Intellectual Property and Copyright Law in a Digital Age

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1. Preface

When I began my academic career, I chose to enroll in both law and computer science. After a year, I made the decision to focus on the latter, and drop the former. Nevertheless, my interest in the first subject never waned. Over the years, mainstream media has widely covered many international events regarding intellectual property. Famous examples include the raid on the Pirate Bay servers by the Motion Picture Association of America (MPAA) in 2006 or the aggressive invoices sent by Buma/Stemra, a Dutch organisation which represents composers, lyricists, authors and publishers, to individual people embedding YouTube videos on their personal homepage in 2008.

The public debate that sparked following these events inspired me to investigate the background of this story and ultimately led to this thesis. This paper explores a different angle to the subject than usual. Instead of a technical examination, a more abstract approach to the legislature has been chosen. For a brief, by no means exhaustive, summary of technical challenges related to copyright enforcement, see appendix A.

2. Abstract

This work will consider various measures intended to protect copyright and intellectual property in the United States, with a focus on the Stop Online Piracy Act (SOPA), which grew out of the Protect Intellectual Property Act (PIPA), as well as the Anti-Counterfeiting Trade Agreement (ACTA), and another multinational treaty, the Trans-Pacific Partnership (TPP), which is currently being negotiated. This review will focus on the history of general copyright and internet copyright law in the United States, and consider the approaches of each of these legislative works to combat copyright violations, as well as whether these measures have been effective. Ultimately the tide of history has been moving toward ever-stringent copyright protection and excessively-vague language used to define rights violations. This work will show it to be incumbent upon lawmakers to more rigorously define ‘infringement’ of intellectual property before assigning criminal status to vague activity.

3. Introduction

The past years have shown an increase in online piracy, which can be described simplistically as the theft of information. Traditional laws have difficulties addressing the issue, as theft has always been defined as “taking something away from its rightful owner”. When information is stolen, nothing is taken away. Rather than that, it's copied, leaving the original in place.

In a response to the increase in global trade of counterfeit goods and pirated copyright protected works, a series of acts was proposed to establish an international standard for the protection of intellectual property. What followed was a great amount of international protests against these laws, as people feared they would lead to censorship of the internet, an invasion of privacy and a potential threat to civil liberties in general.

These acts and their predecessors have one thing in common: every one of them was heavily lobbied for by large corporations, such as Microsoft, Disney, the American Society of Composers, Authors and Publishers (ASCAP) and the MPAA. Even though a lobby for multiple copyright extensions has been successful, the shelving of SOPA and PIPA caused MPAA chairman Chris Dodd to comment that Hollywood might cut off campaign contributions to politicians who failed to support the movie industry in the future (Fox News, 2012). The White House declined to comment on subsequent allegations of bribery.

Corporate influence in lawmaking policies has since long been a topic of research and discussion (Fisch, 2003; Tully, 2007). The general consensus is that lobbyists have significant influence in politics. Even though criticism is not universal (deKieffer, 2007), the image of the profession remains unfavorable.

The rise of the internet made digital copyright a new and uncharted subject, vulnerable to one-sided interpretation by large corporations. When these views become reflected in new legislation, commercial interests are overly protected, neglecting other stakeholders. At this point in time, we are getting dangerously close to new acts no longer serving the public interest, but rather protect the profits of the business with the biggest lobby.

The demand for new and stricter legislation can often be attributed to the rise in popularity of new software, streaming platforms or the increasing bandwidth of users in general. With each new development, copyright holders argue that their property is insufficiently protected and call for additional protection from infringement.

This paper will focus first on the history of various copyright legislations, as it is crucial to see the development over time. It will show where SOPA/PIPA differ from older acts and what the reason behind their shelving has been. Furthermore, it will briefly touch on future treaties which are yet to be ratified. By comparing the old and the new, it will become apparent why digital copyright is such a sensitive subject and why copyright infringement on intellectual property is so difficult to combat.

4. Legislation

4.1 Traditional Copyright Law

American copyright law is governed by the Copyright Act of 1976. This act, "prevents the unauthorized copying of a work of authorship" (Bitlaw, 2014, p. 1). This act only prohibits the copying of the work itself, but distinguishes this action from the copying of the *ideas* which are contained within a work. Copyright might cover a written description of an object, but not apply to the actual object. The Act protects only the content of the written description of the object, while not extending to the information which is conveyed by this content. Copyrights are automatically registered with the U.S. Copyright office (Bitlaw, 2014).

