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The Artificiality of Digital Scarcity: Contradictions between Code, Law, Norms, and Value(s)

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The internet has become a consequential technology that has transformed life, labor, and consumption around the globe. Yet, saying the internet changed the world is misleading because the internet, and its "digital world," is not one "thing" but a fluid network in constant flux constituted and reconstituted through interactions with billions of users and devices. These continuous modifications are not just a result of technology but are also an effect of law, social norms, and the rise and fall of online businesses and platforms. One platform, Napster, represented a major turning point in the history of the internet as it simultaneously paved the way for peer-to-peer filesharing as well as ushered in a backlash from incumbent media companies backed by an army of lawyers (Lessig 2004; Wayne 2004: 148-152). This essay grapples with the ramifications of this struggle against filesharing and "piracy[1]" that began with Napster and forever changed the internet.

Revisiting Napster twenty-five years after its founding is important because the long-term implications of Napster's rise and fall are complicated. On the one hand, the internet of the 2020s is dominated by gigantic platforms, e.g., Google, Facebook, and Amazon, that collaborate with governments and media companies to surveil, censor, and control the internet to restrict access and maintain "law and order" in what was once a seemingly limitless open frontier (see Srnicek 2017; Zuboff 2019). On the other hand, "illicit" filesharing and "piracy" have by no means disappeared, to the consternation of global media companies (e.g., Bridge, 2023; Stokel-Walker, 2024). So much of how and why the internet is structured as it is can be explained by recognizing that this contradictory situation is due to the inherent properties of the internet and digital files when "forced" to fit the capitalist drive for endless accumulation. Here, I examine why, from a critical theoretical perspective, governments and corporations have struggled to "overcome" the "problem" of freedom on the internet with only partial success. To answer this question, it is necessary to explore how digital infrastructures, supported by code and law, have shaped the internet to facilitate capital accumulation despite the ever-present potential for filesharing and "piracy." Ultimately, I explain how the Napster case represents a "crisis of value" of the digital and how it emerged from the historical dynamics of capitalism that have far-reaching implications beyond Napster itself.

The Rise and Fall of Napster and the "Copyright Wars"

This section describes the core narrative behind the shift from the largely uncommercial and "free" internet before and during Napster's brief existence to the subsequent "enclosure" and commercialization of the internet. By the 1990s, global competition meant the US was no longer the global economic and manufacturing leader it had been in the decades after WWII (Albert 1993; Srnicek 2017: 14-17; Knowles 2023a). Among the strategies devised to attain profits and maintain American economic hegemony was to heavily invest in telecommunications and the "possibilities afforded by getting people and businesses online" (Srnicek 2017: 17).

Thanks to the exponential improvement of many computer technologies, e.g., Moore's Law, the mainstreaming of computer and internet use, as well at its commercial potential, was becoming increasingly plausible (see Brynjolfsson and McAffee 2011: 12-27; Frey and Osborne 2013: 14; Brynjolfsson and McAffee 2014: 47-56). Known as the dot-com boom, venture capital investment in computers and the internet reached unprecedented heights in the late 1990s, with around 50,000 new companies backed by $256 billion in investment funds (Srnicek 2017: 18). Investment in computer development also rose substantially, going from $154.6 billion in 1990 to 412.8 billion by 2000 (ibid.). The investment strategy entailed a "growth before profits" model—although most companies lacked clear revenue sources. The idea was that monopolistic dominance in an internet-based industry would bring profits in the long run (ibid.; see Wayne 2004).

It was in the context of this investment frenzy that Napster was founded in June 1999. Napster pioneered peer-to-peer filesharing technology, using central servers to connect users and copy and share music files from user hard drives (Alexander 2002: 156). The development of the MP3 file was also important as it greatly reduced storage and bandwidth requirements to download and store music (Alexander 2002: 153; McCourt and Burkart 2003: 336). Not only was music that was otherwise only attainable via CDs sold in record stores available for free, but out-of-print records, unreleased tracks, and bootleg live recordings became widely accessible to anyone with internet access. With the support of dot.com boom venture capital, Napster grew to nearly 80 million registered users globally and 6.3 billion user minutes at its peak in February 2001 (Lipsman 2001; Lessig 2004: 67; Wayne 2004: 149). Napster provided a high-demand service that temporarily made music distribution essentially a public good, which constituted a "remarkable extension of communal property" (Wayne 2004: 150).

Napster quickly caught the attention of the music recording industry, a highly concentrated industry whose revenues had been primarily dependent on CD sales since the early 1980s (Alexander 2002: 160; Burkart and McCourt 2006; Richter 2022). Filesharing ultimately undermined CD sales, though the long-term effects were not immediately perceivable. 2001 was the peak year for CD sales, and the Recording Industry Association of America (RIAA) reported in 2002 that CD sales had fallen by 8.9 percent from 882 million sales to 803 million and stated that revenues fell by 6.7 percent (Richter 2022; Lessig 2004: 70-71). At the same time, there were approximately 1 billion music files available online, and an estimated 2.1 billion CDs were downloaded for free (Lessig 2004: 71; Leyshon, Webb, French, Thrift, and Crewe 2005: 179). Although the long-term sales decline was multifactorial (see Leyshon et al. 2005; Arditi 2020), sales dropped throughout the 2000s and 2010s, reaching below 100 million units per year by the 2020s (Richter 2022). The recording industry framed free downloads as theft and copyright violations, disseminating a "piracy panic narrative" (Arditi 2020). Yet, the activities of Napster users largely reflected the general character of the early internet, as Lessig (2004) described,

> [w]hen the Internet was first born, its initial architecture effectively tilted in the "no rights reserved" direction. Content could be copied perfectly and cheaply; rights could not easily be controlled. Thus, regardless of anyone's desire, the effective copyright regime under the original design of the Internet was "no rights reserved." The content was "taken" regardless of the rights. Any rights were effectively unprotected (276).

Unsurprisingly, the recording industry would not tolerate this situation, and Napster was sued by the RIAA in a case that eventually reached the US Ninth Circuit Court of Appeals (see McCourt and Burkart 2003: 338-340).

In court, Napster appealed to fair use and previous court rulings that protected activities such as taping TV through a VCR or recording music to tapes, but these arguments were dismissed because digital technologies allowed much easier and more widespread sharing than analog methods (Beezer 2001). Napster could only survive if it could guarantee copyright protection. Although Napster assured the district court that it had developed technologies that blocked 99.4 percent of copyrighted content, the court demanded a copyright infringement-free system (Lessig 2004: 73-74). Yet, as Lessig (2004) argues, if zero copyright infringement is necessary, then "this is a war on file-sharing technologies, not

a war on copyright infringement" (74).

