

COPYRIGHT AND NEW TECHNOLOGIES:
CAN THEY CO-EXIST?

A Senior Thesis

By

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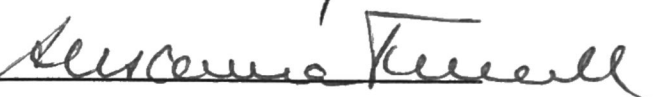
Group: HUMANITIES I

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Thesis Abstract

Copyright Law and New Technologies: Can They Co-exist?

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With the rising use of the Internet and the other technological advances that go with it, the continued enforcement of Copyright Law is jeopardized. Many are asking the question of whether or not we will reach a point when we can no longer compensate adequately for copyrighted endeavors. If we do reach this point, what will motivate these people to continue creating? The Internet is an independent and completely decentralized network of computers that no one entity can be held responsible for. This also means that monitoring the Internet for copyright infringement is close to impossible. With technologies such as encryption and remailers, users on the Internet can trade, sell, download, and upload illegal copies of copyrighted works with little or no detection. Although there are several options for updating the current Copyright Law to cover new problems associated with rising technologies, we have yet to discover the means by which we can enforce these changes.

Copyright Law and New Technologies: Can They Co-exist?

It is upon us. It has come into each of our lives through our homes, our school, our workplace, and even our leisure time. With such a rampant rising of Internet growth and use, it is inevitable that it should affect the lives of all those around it, whether they are users or not. Also inevitable is the fact that the Internet will affect the laws of this country. It's effects are already being seen and they will continue to increase as Internet usage does.

These laws serve as the guidelines for our government to determine what rules need to be enforced to maintain civilization and order. What happens, though, when a greater entity has come about that hinders successful enforcement of these laws? This is a very valid question many people involved with intellectual property rights are asking as growth of the Internet is making copyright law more and more difficult to enforce.

INTERNET BACKGROUND

To Examine this problem, it is logical to first look at exactly what the Internet is. The Internet is not a single thing.

Rather, it is a multitude of things. More specifically, it is the world's largest computer network.¹ It is a collection of thousands of independent local, regional, and global Internet Protocol networks containing millions of host computers.² To put it more simply, there are millions of computers in schools, universities, corporations, and other organizations that are tied together via telephone lines. Unlike on-line computer services such as CompuServe or America On Line, no one runs the Internet.³ It basically runs itself due to the completely decentralized nature of it. There is no single program used to gain access to the Internet. The Internet is accessible through many programs that follow Internet protocol.⁴ In 1983 there were about 200 computers on the precursor of the modern Internet, the ARPANET. As of January 1993, there were more than 1.3 million computers with a regular connection to the system. In January 1996 there were about 9.4 million Internet hosts, computers regularly connected to the Internet, with a substantial fraction, but probably less than half, located outside the United states. Internet access doubles approximately every year.⁵ This in large part due to the rising popularity of the two most successful Internet applications,

Since the Internet is not run by one corporation or entity, it is in a sense an amorphous body. Although this makes it difficult to sue for violations of copyright, the issue of anonymity on the Internet serves as an even greater obstacle. There are several ways available today to achieve anonymity. There are also many different levels of anonymity.

Cryptography, encryption, is a means of hiding information so that it can be read only by the intended recipient(s). There are many different types of ciphers, of varying strengths. The strength of a cipher is determined by the number of bits in its key. The longer the key, the more complex the encryption is and the more difficult it is to decrypt the message.¹¹ It is possible to send things that are nearly impossible to decode through the process called encryption. One article states that:

Encryption basically involves running a readable message known as "plaintext" through a computer program that translates the message according to an equation or algorithm into unreadable "ciphertext." Decryption is the translation back to plaintext when the

electronic mail, also called “e-mail,” and the World Wide Web (WWW).⁶

OBSTACLES OF INTERNET CONTROL

The Internet as it is today cannot be controlled. There are several factors contributing to this dilemma. The first is the fact that the Internet is a packet-switching network. This means that data can be broken up into standardized packets which are then routed to their destinations via an indeterminate number of intermediaries.⁷ In other words, the information is broken into pieces and the separate pieces are sent along the whatever route is most convenient at the nanosecond it is sent.⁸ Eventually, all the pieces end up at the destination as a whole message for the intended receiver. If part of the network goes down, messages are simply sent through another route. The Internet can use dedicated lines or messages can travel over ordinary telephone lines. This built-in effort is the primary reason that any effort to censor the Internet will most likely fail.⁹ This means that although a government can restrict access to the Internet, once a person is connected, it is beyond the power of government to limit what is accessible.¹⁰

message is received by someone with an appropriate “key.” The message is both encrypted and decrypted by common keys. The uses of cryptography are far-ranging in an electronic age, from protecting personal messages over the Internet and transactions on bank ATMs to enduring the confidentiality of military intelligence.¹²

Encryption is an imperative part of the Internet. Without it, there would be no privacy. “Encryption also permits users to engage in political speech without fear of retribution, to engage in whistle-blowing while greatly reducing the risk of detection, and to seek advice about personal problems without fear of discovery.”¹³ The problem is this: If encryption is permitted to remain on the Internet, it is very feasible for users to illegally trade, send, sell or download copyrighted materials without the knowledge of anyone other than the sender and the intended recipient. However, if the government were to outlaw encryption it would violate our basic constitutional right to privacy. This will become even more relevant as Internet usage increases as a primary means of communication.