As Leaffer (2010) explains, the 1976 Act is far from comprehensive, and modern copyright protection has faced a series of complex challenges in the years since its passage. These have typically been derived from the increasing pressure presented by the international dimension of content creation in an "increasingly interconnected world" (Leaffer, 2010, p. 22). Given the global markets for information as well as the "preeminent role" played by the United States in the export of informational (and entertainment) products, there were a series of laws put into place after the 1976 Copyright Act designed to continue and advance its protections. These included copyright provisions in NAFTA, the Berne Convention, the TRIPS Agreement, and the WIPO Copyright Treaty, which was passed in 1996.

4.2 WIPO

Given the central role that the WIPO Copyright Treaties play in the Digital Millennium Copyright Act, it is necessary to consider these in greater detail. Signatories to the 1996 World

Intellectual Property Organization (WIPO) Copyright Treaty, including the United States, adopted copyright protection necessary with regard to the rapidly-expanding digital domain. Under WIPO Article 4, computer programs were given the same level of copyright protection as literary works. Under Articles 6 and 8, the treaty also provided authors and copyright holders with expanded rights with regard to control over their works' rental or distribution. The treaty prohibited the 'circumvention' of technological measures with respect to the protection of copyright (Reinbothe & Lewinski, 2007).

With regard to specific stipulations against piracy of copyrighted works, WIPO Article 12 requires parties to that treaty to provide "adequate and effective" legal means by which any person who "knowingly" violated copyright to know that such violation would "induce, enable [or] facilitate infringement" of that copyright (WIPO, 1996). Under WIPO 1996, such copyright violation included the removal of electronic rights management software without permission from the copyright holder. Piracy is also specifically addressed under this treaty. Persons in countries subject to WIPO are prohibited from distributing, "importing for distribution," broadcasting or communicating copyrighted works "to the public", and most importantly, to copy copyrighted works or make unlawful copies of copyrighted works (WIPO, 1996).

Criticism of WIPO, as well as the broad range of legislation to follow, tended to focus upon specific arguments regarding its lack of direct stipulations regarding protection in case of fair use. It is necessary to explore this concept in greater detail.

4.3 Fair Use

One specific quality that applies to the legal consideration of copyright is the term 'fair use'. As described by Aufderheide and Jaszi (2011), this term refers to the "right to use

copyrighted material without permission or payment", albeit in certain specific circumstances (Auferheide & Jaszi, 2011, intro). As described by the U.S. Copyright Office (2014), these certain circumstances may apply in instances of criticism or comment, quotation of short passages, for "illustration or clarification of the author's observations", for purposes of parody, in summary, and as news (Copyright.gov, 2014, p. 1).

Auferheide and Jaszi (2011) – and other advocates for fair use - argue that the current stipulations of the Copyright Act, as well as the current laws treaties to which the United States is bound, fail to properly protect rights to fair use. These advocates argue that while there is sufficient definition of the terms by which the use of certain works may be defended under the stipulations of fair use, there is often little protection provided for these works in the event that such use is contended by a current copyright holder.

These authors defend the fair and open use of a wide variety of works as wholly necessary to achieve the missions of a wide variety of "established communities of artists and archivists, including filmmakers, teachers of English and visual art, librarians, makers of open educational software, poets, and dance archivists" (Auferheide & Jaszi, p. 9).

Many companies and organizations have taken up the banner of fair use, including Google, the Consumer Electronics Association, and the Computer and Communications Industry Association, as well as advocacy groups such as the Electronic Frontier Foundation and the American Civil Liberties Union. These groups are united in their commitment to the principles of this concept, particularly that through the free and open exchange of materials, they may maintain or "expand their sphere of freedom and expression" which is currently trending toward the increased restriction on use of copyrighted works (Auferheide & Jaszi, 2011, p. 10).

4.4 Internet Copyright Law and Piracy

The piracy of copyrighted works, particularly music, is the cornerstone of internet-based crime and the most important impetus for modern legislation designed to protect intellectual property. Wall (2003) describes 'cyberpiracy' as the "appropriation of new forms of intellectual property that have been created or popularized" on the internet, including "images, music, office aides or interactive experiences" (Wall, 2003, p. 5). These crimes are not often considered as such. Because copyright law pertains to 'intangible' property, including "ideas, invention, signs, information, and expression", there is often reason to believe that these forms of property are less 'private' than other forms (Bently et al., 2010, p. 390). This author argues this not to be case, advocating that this perception of intellectual property as less tangible a property as other forms is the reason why it is *more* necessary to protect these properties, not less.

