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Pirate Tales from the Deep [Web]: An Exploration of Online Copyright Infringement in the Digital Age

Nicholas C. Butland
Justin J. Sullivan

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ABSTRACT

Technology has seen a boom over the last few decades, making innovative leaps that border on science fiction. With the most recent technological leap came a new frontier of intellectual property and birthed a new class of criminal: the cyber-pirate. This Article discusses cyber-piracy and its interactions and implications for modern United States copyright law. The Article explains how copyright law, unprepared for the boom, struggled to adapt as courts reconciled the widely physical perceptions of copyright with the digital information being transferred between billions of users instantaneously. The Article also explores how cyber-piracy has made, and continues to make, its mark on copyright enforcement through political movements that vie for reduced copyright protections and support elusive distribution platforms that are nearly impossible to shut down permanently. As technology continues to surge forward, and 3D printers become increasingly available to consumers, copyright law will have to account for a new field of works that may need to be protected in the face of rising political turmoil.

AUTHOR NOTES

Nicholas C. Butland - B.A., Worcester State University, J.D., University of Massachusetts School of Law. This author would like to thank Professor Ralph Clifford, whose expertise and guidance helped to greatly focus this article. He would also like to thank his co-author, Justin Sullivan, whose research ability is unparalleled. Finally, this author would like to thank the University of Massachusetts Law Review Editors, who provided valuable feedback and polish for the article.

Justin J. Sullivan - B.A., University of Rhode Island, J.D., University of Massachusetts School of Law. Many thanks to the dedicated members of the 2017-2018 UMass Law Review. This author also thanks Professor Ralph Clifford and Ethan Dazelle for their guidance and encouragement during the writing process as well as Stefanie Williams for her continued love and support.

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I. INTRODUCTION

Cyber piracy is an ever-evolving boogeyman that has been the bane of lawmakers and copyright holders since the dawn of the Digital Age. Despite an aggressive campaign by both legislatures and copyright holders, the support base for cyber piracy continues to grow in strength. The result is that a political schism has formed and created two political ideologies about how copyrights should be enforced and protected. This Article explores the history of cyber piracy, how it came to exist, and how two political ideologies have come to center around it.

A rapid expansion of technology created new means to infringe upon copyright that was eventually met with legislative response. Gradually, legislators inflated the protections offered to copyright holders until the protections became so intense that they were criticized as redundant and excessive. At the same time, the demand for free media in the global population spurred the creation of large hubs of illicit internet activity, including cyber piracy, which eventually grew into a multi-national political phenomenon. As technology continues to evolve, the conflict between pirates and copyright holders, too, expands into new fields.

Two major political views have formed around the issue of cyber piracy.¹ The first view is that cyber pirates are destroying the intellectual property industry by stealing and illegally sharing music, movies, games, and other software.² The opposing view is that cyber pirates have a right to enjoy media any way they see fit, and that cyber piracy is only promoting a free and healthy industry.³ These conflicting theories have been argued back and forth between the media industry and consumers for decades; however, these theories are at their core arguments for what property rights exist for intangible ideas. One side believes that “if you cannot protect what you own, you don’t own anything,”⁴ while the other argues that copyright laws were intended to grant creators “limited trade monopoly in exchange for use

¹ See *infra* Part V and accompanying text.

² *Id.*

³ *Id.*

⁴ JOHN GANTZ & JACK ROCHESTER, *PIRATES OF THE DIGITAL MILLENNIUM* 1 (2005) (quoting Jack Valenti, President and CEO, Motion Picture Association of America).

and access.”⁵ Time will tell how this growing schism will be resolved, and how legislation will develop to accommodate it.

This Article begins in Part II by reviewing the origins of recorded media to better contextualize how personal media has become a prime target for cyber piracy in the modern era. Next, Part III gives a brief overview of intellectual property theory to establish the legal framework necessary to interpret copyright legislation. Part IV outlines the evolution of U.S. copyright law as it relates to cyber piracy, by discussing the Copyright Act of 1976, Digital Millennium Copyright Act (“DMCA”), and the Prioritizing Resources and Organization for Intellectual Property Act of 2008 (“PRO-IP Act”), in addition to several pivotal cases that were essential to modern intellectual property jurisprudence. Part V describes the social dynamics that have evolved because of anti-intellectual property rights movements, such as the Pirate Bay, and compares those movements to the anonymous online communities on the “deep web.” Finally, Part VI of this Article discusses the future of cyber piracy in terms of 3D printing as we move forward into a new era of technology.

⁵ *Id.* (quoting SIVA VAIDHYANATHAN, COPYRIGHTS AND COPYWRONGS: THE RISE OF INTELLECTUAL PROPERTY AND HOW IT THREATENS CREATIVITY 11-12 (2001)).

II. ORIGINS OF ELECTRONIC MEDIA

It is important to understand the history of electronic media, how we arrived at the modern state of cyber piracy, and why it is such a hot topic. Today, the convenience and omnipresence of media entertainment is so pervasive that we hardly think twice about it. Get into your car and your phone automatically syncs to the radio and starts playing your favorite songs. Kids in the back giving you trouble? Quiet them down with a movie while you drive. Want to play a video game on your computer? No need to drive to the store, you can download it directly and start playing inside of an hour without ever having to leave your desk. More importantly, a remotely tech-savvy individual can accomplish all of this without paying a dime by illegally pirating it from one of thousands of anonymous sources on the Internet.

Piracy was not always so easy, however. Roughly a century ago, in an era of cylinders and record discs, the best way to pirate music was to steal someone else's physical copy. To really appreciate the significance of cyber piracy, it is important to understand the rapid evolution of media and its assimilation into our daily lives. The following sections review the origins of personal media in the home with records and basic acoustic devices. It then follows the transition of media into the Magnetic Era, where tapes made recording an easier and more space-efficient experience. Finally, this Part discusses the transition from magnetic tapes to compact disks, which ushered in the Digital Era that we live in today, and what made cyber piracy truly possible.

A. The Acoustic Era

Thomas Edison's invention of the phonograph in 1877 established the beginning of the Acoustic Era of recordable media and set the stage for all digital media used today.⁶ In fact, twenty-six years later, Thomas Edison copyrighted the first full-length motion picture, *The Great Train Robbery*, in 1903.⁷ Edison's phonograph found booming success in the home market.⁸ There was great novelty in recorded sound, and private citizens were drawn to the attractive prospect of listening to recorded music.⁹ Through the late 1800s and early 1900s, the phonograph made its way into homes, and the race was on to mass produce records for home use.¹⁰ Record discs became standard, with a focus towards delivering more tracks and longer music playtimes.¹¹ At the same time, the luxury of personal home music was marketed as being a necessary staple in domestic life.¹² The budding music industry presented itself as being a necessary utility, providing relaxation from life's stress and conferring a level of social affluence.¹³ The music industry succeeded, embedding musical entertainment into the standard lives and practices of the modern family, setting the stage for an ever-evolving market dedicated to making media a more integrated part of our lives.¹⁴

Soon, however, the Acoustic Era and its phonographs reached the limit of their usefulness and adaptability.¹⁵ As early as 1925, electrical recordings became more available to the home listener, following the same path as phonographs did before them.¹⁶ Soon, electrical recordings were offering better, louder sound and slowly sought to replace acoustic recordings entirely.¹⁷ Radios managed to survive the Great Depression, when Thomas Edison's phonographs began to see a

⁶ U.S. Patent No. 200,521 (filed Feb. 19, 1878).

⁷ THE GREAT TRAIN ROBBERY (Edison Mfg. Co. 1903).

⁸ ANDRE MILLARD, AMERICA ON RECORD 37-64 (1995).

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.*

¹³ *Id.*

¹⁴ *See id.*

¹⁵ *Id.* at 136-57.

¹⁶ *Id.*

¹⁷ *See id.*

serious competitor in radio for the coveted home entertainment position.¹⁸ Radio began finding vast improvement both in quality and convenience, finding portability in cars and an increase to sound fidelity.¹⁹ Media had not reached the apex of its evolution, however, and the innovative demands of World War II pushed media one step closer to the modern stage with the onset of magnetic recordings.²⁰

B. The Magnetic Era

By the mid-1900s, magnetic recordings were taking over, with notable achievements like the Ampex tape recorder being used commercially to record *The Bing Crosby Show* for later radio broadcast.²¹ Soon eight-track tapes, produced by Ampex, were introduced to fit the booming car market, offering portability and quality of sound that was hard to come by at the time.²² The eight-track tape came in a durable package that could be played in similarly durable machines, giving listeners access to their preferred music at almost anytime, anywhere.²³ The tapes could even be brought to Vietnam, where the portability of not only the tapes, but their playback devices as well, gave soldiers easy access to entertainment on the field.²⁴ However, even eight-track tapes were not without their own downfalls, including the potential to skip as much as half a song when the tape changed tracks, and so the eight-track tape gave way to the cassette tape.²⁵

Smaller, offering more utility such as home recording and an overall improvement over the eight-track tape, the cassette tape was the next innovation in the Magnetic Era that continued to streamline the convenience of personal media.²⁶ The cassette tape could even hold up to forty-five minutes of audio recording on each side of the

¹⁸ *See id.* at 162-72.

¹⁹ *Id.* at 187-99.

²⁰ *Id.*

²¹ GANTZ, *supra* note 4, at 11-12.

²² Dan Moore, *Collector's Corner: The History of the Eight-Track Tape*, GOLDMINE MAGAZINE (Dec. 24, 2005), <http://www.goldminemag.com/collector-resources/collectors-corner-the-history-of-the-eight-track-tape> [<http://perma.cc/6UYQ-7LSC>].

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.*

²⁶ *Id.*

tape.²⁷ It was the cassette that enabled the beginning of a mobile media market no one previously knew existed.²⁸ In 1979, Sony introduced the Walkman, a portable cassette player that was only slightly bigger than the cassette itself.²⁹ In a sense, the Walkman was the final step in portability towards the modern media players of today.³⁰

The cassette's importance did not end there, however. The cassette evolved into the VHS video tape which joined the Magnetic Era as one of the most popular consumer durables to hit the market, bringing feature-length films into family homes as the phonograph and its descendants once did for music.³¹ The Magnetic Era effectively bridged the gap between the origins of recorded sound and the modern integration of media by making media so accessible it could literally be carried around wherever one went.

C. The Digital Era

Despite the explosion of popularity that the media industry experienced, it was not until the Digital Era that the specter of piracy began to loom above its head. During the Magnetic Era, reproduction of media was not perfect, as the copies were subject to destructive reading, meaning that each reading of the tape produced a small amount of deterioration to the product, gradually destroying the copy.³² At the close of the 20th century, the Digital Era exploded onto the scene with the invention of the compact disk, or CD.³³ The CD had a myriad of advantages over its predecessors. For example, it could produce sound without the background whirs or hisses that accompanied magnetic tape or vinyl records.³⁴ Because the CD was read by a laser, there was no physical contact to the disc.³⁵ This also meant that the disc had achieved nondestructive reproduction, meaning that the disc could be played theoretically an infinite number of times, with each playback retaining the original quality of sound.³⁶ Taking

²⁷ MILLARD, *supra* note 8, at 313-27.

²⁸ *Id.*

²⁹ *Id.*

³⁰ *Id.*

³¹ *See id.* at 337-45.

³² *Id.* at 346-58.

³³ *Id.*

³⁴ *Id.*

³⁵ *See id.*

³⁶ *Id.*

advantage of this new technology, digital audio tape (“DAT”) technology was created to copy CDs into audio tapes.³⁷ Fearful of the potential for piracy, record companies went to Congress and managed to pressure the DAT manufacturers with a number of safeguards, including “copy lock” technology on their tapes that would prevent homeowners from making copies of their copies.³⁸

Copy lock did little to deter piracy, though. CDs came into the world at roughly the same time as the personal computer, and computer users quickly realized that they could copy the entire contents of one CD onto another.³⁹ The contents could even be installed directly onto the computer, enabling one purchaser to install the contents to his machine, then take the CD to his friends and install it on their machines, before swapping the CD at a computer club meeting so others could do the same.⁴⁰ Piracy was literally and virtually⁴¹ rampant. Computers made it possible to casually commit digital crimes with greater ease and on a larger scale than previously imaginable.⁴² Not only was transferring made easier by CD, but copying the contents onto a hard drive or another CD did not result in any degradation in quality.⁴³ Thus, where the CD represented a new apex in the evolution of portable, convenient media, it had inadvertently become too convenient with the dawn of the computer, opening the doors for what is now modern day cyber piracy.

III. INTELLECTUAL PROPERTY

The examination of cyber piracy requires a simple understanding of the quite complex theory of modern intellectual property, which is best explained from a historical context. Before the established principles of modern intellectual property existed, traditional theories of tangible property ownership were applied to the intangible. The following section discusses the origins of intellectual property theory dating back to one of the earliest intellectual property cases. It will then explore intellectual property theory, the foundation upon which

³⁷ *Id.* at 362-66.

³⁸ *Id.*

³⁹ GANTZ, *supra* note 4, at 18-20.

⁴⁰ *Id.*

⁴¹ Pardon the pun.

⁴² *Id.*

⁴³ *Id.*

modern legislature has been developed and written, in the modern setting.

