device called the “cat organ” (also known by the Spanish term “katzenkavalier,” German “katzenklaver,” or “cat piano”), a musical instrument described in Juan Christoval Calvete’s 1552 book chronicling King Felipe II of Spain’s

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1 The term ‘digital capitalism’ was first posed by Dan Schiller in his 1999 book of the same title. While his description proceeds from the same technical basis as my own, they are an example of convergent thinking based in similar initial premises; the current discussion and theorization is independent of his earlier conception even though they both proceed from similar observations.
travels in Europe. A consideration of this early example of semiotic reassembly offers insight into contemporary ethical questions that could be asked about digital capitalism. The operation of the cat organ was summarized by French writer and critic Jean-Baptiste Weckerlin in his 1877 book *Musiciana, extraits d’ouvrages rare ou bizarre* (Musiciana, excerpts from rare or bizarre books):

When the King of Spain, Felipe II was in Brussels in 1549 visiting his father the Emperor Charles V, each saw the other rejoicing at the sight of a completely singular procession. At the head marched an enormous bull with a little devil sitting between his horns juggling fire. Prancing in front of the bull was a young boy sewn into a bear skin riding on a horse whose ears and tail were cut off. Then came the archangel Saint Michael in bright clothing, and carrying a balance in his hand.

The strangest part was a cart that carried the most singular music imaginable. It held a bear that played the organ: instead of pipes, some twenty boxes, each containing a cat whose narrow tail came out the bottom and was connected to the keyboard by a string, so that when a key was pressed, the corresponding tail would be pulled hard, and would produce a lamentable meow. The historian Juan Christoval Calvète, noted the cats were arranged properly to produce a succession of notes from the octave ...(chromatically, I think).

This abominable orchestra arranged itself inside a theater where monkeys, wolves, deer and other animals danced to the sounds of this infernal music.  


\[^3\] Jean-Baptiste Weckerlin, *Musiciana; extraits d’ouvrages rares ou bizarres, anecdotes, lettres, etc. concernant la musique et les musiciens* (Paris: Garnier Frères, 1877), 349. For further reading about the relation of this precession, see Claude-François Ménestrier, *Des Représentations en musique anciennes et modernes* (Paris: Chez R.
Cat lovers might wish the cat organ was a fictional horror, much like Arthur Ewing’s “mouse organ” on Monty Python’s Flying Circus. It produces katzenmusic by torturing live animals as a productive means, causing them to mew on demand: literally cat-calls that are not merely cat-calls, but something more—a form of music semiotically reassembled from the distinct voices controlled by the device. As Weckerlin’s description of the procession shows, the cat organ functions symbolically, based on the association of cats with devils and an immaterial, supernatural order where normally antithetical animals come together in a peaceable kingdom: the harbinger of an immaterial realm.

The cat organ produces a magical transformation of animal noise into harmonious order; and the procession dramatizes an immaterialist theory. It is a demonstration of ‘Godly might and universal design,’ thus forcing immaterial forces into an immanent presence, presented through technical instrumentality: the angel Michael imposes a heavenly order that drives demonic forces before it. Enacting this order requires a systematic denial of the actual physicality of its means: the live animals encased in the katzenkavalier. The specific subordination enacted by the cat organ is at one and the same time an expulsion from consciousness, it is an earlier form of the same blindness which is the aura of the digital, stripping concerns with physicality from consideration. This separation of source (material basis) from meaning reflects the action of a semiotic process.

To Weckerlin and contemporary audiences, the horror of this machine lies with the fact that individual animals are significant to the device only in so far as they stand-in for the specific pitch they produce—in effect, they are living samples

Guinard, 1681), and Samuel Bauer, Denkwürdigkeiten, Vol. XI (1830).


of abstract musical tones. This transfer is significant to understanding the device’s relevance to contemporary technology: the cat organ finds its parallel in the software application AutoTune where any voice can be correctly tuned to be perfectly in pitch, a transubstantiation of ordinary voices into pure musicality. In arranging live cats so the timbre of their voices would at one and the same time become the various pitches of a musical composition, the cat organ implicitly reifies an understanding of physical reality analogous to contemporary digital sampling and fragmentation; it reflects a specifically digital conception of physicality: the operative procedure is semiotic, the results dependent upon the reorganization of a collection of data samples. The katzenkavalier is thus an early symptom of the digital both conceptually and in approach: sampling, via the fragmentation of physical reality into discrete packets (the individual cats), for semiotic reassembly and manipulation as a new product: (katzen)music, an immaterial form whose existence only comes into being through a mechanical apparatus of performance-torture that renders the semiotic transformation of cat’s mewing into abstract musical form.

The cat organ reappears (quite literally) in the 1990s as a pair of Christmas albums released by the group Jingle Cats. They were a popular sensation—their first album, Meowy Christmas, was completely sold out at Christmas in 1993, and followed in 1994 with Here Comes Santa Claws: both albums feature music “sung” by cats’ meowing on key. As the “Jingle Cats” website notes, in a disturbing reflection of the original cat organ’s basis, the music was created using real cats. This transformation-without-torture was possible because of digital synthesizer technology that could sample actual cat’s mews and then adjust them to be on key, thus allowing the use of real cats in the performance. These albums converge upon the semiotic procedure built-in to the cat organ. Both are symptomatic of the ability of digital technology to fragment a continuous physical reality, disassociating it from its

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source. This disassembly into component elements enables their reassembly from/into a new form—data. Semiosis enables and proceeds autonomously without concern for the physicality of the material translated to digital form.