The ethical dimension is a crucial consideration in this case. In a comprehensive study by Lysonski and Durvasula (2008), these researchers considered the state of music piracy on the internet, an activity that they argue has been "inexorable and rampant...particularly among college students" but which they describe as "little deterred" by industry legal action (Lyonski & Durvasula, 2008, p. 167). In a study of over 300 university students, they found that illegal downloading of copyrighted works and works to which respondents did not own the intellectual property was "driven by a strong belief that it [was] not ethically wrong" (Lyonski & Durvasula, p. 176). Students were not deterred by any fear of consequences for these illegal criminal actions. As a result, these researchers argue that it is necessary to find a more effective means besides negative consequences to deter such activity.

Those who most commonly knowingly violate copyright and intellectual property rights on the internet engage in piracy through "peer to peer file sharing". In 2011, "28% of internet

users globally access unauthorized services on a monthly basis" (IFPI, 2012). Another element which factors into the expansion of such piracy is the "rapid expansion of the internet itself," which jumped from 605 million users in 2003 to over 1 billion in 2008, and the rapid growth in 'broadband' internet access, which has allowed users to "download quickly large quantities of digital content in compressed format" (Bently et al., 2010, p. 394).

One of the largest advocates for legislation to ban or curtail piracy and intellectual property and copyright violation on the internet has been the music industry, particularly the Recording Industry Association of America (RIAA) and the International Federation of the Phonographic Industry (IFPI). Pfanner (2010) reports that these industries have revealed that as a result of internet piracy, there has been a continual fall in sales of traditional media, particularly in the sale of compact discs. Digital piracy, the IFPI argues, resulted in a "30 percent decline in global music sales" between the years 2004 and 2009 (Pfanner, 2010, p. 1). While there has been an expansion in the sales of legitimate (often digital rights-managed) music files using services like iTunes, and an expansion of streaming services such as Pandora and Spotify, the record industry has continued to lose revenue and continues to blame this loss on piracy.

While legitimate digital sales increased by 27 percent in the years 2009-10, sale of compact discs (a far more profitable product) fell by 16% during the same years, resulting in industry revenue declining from $17.5 billion in 2009 to $15.8 billion in 2010 (Pfanner, 2010). It is difficult to argue with the record industry's claims: Despite a worldwide increase in the legitimate sale of digital music, 95 percent of all music downloaded from the internet is pirated, a figure that has not changed in recent years (IFPI, 2009). Regardless of whether the record industry has properly adapted to the potential of the digital space, it is not difficult to understand why this industry feels compelled to protect its interests through advocating for strict legislation.

The piracy of movies and television shows has also increased swiftly with rising numbers of internet users and increasing broadband access, but given the larger size of video files as opposed to audio files (particularly MP3), there has been less direct piracy of television shows and movies in recent years. There has been a push to limit and restrict the piracy of copyrighted movies and television shows, but these efforts have focused upon 'streaming' services, and not the direct download of these works, such as through peer-to-peer networks.

In 2012, one streaming site, 'Megaupload', was shut down. U.S. law enforcement cited widespread copyright violation through its offer of pirated video files for streaming. In 2014, the Motion Picture Association of America (MPAA) sued the defunct website, arguing that it had been the "largest and most active [copyright] infringing website...in the world", having reported more than $175 million in proceeds during operation (Spangler, 2014, p. 1). The company representing the six major U.S. movie studios has sued MegaUpload for that full amount.

Strauss (2013) cites the consequences of the piracy and illegal streaming of copyrighted works described by officials and representatives from the MPAA. These representatives explain that piracy in TV and film has caused "shrinkage" in that industry, in the form of "salaries…[being] lower than they would be" if it weren't for piracy, and the "workforce in certain industry segments being smaller than it would be" if there were no widespread piracy of these visual works (Strauss, 2013, p. 1). Between the record industry and the film and television industries, there are two primary arguments against piracy of copyrighted works: First, these works are copyrighted and it is illegal to copy or use them without license. Given the widespread ethical ambivalence reported toward internet piracy, the RIAA, MPAA, and others frequently cite loss in profits -- and with it, jobs -- as the primary consequence of internet piracy of copyrighted works.

4.5 DMCA

No consideration of internet copyright law is complete without considering the Digital Millennium Copyright Act (DMCA). As described by the American Library Association (2014), this "landmark" legislation updated U.S. copyright law to meet the expanding needs "of the digital age", as well as to ensure that U.S. law complied with international requirements based on stipulations presented by the World Intellectual Property Organization (WIPO) (ALA, 2014, p. 1). Despite the strong work of "libraries and other partners", the DMCA was legislation which "strongly [tilted] precedent in favor of copyright holders" (ALA, p. 1).