Even after Napster's defeat in court and subsequent closure in July 2001, it became clear that this was only the beginning of a "war" that would be waged on copyright infringement and "piracy" across the internet in a variety of forms (see Lessig 2008; Arditi 2020). After Napster's closure, similar sites such as Kazaa and Grokster filled in the filesharing void, e.g., 43 million Americans downloaded music in May 2002—nearly a year after Napster closed (Lessig 2004: 199). With the apparent entrenchment of filesharing "piracy," almost 20,000 people were sued for using illegal downloading software during the 2000s, often with stiff penalties, e.g., sued for millions of dollars or years of imprisonment (Lessig 2004 48-52; Lessig 2008: 283; Sebert 2014; Frase 2016: 81). Federal law enforcement backed the industry's pursuit of "pirates" through extensive investigations into online music leaking networks (Witt 2015). The Supreme Court sided with corporate copyright holders over filesharing sites in cases like *MGM Studios, Inc. v. Grokster, Ltd.* in 2005, which made copyrighted peer-to-peer filesharing illegal (Lessig 2008: 110). The court also upheld the Copyright Term Extension Act in *Edred v. Ashcroft* in 2003, which retroactively extended copyright terms by 20 years, allowing copyright terms to last nearly a century or more (see Lessig 2004: 213-248). The Congressional response had mixed results. Congress passed around twenty-four copyright-related bills between 1998 and 2008, including enhanced civil and criminal penalties for copyright infringement (Lessig 2008: 293). However, the strict Stop Online Piracy Act was effectively halted in 2012 due to public outcry and protests from major internet companies (see Challa 2013).

Perhaps the most poignant case was that of Aaron Swartz, a developer of Creative Commons and Reddit, who was prosecuted on 13 felony counts for using rudimentary hacking scripts and evasion tactics to download thousands of academic files from JSTOR at MIT in January 2011 (Masnick 2011; Cushing 2012). Although his intentions were unknown, his public advocacy suggested that he was outraged by the fact that organizations like JSTOR keep scientific and scholarly knowledge behind a digital paywall that is usually only accessible for free for academics and students at Global North universities (Swartz 2008). Although JSTOR chose not to press charges, the federal government aggressively pushed for punishment, with prosecutor Carmen Ortiz arguing that "[s]tealing is stealing whether you use a computer command or a crowbar and whether you take documents, data or dollars. It is equally harmful to the victim whether you sell what you have stolen or give it away" (Masnick 2011). With the trial looming, Swartz committed suicide on January 11, 2013.

Despite the legal atmosphere, online "piracy" has by no means disappeared. Visits to "piracy" websites reached 141 billion—386 million visits a day—in 2023, a 12 percent increase since 2019 (Stokel-Walker 2024). In a 2023 poll, 11 percent of respondents, which approximates 23 million US adults, admitted to pirating TV, movies, or live sports in 2022, while a 2017 poll found that 53 percent of respondents used illegal streaming platforms to watch TV or films (Launch Leap 2017; Bridge 2023). Though music filesharing started the controversy, a 2022 report found that music piracy was only 7 percent of global filesharing, being dwarfed by film (12.9 percent), publishing (27.5 percent), and TV (46.3 percent), and only beating software piracy at 6.2 percent (Aquilina 2023). A 2017 survey found that 33 percent of respondents thought both illegal downloading and streaming were wrong, with 7 percent feeling guilty when "pirating" content (Launch Leap 2017). Despite concerted efforts to criminalize copyright infringement as well as regulate and "enclose" digital space, there remains substantial circulation of free digital files on the internet. What accounts for this? Why have lawmakers, the police, and media industries been unable to win this "war," and why are the stakes so high?

Digital Abundance as a Crisis of Value

My central thesis is that behind the "copyright wars" is a crisis of *value* inherent in the development of digital goods as the first set of essentially perfectly abundant consumer commodities. According to Marx (1976 [1867]), a commodity is not merely any physical (or digital) object that can exist in any society but constitutes a *historically specific form of social relations* that defines capitalist modernity (Postone 2015:

11). Nothing is a commodity without being *made* so through concrete social practices within capitalist societies. Despite this contingency, the commodity form has been nearly universalized as most goods and services are privately owned, given a price, and bought and sold on markets. According to (neo) classical economics, commodification is beneficial to "rationally" allocate *scarce resources* based on the laws of supply and demand (see, e.g., Smith 2014 [1776]; Friedman 2002 [1962]; Wolff and Resnick 2012: 111, 126). Private ownership of scarce resources mobilized to pursue profit engenders optimally organized businesses.

Scarcity is, to some extent, unavoidable, increasingly so with issues of climate change and growing global demand (Steffen, Crutzen, and McNeill 2007). Material scarcity is also a theoretical assumption of (neo)classical economics that justifies "rational" markets and affirms the status quo. Critical analysts recognize that the "reality" of scarcity is manipulated by factors such as degrees of monopoly, market power, cartelization, globalization, government regulation/subsidies, and high barriers to entry (see Robinson 2004; Clelland 2014; Rifkin 2014; Reich 2015; Srnicek and Williams 2015). Such factors can allow commodity prices to be above their value, often by generating *artificial scarcity*. Yet, even if forms of *artificial scarcity* were ameliorated, there would still be scarcity problems for *physical goods*, turning the scarcity problem into a struggle against *artificial scarcity* rather than its abolition. Thus, as undesirable as contemporary monopolistic conditions may be, a more competitive capitalism or post-capitalism would likely still face many scarcity problems (see Frase 2016: 91-119).

Scarcity has never been an issue for *ideas*, however. An idea can be shared without the loss of the idea from its original creator (Lessig 2004: 83). This inherent quality of ideas, understood as a "problem" for entrepreneurs, inventors, and creatives, inspired the copyright and patent system that was practiced in English common law and enshrined in the US Constitution (see Söderberg 2002; Lessig 2004: 130-132; Klein, Moss, and Edwards 2015). Aimed at promoting the arts and sciences, the copyright system simultaneously commodifies and imposes scarcity on the spread of science, creative works, and ideas. Just as the commodity form is not "natural" but *socially created and enforced*, so too are copyright and patent systems not "natural" but another type of "fictitious commodity" and "property" enforced by social norms and the state (see Polanyi 2001 [1944]). These systems are characterized as necessary as inventors, artists, and writers allegedly need copyright protection to encourage creativity, innovation, or entrepreneurship by benefiting from exclusive control and profit from their work. According to this framework, the allure of limited-term monopoly rents spurs the creation of art and innovation, which can only be maintained through the power of law (McCourt and Burkart 2003: 337; Frase 2016: 71-81; Klein, Moss, and Edwards 2015).

While the 18th-century Anglo-American copyright system century protected the author from the plagiarist, the inventor from the competitor, and the publisher from its rivals, there were also many *practical*, *social*, and *physical barriers* to deter would-be copyright infringers. For example, without a printing press, the average 18th-century person was unlikely to make unauthorized copies of the *Wealth of Nations* (Smith 2014 [1776]). The time, labor, and capital necessary to infringe copyright was a sufficient deterrent, so Adam Smith and his publishers practically only had to protect their copyright from a small number of rival publishing firms. Even recording and copying movies or television off VCRs was not considered copyright infringement by the Supreme Court partly because the copying and distribution of recorded tapes were unlikely to occur at the scale necessary to harm the film or television industry—at least in the global North (Lessig 2004: 75-77; Leyshon et al. 2005: 180). In short, alienation from the means of production and the labor, time, and capital demands necessary to produce a copy makes most copyrights and patents of physical goods irrelevant for most people. When confronted with the choice of buying the commodity or copying a patented/copyrighted physical good, most choose the former over the latter.