A. Intellectual Property Origins

The theory of intellectual property can be traced back to as early as 557 A.D., when the King of Ireland ordered an Irish warrior monk to return copies of a manuscript that the monk had impermissibly reproduced by hand.⁴⁴ According to the tale, Saint Finnian (Finnian of Moville) returned home to Ireland after visiting Rome, bringing with him a copy of the Vulgate, a definitive fourth century Latin translation of the Bible.⁴⁵ Colmcille, a pupil of Finnian, asked him to see the book, to which Finnian reluctantly agreed.⁴⁶ With the book in his possession, Colmcille surreptitiously copied its contents by candlelight; that was, until Saint Finnian caught Colmcille in the act and demanded that Colmcille return the book and all copies.⁴⁷ Finnian, disappointed in his pupil for betraying his trust, and Colmcille, angry at Finnian for refusing to share the words of such an important book with the church, agreed to arbitrate the matter before King Diarmaid, the High King of Ireland.⁴⁸

At the arbitration, Finnian claimed that, because he owned the original reproduction of the book, he was entitled to the copies that Colmcille reproduced from its pages.⁴⁹ Colmcille's rebuttal, on the other hand, echoed several key principles of intellectual property theory. First, Colmcille distinguished literary materials from traditional forms of chattel because Colmcille could not "use up Finnian's book by copying it."⁵⁰ Second, making the book accessible through reproductions benefitted "the good of society" because it promoted the advancement of knowledge without harming Finnian or his book.⁵¹ Finally, Colmcille claimed that he fairly used the book

⁴⁴ See Ray Corrigan, *Colmcille and the Battle of the Book: Technology, Law and Access in 6th Century Ireland*, OPEN U. 1-2 (2007), http://oro.open.ac.uk/10332/1/GIKII_Colmcille_final.pdf [<http://perma.cc/4863-NACX>].

⁴⁵ *Id.* at 2-7.

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ *Id.* at 6.

⁵¹ *Id.*

because he “gained no worldly profit from the process.”⁵² Unpersuaded by Colmcille’s newfangled ideas of intellectual property rights, King Diarmaid ruled in favor of Finnian, stating, “To every cow its calf, to every book its [transcript],” and demanded Colmcille return the book and all the copies that Colmcille made.⁵³ Instead of returning the book and any copies, however, Colmcille took the customary fourth century approach to unsatisfactory legal principles and murdered 3,000 people in the Battle of the Book at Cooldrumman.⁵⁴

B. Modern Intellectual Property Theory

Today, intellectual property theory is founded on the combination of rights that form the basics of ownership. Intellectual property rights today are defined as a “category of intangible rights protecting commercially valuable products of the human intellect,” or a “commercially valuable product of the human intellect, in a concrete or abstract form, such as a copyrightable work, a protectable trademark, a patentable invention, or a trade secret.”⁵⁵ Intellectual property, in simpler terms, is a concept where the owner of a piece of intellectual property has the “right” to determine who can make a “copy” of that property; hence the term “copyright.”⁵⁶ Originally, copyrights were issued to owners of intellectual property in a classic *quid-pro-quo* exchange, whereby the property owner allowed his works to enter into the public domain in exchange for a monopoly, granted by the government, for a limited period of time.⁵⁷ Once the copyright term expired, however, the copyrighted work could be shared and reinvented by anyone.⁵⁸ But what determines whether a work should be protected?

The drafters of the U.S. Constitution imbued the concept of intellectual property into the Copyright Clause of Article I and entrusted unto Congress the power “[t]o promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and

⁵² *Id.*

⁵³ *Id.* at 6-7.

⁵⁴ *Id.* at 7.

⁵⁵ *Intellectual Property*, BLACK’S LAW DICTIONARY (10th ed. 2014).

⁵⁶ GANTZ, *supra* note 4, at 5.

⁵⁷ *Id.*

⁵⁸ *Id.*

discoveries.”⁵⁹ Congress has enacted numerous laws governing intellectual property, but the majority of U.S. copyright laws are codified in Titles 15, 17, 18, and 35 of the United States Code, which respectively encompass trademarks, trade secrets, patents, and most importantly, copyrights.⁶⁰

Title 17 shields copyrighted works by protecting the “right of authorship” for “original” works that are “fixed in any tangible medium of expression.”⁶¹ In order for a work to be considered original, the work must have been created by the author claiming the copyright and contain a “minimum quantity of creative expression.”⁶² Likewise, for an original work to be considered fixed in a tangible medium of expression—and therefore protected by Title 17—the original work must be “embodied in a form which is ‘sufficiently permanent or stable for a period of more than transitory duration.’”⁶³ Only by meeting these requirements can a work be considered protected by copyright.

Copyright infringement generally occurs when a person or entity violates or interferes with the exclusive right of a copyright.⁶⁴ In the context of intellectual property, the act that most refer to as cyber piracy is, at its core, copyright infringement.⁶⁵ Title 17 provides civil and criminal remedies for copyright infringement.⁶⁶ While an author must register the copyright with the U.S. Copyright Office before a civil action may be brought against the infringing party, the Department of Justice may bring criminal charges notwithstanding registration.⁶⁷

⁵⁹ U.S. CONST. art. I, § 8, cl. 8.

⁶⁰ *See generally* 17 U.S.C. §§ 101-1332 (2012); *see also* 18 U.S.C. § 2319 (2012) (outlining the criminal penalties for felony and misdemeanor copyright infringement).

⁶¹ RALPH D. CLIFFORD, *CYBERCRIME: THE INVESTIGATION, PROSECUTION, AND DEFENSE OF A COMPUTER-RELATED CRIME* 73-74 (3d ed. 2011) (citing *Feist Pub., Inc. v. Rural Tele. Serv. Co.*, 499 U.S. 340, 345 (1991)).

⁶² *Id.* at 73.

⁶³ *Id.*

⁶⁴ 17 U.S.C. § 501 (2012); *see also* *Infringement*, BLACK’S LAW DICTIONARY (10th ed. 2014).

⁶⁵ Incidentally, the term “piracy,” under federal law, refers to the maritime crime of piracy and privateering; *see* 18 U.S.C. §§ 1651–1661 (1948).

⁶⁶ *See* CLIFFORD, *supra* note 61, at 73.

⁶⁷ 17 U.S.C. § 411(a) (2008).

The most severe criminal penalties for cyber piracy are set forth in 17 U.S.C. § 506(a), which makes it a federal crime to willfully infringe a copyright for the benefit of either private financial gain or commercial advantage.⁶⁸ In a criminal trial, attributing a commercial advantage or private financial gain to the crime of willful infringement functions as a penalty enhancer under 18 U.S.C. § 2319.⁶⁹ Violating 17 U.S.C. § 506(a)(1)—felony copyright infringement for the purposes of commercial advantage or private financial gain—carries a maximum of five years in federal prison if the violation involves the reproduction or distribution of ten or more copies of copyrighted works with a collective value of \$2,500.⁷⁰

The copyright holders possess significant civil enforcement methods and have expansive remedies available to combat infringers.⁷¹ These civil remedies include recovery for compensatory damages, profits derived from the infringement, costs and reasonable attorney fees, and punitive damages.⁷² In addition, copyright holders also have an incredible number of tools available to enforce their copyright, such as sending a “notice and takedown” request to the service provider hosting the alleged infringing material and the ability to seize any allegedly infringing material through an ex parte seizure order.⁷³

IV. COPYRIGHT LEGISLATION AND JURISPRUDENCE

This next section explains and discusses the modern copyright legislation in the United States and the legal war waged against cyber piracy. It begins by discussing the introduction of the Copyright Act of 1976 and how it was intended to deal with the rapidly developing

⁶⁸ See CLIFFORD, *supra* note 61, at 74; see 17 U.S.C. § 411(a); see also 18 U.S.C. § 2319(b) (2008); 17 U.S.C. § 506(a) (2012).

⁶⁹ See CLIFFORD, *supra* note 61, at 75.

⁷⁰ See 17 U.S.C. § 411(a); see also 18 U.S.C. § 2319(b).

⁷¹ See EXEC. OFFICE FOR U.S. ATTORNEYS, U.S. DEP’T OF JUSTICE, PROSECUTING INTELLECTUAL PROPERTY CRIMES 393–94 (4th ed. 2013) [hereinafter PROSECUTING INTELLECTUAL PROPERTY CRIMES], https://www.justice.gov/sites/default/files/criminal-ccips/legacy/2015/03/26/prosecuting_ip_crimes_manual_2013.pdf [<https://perma.cc/DP3B-GF9N>].

⁷² *Id.*

⁷³ See 17 U.S.C. § 512 (2010); see also PROSECUTING INTELLECTUAL PROPERTY CRIMES, *supra* note 71, at 394.

technologies discussed earlier. This leads to a discussion of *Sony Corp. of America v. Universal City Studios, Inc.*,⁷⁴ a landmark case in copyright litigation and the first major loss for copyright holders.

Despite these successful cases, Congress chose to increase protections to copyright holders with the PRO-IP Act. The next section details the PRO-IP Act, a major and controversial act that greatly increased the protections provided by the DMCA by focusing and coordinating law enforcement efforts in the field of intellectual property enforcement. This section then discusses how a political divide began to form around this Act, an effect that the United States was not alone in experiencing.

A. The Copyright Act of 1976

The Copyright Act of 1976 was a much-needed step towards updating copyright laws in the rapidly changing world of modern technology. Prior to the 1976 amendment, the last major change to copyright law took place in 1909.⁷⁵ In the years following the 1909 revision, the world saw several emerging technologies including radio, television, and frequent use of digital storage and retrieval technologies.⁷⁶ Congress also noted that the dawn of laser and satellite technologies would soon change the copyright landscape even further.⁷⁷

While the World War II era witnessed the first attempts at passing revisions to modernize the Copyright Act, politics kept the major revisions of 1976 from surfacing for several decades.⁷⁸ It was in this amendment, however, that Congress began to recognize how quickly the copyright arena could change and thus attempted to plan accordingly in its drafting.⁷⁹ One tactic used was ensuring that statutory language remained broad by changing phrases like “all the writings of an author” to “original works of authorship,” the effect of which was to grant protections to new forms of work that otherwise would be excluded by the original phrase.⁸⁰ At the same time, Congress had to be careful not to over-broaden the protections it was

⁷⁴ *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417 (1984).

⁷⁵ H.R. REP. NO. 94-1476, at 47 (1976).

⁷⁶ *Id.*

⁷⁷ *Id.*

⁷⁸ *Id.*

⁷⁹ *See id.*

⁸⁰ *Id.* at 51.

granting. While Congress wanted to protect individual computer programs, it did not want that protection to extend to the methodology or processes employed to create that program.⁸¹ In some cases, as discussed below, the technology ended up forcing Congress to give complex descriptions of certain terms, such as when Congress attempted to distinguish between what reproductions are and what might instead be considered displays.

The Copyright Act of 1976 gave exclusive rights to owners of copyrights to reproduce and authorize the reproduction of their works.⁸² In discussing the meaning of reproduction, Congress stated it to be a production “in which the work is duplicated, transcribed, imitated, or simulated in a fixed form from which it can be ‘perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device.’”⁸³ Congress then went on to list the showing of images on a screen as an example of non-reproduction that might instead be considered a display.⁸⁴ The entirety of this Copyright Act was littered with attempts not just to bring copyright law up to speed with contemporaneous technology, but to write the law in such a way that it was also flexible for future technological advancements.⁸⁵ This revision inevitably became obsolete as problems began arising once technology developments outpaced the accommodations of the updated copyright laws. It is important to recognize, however, that the Copyright Act of 1976 represents Congress’ first attempt to reconcile the rapidly multiplying mediums of media within the scope of its laws, an attempt that took nearly thirty years longer to pass than previous major revision attempts of the copyright laws.⁸⁶

B. Sony Corp. of America v. Universal City Studios, Inc., 464 U.S. 417 (1983)

The name “Betamax” today has become a colloquial reference for a once-popular, but now failed technological product—e.g., “HD DVD

⁸¹ *Id.* at 57.

⁸² Copyright Act of 1976, Pub. L. No. 94-553, § 106, 90 Stat. 2541, 2546 (1976).

⁸³ H.R. REP. NO. 94-1476, at 61.

⁸⁴ *Id.* at 62.

⁸⁵ *See generally id.* The house report contains numerous more examples of the points already iterated in this paper, as well as other indicators of the house’s general attempt to bring technology within the scope of its laws.

⁸⁶ *See id.* at 47.

has gone the way of Betamax.”⁸⁷ Sony’s Betamax did, however, provide consumers with one global benefit, the recognition of “time-shifting” as a fair-use exemption under the Copyright Act.⁸⁸

In 1984, the U.S. Supreme Court in *Sony Corp. of America v. Universal City Studios, Inc.*,⁸⁹ sometimes referred to as the “Betamax Case,” held that consumers may record a television show on a video cassette recorder (“VCR”) in order to view the show at a later, more convenient time.⁹⁰ In *Sony Corp.*, Universal City Studios brought an action for copyright infringement against Sony Corporation of America, alleging that Sony’s production and sale of Betamax, which allowed consumers to record television shows and movies to watch later, constituted contributory infringement because it provided “the ‘means’ to accomplish an infringing activity,” and encouraged that infringing activity “through advertising.”⁹¹ Sony contended that the use of Betamax to record protected works did not constitute contributory infringement because the product was available for legitimate and non-infringing uses.⁹²

Justice Stevens, writing for the majority, agreed with Sony’s assertion when he bluntly noted that “Sony . . . [did] not supply Betamax consumers with respondents’ works; respondents [did].”⁹³ In his reasoning, Justice Stevens explained that Sony only supplied a piece of equipment that is generally capable of copying ranges of televised programs, which included works that were not copyrighted, copyrighted but could be copied without objection from the copyright holder, and copyrighted works that the copyright holder “would prefer not to have copied.”⁹⁴ The Court also noted that because the respondents represented a small class of copyright holders, a finding of

⁸⁷ See Mike Musgrove, *HD DVD Goes the Way of Betamax*, WASH. POST (Feb. 20, 2008), <http://www.washingtonpost.com/wp-dyn/content/article/2008/02/19/AR2008021902461.html> [https://perma.cc/T7JU-FPD3]. Interestingly, although Sony lost the Betamax versus VHS battle, the failure of the HD DVD was, at least in part, due to the wide availability of Blu-ray, a movie format largely founded by Sony.

⁸⁸ See generally *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417 (1984).