The act (1) imposed rules which prohibited the circumvention of technological protection measures for copyright protection; (2) Limited copyright infringement liability for internet service providers (ISPs); (3) Expanded existing exemptions for making copies of computer programs; (4) Updated the rules and procedures regarding archival preservation; (5) Mandated feasibility studies be performed for distance education, and (6) Mandated that a study be performed on the effects of anti-circumvention protection rules in general, as well as to determine the ways in which they effected the doctrine of 'first sale' (ALA, 2014).

This last mandate is crucial: As described by Hunter (2012), the 'first sale doctrine' states that "the physical owners of authorized copies of a copyrighted work may distribute and display it as they see fit" (Hunter, 2012, p. 50). With the advent of digital rights protection "such as locked PDFs, or electronic books with digital rights management", this is no longer the case, as works managed online often tend toward more restrictive protection, so the doctrine has been effectively limited in the years since the passage of the DMCA (Hunter, p. 50).

The DMCA is separated into five titles: Title I implements the WIPO treaty stipulations, Title II limits ISP liability for end-user copyright violations, Title III exempts copying computer

programs “for the purposes of maintenance or repair,” and Title IV pertains to distance education, but also stipulates with regard to “the applicability of collective bargaining...in the case of transfers” of motion picture intellectual property rights (Copyright.gov, 2014, p. 1). Title V specifically protects the design of hulled vessels.

Prior to the introduction of SOPA/PIPA and other major current legislation, this law allowed for the seizure of websites determined to be used solely for piracy. For instance, the facilitation of the seizure and removal of U.S.-based MegaUpload in January of 2012 was authorized through a section of the DMCA of 1998 called the Online Copyright Infringement Liability Limitation Act (OCILLA). This law serves to shield internet service providers from secondary liability in the event that their users engage in acts of copyright violation. Websites based in the United States found to be engaging in acts of malicious or focused infringement of copyright protections can be removed under the DMCA’s OCILLA powers.

The problem with the extant legislation is that since the passage of the DMCA, the majority of major websites used for the misappropriation and theft of material copyrighted in the United States are based and hosted outside of the United States. Recent legislation has attempted to protect American copyright from American user infringement by restricting access to such websites. The following section will consider legislation which has been proposed to disallow the use of foreign websites through general prohibition on their access by American users.

4.6 SOPA/PIPA

The Protect Intellectual Property Act (PIPA), proposed by Senator Patrick Leahy on May 12, 2011, was a modified version of the Combating Online Infringement and Counterfeits Act (COICA) of 2010, which had failed to pass. If passed into law, PIPA would establish a system for

penalizing access and linking to websites which had been determined to be solely dedicated to "infringing activities", such as those provided by Megaupload, but outside the United States (OpenCongress, 2014a, p. 1). Under this act, the Department of Justice would be liberated to engage in legal action against the parties or associated websites determined to have infringed upon copyright, and demand the website be taken down, as well as access restricted from search results. Under PIPA, action might be taken to block such infringing sites "without first allowing the alleged infringer to defend themselves" in a courtroom (OpenCongress, 2011a, p. 1).

As described by the text of the bill, copyright infringement is defined as the distribution of illegal copies of copyrighted material, distributing other copyrighted goods, or products designed to circumvent technology for the management of digital rights. Infringement is determined to exist if "facts or circumstances suggest" that a given site is being used "primarily as a means for engaging in, enabling, or facilitating" the violation of copyright protection (GovTrack, 2011, p. 1). Upon the identification of such websites, the bill would provide for stringent penalties be taken against the particular site. Once an order is served under PIPA to a website suspected of violation, this order would also be served to associated "financial transaction providers, internet advertising services", and the internet service provider hosting the site in question (GovTrack, p. 1). In the event of PIPA's passage, those holding trademark and copyright on the particular intellectual property complaining of violation might file a court injunction against the particular domain. This would allow the rights-holders to compel financial transaction providers, internet service providers, and advertising services, to cease financial and legal interaction with the offending website while it was under injunction (Govtrack, 2011).

PIPA was supported by the National Cable and Telecommunications Association, the National Association of Theater Owners, the MPAA, the Screen Actors Guild, the RIAA,

NBC/Universal Studios, and other major intellectual property and copyright holders. The bill was also supported by the U.S. Chamber of Commerce and the AFL-CIO (Vijayan, 2012).

The U.S. Chamber of Commerce argued that PIPA was an appropriate and proper measure for "going after rogue foreign sites...dedicated to copyright theft, patent infringement, and counterfeiting" (Vijayan, 2012, p. 1). Other industry advocates and proponents of this bill tended to focus on the 'Megaupload' and 'Pirate Bay' examples, that is, the bill's necessity as being proven through it being needed to target large websites which were entirely focused on infringing upon copyrighted works and unlawfully profiting from such infringement.