For digital files, however, these barriers are practically nonexistent. Any internet user could, in theory, access and copy any digital file if equipped with the necessary knowledge to acquire it, e.g., possessing proper credentials, skillfully navigating websites, or hacking. Scarcity is not a barrier. There are also no labor or capital requirements that ordinarily deter copying physical commodities. The Napster model required no wage labor or monetary exchange to acquire digital music, only patience. As

Alexander (2002) describes,

> [w]ith digital products, the cost of reproducing and distributing perfect copies is functionally zero. Unlike the case where the tape player made production cheaper but did not alter the costs of distribution, digital technology has reduced both reproduction and distribution costs (154).

Advancements in peer-to-peer technology after Napster generated alternative social arrangements, i.e., "mediations without 'state'-like structures (central servers) or the market (exchange without value)" (Wayne 2004: 151). There is no inherent structural factor of computer or internet architecture that prevents peer-to-peer models to be applied to any conceivable digital object. Only socio-legal and code-based restrictions prevent this.

These restrictions are often formidable for would-be "pirates" and have profoundly shaped the internet, but it should be recognized that the potential for free and open access/copying is always contingently possible.[2] Sharing a PDF copy of a book does not remove a file from circulation the way stealing a book from a bookstore does. The "production" of a copy does not require paid labor or equipment beyond the device, electricity, and internet access and is usually a short process. However, since the war on "piracy" began, the legal and infrastructural landscape of the internet has greatly restricted these ever-present possibilities. What is "scarce" now is the knowledge of how to acquire access to music files, paywalled journalism, or academic articles without encountering encoded barriers, malware, or legal trouble. In this way, knowledge of how to "pirate" or "hack" becomes a scarce form of "human capital." However, once a "pirate" makes digital goods available, the costs of copying are minimal.

This puts the intended aims of copyright squarely against the inherent characteristics of the internet and digital media. The attack on Napster favored socio-legal and code-based restrictions to ensure *artificial scarcity* and undercut *digital abundance*. The "copyright war" is an attempt to establish monopoly power and control over digital goods that inherently resist monopolization and thus are primed for "piracy." The monopolization of digital goods *requires* the force of code and law because "[w]hat before was both impossible and illegal is now just illegal" (Lessig 2008: 38). Without the impediments to copying typical of physical goods, the essentially *arbitrary nature of filesharing restrictions* becomes apparent. Given the continued prevalence of internet "piracy," many consumers around the world recognize and reject these arbitrary restrictions (see Bridge 2023; Aquilina 2023; Stokel-Walker 2024).

This goes beyond consuming entertainment. As open access advocates lament, the strictures of copyright and the suppression of filesharing also deter the free flow of human knowledge and culture. Troves of academic knowledge are held behind paywalls such as JSTOR, except for students and employees of large universities (Swartz 2008). Ironically, top-quality journalism is often paywalled for subscribers only, while hyper-partisan, conspiratorial, and low-quality journalism is freely available (Robinson 2020). The current copyright system suppresses not just the free availability of culture but also stifles a freely creative culture. Long copyright terms and the difficulties of receiving copyright holder permission means that derivative creative works are often in a precarious legal position, often existing at the whims of the copyright holder, e.g., derivative works escape their notice, they are non-commercial, or are considered a beneficial form of advertising (see Lessig 2004). There are media libraries from a variety of formats that can be digitized, preserved, and shared but remain unavailable because of copyright—despite often not being commercially viable (Lessig 2004: 227). Napster provided a glimpse at a possible future where the internet could function as a vast archive of art, knowledge, and culture. But this potential is unfulfilled because while

> Technologists have thus removed the economic costs of building such an archive…lawyers' costs remain. For as much as we might like to call these [internet] "archives" […], the "content" that is collected in these digital spaces is also someone's "property." And the law of property restricts the freedoms that [open access advocates] would exercise (Lessig 2004: 115).

Nevertheless, there exist websites, organizations, and practices that take advantage of the inherent qualities of the internet to enable free information flow without commodification, such as Wikipedia, the Internet Archive, and Creative Commons (Söderberg 2002; Lessig 2004: 108-114, 282-286; Lessig 2008: 156-171; Rifkin 2014). Such activities create and facilitate free access and legal filesharing of writing, music, videos, and software without monetary incentive. However, in an internet increasingly dominated by large commercial platforms, this culture of decommodification, access, and freedom is increasingly becoming an archipelago amongst a sea of commercialization (see Srnicek 2017).

The effects of the "copyright wars" can be described as a process of *deepening capitalist social relations* into domains previously untouched by commodification (Wallerstein 2004). This reflects a broader trend within neoliberal capitalism where intellectual property rights and restrictions extend into new domains. For example, many farmers today are restricted from replanting their own seeds, Apple users cannot "jailbreak" their iPhone to install "unapproved" software, and tractor owners are not allowed to make repairs to their own tractors (see Lessig 2004: 154; Reich 2015; Frase 2016: 78-79). As copyright and IP become increasingly central to global capitalism, it is unsurprising that "piracy," peer-to-peer filesharing, and free access are framed as threatening to transnational economic interests (Arditi 2020). However, the effortless copying of digital files represents a major development within a crisis that is much deeper than the surface-level appearances of court cases and legislation. Filesharing and the "problem" of digital abundance is a symptom of a larger *crisis of value* theorized by Marx as the contradictory core of capitalism.

For Marx (1976 [1867]), capital is not a "thing" but is value in motion, i.e., a process that appears at different moments in the form of money and commodities in a spiraling path of movement and expansion. Harvey (2017) divides this into phases: *valorization* (production), *realization* (sale), *distribution*, and *(re)investment*. For non-digital commodities, value, i.e., *socially necessary labor time expenditure*, is generated and circulated throughout this process, from valorizing production workers and the commodities to valorizing other workers in charge of transportation, retail, management, marketing, etc. The inherent qualities of digital goods eliminate the need for labor, and thus the need for valorization, at multiple nodes in the process of capital accumulation, as "the cost of reproducing and distributing perfect copies is functionally zero" (Alexander 2002: 154). Take a song as an example: while musical artists, producers, engineers, etc., are valorized from their labor (or surplus value extraction), if/when the song is posted to the internet on peer-to-peer networks, not only are there no transportation and retail costs—obviating the need for related labor (see Wayne 2004: 143)—but no value is realized, which precludes the distribution and (re)investment stages. The valorization of music industry workers and the value of the original recording is irrelevant if the recording is released via filesharing in the same way that unsold physical commodities bear no value if never sold (see Harvey 2017: 72-93). In short, the value that begins its motion in the valorization stage through recording is stopped once it circulates for free on the internet.

However, while value as a form of *social wealt*h is halted, "material wealth," which here includes digital goods, has nevertheless increased. It is important to keep "material wealth," and value separated analytically because digital distribution allows for an abundance of "material wealth" but inherently makes value circulation difficult (see Postone 2015: 17). Yet, because value is the *dominant form of wealth* in capitalist societies, the "material wealth" of free music is not celebrated for its increase in human happiness but is viewed as a "problem" because it disrupts the motion of value. To solve this "problem," the law, social norms, and digital "enclosure" techniques are deployed to maintain capital accumulation and keep value in motion (see Wayne 2004: 151-152).