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *Id.* at 436 (citing *Kalem Co. v. Harper Bros.*, 222 U.S. 55 (1911)).

⁹² *Id.* at 440.

⁹³ *Id.* at 436.

⁹⁴ *Id.*

contributory infringement would “inevitably frustrate the interests of broadcasters” who opted to permit time-shifting in the hopes of reaching a greater portion of viewers.⁹⁵

The Supreme Court continued its analysis by addressing unauthorized time-shifting as an infringement, pointing out that mere unlicensed use did not constitute an infringement unless that use conflicts with specific and exclusive rights conferred by statute.⁹⁶ The Court then analyzed whether unauthorized time-shifting fell under the “fair use” exception provided by section 107 of the Copyright Act.⁹⁷ Here, the Court found that the respondents failed to overcome their burden to demonstrate by a preponderance of the evidence that the noncommercial use of time-shifting would likely lead to future harm.⁹⁸ The Supreme Court acknowledged the District Court’s findings, which “described respondents’ evidence as follows: ‘Plaintiffs’ experts admitted . . . that the time-shifting without librarying would result in “not a great deal of harm.”’”⁹⁹

C. The Digital Millennium Copyright Act of 1998 (DMCA)

On October 28, 1998, four years after the Trade Related Intellectual Property Rights (“TRIPS”) Agreement,¹⁰⁰ President Clinton signed the DMCA¹⁰¹ into law.¹⁰² Congress drafted the DMCA

⁹⁵ See *id.* at 446.

⁹⁶ *Id.* at 447; see also *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 154-55 (1975).

⁹⁷ See *Sony Corp. of Am.*, 464 U.S. at 447.

⁹⁸ *Id.* at 451.

⁹⁹ *Id.*

¹⁰⁰ Member countries of the World Trade Organization, including the United States, negotiated the passing of the Trade Related Intellectual Property Rights Agreement (“TRIPS”) at the Uruguay Round of the General Agreement on Tariffs and Trade in 1994. BÉNÉDICTE CALLAN, *PIRATES ON THE HIGH SEAS: THE UNITED STATES AND GLOBAL INTELLECTUAL PROPERTY RIGHTS* 16 (1998). The TRIPS Agreement benefitted the U.S. on the international level because it established a new framework of minimum standards of protection for intellectual property mechanisms like patents, copyrights, and trademarks. *Id.* at 18–19. For instance, the TRIPS Agreement entitled patents to twenty years’ protection from the date of filing, copyrights for software, databases, music, movies, and performances enjoyed protections for up to fifty years, with copyrights for broadcasts receiving twenty years of protection, and finally, trademarks registered for at least seven years could be renewed indefinitely. *Id.* at 20.

¹⁰¹ Digital Millennium Copyright Act, Pub. L. No. 105-304, 112 Stat. 2860 (1998) (codified in various sections of 17 U.S.C.) [hereinafter DMCA].

to mirror the World Intellectual Property Organization (“WIPO”) Copyright Treaty, which the Clinton Administration signed two years earlier in 1996, during the Burne Convention in Geneva.¹⁰³ While the DMCA certainly manifested Congress’ intent to move U.S. copyright laws into the Digital Age, the enactment of the DMCA recognized the complex relationship that global electronic commerce shares with U.S. copyright laws.¹⁰⁴

The DMCA was divided into five titles, three of which are considered in this section: the WIPO Copyright and Performances and Phonograms Treaties Implementation Act of 1998 (Title I);¹⁰⁵ the Online Copyright Infringement Liability Limitation Act (Title II);¹⁰⁶ and the Computer Maintenance Competition Assurance Act, which exempted from infringement copy a computer program for purposes of maintenance or repairs (Title III).¹⁰⁷ The DMCA also includes two additional titles, Miscellaneous Provisions (Title IV)¹⁰⁸ and the Vessel Hull Design Protection Act, (Title V),¹⁰⁹ but these titles do not affect cyber piracy and will not be discussed in the foregoing section.¹¹⁰

The goal of the DMCA was to expand regulation by “addressing policies relating to the ‘National Information Infrastructure.’”¹¹¹ For example, the DMCA proscribed the act of circumventing a technology measure intended to control access to a protected work, *i.e.*, bypassing Digital Rights Management (“DRM”), discussed *infra* in Subsection

¹⁰² Peter Boyd, *The DeCSS Story: Struggle for Power in the Digital Age*, LOTT & FISCHER, <http://lottfischer.com/general.php?category=Resources&subhead=Articles&headline=The+DeCSS+Story%3A+Struggle+for+Power+in+the+Digital+Age> (last visited Oct. 3, 2017) [<https://perma.cc/9DVL-6LJ8>].

¹⁰³ *Id.*

¹⁰⁴ See U.S. COPYRIGHT OFFICE, THE DIGITAL MILLENNIUM COPYRIGHT ACT OF 1998: U.S. COPYRIGHT OFFICE SUMMARY (1998), <http://www.copyright.gov/legislation/dmca.pdf> [<https://perma.cc/W4GF-B9UT>].

¹⁰⁵ See DMCA, *supra* note 101, at 2861.

¹⁰⁶ *Id.* at 2877.

¹⁰⁷ *Id.* at 2886; see also LISA M. TITTEMORE & JOEL R. LEEMAN, COPYRIGHT LAW IN THE NEW MILLENNIUM: RECENT DEVELOPMENTS AND FUTURE CHANGES, PEC MA-CLE 5-1 at 8 (2014).

¹⁰⁸ DMCA, *supra* note 101, at 2887.

¹⁰⁹ *Id.* at 2905.

¹¹⁰ Congress codified the DMCA in part at 17 U.S.C. §§ 512, 1201-05, and 1301-32. TITTEMORE, *supra* note 107, at 8.

¹¹¹ *Id.* (quoting *Universal City Studios v. Corley*, 273 F.3d 429 (2d Cir. 2001)).

D. Not only did the DMCA bar the act of circumventing these control measures, it also banned the trafficking of any devices that were designed to defeat the control measures that protect copyrighted content.¹¹²

The DMCA also provided exceptions for persons who used certain works that fell into particular classes if the person would likely be adversely affected by the prohibition against circumvention in their ability to make non-infringing uses of the protected work.¹¹³ To properly employ these exemptions, the Librarian of Congress, with the recommendation of the Register of Copyrights, determines and publishes a report every three years that details the classes of copyrighted works that are subject to this exemption.¹¹⁴ While the initial lists of classes of works demonstrated a movement towards widening the scope of exemptions, the government has begun a new trend of narrowing these exemptions.¹¹⁵ For example, the Register of Copyrights approved the exemption for “jailbreaking” and permitted the circumvention of controls on cellphones for the installation of non-approved applications.¹¹⁶ However, the Register of Copyrights declined to extend the same exemption to the operating systems of tablets, video game consoles, and most importantly, personal computers.¹¹⁷ While the Register of Copyrights declined to exempt these three distinct classes, each declination was made for entirely different reasons.¹¹⁸ The Register of Copyright’s decision in 2011 is of particular interest. It declined to expand “time-shifting” exemptions that applied to VCRs under the *Sony Corp.* decision to also include “space-shifting,” which is the copying and transferring of content from one device to another, reasoning that the DMCA exemption process was not an arena for breaking “new ground in the law of fair use.”¹¹⁹

¹¹² *Id.*; see also *Universal City Studios v. Corley*, 273 F.3d 429 (2d Cir. 2001).

¹¹³ TITTEMORE, *supra* note 107, at 8.

¹¹⁴ 17 U.S.C § 1201(a)(1) (1999); see also TITTEMORE, *supra* note 107, at 8.

¹¹⁵ See TITTEMORE, *supra* note 107, at 8.

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ See *id.* The Register of Copyrights declined to exempt tablets because of a lack of a proper definition for “tablet,” video game consoles because of the extremely high production cost when compared to most cellphone applications, and personal computers because, according to Microsoft, locking the operating system is an antivirus measure. *Id.*

¹¹⁹ See *id.* at 9.; see also *Realnetworks, Inc. v. DVD Copy Control Ass’n*, 641 F. Supp. 2d 913, 941 (N.D. Cal. 2009) (declining to extend the decision in *Sony*

D. Universal City Studios v. Corley, 273 F.3d 429 (2d Cir. 2001)

As quickly as cyber pirates developed the means to reproduce copyrighted works, companies developed numerous models of DRM to protect their works. Simply put, DRM is an umbrella term for the various hardware and software tools that companies employ to deter illegal copying or sharing of copyrighted works.¹²⁰ The film industry famously developed DRM software for Digital Versatile Disks (“DVD”) that combined unique signature recognition and digital encryption to prevent home viewers from copying movies.¹²¹

In the late 1990s, Universal City Studios collaborated with several other movie studios to create the Content Scrambling System (“CSS”), which protected the copyrighted material contained on DVDs from being displayed or copied without the proper authentication keys.¹²² CSS became an extremely popular tool in the early 2000s, during the transition period from VHS tapes to DVDs.¹²³ But it was not until the foundation of Napster that the film industry uniformly adopted CSS as the de facto DRM method for DVD content.¹²⁴

The application of CSS essentially combines player-host mutual authentication and multiple forms of digital encryption.¹²⁵ The digital content is first encrypted and written to the DVD. Once the encrypted content is written to the DVD, several encryption keys are embedded onto the disk, including a unique player manufacture key,¹²⁶ in

Corp. of Am. v. Universal City Studios to include the creation of personal backup copies of purchased DVDs).

¹²⁰ Ben F. Anderson & Eric J. Renzulli, *Modern Digital Rights Management Methods: An Interactive Qualifying Project Report* WORCHESTER POLYTECHNIC INST. 1, 2 (May 5, 2009), https://web.wpi.edu/Pubs/E-project/Available/E-project-051109-135624/unrestricted/modern_DRM_methods.pdf [<https://perma.cc/9W97-LTBP>]; see also Lucille M. Ponte, *Coming Attractions: Opportunities and Challenges in Thwarting Global Movie Piracy*, 45 AM. BUS. L.J. 331, 331 (2008).

¹²¹ Anderson, *supra* note 120, at 14–28.

¹²² *Id.* at 14–15.

¹²³ *Id.* at 14.

¹²⁴ See *id.* at 4.

¹²⁵ See *id.* at 14–15; see also Gregory Kesden, Associate Professor, Carnegie Mellon University, Lecture on Content Scrambling Systems (Dec. 6, 2000), <https://www.cs.cmu.edu/~dst/DeCSS/Kesden> [<https://perma.cc/8Z46-JWME>].

¹²⁶ DVD manufacturers may only obtain unique player manufacturer keys exclusively from the DVD Control Association. Anderson, *supra* note 120, at

addition to several other keys that unlock the encrypted content much like unlocking a door with multiple locks.¹²⁷

In its preliminary form, only closed-source operating systems¹²⁸ used CSS, prohibiting open-source operating system users, such as Linux users, from obtaining and manipulating the software's source code.¹²⁹ Limiting CSS to only closed-source operating systems made the security that CSS provided less susceptible to being compromised; that is unless you are a teenage programming superstar.

In October 1999, a fifteen-year-old named John Lech Johansen became famously known as "DVD Jon" for reverse engineering the CSS software and publishing an open-source program called DeCSS.¹³⁰ Johansen's DeCSS program allows Linux-based operating systems to bypass the DRM protections provided by CSS by emulating a licensed DVD player, essentially tricking the disk's encryption into performing the authentication and decryption processes.¹³¹ Although Johansen's initial basis for creating DeCSS was simply to gain the ability to play retail DVDs on his Linux-based computer, he caused the DeCSS source code to spread like wildfire by publishing it on the Internet.¹³² Unsurprisingly, the mass distribution of DVD decryption software quickly caught the attention of most of the Hollywood film industry, including Universal City Studios, Paramount Pictures, Metro-Goldwyn-Mayer Studios, Tristar Pictures, Columbia Pictures, Time

15. All authorized DVD player manufacturers must obtain a license from the DVD Control Association; failing to do so would render the DVD player incapable of reading any CSS enabled DVD. See *Content Scrambling System, DVD COPY CONTROL ASS'N*, <http://www.dvdcca.org/css.aspx> (last visited Oct. 3, 2017) [<https://perma.cc/8PPC-SJAN>].

¹²⁷ Kesden, *supra* note 125.

¹²⁸ Closed-source operating systems are developed and sold for profit by software companies, such as Microsoft Windows or Apple, without the end user being able to access or alter the operating system's source code. Conversely, open-source operating systems, such as Linux, are often published and freely distributed for anyone to use and develop further, with the operating system's source code being available to the end user to alter or improve.

¹²⁹ Anderson, *supra* note 120, at 15.

¹³⁰ *Id.*

¹³¹ JON LECH JOHANSEN'S BLOG, <http://nanocr.eu/about> (last visited Mar. 2, 2016) [<https://perma.cc/S3GM-468C>].

¹³² Anderson, *supra* note 120, at 15.