As proposed, the Stop Online Piracy Act (SOPA) was very similar to PIPA. This House analogue to the Senate's PIPA would have been one of the most comprehensive pieces of legislation designed to combat the rise of online software, media, and piracy of copyrighted works and other intellectual property. SOPA was introduced to the U.S. House of Representatives on October 26, 2011, to strong support from that legislative body. The bill would establish a system by which websites that the U.S. Justice Department determined were "dedicated to copyright infringement" could be efficiently removed from the public internet (OpenCongress, 2014, p. 1). Under the stipulations of this bill, the Department of Justice (or copyright holder) could commence legal action against any website that was determined to have no purpose, or limited purpose, other than infringing upon their copyright.

If put into law, SOPA would have permitted and encouraged the Department of Justice to demand that "search engines, social networking sites, and domain services" block all access to the site in question (OpenCongress, p. 1). The bill would also make the unauthorized streaming of copyrighted content a felony which would carry a penalty of five years in prison. SOPA is a

combination of House Bills S.968, the Protect Intellectual Property Act (PIPA), and S.978, the Commercial Felony Streaming Act.

5. Discussion

5.1 Arguments against SOPA/PIPA

Once PIPA was folded into SOPA in late 2011, what was once a single controversial bill regarding the closing down of websites determined to be engaging in infringing activities was compounded by the presence of felony designation given to proprietors of sites found to be illegally streaming copyrighted works. What followed would be a major backlash against both proposed bills that would result in the shelving of both for an indeterminate period.

Advocates arguing against SOPA included major technology companies, particularly Google, Twitter, and Facebook, who argued that the law's passage would mean that companies would no longer be protected from the "contributory infringement" stipulations of the Digital Millennium Copyright Act (DMCA) (Berger, 2010, p. 1). Under the provisions of the DMCA, ISPs and technology companies were limited in the liability they would incur for facilitating the violation of copyright. Under SOPA, ISPs and technology companies would face stiffer legal penalties for hosting websites determined to be focused on piracy.

The language in SOPA that caused the greatest controversy and backlash against its Congressional and industry supporters pertain to processes of *facilitation*. As described by Carrier (2013), websites determined by SOPA to be "dedicated to the theft of U.S. [intellectual] property" include those which "engage in...enables, or facilitates" the infringement of copyright (Carrier, 2013, p. 4). By use of such broad language, SOPA would appear to have the potential to cause many websites outside the purview of DMCA protections to be indicted by the Justice Department. Not only would end-users be guilty of copyright infringement, but every website along the 'food chain' which allowed them to engage in such infringement would be investigated

and penalized for infringement as well. This would include "any computer, communication tool, user-generated content website, search engine, and storage locker," as well as websites and services including YouTube, Google, Facebook, Flickr, Dropbox, and others (Carrier, p. 5).

The language of this primary section of SOPA is so broad, that in case of any finding of copyright infringement, "the entire internet itself" could be found to have assisted in or otherwise facilitated such infringement of intellectual property (p. 5). Worse, the requirement that all companies which assist in the financial services or advertising services of companies accused of copyright and intellectual property violations "take technically feasible and reasonable measures" to prevent access to foreign infringing sites would be difficult to implement and impose a major burden on companies and service providers with only a "tangential relationship to infringement", but which are crucial to internet economic activity (Carrier, p. 6). If passed, SOPA would pose a major "threat to innovation on the internet" (Zuckerman, 2012, p. 1).

Far from simply being used to target specific websites determined to be entirely devoted to profiting off of copyrighted material, SOPA would force internet service providers (ISPs) to "police content uploaded by users" and find a means by which they might "prevent users from uploading copyrighted content" (Zuckerman, p. 1). This would cause an undue burden to ISPs while reducing the likelihood that individual users would produce innovative content or entrepreneurial innovation that supports so much of the internet's vitality.

Harvard scholar Laurence Tribe (2011), in his legal brief, agrees with this point, arguing that requiring sites to actively police themselves in order to ensure that infringement does not occur "would impose the very monitoring obligation" that existing law -- under the DMCA -- "expressly does *not* require" (Tribe, 2011, p. 4). Upon its passage, this author argues that SOPA

would remove the statutory framework which had facilitated the creation and success of many of the most powerful and lucrative internet businesses.