Though I am critical of this so-called "problem," there are legitimate questions when imagining an alternative system, e.g., how can artists be paid for their art in a post-capitalist system? Capitalist societies are characterized by a *struggle for survival* that pressures everyone—workers, capitalists, and companies—to integrate themselves within the flow of value in motion or else be deemed superfluous (see Horkheimer and Adorno 2001 [1947]; Postone 1993; Srnicek and Williams 2015). Even if one rejects the premise that copyrighted commercial art is *only* made to secure sales and/or monopoly rents, it is understandable that, to the extent we are products of bourgeois society, we *want* artists to be

compensated for their work. The oligopolistic media industries are not interested in simple reproduction but are oriented toward perpetual growth and profit maximization. Bourgeois social relations provide the framework for social reproduction, interdependence, and value distribution that *goes hand in hand* with capital accumulation. Thus, the *relations of production* demand that value in motion be maintained despite changes in the *forces of production* that disrupt capital accumulation (Marx 1978 [1859]; Wayne 2004). Yet, these demands are immaterial to the concrete *objective* possibilities inherent to the digital world—as the Napster case demonstrates.

This "problem" is not a *deus ex machina* designed to "kill" industries but is rather part of a historical dynamic generated by capitalism. The *socially necessary* modifier of *socially necessary labor time* signifies how a commodity's production time is not arbitrary but is limited and constrained by "socially general, compelling, norm[s]" that pressure production to "conform to this prevailing, abstract, overarching norm if it is to generate the full value of its products" (Postone 2015: 14). These productive norms are not static but adjust to productivity increases. Because increased productivity usually raises the rate of relative surplus value, lowers costs, and generates higher profits, capitalist businesses continuously seek out new methods, tools, and labor techniques to increase efficiency and productivity. Competitors must adapt to the *new productivity standard* if they are to survive in the market in the long run. This can be described as a process of *generalization* that is "enforced but not created… by intercapitalist competition" (Harvey 2017: 154). This ultimately results in a *continuous redefinition* of what socially necessary labor time *is*. This also has the effect that productivity increases result in more "material wealth," but, once generalized, produces the same amount of value as before the productivity increase (Postone 1993: 288). The compulsions, limitations, and constraints placed on workers, capitalists, and businesses from the need to *keep up with these everchanging productive norms* constitute what Postone (1993) calls *social domination* (see Knowles 2023a). This process, when applied to capitalist societies generally, constitutes the *historical dynamic of capitalism* that ultimately leads to contradictions between the *forces of production* and the *relations of production* (Postone 1993).

The internet and filesharing owe their genesis to decades of technical accomplishments and productivity increases in a variety of fields, from the pursuit of exponential growth in computing power to developments in microprocessors, memory capacity, file compression, and computer networks (Alexander 2002; Brynjolfsson and McAffee 2011: 12-27; Frey and Osborne 2013: 14; Brynjolfsson and McAffee 2014: 47-56). Even though neither the internet nor filesharing were created strictly as a private capitalist pursuit, both are wrapped up in the development of *science as a productive force*, which Kurz (2014 [1986]) describes as the concerted effort to apply the natural sciences to both basic technical research and commercially applicable research. Thus, these technologies are manifestations of historical processes.

And to what effect? With the proven efficacy of Napster and peer-to-peer filesharing, the value of a music file as defined by socially necessary labor time to "produce" a copied music file dropped to essentially zero. In fact, no paid labor is *de facto* necessary for the distribution of digital media, whether music, film, journalism, or academic articles. Media production still has various socially necessary labor times, and those involved are still valorized for their labor time, but online filesharing drives down the realizable value from that effort to zero.[3] This represents a kind of social domination against artists and the media industries for the benefit of the consumer. Artists and corporations must compete with filesharing as the "success" of Napster and other filesharing sites have essentially redefined the norms of social necessity to require a functionally zero cost for media reproduction and distribution (Alexander 2002: 154).

The alternatives that enable online media monetization have generally involved either advertising-based platforms[4] or rent-extracting subscription models to compete with illicit filesharing (Srnicek 2017; Arditi 2020). Consumers have the option to legally access media for a subscription fee and/or if they are willing to watch ads. By doing so, they avoid legal consequences or accidentally acquiring malware. They also do not need to know how to effectively and safely "pirate" digital goods. Publishers may also offer physical media with additional features or add-ons to entice realization—e.g., limited editions, preorder bonuses, etc.[5] However, considering the sharp decline in CD sales as well as DVD/Blu-ray sales in the

United States since the mid-2000s, it appears that filesharing has put tremendous downward pressure on media industries to provide "reasonably priced" access to media (Richter 2022; Parris 2023).

The controversy over digital filesharing perhaps most exemplifies the *crisis of value* and the potential for freedom beyond capitalism in the microcosm more than any other commodity. The contradictions between *value* and *material wealth* are laid bare here more plainly than anywhere else. It demonstrates how capitalism, in its pursuit of speed and efficiency, ultimately becomes a victim of its own success. It also shows how material wealth can be distributed *apart from and in tension with* capital accumulation processes. In the same way that tasks in manufacturing have been automated and workers are under constant pressure to reach new productivity benchmarks (see Knowles 2023a), so too have the media industries discovered through the popularity of Napster that digital media is under constant pressure to become essentially free. In this way, filesharing is just one example of a historical dynamic that illustrates how capitalism undermines its own accumulation processes yet still fights to keep value in motion and maintain the primacy of value for the entire system.

The Construction of and Resistance to Digital Scarcity through Law, Digital Code, and Social Norms

The historical dynamic characterized here is dialectical. Postone (2015) describes how this historical dynamic is "characterized by ongoing transformations of production, and more generally, of social life" and yet

> entails the ongoing reconstitution of its own fundamental condition as an unchanging feature of social life—namely, that value is reconstituted and, hence, that social mediation ultimately remains affected by labor and that living labor remains integral to the process of production (considered in terms of society as a whole) regardless of the level of productivity (15-16).

The "copyright wars" can be understood as a manifestation of the latter process in reaction to how internet filesharing inexorably transformed media distribution and consumption patterns. The question remains: how has artificial scarcity been pursued, and what forms of resistance have emerged against it? When both physical/technical barriers are overcome, how do socio-legal and counter-technical factors strive to maintain value in motion and the media industries?

Lessig (2004) argues that copyrights are regulated through a combination of law, digital architecture, markets, and social norms (119-126). Legislatures and the courts have declared copyright-infringing filesharing illegal. The legal pursuit of Napster and other filesharing companies, as well as tens of thousands of individual "pirates," functions as a deterrent. However, the ubiquity of "piracy" among millions of people around the world makes legal prosecution of every case impossible, thus enabling much small-scale "piracy." Nevertheless, simply labeling an activity as illegal or making the threat of legal action palpable through examples such as Aaron Swartz is likely enough of a chilling effect for many to eschew filesharing. However, the legality of an activity does not always influence human behavior. Music filesharing did not decrease after Napster's closure or the June 2005 *MGM v Grokster* case but *increased* with more recorded peer-to-peer users and over five billion songs downloaded in 2006 alone (Arthur 2001; Lessig 2008: 110-113). Legal status and prosecutorial harshness alone cannot explain trends in "piracy."