Warner Entertainment, Disney Enterprises, and Twentieth Century Fox.¹³³

On January 20, 2000, only three months following the publication of DeCSS, three defendants, Shawn Reimerdes, Eric Corley, and Roman Kazan, obtained and posted copies of DeCSS onto the Internet.¹³⁴ Universal City Studios brought an action in the Southern District of New York, seeking to permanently enjoin the defendants under the DMCA from transferring, manufacturing, trafficking, or otherwise distributing DeCSS.¹³⁵ The district court granted the injunction and Corley appealed to the Second Circuit, challenging the district court's ruling and the constitutionality of the DCMA on First Amendment grounds.¹³⁶

On appeal, Corley asserted that because the dissemination of computer code is “speech” it is entitled to full First Amendment protection, and the anti-trafficking provisions of the DMCA are content-based and therefore unconstitutional as applied to Corley's dissemination of DeCSS.¹³⁷ Corley maintained that the anti-trafficking provisions “specifically target . . . scientific expression based on the particular topic addressed by that expression—namely, techniques for circumventing CSS.”¹³⁸ The Second Circuit remained unpersuaded, however, and affirmed the injunction.¹³⁹

The Second Circuit reasoned that Corley's argument failed to consider that the “posting provisions of the injunction” contained both non-speech and speech components, *i.e.*, DeCSS.¹⁴⁰ The DMCA prohibitions, as applied to Corley, only concerned the non-speech component, which the Court concluded was the function of DeCSS.¹⁴¹ The Second Circuit identified the DMCA as a content neutral regulation with an incidental effect on free speech, and thus subject to

¹³³ See *Universal City Studios, Inc. v. Reimerdes*, 111 F. Supp. 2d 346 (S.D.N.Y. 2000), *aff'd sub nom* *Universal City Studios v. Corley*, 273 F.3d 429 (2d Cir. 2001) (enjoining plaintiffs from distributing DeCSS under the DMCA).

¹³⁴ *Corley*, 273 F.3d at 436.

¹³⁵ See *Reimerdes*, 111 F. Supp. 2d at 346.

¹³⁶ *Corley*, 273 F.3d at 436.

¹³⁷ *Id.* at 429.

¹³⁸ *Id.* at 454.

¹³⁹ *Id.* at 459–60 (internal quotations omitted).

¹⁴⁰ *Id.* at 454.

¹⁴¹ *Id.*

intermediate scrutiny.¹⁴² The Second Circuit recognized that the government had an unquestionably substantial interest in “preventing unauthorized access to encrypted copyrighted materials,” and the regulation of DeCSS by the DMCA “plainly serves that interest,” though not necessarily by the least restrictive means.¹⁴³ However, the Second Circuit acknowledged that the regulation “need only avoid burdening ‘substantially more speech than is necessary to further the government’s legitimate interest,’” which it did satisfactorily.¹⁴⁴

While the district court’s decision in *Universal City Studios v. Reimerdes* earmarked the first real test of the DMCA’s power,¹⁴⁵ the Second Circuit’s validation of the decision in *Universal City Studios v. Corley*¹⁴⁶ memorialized the DMCA’s ability to proscribe not only the illegal sharing of copyrighted works through technologic means, but also the tools required to bypass DRM like DeCSS.¹⁴⁷ The Second Circuit’s decision in *Universal City Studios* set the tone for the next cyber piracy showdown that followed, *A&M Records v. Napster, Inc.*¹⁴⁸

E. A&M Records v. Napster, Inc., 239 F.3d 1004 (9th Cir. 2001)

At the turn of the Millennium, amongst fears of “Y2K” and visions of hover boards, a new program set the stage for a dawning era of personal, portable media, and a new era of copyright enforcement under the DMCA. Predating the PRO-IP Act by less than a decade, a software called Napster for computers made use of the MP3 format of

¹⁴² *See id.*

¹⁴³ *Id.*

¹⁴⁴ *Id.* (quoting *Turner Broad. Sys. v. FCC*, 512 U.S. 622, 662 (1994)).

¹⁴⁵ *See Corley*, 273 F.3d 429.

¹⁴⁶ *Id.*

¹⁴⁷ It should be noted that while the DMCA did have enforcement power to ban the dissemination of programs like DeCSS, it could do little to actually quell the spread of DeCSS on the internet or elsewhere. In 2000, the DVD Copy Control Association (“DVD CCA”) sued a company named “Copyleft,” who ironically printed the source code of DeCSS on t-shirts with the caption: “Coding is NOT a crime.” Farhad Manjoo, *Court to Address DeCSS T-Shirt*, WIRED (Aug. 2, 2000, 12:00 PM), <https://www.wired.com/2000/08/court-to-address-decss-t-shirt/> [https://perma.cc/7EB2-GLNP]. Copyleft sold more than 4,000 t-shirts and donated more than \$12,000 of the proceeds to the Electronic Frontier Foundation, a nonprofit which represented a vast majority of the defendants in the DVD CCA’s lawsuit. *Id.*

¹⁴⁸ *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004 (9th Cir. 2001).

music.¹⁴⁹ MP3s are digital files of music, and are obtainable by downloading music from audio CDs onto one's computer.¹⁵⁰ Napster went one step further, however, and facilitated "Peer to Peer" transferring of files.¹⁵¹ Essentially, Napster users would each possess their own digital library of MP3 files, and Napster's centralized servers would keep a directory of what users were online at any given time and what files those users had available to others.¹⁵² Users of the software could query the Napster servers for files they wanted, and then download those files from users who were online and possessed the file.¹⁵³ Essentially, rather than buying the music on a CD, users could download the specific song they wanted directly from someone else who had the file, and without having to purchase that song.¹⁵⁴ While this was obviously popular among users and consumers, copyright holders were less than enthused, and eventually brought suit against Napster for copyright infringement.¹⁵⁵

Among other defenses, one of Napster's leading legal theories was that of fair use.¹⁵⁶ Use of copyrighted work is a non-infringing "fair use" when it falls under specific categories of protected use, such as for purposes of criticism or comment, or for teaching purposes.¹⁵⁷ Asserting fair use as an affirmative defense, Napster claimed three specific fair uses: sampling, space-shifting, and permissive distribution.¹⁵⁸ The court first balanced the fair use claim under four factors that were to guide its analysis to examine the specific claims: the purpose and character of the use, the nature of the copyrighted work, the amount used, and the effect of the use on the potential market value of the work.¹⁵⁹

The court began its analysis with the purpose and character of the use factor, which focuses on whether and to what extent the new work

¹⁴⁹ *Id.* at 1011.

¹⁵⁰ *Id.*

¹⁵¹ *Id.*

¹⁵² *Id.* at 1011-12.

¹⁵³ *Id.*

¹⁵⁴ *Id.*

¹⁵⁵ *See generally id.*

¹⁵⁶ *See id.* at 1013-19.

¹⁵⁷ 17 U.S.C. § 107 (2012).

¹⁵⁸ *A&M Records, Inc.*, 239 F.3d at 1013-15.

¹⁵⁹ *Id.*

is transformative of the original work.¹⁶⁰ When an original work is merely retransmitted in a different medium, courts have determined the use to be non-transformative, and such was the case in *Napster*, where users were merely transferring the MP3 files to one another.¹⁶¹ Additionally, courts look to whether the use was commercial or not, as commercial use weighs against a finding of fair use in the purpose and character factor.¹⁶² In this case, though *Napster* did not actually benefit in a direct economic way from the copyrighted works, the court found the use nonetheless commercial because repeated and exploitative copying of copyrighted works can be commercial, even if the copies are not offered for sale.¹⁶³ The court reached a similar conclusion in their evaluation of the nature of the use, briefly stating that copyright laws more closely protect works of a creative nature, such as music.¹⁶⁴ Obviously, because the entirety of the copyrighted music was transferred from one user to another, the portion use factor also weighed against *Napster*.¹⁶⁵ When it came to the effect of the use on the market, both sides came prepared with experts ready to argue their points.¹⁶⁶ Plaintiffs' experts claimed that *Napster's* software reduced CD sales among college students and erected a barrier to plaintiffs' entry into the market of the digital downloading of music.¹⁶⁷ To counter, *Napster* offered an expert who claimed that *Napster's* file sharing service stimulated more CD sales than it displaced.¹⁶⁸ Unconvinced by *Napster's* expert, the court sided once again with the plaintiffs on this factor.¹⁶⁹

When reviewing *Napster's* usage claims, the court continued its disposition in favor of the plaintiffs.¹⁷⁰ When it came to the claim of sampling, the court's opinion harkened back to the details of a commercial use.¹⁷¹ Ordinarily, song samples were a highly regulated

¹⁶⁰ *Id.* at 1015.

¹⁶¹ *Id.*

¹⁶² *Id.*

¹⁶³ *Id.*

¹⁶⁴ *Id.* at 1016.

¹⁶⁵ *Id.*

¹⁶⁶ *Id.* at 1016-17.

¹⁶⁷ *Id.*

¹⁶⁸ *Id.*

¹⁶⁹ *Id.*

¹⁷⁰ *See id.* at 2017-20.

¹⁷¹ *Id.* at 2018-19.

ordeal containing either fractional pieces of songs, or granting users only temporary access to the song, and the copyright holders could collect royalties on such samples.¹⁷² In contrast, Napster users were able to acquire full, permanent copies of the song.¹⁷³ Even if the users eventually went on to purchase the song, the court still held that the samples were a commercial use and did not, therefore, qualify under the sampling fair use factor.¹⁷⁴ Space-shifting is a concept closely related to time-shifting as argued in *Sony Corp. of America v. Universal Studios, Inc.*¹⁷⁵ Space-shifting occurs when a user downloads an MP3 file for music that he already owns in CD form.¹⁷⁶ However, the court refused to apply the space-shifting exemption to Napster's case because, unlike in prior cases like *Sony*, here the shifting included the simultaneous distribution to the general public, effectively making the song available to millions of other users as opposed to just the original user.¹⁷⁷ Finally, the permissive reproduction factor was rendered moot as the plaintiffs chose not to challenge these uses, which were programs such as chat rooms and message boards.¹⁷⁸ With the fair use defense quashed, the court found Napster liable for copyright infringement on grounds notably including contributory liability.¹⁷⁹

Essentially, the court held that Napster was contributorily liable because of its role in hosting the centralized indexer of the copyrighted material.¹⁸⁰ As explained above, Napster's servers provided for indexes that Napster users in turn relied upon in order to "find" the other online users with the files they desired and download those files from those other users.¹⁸¹ Additionally, the court determined that the software was not capable of commercially significant non-infringing uses.¹⁸² Thus, the court determined that Napster both had knowledge

¹⁷² *Id.*

¹⁷³ *Id.*

¹⁷⁴ *Id.*

¹⁷⁵ *See id.*; *see also* *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 421 (1984).

¹⁷⁶ *A&M Records, Inc.*, 239 F.3d at 1019.

¹⁷⁷ *See id.*

¹⁷⁸ *Id.*

¹⁷⁹ *Id.* at 1019-22.

¹⁸⁰ *See id.* at 1019-22.

¹⁸¹ *Id.* at 1011-12.

¹⁸² *Id.* at 1020-21.

of the copyright infringement occurring through the use of its software and that it materially contributed to it, because without its indices users would not be able to find the MP3 files they desired and would be unable to download those files.¹⁸³ While this may seem like an overly technical analysis, this reasoning left a logical hole in the Ninth Circuit Court's decision, which could be exploited by future peer-to-peer file sharing software. In the meantime, the *Napster* case represents a massive *tour de force* by the DMCA and civil copyright enforcement at the time, as practically every argument advanced by Napster was defeated, and Napster was unable to persuade the Ninth Circuit on any real issue.¹⁸⁴

F. Metro-Goldwyn-Mayer Studios, Inc. v. Grokster Ltd., 545 U.S. 913 (2005)

As Napster's chapter came to a close, other software companies awaited eagerly on the fringes, ready to seize the market gap left in Napster's wake. Among several such companies were Grokster, StreamCast, and Kazaa, who all saw an opportunity in the former Napster users and answered that market call with their own peer-to-peer file sharing service.¹⁸⁵ This began with the development of a program, OpenNap, which was designed to be compatible with Napster's software and to leverage Napster's user base once Napster shut down.¹⁸⁶ OpenNap allowed these software companies to find the former users of Napster and encourage them to make the switch over to their own software programs.¹⁸⁷ The process led users to Grokster and StreamCast, who had a new take on Napster's software.¹⁸⁸ A substantial part of the decision from the *Napster* case rested on Napster's centralized index servers, which ultimately supported the decision that Napster was contributorily liable for copyright infringement.¹⁸⁹ However, there are three types of peer-to-peer services.¹⁹⁰ Centralized systems, like what Napster used, store indices

¹⁸³ *Id.* at 1022.

¹⁸⁴ *See generally id.*

¹⁸⁵ *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913, 913-27 (2005).

¹⁸⁶ *Id.*

¹⁸⁷ *Id.*

¹⁸⁸ *See id.*

¹⁸⁹ *See A&M Records, Inc.*, 464 U.S. at 1019-22.

on central servers operated by the software company, which users use to find the files they wish to download from other users.¹⁹¹ In contrast, decentralized systems have each computer keeping their own indices of files available on that computer.¹⁹² Finally, Grokster used a “supernode” system, in which select user computers maintained the indices for all files available for download.¹⁹³

By using the “supernode” system, Grokster expected to use the *Napster* decision against the copyright holders and evade liability by virtue of the decentralized system.¹⁹⁴ Grokster’s theory was not excessively bold either, as there were scholars who agreed with their assessment.¹⁹⁵ It was believed that the recording industry had missed an opportunity with Napster in which the industry could have chosen to support Napster in exchange for some control over the process, such as perhaps limiting the number of times a particular user could share a particular file on the centralized servers.¹⁹⁶ Grokster argued that once users had installed their software, they had no control over how the users used that software because they, unlike Napster, did not use a centralized server to index files, and so their own computers had no control over the process.¹⁹⁷ In fact, the courts recognized that even if the software distributors were to deactivate all computers within their control, users could continue their activities with virtually no interruption.¹⁹⁸ Grokster argued that its lack of control precluded claims of vicarious liability, as had been found in the *Napster* case.¹⁹⁹ With respect to contributory infringement, Grokster argued that it was

¹⁹⁰ *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 380 F.3d 1154, 1158-60 (9th Cir. 2004) *rev’d*, 545 U.S. 913 (2005). Readers are advised to note that this Article will frequently refer between both the Ninth Circuit case and its appeal to the Supreme Court as referenced in note 185. Caution is advised to avoid confusion, as the Ninth Circuit’s ruling was ultimately overturned by the Supreme Court.