This advocate also opposes the passage of SOPA on First Amendment grounds, voicing strong criticism of the "notice and termination procedure" defined under SOPA's Section 103(a), which would allow for websites found in violation to be taken down immediately (Tribe, 2011, p. 1). This advocate argues that upon the passage of SOPA, that stipulation would violate the "prior restraint" doctrine of the First Amendment and free speech protections, and "[delegate] to a private party" the ability to "suppress speech without prior notice and a judicial hearing" (Tribe, 2011, p. 1). The bill would provide "complaining parties" with the power to halt economic interaction with advertisers and credit card companies which support an offending website, but while providing little incentive for the ISPs to not simply, immediately, comply with the requests of such complaining parties (Tribe, p. 4). Even in the case that no infringement is found to have occurred, the "immunity provisions" provided in the act are described as creating an "overwhelming incentive" for advertisers and payment processors to comply immediately upon receipt of a specific complaint (p. 4). Were SOPA to be passed, it would violate current law regarding the free speech protections of the First Amendment, particularly those which argue that "only a judicial determination in an adversary proceeding" can provide a suitable means by which the "necessary sensitivity" to freedom of expression can be determined (p. 4).

Furthermore, SOPA complainants would be freed to file notices alleging that they have been harmed by copyright infringement on a website "or a portion thereof", language which this author argues opens the floodgates for "entire websites...containing tens of thousands of pages [being] targeted if only a single page were accused of infringement (Tribe, 2011, p. 4). In addition, this author argued that Section 103 of SOPA was too sweeping with regard to the *type*

of website that can be targeted for immediate removal on complaint of copyright and intellectual property violation. He acknowledges that SOPA's supporters described the bill as intended for direction against “foreign rogue websites” alone, but explains that the knowledge contained in the bill too broad to be limited to “foreign sites”, or indeed to sites which were engaged in “egregious piracy” (Tribe, p. 4). Extrapolating from this finding, this critic explains that, on its passage, SOPA would lead to the “silencing” of “fully-protected speech”, as well as the removal of websites that had not violated any laws, copyrights, or trademarks.

Another major reason why this legislation was opposed deals with the economic impact of such legislation from an investment perspective. As described by Le Merle et al. (2012) in their quantitative study, so-called ‘angel’ investors were found to be less likely to invest in internet-based companies which derive their content from users -- such as Facebook, YouTube, and others -- if SOPA was passed. The study found that the ‘ambiguous’ language used in the bill and the potential for heavy regulation and application of liability (as well as the swift destruction of websites/businesses accused of infringement) would result in a “negative impact on innovation” (Booz & Co., 2012, p. 6). Any legislation which held “digital content intermediaries” -- websites and hosts -- liable for user infringement would ensure that future investment in entrepreneurial technology companies by venture capitalists would be weakened. Given that the internet holds a 3.4% share of all economic sectors (as part of GDP), the report argues that it would be unwise for the government to foster a means by which such a large sector of the economy would be unnecessarily restrained.

Largely due to acts of online protest from technology companies such as Tumblr, Facebook. Wikipedia, and Google, as well as protest in the form of ‘blacking out’ popular

websites -- restricting access – by sites including Reddit and Wikipedia, on January 18, 2012, SOPA (along with its PIPA provisions) was shelved by the U.S. Congress on January 20, 2012.

Despite this overwhelming public rejection of the provisions of SOPA, two major international treaties, one passed, the other proposed, are currently being used as a basis for protecting American intellectual property in the same vein as SOPA, without the need for American popular or Congressional approval. The following section will consider two such treaties and their impact on the state of American copyright protections.

5.2 ACTA

Just as American efforts to protect intellectual property and copyright are based on justifications derived from losses associated with reduced sales due to piracy of copyrighted works, the justification for the Anti-Counterfeiting Trade Agreement is justified by Blakeney (2012) as based on the "adverse" impact of piracy upon the "multifarious...impacts of trade" (Blakeney, 2012, p. xiii). Losses to American companies -- and the American economy -- associated with piracy of copyrighted intellectual property are estimated at $60 billion per year, a figure sufficient to justify its consideration as a matter of trade. The international justification of this legislation is also put in terms of lost profit. An OECD report from 1998 argued that counterfeiting and the international violation of intellectual property (primarily American intellectual property like software, movies, and video recordings) resulted in the loss of €250 billion and constituted between 5 and 7% of international trade (OECD, 1998, p. 5).

ACTA was a realization of many of the recommendations outlined in that OECD report, including that nations "adopt procedures to enable [intellectual property] rights holders...to lodge

an application", a complaint, which would result in the "suspension…[of] release into free circulation" of such property (OECD, 1998, p. 7).

Under ACTA, criminal liability would be incurred by companies or parties who engage or assist others in engaging in "willful copyright piracy on a commercial scale" (Carrier, 2013, p. 9). While the scale of these activities is loosely determined as "commercial activities" resulting in "direct or indirect economic or commercial advantage", these specific activities are not defined (Carrier, p. 9). For this reason, as with the vague term 'facilitation' in SOPA, ACTA defines "criminal liability" as resulting from any activity which provides a party which breaches a copyright with "indirect commercial advantage" (p. 9).