Anything on the internet is, in principle, accessible with the proper credentials or hacking, but in practice, the digital infrastructure protects most institutional and personal data and files from would-be "pirates," hackers, or criminals. In the case of protecting personal information, e.g., banking information, this is perfectly justified. However, it is much harder to keep high-demand media and other digital goods off "piracy" sites. Nevertheless, code, separately or in conjunction with law, can fight against filesharing and "piracy." For example, the Digital Millennial Copyright Act (DMCA) enforces the removal of copyrighted material from websites, even derivative creative works which would likely be considered fair use if

litigated in court (Lessig 2004: 157). Code can also enforce *de facto* restrictions beyond copyright law, e.g., restricting how much text can be notated or copied off a Kindle book—even for public domain works (see Lessig 2004: 148-152). Without the knowledge or means to circumvent such restrictions, some digital commodities ironically give consumers *less ownership and control over* purchased products than if they bought a physical version (Lessig 2004: 143). Such code-based restrictions may even incentivize "piracy" because of these limitations, e.g., "pirating" a PDF of a book rather than buying a restrictive Kindle version. Region-blocking certain content for licensing reasons can also be encoded—another layer of access restrictions. This also may encourage "piracy," e.g., one poll showed that 32 percent of respondents engaged in "piracy" because the content was not available in their region (Bridge 2023).

Such restrictions become more prevalent as the internet is siloed into large platforms such as Facebook and YouTube with expansive terms of service, black box algorithms, and automated copyright detection and blocking systems (Srnicek 2017). However, not all copyright violations and filesharing activities are pursued with equal vigor, and much creative activity, e.g., clip sharing, remixing, or meme production, goes on with the implicit approval, or at least not active disapproval, of copyright owners. Nevertheless, the center of power—the power to veto—is with highly concentrated transnational copyright owners and online platforms that write the code that essentially becomes a "law-unto-itself" on the internet (see Lessig 2006). Lessig (2004) describes the situation this way,

> The controls built into the technology of copy and access protection become rules, the violation of which is also a violation of the law. In this way, the code extends the law—increasing its regulation, even if the subject it regulates (activities that would otherwise plainly constitute fair use) is beyond the reach of the law. Code becomes law; code extends the law; code thus extends the control that copyright owners affect (160).

Ultimately, the internet is regulated at the behest of copyright owners, who protect their rights to the letter of the law but often go *beyond the letter of the law*. This, therefore, leaves much internet activity, including but not limited to filesharing, up to the discretion or "good graces" of copyright owners and/or large internet platforms.

Commercialized digital marketplaces such as the iTunes store or music, film, and television streaming services have provided legal alternatives that deliver media at *essentially arbitrary prices*. The customer of a streaming service or digital store pays for the convenience of access, centralization, and organization. They thereby avoid investing time and effort into "piracy" or encountering malware and other dangers.[6] They also may enjoy a "moral effervescence" from choosing legal rather than illegal activity. They may also believe their purchase or subscription supports artists and choose to purchase over "piracy" to encourage more creative output. One may eschew digital commodities in favor of physical media for the sake of tactility, social esteem, the joy of collecting, or due to exclusive incentives. Thus, while the *value* of digital goods may be functionally zero, their *price* can take the form of a subscription or arbitrary price that consumers agree to for a variety of reasons.

Yet, digital marketplaces apparently do not always provide an attractive deal, considering that 48 percent of respondents in a 2023 poll reported that they "pirated" media because the cost of the content was too high, and 36 percent noted that they "pirated" because the content was not available anywhere else (Bridge 2023). The first response is indicative of the implicit recognition that streaming service subscriptions are essentially *monopoly rents* collected because of the concentrated ownership of intellectual property by a few media corporations (see Lessig 2004: 170-172; Burkart and McCourt 2006; Frase 2016: 71-74). Ironically, it is also the *lack of concentration* that may cause consternation because the proliferation of streaming platforms with limited and ever-shifting offerings makes the collective price for subscribing to music and film/TV platforms as well as subscriptions to paywalled online newspapers or other online services less worthwhile or financially viable than "piracy." The frequent price increases of streaming services cause many to cancel subscriptions, with an analysis finding that more than half of streaming customers have canceled their subscriptions due to price hikes (Fitzgerald, 2023). I contend many spurn streaming price increases because of the implicit recognition that streaming

services extract arbitrary monopoly rents and that the value of online media is essentially zero. The latter finding reflects how arcane and bureaucratic the business of licensing intellectual property still is, with complicated negotiations and large sums constantly changing hands for the legal right to stream copyrighted content (see Lessig 2004: 95-99; Arditi 2019). Frustrations with the vicissitudes of these processes evidentially convince many that "piracy" is preferable.

The moral and normative landscape surrounding "piracy" is complex, with discourses and arguments on both sides (see Edwards, Klein, Lee, Moss, and Philip 2012; 2015). Here, rather than frame humans as cost-benefit analysis machines as depicted in (neo)classical economics (e.g., Smith 2014 [1976]; Friedman (2002 [1962]), these issues are understood as embedded in a "moral economy" where historically specific social norms shape economic decision-making, including decisions involving media consumption and "piracy" (see Thompson 1971; Palomera and Vetta 2016). For example, what constitutes a "fair" price for media in the context of the free abundance potentiated by filesharing? Is "stealing" wrong when the "stealing" in question does not decrease the stock of digital goods? We are all bourgeois subjects to the extent we buy into the ideas of private property, including intellectual property, and find it just that artists are compensated. But at what point does the potential for abundance override bourgeois sensibilities and point toward the development of a post-capitalist ethics? Ultimately, there is a struggle over norms with bourgeois rights and the sanctity of property in conflict with a culture that expects convenient access and the right to consume culture, knowledge, and media at one's discretion as well as remix, comment upon, and make derivative works from culture without interference from copyright holders (see Lessig 2008; Edwards et al. 2015).

Some concrete examples demonstrate this. Supporting the anti-copyright infringement campaign, the "You Wouldn't Steal a Car" ad, produced by the Motion Picture Association and the Federation Against Copyright Theft, appeared in theaters and DVDs from 2004-2007. This promo attempted to convince viewers through dynamic vignettes and Matrixesque music that downloading films from the internet is the moral equivalent of stealing a car, a handbag, or a DVD from the store (PopMov 2020). It ends by reiterating that "stealing is against the law" and that "piracy is a crime." This is just one of many campaigns fomenting a "piracy panic narrative" to "nudge" consumers into respecting copyright and "responsibly" paying for media (Edwards et al. 2012: 13; Arditi 2019). Other campaigns argue "[c]onsumers should consume legally" to "ensure the production of the cultural goods they enjoy" and frame full-price payment as "support" for artists, not a "purchase" (Edwards et al. 2015: 65-69). In one *New York Times* article, the journalist tests Napster to download an Elvis song only to have a change of heart because "it simply did not seem fair to Elvis's estate or his record company to enjoy his music without paying something for it" (Lewis 2000). These discourses, pushed by businesses and governments, appeal to the "rules of the game" of capitalist society, i.e., the *relations of production* and the sanctity of private property (see Edwards et al. 2015). If consumers ordinarily accept the universality of wage labor, alienated commodity production, and the interdependence of a society based on commodity exchange (Postone 2015: 12), then these social norms should not be exempted just because a free alternative that opposes these norms appears for digital products.