¹⁹¹ *Id.*

¹⁹² *Id.*

¹⁹³ *Id.*

¹⁹⁴ *See generally id.*

¹⁹⁵ *See, e.g.,* Gabriel Fitch, *From Napster to Kazaa: What the Recording Industry Did Wrong and What Options Are Left*, 9 J. TECH. L. & POL’Y 183, 196 (2004).

¹⁹⁶ *Id.*

¹⁹⁷ Jennifer Norman, *Staying Alive: Can the Recording Industry Survive Peer-to-Peer?*, 26 COLUM. J. L. & ARTS 371, 387-89 (2004).

¹⁹⁸ *Metro-Goldwyn-Mayer Studios, Inc.*, 380 F.3d at 1163.

¹⁹⁹ Norman, *supra* note 197 at 378-81, 388-89.

protected under the *Sony* doctrine, in that its software was capable of non-infringing use.²⁰⁰ The Ninth Circuit Court of Appeals was largely persuaded by these arguments, finding that Grokster and StreamCast were not material contributors to copyright infringement because they did not store the indices on their own computers and further because their software was capable of non-infringing uses.²⁰¹ With regard to vicarious liability, once again the decentralized nature of the software programs served to protect them.²⁰² Due to the nature of their software, Grokster could not monitor and control its users, and therefore possessed no right or ability to supervise its users, thus they were not vicariously liable either.²⁰³ It seemed that Grokster had won the day, and its decentralized servers were the key to success for peer-to-peer file sharing.²⁰⁴

The Supreme Court of the United States, however, was not so willing to leave this devastating loophole to copyright infringement unchecked. The Supreme Court recognized that Grokster and StreamCast were actively marketing their products to former Napster users and essentially encouraging them to infringe copyrights.²⁰⁵ The Supreme Court did not rely on the nature of Grokster's software, but rather looked at the company's conduct to support its decision, viewing negatively the defendant's blatant encouragement to its users to infringe copyrights.²⁰⁶ The Court disagreed with the Ninth Circuit's reading of *Sony*, finding that the Ninth Circuit assumed *Sony* barred secondary liability whenever there was a substantial non-infringing use to be found for the product.²⁰⁷ Rather, the Court explained, *Sony* prevents courts from *imputing* culpable intent for secondary liability when a non-infringing use could be found, but it does not prevent actual evidence of intent from being relevant.²⁰⁸ Evidence of

²⁰⁰ *Id.* at 388-89.

²⁰¹ *Metro-Goldwyn-Mayer Studios, Inc.*, 380 F.3d at 1163-64.

²⁰² *See id.* at 1164-67.

²⁰³ *Id.*

²⁰⁴ *See generally* Fitch, *supra* note 195 (discussing how the record industry's success in *Napster* effectively sealed their defeat in *Grokster* prior to the Supreme Court appeal reversing the decision).

²⁰⁵ *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913, 922-27 (2005).

²⁰⁶ *See generally id.*

²⁰⁷ *Id.* at 933-34.

²⁰⁸ *Id.* at 934-37.

inducement to infringe may be submitted and, consequently, secondary liability can be assigned based on that evidence.²⁰⁹ With the *Sony* case in mind, the Supreme Court relied on the readily available evidence of defendant's intent to induce, citing to evidence like OpenNap, which was directly targeted to Napster users in an effort to win them over following Napster's unfavorable court decision, and found that defendants very clearly had the requisite intent and were not protected by *Sony*.²¹⁰ In making this decision, the Supreme Court effectively closed the loophole left behind by the *Napster* case. Even the mere fact that the defendants failed to develop filtering tools to diminish the infringing activity weighed against them in the determination of an unlawful objective.²¹¹ The Court also looked unfavorably on the fact that the defendants relied on advertisements for revenue generation, which in turn meant that they benefitted from high-volume use of their software that was shown to be largely infringing use.²¹² The Court's decision was so decisive that it is difficult to conceive how another software company might attempt to skirt this decision as Grokster and StreamCast attempted to skirt around the *Napster* decision. Where the *Napster* decision served to highlight the power of the DMCA, the *Grokster* decision secured that power definitively and gave copyright holders a powerful position for enforcing their copyright protections on the Internet. Congress, however, was not content with the protections provided by the DMCA, and so three years following the *Grokster* decision, Congress passed a new act further expanding copyright enforcement.

G. The Prioritizing Resources and Organization for Intellectual Property Act of 2008

Introduced in 2008, The Prioritizing Resources and Organization for Intellectual Property Act of 2008 ("PRO-IP Act" or "Act") expanded upon what the DMCA had originally provided.²¹³ Essentially, the PRO-IP Act was designed to increase the resources available for the federal enforcement of copyright laws by coordinating the efforts on federal and state levels and even allowing the Department of Justice ("DOJ") to bring civil actions for copyright

²⁰⁹ *Id.*

²¹⁰ *Id.*

²¹¹ *Id.* at 939-40.

²¹² *Id.*

²¹³ TITTEMORE, *supra* note 107, at 13.

infringement.²¹⁴ The Act sought to streamline law enforcement's ability to enforce copyright laws by reorganizing positions in the Executive Branch, providing for cooperation between state and federal law enforcement, bringing international infringement into federal enforcement's reach, and improving the legal consequences of infringement.²¹⁵ The Act established an Intellectual Property Enforcement Coordinator ("IPEC") to keep tabs on the fight against copyright infringement and prioritize the enforcement of intellectual property laws.²¹⁶ These duties include issuing policy guidance, filing reports with the President, recommending future legislative changes to Congress, and implementing a Joint Strategic Plan to coordinate the efforts of the various departments and agencies.²¹⁷ The Act also increased the civil and criminal penalties of infringement, and permitted the government to bring criminal proceedings for copyright infringement regardless of whether the copyright was registered, whereas registration was ordinarily required for a private civil claim.²¹⁸ The Federal Bureau of Investigation ("FBI") reported that the efforts of the PRO-IP Act were successful in facilitating its intellectual property rights investigations.²¹⁹

The FBI states that the purpose of intellectual property rights ("IPR") enforcement is to dismantle international and domestic criminal organizations that steal and traffic pirated goods.²²⁰ In that regard, the FBI reports success attributable to the powers provided by the PRO-IP Act, offering such examples as its successful takedown of the "criminal enterprise" Megaupload in collaboration with international law enforcement agencies.²²¹ The PRO-IP Act, alongside funding bills, enabled the FBI to create the Intellectual Property Rights

²¹⁴ *Id.*; see also Morris A. Singer, *The Failure of the PRO-IP Act in a Consumer-Empowered Era of Information Production*, 43 SUFFOLK U. L. REV. 185, 198 (2009).

²¹⁵ Singer, *supra* note 214, at 198.

²¹⁶ *Id.* at 198-99.

²¹⁷ Prioritizing Resources and Organization for Intellectual Property Act of 2008, Pub. L. No. 110-403, § 301(b), 122 Stat. 4256, 4265 (2008) [hereinafter PRO-IP Act].

²¹⁸ Singer, *supra* note 214, at 199-200.

²¹⁹ See generally U.S. DEPT. OF JUST., PRO IP ACT ANNUAL REPORT FY2012 (2012).

²²⁰ *Id.* at 1.

²²¹ *Id.* at 2-7.

Unit (“IPRU”).²²² The IPRU, staffed by at least five special agents, works with other government agencies to handle complex, multi-district and international IPR crimes.²²³ After an appropriations bill in 2012, the IPRU received almost \$2,000,000, which was used to fund personnel and expand operations, field missions, and contractor support for computer forensic analysis, improve the hosting and maintenance of a website, and deploy units overseas.²²⁴ With its newly allocated resources, the FBI reported that under the PRO-IP Act’s provisions, it was able to not only take down Megaupload, but successfully prosecuted dozens of other related major crimes.²²⁵ Several of these were for the theft of trade secrets, frequently by international criminals.²²⁶ There were also instances of cyber piracy, such as the illegal reproduction and distribution of Android cell phone apps, and a Delaware individual who operated multiple software-piracy websites that unlawfully sold hundreds of pirated, popular computer software products.²²⁷ The FBI concluded its report by acknowledging that the threat to United States intellectual property rights was an immense, multinational specter and that the funding provided by the PRO-IP Act was instrumental in forming positive relationships with rights holders, enabling the FBI to leverage the success of their IPR operations exponentially.²²⁸ However, the PRO-IP Act was not met with universal fanfare.

Notably, the DOJ expressed concern that the bill intruded too far onto its independent authority, believing that the establishment of an office in the White House intended to guide law enforcement towards intellectual property (“IP”) enforcement qualified as precisely the political interference with law enforcement the DOJ wanted to avoid.²²⁹ The DOJ sent a letter to Congress with such grievances, stating that, among other provisions, the “Czar” provision was

²²² *Id.* at 2.

²²³ *Id.*

²²⁴ *Id.* at 3.

²²⁵ *Id.* at 3-7.

²²⁶ *Id.*

²²⁷ *Id.*

²²⁸ *Id.* at 12-13.

²²⁹ Frank Ahrens, *House Bill to Create Anti-Piracy Czar Advances*, WASH. POST (May 1, 2008), <http://www.washingtonpost.com/wp-dyn/content/article/2008/04/30/AR2008043003360.html> [https://perma.cc/FDG8-HGAP]. The “IP Czar” provision is one that would create a new position that would oversee IP enforcements. *Id.*

unnecessary and needlessly detracted from the department's autonomy.²³⁰ The DOJ also had reservations about early provisions eventually struck from the bill, such as one that authorized the DOJ to bring civil claims on behalf of private copyright holders, which were actions never before assigned to the DOJ.²³¹ The White House echoed these sentiments, though it was eventually persuaded to compromise and accept the IPEC position.²³² Despite these complaints, the DOJ has not been without at least some success relating to the PRO-IP Act. In its 2014 annual report regarding the PRO-IP Act, the DOJ reported some successful prosecutions attributable to the PRO-IP Act.²³³ In a one-year period preceding the release of the report, the DOJ logged over 1,500 instances of success attributable to the PRO-IP Act grants, including nearly 500 disrupted or dismantled piracy organizations.²³⁴

Some legal scholars also opposed the bill. For example, Morris Singer writes that while some of the protections provided by the PRO-IP Act were beneficial to the industry, some of the protections were redundant and, consequently, harmful to the industry.²³⁵ Singer believes that many of the protections offered by the PRO-IP Act protect large media industries that already have the means to protect themselves.²³⁶ However, those protections affect the freedom of users to access information, which, in a technological field, makes it difficult for new producers of content to emerge in the market.²³⁷ Singer notes that Congress, in writing the PRO-IP Act, looked at the Internet and budding technology as a method of mass-infringement.²³⁸ In so doing, Congress failed to consider how technology and the ease of access to information encouraged the production of new works, resulting in a serious restriction in the production of future information by any newcomers to the field while simultaneously entrenching well-

²³⁰ Wendy K. Marsh, *Long Live the IP Czar?*, MCKEE, VOORHEES & SEASE, PLC, <http://www.ipmvs.com/news/long-live-the-ip-czar/> (last visited Oct. 3, 2017) [<https://perma.cc/2JXB-33DH>].

²³¹ *Id.*

²³² *Id.*

²³³ *See generally* U.S. DEPT. OF JUST., PRO IP ACT ANNUAL REPORT FY2014 (2014).

²³⁴ *See generally id.*

²³⁵ Singer, *supra* note 214, at 200-08.

²³⁶ *Id.*

²³⁷ *Id.*

²³⁸ *Id.* at 214-15.

established figures.²³⁹ As an example, rap music, which is considered a predominant form of cultural expression, is often produced using numerous samplings of copyrighted works.²⁴⁰ Under the PRO-IP Act, one would have to obtain individual licenses in order to use these samples, turning the production of rap music into an extremely costly affair while the copyright holders of those samples profit and are thus further entrenched and enriched.²⁴¹ Singer was not alone in his analysis either. Criticism of the legislation could even be found from Google's senior copyright attorney, and other groups who generally expressed sentiments that the bill provided unnecessary, excessive protections to entrenched producers of content.²⁴² Nevertheless, the bill found both proponents and opponents, and ultimately it passed after some serious revision,²⁴³ bringing into existence the most recent major amendment to copyright law, and perhaps more specifically copyright law enforcement.

V. MODERN CYBER PIRACY

This next section describes the modern effects of cyber piracy, beginning with a discussion of the economic impact cyber piracy has had in the United States. The brief overview examines some recorded losses the entertainment industry has attributed to cyber piracy. It then discusses the Pirate Bay, a global online source for piracy, its history, and how it continues to operate despite many failed attempts to cull it. Born directly from the conflicts between Pirate Bay and copyright holders, the Pirate Party came into existence as supporters of Pirate Bay rallied into a substantial party against copyright holders. This section also discusses the rise of the Pirate Party as well as its place in the modern world. Finally, this section compares the rise and social dynamics of the Pirate Bay movement to anonymous dark net sites on the deep web, such as the Silk Road. The section explains what the deep web is, what sort of illicit activity takes place on dark net sites, and how political ideologies have formed around that illicit activity in

²³⁹ *Id.*

²⁴⁰ *Id.* at 210-11.

²⁴¹ *Id.*

²⁴² *See* Ahrens, *supra* note 229.

²⁴³ *See, e.g., id.* (noting the removal of a "compilation clause" that would have targeted distributors of CDs, assigning penalties for each individual song on the CD rather than one penalty per disc).

much the same way that it has formed around Pirate Bay and cyber piracy.