Under ACTA Section 4, participating nations (which include The United States, Australia, New Zealand, Morocco, Singapore, Switzerland, Korea, and Japan [the E.U. rejected ACTA]) would be required to ensure that their local laws contain proper language with regard to prosecuting those found to 'enable' or 'facilitate' copyright violation (Carrier, p. 9). Participating nations are required to establish a means by which even indirect 'participants' in copyright infringement would be subject to *criminal* liability, such as PC manufacturers, websites, ISPs, and search engines. Carrier (2013) argues directly against the use of such precedent from criminal law in ACTA's language. This author explains that ISPs and other 'facilitators' of copyright violation are patently dissimilar from those who "assist in a crime…[like] getaway drivers" (Carrier, p. 10). Because the definition of copyright is subject to public policy, and is not relatively stable like criminal law, ACTA's language is inappropriate.

In the lead-up to ACTA's rejection by the European Parliament, there were widespread protests and unprecedented direct lobbying and criticism of ACTA levied against that legislative body. As reported by the BBC (2012), the European Data Protection Supervisor warned that this

international treaty would have “unacceptable side effects” on human rights, and advocated its rejection (BBC, 2012, p. 1). ACTA was rejected by the European Parliament on July 3, 2012, arguing that its language was “too vague [and] open to misinterpretation,” and might serve to jeopardize the rights of EU citizens (Europarl, 2012, p. 1).

5.3 TPP

Another piece of international legislation that seeks to restrict violation of American copyright, but which has yet to be passed, is the Trans-Pacific Partnership (TPP). According to Depillis (2013), a ‘leaked’ chapter of the TPP language regarding intellectual property has revealed that in these current negotiations, the United States has been “pushing for stronger copyright protections for music and film”, as well as “broader and longer-lasting applicability” for rights-holders in the case of patents (Depillis, 2013, p. 1). The proposed treaty would also make approval for generic medications more difficult to obtain, as well as “extend protections for biologic medicine” (Depillis, p. 1). In all likelihood, this trade agreement, which would encompass the United States, Mexico, Peru, Chile, Australia, Malaysia, Vietnam, Singapore, Japan, and Brunei, will be similar to ACTA both in its extended protections for copyright and its free speech ramifications.

In a letter dated December 6, 2013, Columbia University economics professor Joseph Stiglitz wrote to the parties currently negotiating the TPP. He complained of the lack of transparency in the negotiations, as well as for the “grave risk” associated with the intellectual property provisions of their proposed transnational treaty (Stiglitz, 2013, p. 1). This advocate argues that in the copyright provisions of the proposed treaty, “the TPP proposed to freeze into a

binding trade agreement many of the worst features of the worst laws" regarding copyright in each of the nations where its language would be binding (p. 1).

As of this writing the TPP is still being negotiated.

5.4 Ramifications

This work has presented a consideration of the many factors which currently influence the protection of copyright and intellectual property rights in the internet age. It is clear that under the current framework, laws will likely be extended to more stringently protect copyright and intellectual property, even if such laws are established through international treaty.

Under laws in which not only end-users are held liable for copyright violation, but also the companies and service providers which 'aid and abet', or 'enable and facilitate' such violations are prosecuted as well, there is strong potential for serious economic and civil libertarian ramifications. As touched upon by Tribe (2011), in the event that SOPA/PIPA-type legislation is passed in the United States (or through 'backdoor' treaties like ACTA and TPP), there are grave implications for free speech: If any website might be shuttered entirely by any complaining party for hosting a single article of copyrighted material, the boundless potential for the internet as an avenue of human expression stands to be severely curtailed.

Despite the civil rights argument, it is likely that the economic argument against the passage of such stringent legislation will ring stronger among those in power. To this end, Carrier (2013) argues that laws should not be made to provide copyright holders, for whom "lawsuits [are] a business model" with strong incentive to place "insurmountable hurdles" in the path of any company attempting innovation in any proximity to an established business sphere (Carrier,

2013, p. 30). In addition, the passage of such legislation would cause a similar effect on the ability or willingness of investors to support innovative start-up ideas.