For generations already socialized on the internet, however, this differentiated attitude is not a contradiction. Evidentially, one can agree that theft of personal property or physical commodities violates bourgeois social relations while simultaneously being comfortable with filesharing on Napster, password sharing on Netflix, downloading a PDF of a book, and using copyrighted material to create derivative works without apology (see Lessig 2008; Launch Leap 2017). Is this a form of cognitive dissonance? Perhaps. But this may also signify the development of a *counter-systemic sensibility against artificial scarcity* and a culture constrained by stifling copyright laws. Take Lessig's (2008) account of Jack Valenti, the late head of the Motion Picture Association of America, confronting students at Stanford—90 percent of who had confessed to downloading music from Napster. When asked to defend this "stealing," one student responded to Valenti with the simple retort, "Yes, this might be stealing, but everyone does it. How could it be wrong?" (Lessig 2008: xvii). Lessig (2008) argues that the "copyright war" is "causing great harm to our society," not just through losses of innovation, stifling creativity, and limiting freedom, but because the "war" amounts to a "war against our children" (293). Rather than instilling fear or normalizing respect

for “digital property,” the heavy-handedness of the “war” and the apparent senselessness of copyright laws inadvertently foster hostility toward the government and media industries or even open defiance by accepting the “pirate” identity (Lessig 2008: 283). For millions globally, the sentiment is apparently, “yeah, I pirate. Everybody does it. So what?”

The Simpsons captured this sentiment in season 2, episode 13, “Homer vs. Lisa and the 8th Commandment” (Moore 1991). Here, Homer encounters a man who offers to install cable TV for free. At first, Homer appears nervous, asking, “this is okay, isn’t it? I mean everybody does it, right?” to which the man hands him a pamphlet entitled “So You’ve Decided to Steal Cable” that reads “Myth: Cable piracy is wrong. Fact: Cable companies are big, faceless corporations which makes it okay” (Moore 1991). This introduces resentment of capitalist class power into the question of “piracy.” In the context of neoliberal globalization and oligopolistic media concentration, the “bigness” and “facelessness” of transnational corporations make them hard to sympathize with. Wayne (2004) argues that the mainstreaming of filesharing engendered an “informal anticorporate culture” (148). Considering the legal alternative to filesharing was to buy a CD that costs a few cents to make but sells for $17, was it any wonder that “the music industry [was] held in contempt, by both musicians and consumers”? (Wayne 2004: 143).

As Wayne (2004) describes,

> Napster’s success taps into a latent reservoir of resentment toward such profiteering. This discrepancy between the economic value of new technology and its cultural value derives from the way culture has the particular quality of prefiguring and anticipating potentialities within the new economic arrangements that have yet to be realized (143; see Benjamin 2002).

In addition, the copyright system has maintained protections for nearly one hundred years, creating what is essentially a rentier class that demands increasingly expensive rents on streaming services for merely possessing large libraries of copyrights going back to the 1920s (see Lessig 2004: 133-136; Frase 2016: 71-81). Considering economic inequality has been increasing at the expense of the middle and lower classes for decades, it is easy to understand why “piracy” from transnational corporations might be shrugged off as inconsequential or even justified (see Piketty 2014; Milanovic 2016).

But what about the artists? One may be apathetic or hostile toward media companies but still want creatives to be paid for their work. In July 2000, Metallica’s Lars Ulrich appeared before the Senate Judiciary Committee to criticize Napster. He argued that Napster took control away from artists to do what they wanted with their creations and that “every time a Napster enthusiast downloads a song, it takes money from the pockets of all these members of the creative community” (Ulrich 2000). However, directors like Christopher Nolan, authors like Stephen King, and musical acts like Metallica that permeate popular culture are unlikely to be financially devastated by “piracy.” “Weird Al” Yankovic (2006) captures this in his song “Don’t Download This Song,” a pastiche of the “charity anthem,” with the lyrics

> Don’t take away money from artists just like me/
> How else can I afford another solid gold Humvee?/
> And diamond studded swimming pools, these things don’t grow on trees/
> So all I ask is everybody, please/
> Don’t download this song.[7]

The most likely “victims” of filesharing are the most popular and wealthy artists who “look least like they’re starving in a garret somewhere” (Wayne 2004: 151). Nikki Sixx of Mötley Crüe criticized Metallica’s stance, stating, “Pigs get fat and hogs get slaughtered, and I think Metallica’s hogs. They make enough off T-shirts and concert events and other forms of corporation” (Shelton 2019; see James and Tolliday 2009). Wayne (2004) poses the solution for musicians similarly, “If reproducibility is eroding the possibility of endless remuneration for a one-off piece of cultural labor, then artists can always go out and do what most musicians outside the musical aristocracy do: touring and gigging”

(151). An implicit argument here is that rather than suppress and criminalize filesharing, artists and media industries should accept the wide proliferation of digital goods the internet can facilitate while finding other means to monetize media, e.g., merchandise, synchronization licenses, offering unique experiences in theaters, concerts, or conventions, or crafting high-quality physical media. Many media companies and artists have diversified their revenue streams (see Leyshon et al. 2005; Arditi 2019) but still restrict online access to maximize profits.

There are, however, thousands of artists who are not popular enough to live off merchandise or concert tickets alone. The cheapening and democratization of creative technologies, such as high-quality cameras, audio equipment, editing software, etc., have engendered new career categories, such as YouTubers, podcasters, and influencers, a few who come to rival "mainstream establishment" artists but thousands more who do not. Much creative work online is noncommercial, but others seek revenue from advertising, product sponsorship, Patreon subscriptions, offering customized commissions, or gaining investment funds from backer campaigns to kickstart new products. Patreon functions as a subscription service for independent creators who frequently entice patrons with exclusive content behind paywalls. The normative question then appears: does the moral calculation change when considering "pirating" exclusive content behind the Patreon paywall of a "petty bourgeois" independent artist versus downloading a Metallica song or Spielberg film? If there is a line where "piracy" becomes condemnable if the artist is small enough, where should that line be drawn? Is it fair to "pirate" Billy Joel because he can sell out Madison Square Garden? If so, does it become unacceptable to "pirate" Blue Öyster Cult because they play in smaller venues? Or should artists small enough to be reliant on Patreon be protected but not others? Is the level of income all that matters, or is the organizational form important too, e.g., independent artists vs corporate artists? In short, is "piracy" justified in all cases in the name of freedom and abundance, or does size and context matter?[8]

There is no objectively correct answer here, but it should be remembered that capitalism is a struggle for survival that imposes imperatives and constraints on everyone, with survival for some being more precarious than others (see Piketty 2014; Srnicek and Williams 2015). There may be individuals who "pirate" a TV show while simultaneously paying a "monopoly rent" to a YouTuber or vice versa. The principles may not be consistent, but what else can be expected in modern capitalist societies that abound with inconsistency, contradiction, and inequality? Nevertheless, it is clear that the social norms and moral discourse surrounding "piracy" are complex, contradictory, and contested, and this will remain so unless or until the bourgeois social relations that assume scarcity no longer stand in tension with the forces of production that increasingly generate abundance (see Wayne 2004: 152). Code, laws, market expansion, and social norms jointly regulate the internet within the forcefield of tensions between the forces and relations of production.