A. Modern Economic Effects of Piracy in the U.S.

The U.S. intellectual property industry is a billion-dollar industry that employs nearly 5.5 million workers and accounts for approximately 6.71% of the total U.S. economy.²⁴⁴ The core-copyright industry has repeatedly outperformed the U.S. economy, growing even during a period of recession at an aggregate of 3.9% between 2009 and 2013, while the U.S. economy grew at 2.25%.²⁴⁵ Additionally, the 5.5 million workers employed by the core-copyright industry in 2013 earned an average annual wage of \$87,860, a figure that is 16.88% higher than the median household income of American families in 2013.²⁴⁶

The Motion Picture Association of America (“MPAA”) claims that piracy caused the film industry to lose \$18 billion in potential revenue, which it claims resulted in 141,030 jobs lost and \$837 million in lost tax revenue for the United States.²⁴⁷ However, a 2010 study published by the Harvard Business School suggested that “data on the supply of new works are consistent with [the] argument that file sharing did not discourage authors and publishers.”²⁴⁸ The study also proposed three explanations for the lack of effect that piracy has had on U.S. markets, including: (1) empirical evidence gathered suggests only twenty percent of sales can be attributed to file sharing; (2) file sharing has increased the demand for complementary products and services, such as live concerts, and that increased demand has led to increased prices;

²⁴⁴ *Core Copyright Industries Add \$1.1 Trillion to U.S. Economy, Employ 5.5 Million Workers*, INT’L INTELLECTUAL PROP. ALLIANCE (Dec. 17, 2014), http://www.iipawebsite.com/pdf/2014_Dec17_CopyrightRptPressRelease.PDF [<https://perma.cc/2XZR-5GH8>]; see also Stephen E. Siwek, *Copyright Industries in the U.S. Economy: The 2014 Report*, INT’L INTELLECTUAL PROP. ALLIANCE (2014), <http://www.iipawebsite.com/pdf/2014CpyrtRptFull.PDF> [<https://perma.cc/WQF7-6N2C>] (reporting that U.S. based core-copyright industries generated over \$1.1 trillion of economic output in 2013).

²⁴⁵ See Siwek, *supra* note 244, at 2.

²⁴⁶ *Id.*

²⁴⁷ Ponte, *supra* note 120, at 332.

²⁴⁸ Felix Oberholzer-Gee & Koleman Strumpf, *File-Sharing and Copyright*, INT’L J. MUSIC BUS. RES. 1 (2010), <http://musicbusinessresearch.files.wordpress.com/2010/06/paper-felix-oberholzer-gee.pdf> [<https://perma.cc/2XGZ-2RC3>].

and (3) monetary incentives in certain industries play a reduced role in motivating authors of protected material to remain creative.²⁴⁹

B. The Pirate Bay

The Pirate Bay is perhaps the most famous (or infamous depending on one's view) file sharing network today.²⁵⁰ The website began as an online index for torrent files, but has rapidly materialized into a community of copyright dissidents.²⁵¹ The Pirate Bay was founded in Sweden in 2003 under the U.S.-based domain "thepiratebay.org" by Peter Sunde (alias, *brokep*), Fredrik Neij (alias, *TiAMO*), and Gottfrid Svartholm Warg (alias, *anakata*).²⁵² According to the founders—who claim to only maintain a non-pecuniary administrative relationship to the website—the Pirate Bay is owned by Reservella, a mysterious corporation based in the Republic of Seychelles, a small island country located approximately 800 miles southeast of the Somalian coast.²⁵³

²⁴⁹ *Id.*

²⁵⁰ See generally THE PIRATE BAY, <http://thepiratebay.se> (last visited Apr. 29, 2016) [<https://perma.cc/WM6V-GKRR>].

²⁵¹ See Joost Mollen, *Pirate Bay Founder: I Have Given Up*, MOTHERBOARD (Dec. 11, 2015, 2:26 PM), https://motherboard.vice.com/en_us/article/qkjpbd/pirate-bay-founder-peter-sunde-i-have-given-up [<http://perma.cc/Y47K-N927>]. A torrent file is the next step in the evolution of peer-to-peer file sharing. The purpose of a torrent file is pure efficiency: to get files of all sizes to as many people on a globally connected network of hosts (called a swarm), comprised of individual host computers (called seeders) and downloaders (called peers). A torrent file does not contain the actual content to be distributed and downloaded, but rather contains the information necessary to download the content, such as a description of each piece of the content and which computers on a global network host those portions of the file for download. A program is used to read the torrent file, locate each piece of the content, download pieces of that content from each of the swarms, and compile the finished product for the user to enjoy. It should be noted that, similar to prior sharing protocols, torrent files are a totally legitimate means to download a file. In fact, because modern video game files are so large, many video game clients now use torrents to distribute updates to users because torrents are so efficient and redistribute the burden of hosting files to the end. Only if material is protected by copyright and downloaded without permission is the use of a torrent file considered infringing. Truly, sharing is caring. See generally J.A. Pouwelse, et al., *A Measurement Study of BitTorrent Peer-to-Peer File Sharing System*, DELFT UNIV. TECH. PDS-2004-003 (2004), <https://pdfs.semanticscholar.org/057f/44dff64060e769d3242b7a9baf7cf4191df7.pdf> [<https://perma.cc/AH5N-YCAW>].

²⁵² See Mollen, *supra* note 251.

²⁵³ Nate Anderson, *Reservella: The Shadowy Company Behind the Pirate Bay*, ARS TECHNICA (Oct. 12, 2009, 7:15 AM), <https://arstechnica.com/tech->

The founders of the Pirate Bay themselves are the quintessential rogues of the Digital Age. Two of the founders of the Pirate Bay founded a Swedish-based ISP named PeriQuito AB (“PRQ”), which gained notoriety for hosting controversial free speech-focused websites such as WikiLeaks.²⁵⁴ In fact, Julian Assange, the founder of WikiLeaks, issued a statement suggesting that Pirate Bay founder Gottfrid Svartholm played a crucial role in exposing the controversial WikiLeaks video “Collateral Murder,”²⁵⁵ and is responsible for “an important part of [WikiLeak’s] infrastructure.”²⁵⁶ Since the Pirate

policy/2009/10/who-owns-the-pirate-bay-part-ii/ [http://perma.cc/9JB2-VZ7R]. A Swedish company called Global Gaming Factory X realized the shady history of the company when it agreed to purchase the Pirate Bay in 2009 for approximately \$7.7 million. Veronica Ek & Mia Shanley, *Pirate Bay Founders Get Rich in Jail*, REUTERS (Jun. 30, 2009, 8:44 AM), <http://www.reuters.com/article/us-piratebay-smbiz/pirate-bay-founders-get-rich-in-jail-idUSTRE55T3AP20090630> [http://perma.cc/JLE3-ZGEX]. But due to financial difficulties and allegations of insider trading after the company’s stock rose 70 percent several hours preceding the announcement, Global Gaming Factory X failed to secure the financing to complete the purchase. Johan Nylander, *The Pirate Bay Sold to Swedish IT-Company*, SWEDISH WIRE (Jun. 30, 2009), <https://www.theguardian.com/media/pda/2009/jun/30/pirate-bay-bought-by-swedish-firm> [https://perma.cc/GJV7-636N].

²⁵⁴ Andy Greenberg, *PRQ, Web Host for WikiLeaks and Once for the Pirate Bay, Raided by Swedish Police*, FORBES (Oct. 1, 2012, 4:16 PM), <https://www.forbes.com/sites/andygreenberg/2012/10/01/wikileaks-and-pirate-bay-web-host-prq-raided-by-swedish-police/#4fd8d6141e5c> [http://perma.cc/6DBU-8GHD]; David F. Gallagher, *BITS; WikiLeaks Has a Friend in Sweden*, N.Y. TIMES (Feb. 25, 2008), <https://bits.blogs.nytimes.com/2008/02/20/wikileaks-site-has-a-friend-in-sweden/> [http://perma.cc/8PZK-FFU5]. PRQ chief executive officer Carl Lundstrom was charged alongside the Pirate Bay founders in 2009 for contributory infringement. David Kravets, *Pirate Bay Crew Chums Up to Foes Over Lunch*, WIRED (Feb. 18, 2009, 2:05 PM), https://www.wired.com/2009/02/pirate_wednesda/ [https://perma.cc/862P-E6Z8].

²⁵⁵ See generally *Collateral Murder*, WIKILEAKS (Apr. 5, 2010, 10:44 PM), <https://collateralmurder.wikileaks.org> [https://perma.cc/YN9D-R7ZU]. The video “Collateral Murder” is a leaked U.S. military video depicting a first-person view of a U.S. attack helicopter killing over a dozen people in Iraq, including a Reuters photojournalist. Viewer discretion is advised, as the video contains graphic violence. *Id.*

²⁵⁶ *WikiLeaks Consultant Gottfrid Svartholm Warg Extradited from Sweden After Alleged Access to NSA Contractor CSC*, WIKILEAKS (Nov. 29, 2013, 3:00 PM), <https://wikileaks.org/WikiLeaks-consultant-Gottfrid.html> [https://perma.cc/ASV8-HHGN].

Bay's inception, all three founders have served time in prison for computer-related crimes, which range from hacking Swedish banks to copyright infringement.²⁵⁷

Despite the legal successes of the MPAA and the Record Industry Association of America ("RIAA") in taking down the large distributors of copyrighted materials,²⁵⁸ the traditional methods of combating online piracy have proven somewhat futile when considering Hollywood's campaign against the Pirate Bay. In 2006, the MPAA and the RIAA moved away from prosecuting singular cases of infringement,²⁵⁹ and fixed their sights on bigger fish, namely the torrent indexing giants like the Pirate Bay.²⁶⁰ In 2009, after several failed attempts to shut down the Pirate Bay website,²⁶¹ several large

²⁵⁷ See Alex Hern, *Last Pirate Bay Co-Founder Released from Prison*, THE GUARDIAN (Sep. 29, 2015), <https://www.theguardian.com/technology/2015/sep/29/last-pirate-bay-co-founder-released-prison-gottfrid-svartholm> [<https://perma.cc/N37C-38S3>]; see, e.g., Ryan W. Neal, *Gottfrid Svartholm, Pirate Bay Founder, Charged with Attempting to Steal 5.7 Million Swedish Kronor in Hacking Plot*, INT'L BUS. TIMES (Apr. 16, 2013, 12:15 PM) <http://www.ibtimes.com/gottfrid-svartholm-pirate-bay-founder-charged-attempting-steal-57-million-swedish-kronor-hacking> [<https://perma.cc/V9CW-XDJR>].

²⁵⁸ See, e.g., *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004 (9th Cir. 2001); *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913, 913-27 (2005); *Arista Records LLC v. Lime Group LLC*, 715 F. Supp. 2d 481 (S.D.N.Y. 2010); see also *Universal Music Austl. Pty Ltd. v. Sharman License Holdings Ltd.* [2005] 222 FCR 465 (5 September 2005) (Austl.).

²⁵⁹ Beginning in 2003, the movie and record industries sued over 261 individuals in the U.S. for copyright infringement under the DMCA. See GANTZ, *supra* note 4, at 143-44. General Counsel and Executive Vice President of Verizon, William F. Barr, testified before Congress that the DMCA "threatens to turn [U.S.] Federal courts into free-floating subpoena mills" because the DMCA subpoenas and takedown notices have "little or no oversight," and called the RIAA lawsuits a "jihad against 12-year-old girls." *Id.* at 143; see also *Virgin Records Am., Inc. v. Thomas*, No. 06-1497 (MJD/RLE), 2007 U.S. Dist. LEXIS 79585 (D. Minn. Oct. 1, 2007), *rev'd sub nom*, *Capitol Records, Inc. v. Thomas-Rasset*, 692 F.3d 899 (8th Cir. 2012); Joshua Freed, *Woman to Pay Downloading Award Herself*, ASSOCIATED PRESS (Oct. 5, 2007, 8:09 PM), http://www.washingtonpost.com/wp-dyn/content/article/2007/10/05/AR2007100500390_pf.html [<https://perma.cc/8LJL-DB33>].

²⁶⁰ See Mollen, *supra* note 251.

²⁶¹ See, e.g., David Kravets, *Pirate Bay Raided, Shuttered*, WIRED (May 31, 2011, 7:00 AM), <https://www.wired.com/2011/05/0531swedish-police-raid-pirate-bay> [<https://perma.cc/FV35-EURE>].

music and film studios filed a lawsuit in Stockholm against the three Pirate Bay founders and the chief executive officer (“CEO”) of PRQ, the Pirate Bay’s ISP.²⁶² The lawsuit consisted of a joint civil and criminal prosecution, with each of the four defendants (the “Pirate Bay Four”) charged with promoting copyright infringement.²⁶³ On April 17, 2009, a Stockholm district court found the Pirate Bay Four guilty and sentenced Sunde, Neij, Svartholm, and Lundstrom to serve one year in prison and imposed a collective fine of 30 million Swedish kronor—roughly \$4.5 million U.S. dollars.²⁶⁴ The defendants appealed the Stockholm district court decision to a Swedish appellate court, which reduced the prison sentences by two months each, but increased the collective fine from 30 million kronor to 46 million kronor (\$6.8 million U.S. dollars).²⁶⁵ The Pirate Bay Four appealed the Swedish appellate court decision, but the Swedish Supreme Court extinguished the fiery legal battle when it denied the appeal.²⁶⁶

Interestingly enough, the Pirate Bay continues to operate to this day, after twelve years, despite jailing its founders and administrators and fining the CEO of its original ISP into bankruptcy.²⁶⁷ Remarkably, the continued survival of the Pirate Bay is likely due to the difficulties that the Swedish government has faced enforcing the judgement against the Pirate Bay Four.²⁶⁸ Shortly after the appeal, dozens of music and film companies filed another suit against Neijm, Svartholm, and Sunde, as well as the Pirate Bay’s new ISP—aptly named Black Market—demanding the ISP cease hosting the website and that the court impose additional fines against the founders for noncompliance of the original order.²⁶⁹ The Stockholm district court ruled against the

²⁶² *Id.*

²⁶³ Nate Anderson, *The Pirate Bay Verdict: Guilty, with Jail Time*, ARS TECHNICA (Apr. 17, 2009, 7:23 AM), <https://arstechnica.com/tech-policy/2009/04/the-pirate-bay-verdict-guilty-with-jail-time/> [<https://perma.cc/XC67-ML8F>].