There is also a great deal of evidence that even the most restrictive of legislation will not result in the mitigation of piracy or copyright infringement. As described by Masnick (2012) in an article critical of SOPA, since the passage of the Copyright Act of 1976, there have been 15 major expansions in copyright protection, most of which were passed in response to an apparent mandate to 'stop piracy' at the behest of the record and motion picture industries. Such laws have been passed at a rate of about once every two years since 1976. Even through this extended period of periodic legislation, rates of piracy have been largely unaffected by these expanded laws, only the scope of what is 'criminal' and the civil and criminal penalties for piracy. It appears that the ethical dimension explored by Lysonski and Durvasula (2008) remains true: People generally have no *ethical* issues with copyright violation, particularly when these violations are so easily facilitated by the internet. The difficulty, then, comes with striking the right balance between legislation which is sufficiently punitive to discourage piracy while allowing for free speech and economic innovation to continue unabated.

6. Conclusion

Future legislation which seeks to protect copyright and intellectual property must clearly define its terms. It is unacceptable that the United States has come so close to implementing policy which would provide such a broad and vague definition of copyright infringement. Under the Copyright Act of 1976, a sufficient definition was put into place, but with the advent of every new form of mass media, leading up to and including the internet, there has been a push to expand the scope of 'infringement'. This system was in a reasonable state after the 1998 passage of the DMCA, but recent years' expansion of piracy and infringement in nations not covered by native U.S. law have resulted in the necessity of regulation which presents means by which American copyright can be protected internationally.

At a technical level, there are no problems with nations and rights-holders seeking a comprehensive (or international) solution by which their copyright can be protected. The problem and difficulty arises with regard to the language of these given laws (particularly SOPA, PIPA, ACTA, and the proposed TPP) as being unnecessarily regressive. By tying copyright protection (and particularly the designation of criminal copyright violation) to all parties who may have 'aided' and 'abetted' or 'facilitated' the violation of copyright, these proposed works of legislation not only go against specific provisions of DMCA, but against the spirit of copyright itself. Copyright protection is designed to protect intellectual property, not to create a system by which copyright itself can be used as a bludgeon against any future innovation. The economic and libertarian ramifications of such policies are clear. While copyright holders' rights must be protected, this protection cannot come at the expense of innovation, economic expansion, and personal liberty. Future legislation in this vein must be made to specifically address what is meant by 'infringement' and not leave this crucial concept open to interpretation.

7. Postface

This thesis is the result of many, many months of research, reading up with current affairs and puzzling every piece of information into the big puzzle. At times, I was doubting if I would ever be able complete my work, yet in the end perseverance prevailed. The main reason for success has been the guidance offered by Anton Eliens and Gerard Alberts. Their feedback has been invaluable to me and I can't thank them enough for the time they spent helping me, even on short notice.

Though this work might not have a direct application within the domain of computer science, I learned a lot on the subject of digital copyright. In addition, I learned how to distill useful information out of books, papers and other publications, without losing track of the bigger picture.

All in all I'm happy to be able to wrap this up, and very grateful for the opportunity I've been given by all those involved.

Peter Florijn

Amstelveen, juli 2015

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Appendix A

Deep Packet Inspection

SOPA requires ISPs to actively monitor the direct activity of its subscribers. The only way this is feasible is by inspecting all traffic generated by and sent to those users. In many countries DPI is illegal on privacy grounds. (http://faculty.ist.psu.edu/bagby/432Spring12/T6/index.html)

DNS

The current wording of SOPA requires DNS servers to stop referring requests for infringing domains. Such filtering would undermine the entire integrity of the Domain Name System, apart from being near impossible to implement or enforce. (http://www.welivesecurity.com/wp-content/media_files/Andrew-Lee-Letter-To-Congress.pdf)

DNSSEC

DNS Security Extensions (DNSSEC) is designed to protect end-users from malicious hijacks of DNS-requests. By mandating to redirect or filter requests to infringing domains, PIPA requires and legitimizes the exact behavior DNSSEC to recognize and block. (http://www.circleid.com/pdf/PROTECT-IP-Technical-Whitepaper-Final.pdf)

DRM

Digital Rights Management is very difficult to enforce. The analog loophole states that everything that can be observed by a user can also be copied. It is therefore impossible to secure content against copyright infringement while still being able to distribute it. Watermarking and

other forms of digital security have always proven to be circumventable. (link.springer.com/content/pdf/10.1007%2F978-3-540-44993-5_4.pdf)

IP Address Masking

With how easy it is to 'change' an IP address through a proxy or VPN, it can be very difficult to pin an infringing IP address to an individual person. Identifying the right people is crucial in finding the actual perpetrator. (http://cseweb.ucsd.edu/~savage/papers/Ton01.pdf)

Peer-to-Peer Networking

Due to its distributed nature, it can prove to be virtually impossible to remove content once it has entered the file-sharing 'cloud' of a P2P network. This makes takedown notices very difficult to enforce. (http://iptps03.cs.berkeley.edu/final-papers/copyright.pdf)