Internet "Piracy" as Social Domination

The case of Napster and digital "piracy" also demonstrates the analytical purchase of the concept of *social domination*. The consequences of filesharing bringing the socially necessary labor time of digital goods to basically zero, and thereby allowing many digital goods to drop out of the flow value in motion, were that new limitations, compulsions, and constraints *based on this new standard* have emerged. Physical media sales for CDs and DVDs/Blu-rays have declined (Richter 2022; Parris 2023) while new business models based on advertising and/or rent extraction have institutionalized, but these models are tempered by the possibility/threat that potential customers will choose "piracy" if their offerings are too expensive, limited, or otherwise unfavorable. This deviates from traditional economic analysis because the "competitors" here are not-for-profit economic actors but a socially generalized and mediated standard "that *must be responded to* by human actors yet are *not consciously determined* by them" (Knowles 2023a: 27; see Postone 2015: 6). No single organization or social system determined this standard, and no institution—not even governments and the force of law—can dictate that this overarching standard be changed (see Moeller 2012: 88-116; Knowles 2021: 182), as the

failed “copyright wars” demonstrate (see Lessig 2008). The standard of free and abundant digital goods can be compared to a central gravitational force, i.e., no matter how much it is being repressed, all companies and artists must shape their capital accumulation strategies around the fact that their digital commodities always have the *objective potential* to be decommodified and freely distributed. There is a tendency towards abundance that is being suppressed by digital scarcity but can never be eliminated.

This does not mean, however, that all digital goods will inevitably become free or “piracy” will win this “war” in the long run. There are too many contingencies, and because the possibility of freely abundant digital goods clashes with bourgeois social relations and capital accumulation, the efforts to protect commodified digital goods have been fierce. Yet, this is not foundationally different from past reactive responses to shifting productive norms that generate social domination.

Take the crisis of the American auto industry from the 1970s to the 2000s. Japanese competition eroded the market share of the domestic auto industry until GM and Chrysler eventually declared bankruptcy in 2009 (see Ingrassia 2011; Helper and Henderson 2014). Though the reasons for the decline were multifactorial, the decades-long productivity advantage of Japanese automakers vs their American counterparts resulted in cheaper and higher quality cars, which were able to effectively penetrate the US market (see Womack, Jones, and Roos 2007 [1990]). In terms of social domination analysis, the Japanese industry set the *global productivity standard*, i.e., the temporal norms of socially necessary labor time, which delivered competitive advantages to the Japanese over the American industry. During the 1980s under Reagan, one response to this slow-motion crisis was the implementation of “voluntary export restraints” that limited the Japanese car imports, which was estimated to have increased the profits of the US auto industry by $10.2 billion and saved 44,000 domestic jobs (Flink 1988: 342; Benjamin 1999; Berry, Levinsohn, and Pakes 1999: 421). Such policies, among others, were attempts for government intervention to ameliorate productivity pressure, i.e., they lessened the need for the American industry to change their production systems to match Japanese productivity, price, and quality levels. The American industry slowly adapted to Japanese methods to reduce the productivity gap, but these efforts were ultimately too little too late to save GM and Chrysler from bankruptcy (Helper and Henderson 2014; Knowles 2023a: 210-218).

There are many fruitful comparisons between this case and that of Napster (see Leyshon et al. 2005: 201-202). Both the US auto industry and the music industry pushed for government intervention to suppress a “competitor” that was threatening its ability to accumulate capital. Indeed, without legal intervention and criminal suppression, Napster would have likely ensured digital music, and probably all forms of digital media, would remain free and open on the internet at the expense of potential revenue for the media industries. Despite these interventions, the established *socially necessary standard* pushed toward particular patterns of change, from the decline of both domestic manufacturer auto sales and physical media to adapting their production methods/business models to more closely align with the productive/technological norms (compare Knowles 2023a; Arditi 2020). Even though the media industries do not embrace the full potential for access and abundance digital goods represent, they must nevertheless contend that if they do not offer an acceptable alternative to “piracy,” then they will ultimately lose out. However, social domination is not technological determinism or a teleological concept—just as American cars were still bought by millions despite the cheaper and higher quality Japanese alternative, so too do millions accept the advertisements and monopoly rent payments to media companies despite the filesharing alternatives. Social domination is not destiny but the continuous pressure of a historical dynamic that engenders productive transformations that subsequently transform social life.

The complexities of code, laws, markets, and social norms demonstrate how *social* domination is indeed *social* because it entails socio-communicative dynamics and pressures beyond economic compulsion or “market forces” (see Edwards et al. 2015; Knowles 2023a: 258-262). The ways code can be either restrictive or enabling is, in part, a reflection of social norms, values, and desires, as seen in the dichotomy of the collaborative and sharing internet vs the commercial internet (see Lessig 2006; Rifikin 2014). Though courts and legislatures have criminalized internet “piracy” to protect media industries and enable capital accumulation, it is too simplistic to frame this as total state capture by economic interests. As Lessig (2004, 2008) argues, the American legal system has previously enabled certain

activities that are essentially a kind of "piracy," and the defeat of exceptionally restrictive legislation, such as the fight against the Stop Online Piracy Act, demonstrates that socio-legal debate and contingency are still at play (see Challa 2013). This is most obvious in the moral/normative arena where social norm formation and competition among sets of norms and values are at "war." I.e., bourgeois values as they exist in contemporary neoliberal capitalist society are in tension with a possible post-capitalist mentality attuned to a sharing, collaboration, and perhaps prefigure a post-work society based on abundance. In other words, this transformation of the forces of production is both in tension with but is also *redefining* the relations of production. Millions resist the arbitrariness of monopoly rents and artificial scarcity and, through collaborative projects as well as "piracy," whether implicitly or explicitly, put into practice different social relations that are *more in tune with the potential* the productive forces represent. They recognize the "discrepancy between capacity and use" within the internet's structure, which stimulates resistance against fettering its potential (Söderberg 2002). No single individual or organization is responsible for this. Rather, it derives from a historical dynamic that both attempts to reconstitute bourgeois labor relations and the commodity form yet also develops productive forces that undermine those relations and point beyond capitalism. It is on this level that the Napster controversy takes on world-historical significance.

Hierarchy amongst Abundance: The Specter of "Rentism?"

The sharing, collaborative, and even "pirate" activity on the internet implicitly recognizes that a free, accessible, and abundant internet is possible. What if this alternative mentality is the precursor to not just a free and abundant internet but a free and abundant society? Frase (2016) discusses potential futures for modern capitalist societies through the axes of equality and hierarchy on the one hand and scarcity and abundance on the other. On the internet, the question is not one of scarcity, since abundance is the default, but whether the internet is structured by equality or hierarchy. Hierarchies of power, wealth, and law have turned much of the internet into what Frase (2016) calls "rentism," i.e., a social form where abundance is artificially constrained through a restrictive intellectual property and copyright regime. But if Marx is right that the historical dynamics of capitalism point toward the increasing *abundance of material wealth* and *less socially necessary labor time on a societal level*, then the specter of "rentism" may become relevant—and threatening—at a societal level.

The case of Napster and "piracy" shows how this historical dynamic produces periodic crises of value and capital reconstitution because disruptive productive transformations do not occur predictably and affect some industries more than others (see Wayne 2004: 145-148; Knowles 2017). The development of the productive forces may be steady with continual productivity increases or may lurch forward through technological breakthroughs. The results can range from minor changes in job tasks to industry downfalls and mass layoffs. The Napster case initiated and built upon substantial changes in consumer behavior and business practices (see Arditi 2019, 2020), but its capital-threatening effects were stymied by the "copyright wars" and the erecting of online "rentism." What might happen if the continuous pursuit of productivity makes a society of abundance in physical goods possible? Even if there are reasons to believe not all scarcity problems can be overcome, there are also reasons to believe production and distribution can be more equitable than the current capitalist system if there is the political will to do so.