²⁶⁴ Cyrus Farivar, *Evasive Action: How the Pirate Bay Four Dodged Swedish Justice—for a While*, ARS TECHNICA (Oct. 3, 2012, 8:45 PM), <https://arstechnica.com/tech-policy/2012/10/evasive-maneuvers-how-the-pirate-bay-founders-dodged-swedish-justice/> [<https://perma.cc/3G2R-WRH3>].

²⁶⁵ *Id.*

²⁶⁶ *Id.*

²⁶⁷ *See, e.g.*, THE PIRATE BAY, <https://thepiratebay.se> (last visited Apr. 30, 2016) [<https://perma.cc/GSY3-MWPN>].

²⁶⁸ Anderson, *supra* note 263.

²⁶⁹ Daniel Goldberg, *Så Tänker Tingsrätten (So Think the District Court)*, COMPUTER SWEDEN (Aug. 8, 2009, 5:32 PM),

Pirate Bay and ordered the Black Market to discontinue hosting the Pirate Bay.²⁷⁰ Similar to the first case, the Pirate Bay appealed, the Swedish appellate court affirmed the district court's decision, and the Swedish Supreme Court denied the follow-up appeal.²⁷¹

Subsequently, the Pirate Bay, in the absence of its original founders, began a high stakes “cat-and-mouse game” moving its servers between several countries, including Iceland, Greenland, and St. Martin.²⁷² Eventually these servers were shut down and the Swedish servers were raided by police in 2014.²⁷³ The Pirate Bay's new administrators, consisting of between thirty to fifty individuals, were not surprised by the raid and suggested that the “people behind [the Pirate Bay] are like one big collective mind.”²⁷⁴ Following the 2014 raid, IsoHunt, another popular torrent indexing website, copied much of the original Pirate Bay website and released a tool called the Open Bay, which allowed users to reproduce versions of the Pirate

<http://computersweden.idg.se/2.2683/1.242544/sa-tanker-tingsratten>
[<https://perma.cc/NM4V-BRZC>].

²⁷⁰ *Id.*

²⁷¹ *Court of Appeal Announces Interim Injunction Regarding the Involvement of Copyright Infringement on the Internet*, SVEA HOVRÄTT (May 21, 2010), <http://www.svea.se/Om-Sveriges-Domstolar/Sveriges-Domstolars-pressrum/Nyhetsarkiv/2010/Svea-hovratt-meddelar-interimistiska-vitesforbud-avseende-medverkan-till-upphovsrattsintrang-pa-Internet-hovrattens-mal-O-7131-09-O-8773-09-och-O-10146-09/> [<https://perma.cc/7BD9-HVUV>] (translated version on file with author).

²⁷² Ryan W. Neal, *Pirates of the Caribbean: The Pirate Bay Moves to Island of St. Martin*, INT'L BUS. TIMES (April 30, 2013, 2:52 PM) <http://www.ibtimes.com/pirates-caribbean-pirate-bay-moves-island-st-martin-1226787> [<https://perma.cc/U5PK-TETM>]. In addition to its trusted domains (thepiratebay.org and thepiratebay.se) the Pirate Bay registered new domains including: “thepiratebay.gs”; “thepiratebay.la”; “thepiratebay.am”; “thepiratebay.mn”; and “thepiratebay.gd,” forcing the media industries to file claims in several other countries to force registrars to delist the new domains; *see also* Ernesto, *Pirate Bay Loses New Domain Name, Hydra Lives on*, TORRENT FREAK (May 22, 2015), <https://torrentfreak.com/pirate-bay-loses-new-domain-name-hydra-lives-on-150522> [<https://perma.cc/47MK-R8K5>].

²⁷³ *See* Stuart Dredge, *The Pirate Bay Crew ‘Couldn’t Care Less’ About Being Taken Offline*, THE GUARDIAN (Dec. 16, 2014), <https://www.theguardian.com/technology/2014/dec/16/the-pirate-bay-taken-offline-files-sharing> [<https://perma.cc/XJ5D-8998>].

²⁷⁴ *Id.*

Bay.²⁷⁵ Within a week of the Open Bay's release, an astounding 400 Pirate Bay website copies appeared across the Internet.²⁷⁶ After seven weeks, and hundreds of copy websites, the Pirate Bay rose from its digital ashes once again.²⁷⁷

Shortly after coming back online, the Pirate Bay focused its efforts on defending another lawsuit filed by the music and film industries against Bredbandsbolaget, the Pirate Bay's ISP at the time.²⁷⁸ This time, the Stockholm district court sided with the Pirate Bay and rejected the lawsuit, holding that the conduct of Bredbandsbolaget "[did] not constitute participation under Swedish law."²⁷⁹ Pirate Bay supporters' celebration was short-lived, however, because on February 13, 2017, a Swedish appellate court reversed the Stockholm district court's decision, holding in favor of the music and film industry.²⁸⁰

The Pirate Bay has weathered many storms, including the imprisonment of its founders and the CEO of the website's ISP, multiple raids on its servers, which were housed in two different underground nuclear bomb shelters, and millions of dollars in fines. Today, the site has returned to its roots at its original U.S.-based domain, "thepiratebay.org."²⁸¹ What has made the Pirate Bay so resilient is the community that has flocked to the idea behind the website, complete freedom online that borders on anarchy. The "steadfast resilience" of the Pirate Bay community has caused it to

²⁷⁵ Ernesto, *Hundreds of Pirate Bay Copies Emerge, Is the Hydra Alive?*, TORRENT FREAK (Dec. 27, 2014), <https://torrentfreak.com/hundreds-of-pirate-bay-copies-emerge-is-the-hydra-alive-141227> [<https://perma.cc/5QF7-FCAT>].

²⁷⁶ *Id.*

²⁷⁷ Adam Clark Estes, *The Pirate Bay is Back, Again*, GIZMODO (May 19, 2015, 5:50 PM), <http://gizmodo.com/the-pirate-bay-is-back-again-1685721077> [<https://perma.cc/5CZQ-BSNA>].

²⁷⁸ Samuel Gibbs, *Sweden Refuses to Order ISP to Block Pirate Bay*, THE GUARDIAN (Nov. 30, 2015, 6:09 PM), <https://www.theguardian.com/technology/2015/nov/30/pirate-bay-stockholm-district-court-sweden-refuses-order-isp-block-site> [<https://perma.cc/8SRH-3EKK>].

²⁷⁹ *Id.*

²⁸⁰ Andy, *The Pirate Bay Must Be Blocked in Sweden, Court of Appeal Rules*, TORRENT FREAK, (Feb. 13, 2017), <https://torrentfreak.com/the-pirate-bay-must-be-blocked-in-sweden-court-of-appeal-rules-170213> [<https://perma.cc/55EW-SE67>].

²⁸¹ Don Reisinger, *The Pirate Bay Returns to .Org*, PC MAGAZINE, (May 25, 2016, 4:45 PM), <https://www.pcmag.com/news/344753/the-pirate-bay-returns-to-org> [<https://perma.cc/E83U-RAWY>].

earn the reputation of a “hydra” site, where cutting off the head will only cause more to grow in its place.²⁸² The Pirate Bay has outgrown its original purpose and formed a new cause, and it has a large global network backing it.

C. The Pirate Party

The Pirate Party became an international political movement that supports online freedom, sporting offices in over sixty countries.²⁸³ The Pirate Party surged with support in Iceland following the Panama Papers leak in April 2016, which condemned Icelandic Prime Minister Sigmundur David Gunnlaugsson’s financial portfolio, forcing him to resign his position.²⁸⁴ According to several polls conducted in April 2016, the “once-fringe, radical Pirate Party” of Iceland that controlled roughly five percent of parliament in 2013, now appears to be the most popular party in Iceland by a significant amount.²⁸⁵ In fact, one poll in 2016 showed that “43 percent of Icelanders would vote for the [Pirate Party] in an election—the highest figure for any party.”²⁸⁶

With so much support, the Pirate Party ran in Iceland’s 2016 national election expecting to be at the top of the vote.²⁸⁷ While the

²⁸² See Natalie Halimi, *The Pirate Bay Rises from the Ashes (Again): A Stats'-Eye View*, VENTURE BEAT (Feb. 5, 2015, 8:00 AM), <http://venturebeat.com/2015/02/05/pirate-bay-rises-from-the-ashes-again-a-stats-eye-view> [<https://perma.cc/T37F-HUQM>].

²⁸³ Lucy Westcott, *Pirate Party Is Now Iceland’s Biggest Political Party*, NEWSWEEK (Mar. 19, 2015, 12:43 PM), <http://www.newsweek.com/pirate-party-now-icelands-biggest-political-party-315068> [<https://perma.cc/ZLL3-SDYX>].

²⁸⁴ Nick Robins-Early, *Why the Panama Papers Hit a Nerve in Iceland*, HUFFINGTON POST (Apr. 7, 2016, 3:14 PM), http://www.huffingtonpost.com/entry/panama-papers-iceland-government-banks_us_57052a20e4b0a506064dc01f [<https://perma.cc/9LA6-GBP2>].

²⁸⁵ *Id.*

²⁸⁶ Nick Robins-Early, *This Radical Protest Pirate Party Is Now Leading Iceland Polls*, HUFFINGTON POST (Apr. 11, 2016, 5:46 PM), http://www.huffingtonpost.com/entry/pirate-party-iceland_us_5706a2fee4b0b90ac2718d40n [<https://perma.cc/G3Q9-BMMG>].

²⁸⁷ Griff Witte, *Pirate Party Surge Falls Short in Iceland Election*, WASH. POST (Oct. 30, 2016), https://www.washingtonpost.com/world/pirate-party-surge-falls-short-in-iceland-election/2016/10/30/0292462e-9d21-11e6-b552-b1f85e484086_story.html?utm_term=.163ac1d2cee7 [<https://perma.cc/LN23-SP8J>].

Pirate Party did not necessarily meet those political expectations, it did surge to third place in Iceland's national election.²⁸⁸

D. The Deep Web

The term “deep web” does not refer to a place, but rather to the collection of online data, unindexed by search engines, such as banking, government, and corporate data.²⁸⁹ The deep web is thousands of times larger than the “surface web,”²⁹⁰ yet remains invisible to all except those savvy enough to navigate the hidden areas contained within the deep web.²⁹¹ The hidden areas of the deep web, which allow users to anonymously communicate, are known as “dark nets,” which are essentially unindexed webpages that permit users to connect and communicate anonymously online.²⁹² While most view dark nets as nefarious places that cater to criminals,²⁹³ many journalists and political activists utilize the anonymity of the dark nets to communicate in places where such communication would otherwise be dangerous or impossible.²⁹⁴

Most users gain anonymous access to the deep web by utilizing an encrypted virtual private network, or through Tor.²⁹⁵ Tor, short for “The Onion Router,” is an anonymizing program that utilizes a vast network of encrypted virtual tunnels to not only mask the real identity of the user's computer, but also to allow the user access to otherwise blocked content.²⁹⁶ The Tor Project, a 501(c)(3) research-education

²⁸⁸ *Id.*

²⁸⁹ THE DEEP WEB (Epix 2015).

²⁹⁰ The “surface web” refers to the visible internet, i.e., the collection of indexed webpages and networked computers that the average user encounters while online. *Id.*

²⁹¹ *Id.*

²⁹² *Id.* Thus, where the surface web is comprised of websites like Facebook, Twitter, and Google, the deep web is comprised of unindexed dark nets like Decentralized Network 42 and Tor. *Id.*

²⁹³ *See, e.g.,* United States v. Focia, No. 2:15cr17-MHT, 2015 U.S. Dist. LEXIS 43519, at *6 (M.D. Ala. Mar. 25, 2015) (“People who desire such anonymity [on the deep web] . . . are much more likely to use the weapons for nefarious purposes.”).

²⁹⁴ *See* THE DEEP WEB, *supra* note 289.

²⁹⁵ *Id.*

²⁹⁶ *See generally* Tor: Overview, TOR, <https://www.torproject.org/about/overview.html.en> (last visited May 1, 2016) [<https://perma.cc/RN95-583H>].

organization based out of Cambridge, Massachusetts, maintains the software, comparing Tor to “using a twisty, hard-to-follow route in order to throw off somebody who is tailing you.”²⁹⁷ Tor prevents an eavesdropping observer from watching “where the data came from or where it’s going” by sending outgoing data packets over a random pathway through a series of independently encrypted relay nodes.²⁹⁸ This process also effectively erases the user’s digital footprints because each relay independently negotiates a set of encryption keys with only the preceding and succeeding relays.²⁹⁹ Because no individual relay ever knows the complete path, an eavesdropper cannot simply monitor internet traffic to link the connection’s source and destination.³⁰⁰ As the Tor Project suggests, the intended purpose of its software is to enable users to “speak and read freely” on the Internet.³⁰¹ Although many anti-copyright organizations, such as the Pirate Bay, certainly utilize Tor to proclaim their message online, perhaps the most extreme example of an online anonymous community-turned political movement is the Silk Road.

E. The Silk Road

While the Pirate Bay was transforming into an anti-copyright political movement on the surface web, an even larger crypto-anarchist community was forming in the shadows of the dark net—the Silk Road. The Silk Road began in 2011 as a “clandestine eBay, a digital marketplace for illicit trade.”³⁰² The Silk Road peddled anything and everything, from pirated video games and movies to assassins for hire, but most of its revenue derived from selling drugs.³⁰³ Users accessed the Silk Road by utilizing Tor (and other cryptographic software) and

²⁹⁷ *Id.*

²⁹⁸ *Id.*

²⁹⁹ *Id.*

³⁰⁰ *Id.*

³⁰¹ *Id.*

³⁰² Joshua Bearman, *The Rise & Fall of Silk Road, Part I*, WIRED (May 2015), <https://www.wired.com/2015/04/silk-road-1> [<https://perma.cc/B9HD-68YE>] [hereinafter Bearman, *Silk Road Part I*] (describing the story of the Silk Road as “[h]ow a 29-year-old idealist build a global drug bazaar and became a murderous king pin”); see also Joshua Bearman, *The Rise & Fall of Silk Road, Part II*, WIRED (June 2015), <http://www.wired.com/2015/05/silk-road-2>. [<https://perma.cc/S7EY-PA8Q>].