Apparent even in the historical cat organ, is the concept of the “aura of the digital.” This neutral protocol so clearly on view in the cat organ is also a cybernetic (machinic) one that incorporates the living into the non-living: cats encased in the instrument of their torture-performance. This cybernetic dimension is an analogue to the digital transference (and surrender) of human agency to the automated and digital computer where particular human concerns become data in the reconfiguration of social space to reflect the immaterial valorization of digital capitalism.

In contemporary digital capitalism, this process strips concerns with immanent physicality (and the very real limitations of the physical world) from consciousness, replacing it with an illusory abundance—the idea that digital technology “ends scarcity” through the purely semiotic process of digital replication (an unintelligent, autonomous protocol of transfer and reproduction). It is the apparent “truth” that all digital copies are equally good which supports the aura of the digital’s a/effects. In considering the digital aura, several features immediately emerge: the effective immortality of digital media, their potential for endless, perfect replication, and the ways that the immaterial is always already limited by the scarcity of capital. The ethical dimension posed by the sampling process arises because the digital, in particular, proceeds by separating means from meaning (its unintelligent nature).

It is the limiting factor imposed by the scarcity of capital which makes a critique of the political economy not only a potential aspect of examinations of the digital, it is also an explanation for the various economic crises that have arisen both in the United States and elsewhere. It challenges the notion that “this time is different” through a continual return to the disassociative production method: semiosis, where a fragmented source is reconfigured for a purpose independent
from its material basis: human life, agency and social reproduction as commodities, rather than as essential factors for the production-consumption relationship. It is this issue—the ethical dilemma posed by immaterialism—that haunts these essays: each focuses on a single conceptual feature and explores it in detail, in the process identifying discrete areas that serve as signifiers for the digital’s colonization—as reified capitalist ideology—of what were previously social activities as new forms of economic production, while at the same time offering a glimpse of a digital capitalism severed from physical production and the consumption of physical material, labor and capital. It is this apparent (and illusory) production *ex nihilo* via technologies of surveillance and automated semiosis (financialization using High Frequency Trading algorithms is the most obvious example) that has come to define the contemporary political economy where the social reproduction of labor is not of concern to capitalism.

Torture is at the foundation of the cat organ: it is symptomatic of the disassociation common to the aura of the digital. To be without concern for the physical impacts denied through the shift to immaterialism is to create the potential for abuses of that physical domain. The cat organ’s sampling process—where the animals become insignificant to its meaning and purpose, but essential to its form—is inherently contained within the foundational procedure of the digital, reflecting the same stripping of physicality from conscious awareness that is *essentially* the aura of the digital; this development is an ideological force operative within the socio-political economy of the United States, guiding the implementation of so-called “social media” and automated production.

The transformation of social activity into commodity emerges from the illusion that digital production creates value without expenditure—the illusion of capital production without its necessary consumption. It is symptom of the structure of a pathological capitalist ideology becoming realized in the fantasy of digital technology. Simultaneously, this
aura of the digital threatens the status quo because the illusion of profit without expenditure suggests the possibility that the digital could enable an end to capitalism itself (ignoring the reality of limited resources, time, expense, etc. that otherwise govern all forms of value and production). It is this second aspect of the digital that poses a utopian potential—the transcendence of the limitations imposed by physical reality.

Material limitations are countered in the semiotic process of isolation, fragmentation and reassembly that provides the technical basis for digital technology. The immaterialist basis is an eruption whose foundations are semiotic. It is the ability of the technology to fragment and proceed through an autonomous protocol that breaks the continuous physical reality into discrete packets of relevant data that enables the neutrality of the digital in relation to that which it conveys: there is no concern for the physicality of the material translated to digital form. Thus the torture that is at the foundation of the technical apparatus of the cat organ is inherently the sampling procedure of the digital, and reflects the same stripping of physicality from conscious awareness that is essential for the aura of the digital. The terror posed by sampling (revealed by the katzenkavalier) emerges in the horror-fantasies of science-fiction in the form of the A.I., the robot, the intelligent machine or the cyborg focused on the enslavement-destruction of humanity.

That there is an ethical concern in relation to this historical infernal device’s use of sampling—the necessary foundation for the digital semiosis—implies a similar ethical dimension and critique may be relatable to the aura of the digital’s occlusion of physicality from consciousness. These ethical questions are emerging, however, not from the manipulation of sampled animal voices, but in the aftermath of the “Housing Bubble” of 2008 where the sampled and semiotically manipulated materials were at once both less tangible (securitized debt) and immanently visible dispossessed humanity. The ideology reified in digital technology suggests the financialization and the economic collapses of the Dot.
Com Bubble and the Housing Bubble, et al., were not only inevitable, but are a structural effect of the transition to immaterial production, and the human collateral damage a sign of its productive action. These economic upheavals are direct evidence for the impact of immaterial production through the digital manipulation of finance as a semiotic system. Understanding the origins of this social dilemma is the underlying purpose of this examination.