What if, and here we engage in sci-fi speculation, improvements in renewable energy combined with advanced 3D printing technologies and general artificial intelligence to produce something akin to the *Star Trek* "replicator?" Such breakthroughs could enable a post-work society where the productive capacity is so great that the social imperative to work to survive would be unnecessary (see Srnicek and Williams 2015; Frase 2016: 35-68). This recalls Marx's contention that communism would necessarily entail minimizing the "realm of necessity," i.e., time at work, and enlarging the "realm of freedom" beyond labor (Marx 1972 [1895]: 439-441). Advanced technology pushed forward by this historical dynamic could fulfill the basic material necessities for all, the material conditions for expanding the realm of freedom can be realized, and "the economic problem that has defined human history will shrink or disappear" (Mason 2015: 289; see Srnicek and Williams 2015; Knowles 2017: 167-168). In this context,

the Napster case is instructive in demonstrating the lengths transnational corporations and states will go to prevent or subvert abundance for the sake of capital accumulation—even on just one technology platform affecting only a few industries. As Frase (2016: 69-90) describes, if existing social inequalities and power relations persist into the future, then anything even approaching a "replicator" technology would likely become embedded in a web of restrictions, copyright boundaries, and legal enforcement that would reproduce social inequalities—the power of the copyright holders at the expense of the many. An anti-*Star Trek* future would be the result.

This is why embedding our analysis of Napster and the "copyright wars" into a larger historical dynamic is important. The "copyright wars" of recent decades may just be a preview of the emerging contradictions between the forces and relations of production. It also serves as a warning: if digital abundance has been restrained for the sake of capital accumulation, how might current and future abundance-enabling technologies become artificially restrained, e.g., renewable energy? It also reframes the historical importance of "piracy" today. The prevalence and ambivalence or even positive attitudes toward "piracy" provide evidence that everyday people may be more prepared for a *Star Trek* world of abundance rather than an anti-*Star Trek* future of restriction than one may assume. The main issue is whether this can be organized politically to realize a post-capitalist future (Rifkin 2014; Srnicek and Williams 2015; Mason 2015; Frase 2016).

Conclusion

The internet today is neither a free and open collaborative project nor a digital shopping mall where copyright laws maximally suppress access and creativity. Perhaps the most important result of the "copyright wars" and the rise of large platforms for the capitalist class is that online commerce and capital accumulation have been enabled despite the prevalence of "piracy" (see Arditi 2020). This is unsurprising considering how capitalist social relations have remained largely the same regardless of the general level of material wealth. Yet, examining Napster reveals the arbitrariness of digital scarcity, the historical dynamics that objectively enable abundance, and the contingency of these arrangements. It demonstrates how capitalism strives to maintain capital even as its contradictions grow and resistance emerges.

Millions intuit that the price and value of digital goods are mismatched because the law of value has broken down here. When the law of value breaks down, power relations take over, i.e., the power of intellectual property law, code, and the state. In response, competing "moral economies" develop that normatively and discursively evaluate the reasonableness of monopoly rents for digital goods, with millions agreeing to subscribe and millions engaging in "piracy" (see Edwards et al. 2012; 2015). In this struggle, the objective possibilities of the internet places imperatives and constraints on media companies, the law places constraints on internet freedom, and the conflict between the forces and relations of production is fought out openly on the internet. As long as modern capitalist societies are based on capital accumulation and maintaining existing patterns of inequality, the potential of the digital and internet will never be realized.

We exist in a state of unfreedom. On one level, the potential of the internet and the digital is untapped due to being fettered by social relations and legal warfare (see Söderberg 2002; Wayne 2004). What could be free is restricted for the sake of capital accumulation. On another level, unfreedom on the internet is enforced because *capital itself is an expression of unfreedom*, an "immanent necessity" that compels wage labor for social reproduction and capitalists to compete and accumulate capital to survive (Postone 2015: 8). The latter overarching form of unfreedom motivates and mediates the former. I contend that overcoming the former ultimately requires addressing the latter. In other words, what if we imagine a society free of the social domination of capitalism that affects both workers and businesses so that sharing abundant digital—and perhaps eventually physical—goods is celebrated rather than criminalized? Does this imply a world without copyrights? Maybe, or perhaps not. But what is most important is to think through what it would mean to ameliorate or remove the underlying economic anxieties and compulsions that pressure everyone to struggle for survival—the pressure that

makes abundance appear as a threat rather than an opportunity. If this can be overcome politically, economically, and socially, the internet can live up to its full potential.

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Endnotes

[1] I put “piracy” in quotes throughout this article to recognize how defining “piracy” is socially constructed, contested, and contingent (Edwards et. al. 2012).

[2] There are types of files and data, e.g., banking information, that ought to be protected. My argument so far is only pointing out the radical contingency of filesharing and open access and should not be misunderstood as advocating for “total anarchy.”

[3] Media still has “value” derived from other conceptions of "value," e.g., aesthetic value, the value of social esteem, the value of likes, retweets, etc. However, these conceptions of "value" do not affect the underlying value according to Marx's definition. A piece of media may be sold at a price above its value for many reasons, but this dynamic should be kept analytically distinct from the analysis of value.

[4] Online advertising involves issues of privacy, surveillance, manipulation, and data extraction/protection (Srnicek 2017; Zuboff 2019; Arditi 2019). Nevertheless, collecting revenue through selling ads has facilitated a wider legal distribution of copyrighted material in exchange for time and valuable data. Whether the trade-offs are better than rent extraction is debatable, though subscription services often also include ads as well as many filesharing websites. The problems with online advertising will not be explored here (see Zuboff 2019; Arditi 2019).

[5] Physical media, whether Blu-rays, vinyl records, or print books, provides an allure that convinces many that paying for media at a price far above the “free” that digital “piracy” offers is worth it. Though this is incomprehensible from a (neo)classical economic point of view that contends people are cost-benefit maximizers, a Marxian perspective may help explain this. Marx's (1976 [1867]) concept of *commodity fetishism* can describe how a commodity’s use value qualitatively goes beyond its exchange value to embody sentiments such as increasing social status, the joy and self-gratification from collecting, and the personal attachment to commodities. Such considerations may explain the persistent appeal of physical media for some, although sales data shows that some physical media formats are in decline (see Richter 2022; Parris 2023).

[6] According to a 2023 poll, 37 percent of respondents reported being infected by malware due to “piracy” (Bridge 2023).

[7] This song is useful commentary as it humorously encapsulates the arguments on both sides without taking a stance. This neutrality was intentional, according to Yankovic, "I wanted to write a song that occupied a grey area, where you wouldn't really know whether I was coming down on the side of the downloaders or the side of the R.I.A.A. The whole thing was very tongue-in-cheek and sarcastic and ironic, and you walk away without really knowing what my viewpoint is, which is all by design. To further compound the irony, we gave that song away as a free download on my website” (Rabin 2011).

[8] One solution is de-commodifying digital goods but making it as easy as possible for users to voluntarily contribute to or "tip" creators they like. This may be susceptible to the "free rider" problem of public goods but may underestimate how everyday people *want* to support the artists, journalists, and authors they enjoy (see Alexander 2002: 156-160). A universal basic income could also support precarious artists, allowing free cultural flows while diminishing concerns for artists’ well-being (see Srnicek and Williams 2015; Knowles 2023b).