³⁰³ Bearman, *Silk Road Part I*, *supra* note 302.

made purchases in Bitcoin,³⁰⁴ the anonymous and open-source “crypto-currency” of the web.

The Silk Road operated as “a Digital Era Wild West” that “represented the new frontier of crime.”³⁰⁵ The vast network of the Silk Road, though largely community-based, was overseen by a mysterious figurehead known as Dread Pirate Roberts,³⁰⁶ often referred to as DPR.³⁰⁷ The alias Dread Pirate Roberts was no accident, intending to pay homage to the main character of the film *The Princess Bride*. According to the film, the Dread Pirate Roberts, played by Cary Elwes, was a *nom de guerre*, eternally handed down by successive generations of pirates.³⁰⁸ Adopting the successive title of an omnipotent pirate not only gave the user a claim of plausible deniability,³⁰⁹ but also ignited a cult following as the personification of an online sanctuary for tech-savvy libertarians, with the Dread Pirate Roberts as its philosopher king.³¹⁰

The Silk Road was more than “a slap in the face to law enforcement,” according to the Dread Pirate Roberts, but “was a direct challenge . . . to the very structure of power.”³¹¹ It took the combined efforts of the Federal Bureau of Investigation, the Drug Enforcement Agency, the Department of Homeland Security, the Internal Revenue Service, the Secret Service, and the U.S. Postal Inspection Service to uncover the identity of the Dread Pirate Roberts—29-year-old Ross Ulbricht of San Francisco, California.³¹²

To place the incredible size of the organization at the time of Ulbricht’s arrest into context, prosecutors alleged that the Silk Road generated \$1.2 billion in revenue in the two years the site operated, netting itself \$80 million in commission.³¹³ Although the network was

³⁰⁴ See generally BITCOIN, <https://bitcoin.org/en/> (last visited May 1, 2016) [<https://perma.cc/JP8S-AHY4>].

³⁰⁵ Bearman, *Silk Road Part I*, *supra* note 302.

³⁰⁶ See DEEP WEB, *supra* note 289.

³⁰⁷ Bearman, *Silk Road Part I*, *supra* note 302.

³⁰⁸ See PRINCESS BRIDE (Twentieth Century Fox 1987).

³⁰⁹ Bearman, *Silk Road Part I*, *supra* note 302.

³¹⁰ *Id.* The Dread Pirate Roberts even created a book club, “where users could publish [sic] their dogma from the sacred texts of [Ludwig] von Mises,” an essential contributor to the theoretical Austrian school of economics. *Id.*

³¹¹ *Id.*

³¹² See generally *id.*

³¹³ Nicole Hong, *5 Things to Know About the Silk Road Trial*, WALL ST. J. (Jan. 13, 2015, 11:10 AM), <http://blogs.wsj.com/briefly/2015/01/13/5-things-to-know->

overly sophisticated in terms of modern cryptographic technology, U.S. Senator Charles Schumer described the Silk Road as “more brazen than anything else by light-years” due to the general lack of technological sophistication ordinarily employed by the drug trade.³¹⁴ But for Ulbricht, it was not just about the money. At his sentencing, Ulbricht recalled why he began the Silk Road, stating that he “wanted to empower people to make choices in their lives . . . to have privacy and anonymity.”³¹⁵ Ross Ulbricht is now serving a life sentence in federal prison.³¹⁶

The stories above underscore the growing need for the development of new tactics and laws to combat online piracy.³¹⁷ Directly engaging online piracy on an international level has only caused a political movement to form and fragmented larger pirate websites into hundreds of other pirate websites.³¹⁸ With the explosion of online crypto-market communities, combating anonymous pirates on the deep web will likely prove futile for law enforcement, notwithstanding some legislative assistance. In its current state, using traditional law enforcement methods, who in turn use outdated

about-the-silk-road-trial [<https://perma.cc/EGS3-PR8U>]; *see also* Bearman, *Silk Road Part I*, *supra* note 302.

³¹⁴ Nicolas Christin, *Traveling the Silk Road: A Measurement Analysis of a Large Anonymous Online Marketplace*, (Aug. 1, 2012) (Carnegie Mellon CyLab, Working Paper No. 1286 2012-07-30 21:29:14Z), <http://arxiv.org/pdf/1207.7139v1.pdf> [<https://perma.cc/2ANR-NXG7>].

³¹⁵ Andy Greenberg, *Silk Road Creator Ross Ulbricht Sentenced to Life in Prison*, WIRED (May 29, 2015, 4:03 PM), <https://www.wired.com/2015/05/silk-road-creator-ross-ulbricht-sentenced-life-prison>. [<https://perma.cc/29VF-FZ84>].

³¹⁶ *Id.*; *see also* United States v. Ulbricht, 31 F. Supp. 3d 540 (S.D.N.Y. 2014) (outlining Ulbricht’s appeal to the Second Circuit in 2016, and the appellate court’s affirmation of his conviction).

³¹⁷ Interestingly, Secret Service agent Shaun Bridges, who was involved in capturing Ulbricht, was re-arrested after a “brazen attempt to flee the United States” after he was convicted and sentenced to prison for various counts of corruption while he was assigned to the Silkroad case. Andy Greenberg, *Corrupt Silk Road Investigator Re-Arrested for Allegedly Trying to Flee the US*, WIRED (Feb. 01, 2016, 3:11 PM), <https://www.wired.com/2016/02/corrupt-silk-road-investigator-re-arrested-trying-to-flee-the-us> [<https://perma.cc/X9GR-9TUK>]. According to reports, Secret Service agent Shaun Bridges conspired to launder approximately \$800,000 worth of Bitcoins he secretly stole from Silkroad. *Id.*

³¹⁸ *See, e.g.,* Ernesto, *supra* note 275.

international laws to “eliminat[e] global copyright [piracy]” would be akin “to attempting to hold back the ocean with a broom.”³¹⁹

VI. THE FUTURE OF CYBER PIRACY

A. 3D Printing and Scanning

Technology continues to evolve, and just as Congress dealt with the onset of new technologies in passing the Copyright Act of 1976, so too will it have to keep up with newer, ever-emerging technologies. Already, attention is being drawn to one such development: 3D Printing. 3D Printing is the process of taking a digital scan of a physical object, or creating a virtual design of an object, and using a “3D Printer” in conjunction with the blueprint design to create a physical copy of that object.³²⁰ The blueprint divides the physical object into hundreds or even thousands of layers.³²¹ The 3D Printer then deposits material, layer by layer, from bottom to top in what is called “additive” technology to produce the final physical product.³²² Different printers go about this process in different ways, but the basic concept remains the same. The materials used vary depending on the project, and can include metal, glass, colored ceramic, plastic, and more.³²³

Being able to print virtual objects into physical reality sounds like a science fiction dream, but how does it relate to cyber piracy? In a recent case, two artists entered the Neues Museum in Berlin and used mobile devices to secretly scan the bust of Queen Nefertiti.³²⁴ The project, titled “The Other Nefertiti,” was intended to confront “cultural theft and persisting colonialist notions of national ownership” by

³¹⁹ MICHAEL L. RUSTAD, SOFTWARE LICENSING, CLOUD COMPUTING AGREEMENTS, OPEN SOURCE, AND INTERNET TERMS OF USE, § 12.03 (Matthew Bender, rev. ed.).

³²⁰ *What Is 3D Printing?*, 3DPRINTING.COM, <http://3dprinting.com/what-is-3d-printing> (last visited Apr. 30, 2016) [<https://perma.cc/5HQR-4QR2>].

³²¹ *Id.*

³²² SHERRI L. SCHORNSTEIN, CRIMINAL ENFORCEMENT OF INTELLECTUAL PROPERTY RIGHTS: U.S. PERSPECTIVE § 1.26 (Matthew Bender, 2013 ed.).

³²³ *See id.*

³²⁴ Charly Wilder, *Swiping a Priceless Antiquity . . . with a Scanner and a 3-D Printer*, N.Y. TIMES (Mar. 1, 2016), http://www.nytimes.com/2016/03/02/arts/design/other-nefertiti-3d-printer.html?_r=0 [<https://perma.cc/99QC-A9BP>].

making the copies of the bust widely available to the public.³²⁵ The artists claimed they used a modified Kinect, a device originally designed for the popular gaming console Xbox 360, to create their blueprint for 3D printing.³²⁶ The artists printed out two of their own copies of the bust and delivered them to Egypt and released a torrent of their blueprint so that anyone with access to a 3D printer could print their own copy.³²⁷ While some art institutions have embraced 3D scanning technologies, encouraging visitors to scan their collections or even hosting “scanathons” to create crowd-sourced digital archives, the Neues Museum had not yet discussed a policy on 3D scanning when the incident occurred.³²⁸ The Neues Museum did, however, possess their own high-quality scan of the bust, and had recently sold their own copies of the bust for nearly \$10,000 per copy.³²⁹ Initially, the Neues Museum discredited the scan as being of low quality, stating they had not yet had the opportunity to compare it to their own 3D scan, but did not believe the artists’ scan was of comparable quality.³³⁰ As the scans were inspected by experts, however, it came to light that the artists’ scan was actually of an extremely high quality, including details about the bust and scanning resolutions that 3D scanning experts said could not be achieved using the Kinect, particularly not when trying to scan the bust through its protective glass housing.³³¹ Because of this, several experts have speculated that it is extremely probable that the scan data, used by the artists and released online, was obtained through other means.³³² This has led to speculation that the museum’s scanning had been stolen in order to produce the copy.³³³ While the museum is still performing a detailed comparison the artists’

³²⁵ *Id.*

³²⁶ *Id.*

³²⁷ *Id.*

³²⁸ *See id.*

³²⁹ *Id.*

³³⁰ *Id.*

³³¹ Charly Wilder, *Nefertiti 3-D Scanning Project in Germany Raises Doubts*, N.Y. TIMES (Mar. 10, 2016), http://www.nytimes.com/2016/03/11/arts/design/nefertiti-3-d-scanning-project-in-germany-raises-doubts.html?_r=0. [https://perma.cc/C3BT-4KJ4].

³³² *Id.*

³³³ *Id.*

scans to its own copy, it is hard to envision how legal action may be taken if it is shown that the artists used a stolen copy of the scan.³³⁴

Already, Pirate Bay has adopted the distribution of 3D-Printer torrents with the introduction of their “physibles” section.³³⁵ In the physibles section, one can download hundreds of 3D blueprints of various objects, including the files for a 3D-printed gun.³³⁶ While initial versions of the 3D gun were prone to shattering after the first shot and were as dangerous to the user as to anyone else, one mechanical engineering student set out to create a viable 3D revolver model and has reported success.³³⁷ The weapon, a “PM522 Washbear .22LR,” was designed with the goals of safely firing at least four shots, being easily maintained using 3D printed parts, and capable of firing a .22LR caliber or larger round.³³⁸ The designer has since released a video showcasing the project’s success.³³⁹

The idea of stolen blueprints and digital files for printable guns has centered 3D printing as the next battlefield for cyber piracy.³⁴⁰ At the moment, some websites believe that 3D printing will be dealt with by the DMCA and treated in much the same way that 2D copying and printing are handled.³⁴¹ However, this speculation fails to account for the possibility that 3D weapons may become more widespread. Additionally, there are still some unresolved questions about the increased complexity of the printing process, from the digital blueprint files to the printer itself, to the final physical object produced.³⁴² Thus, time alone will tell how 3D printing ultimately takes root in a world of conflict between cyber pirates and copyright holders.

³³⁴ *Id.*

³³⁵ *See* SCHORNSTEIN, *supra* note 322.

³³⁶ *See id.*

³³⁷ *World’s First Fully 3D Printed Revolver*, 3DERS.ORG, (Nov. 24, 2015) <http://www.3ders.org//articles/20151124-worlds-first-fully-3d-printed-revolver-can-fire-up-to-8-bullets-between-reloads.html> [<https://perma.cc/QKP8-YNMX>].

³³⁸ *Id.*

³³⁹ *See id.*

³⁴⁰ *See* SCHORNSTEIN, *supra* note 322.

³⁴¹ *See generally* Michael Weinberg, *Understanding Why the Copyright Office Is Looking into 3D Printing*, 3DPRINT.COM (Jun. 30, 2015), <https://3dprint.com/77334/3d-printing-copyright-office> [<https://perma.cc/JYQ7-K2W9>].

³⁴² *Id.*

VII. CONCLUSION

Cyber piracy has become a major institution in the modern era. Despite an aggressive campaign by both legislatures and copyright holders, the support base for cyber piracy continues to grow in strength. The result is that a political rift has formed and created two political ideologies about how copyrights should be enforced and protected. This Article has explored the history of cyber piracy, how it came to exist, and how two political ideologies have evolved to center around it. A rapid expansion of technology created new means for infringing upon copyright that was eventually met with legislative response. Gradually, legislators inflated the protections offered to copyright holders until the protections became criticized as redundant and excessive. At the same time, the demand for free media in the global population spurred the creation of large hubs of illicit Internet activity, including cyber piracy, which eventually grew into a multi-national political phenomenon. As technology continues to evolve, the conflict of pirates and copyright holders, too, expands into new fields. Time will tell how this growing schism will be resolved, and how legislation will develop to accommodate it.