In cases where encryption is not used it is still possible for users to send information anonymously. They can do this through remailers. A remailer basically receives and then forwards a message removing all of the identifying marks that would link the message to its sender.¹⁴ A remailer is a third party that the message is sent through before it reaches the intended recipient. While several remailers can be used to send a message, the more remailers used, the greater the chance that an operator in the chain will fail to pass the message down the line. It is important to note that while remailers can be a second option to encryption, they may also be used in conjunction with it. In doing this each of the parties in the remailer chain not only remove the information linking the message to the previous sender but also encrypts the message with a specific key.¹⁵

Even if it were constitutionally feasible for the government to legalize unauthorized encryption and remailers, it would find not only problems of detection and enforcement, but would also find that even when a violation on the Internet is found, the sender is often-times anonymous and unidentifiable. Quite obviously, it is not possible to punish a violation without an identifiable violator.

So, what does this mean for copyright owners? Will we reach a point when we can no longer compensate for creative endeavors? If we do reach this point, what will motivate these people to continue creating? Is there another way to award monetary or some other worthy compensation, and will these creators consider the compensation to be worth their efforts?

BASICS OF COPYRIGHT

There are two primary reasons why copyright law exists. These two reasons, moral and economic, are also the same reason why people create. Some may create to express themselves to others and/or to achieve prestige or fame. It is for this reason that morally their creations should be protected as their own.

Others create for commercial reasons, to gain monetary rewards. If copyright laws did not protect intellectual property, anybody with access to the creation could profit from it by trading or selling it as though it were their own.

Copyright laws allow creators to have ownership of something they've created, but that can be duplicated and in effect "stolen."¹⁶

Both economically and morally copyright law is being jeopardized by the existence of the Internet. Users can very easily download and make an infinite number of copies of music, photos, books, video games, software, and a plethora of other things currently available on the Internet. There is no way for the government to track everything on the Internet. So how can we prevent these creations currently protected by copyright law from being illegally used and distributed? We can refine Copyright Law to cover new problems brought about by the Internet but how do we enforce these laws?

Not only is there a problem of Copyright Law enforcement, but we also must consider the creator's rights as well as user's rights.

Too much emphasis on creator's rights impairs the rights of users. This, in turn clouds copyright and patent policy; "the ultimate purpose of copyright is not the maximization of financial rewards to copyright owners (which is what the publishers would generally like it to be), but fostering the creation and dissemination of literary and artistic

works in order to enhance the public's access to knowledge.¹⁷

In determining whether the use made of a work in any particular case is fair use the factors to be considered shall include (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion use in relation to the copyrighted work as a whole; (4) the effect of the use upon the potential market for or value of the copyrighted work.¹⁸

COPYRIGHT LAW HISTORY

The Copyright Act was enacted in 1976. It gives copyright owners control over most, if not all, activities of conceivable commercial value. The statute provides that "the owner of a copyright...has the exclusive rights to do and to authorize any of the following: (1) to reproduce the copyrighted work in copies...; (2)to prepare derivative works based upon the copyrighted work; (3) to distribute copies...of the copyrighted work to the public...and (5) in the case of...pictorial...works...to display the copyrighted work

publicly.”¹⁹ Engaging in or authorizing any of these categories without the copyright owner’s permission violates the exclusive rights of the copyright owner and constitutes infringement of the copyright.

To establish copyright infringement, one must show ownership of the copyright and “copying” by Defendant. Since direct evidence of copying is rarely available in copyright infringement action, copying may be inferentially proven by showing that Defendant had access to the allegedly infringed work and that one of the rights statutorily guaranteed to copyright owners is implicated by Defendant’s actions.²⁰

All discussions of the proper scope of copyright protection in the United States must begin with the Constitution. The Constitution provides the authority for copyright and patent laws. It gives Congress the power to create laws “to promote the progress of science and useful arts, by securing for limited times to authors and Inventors the exclusive right to their writings and discoveries.”²¹ This constitutional language establishes two competing principles. However, these exclusive rights are to be given only as long as they reach the purpose of furthering the development of science and the useful arts.²² Thus, any copyright law must

balance creator's rights against user's rights. This constitutional language also plays against the free speech guarantee of the First Amendment--"where the First Amendment removes obstacles to the free flow of ideas, copyright law adds positive incentives to encourage flow."²³ This balancing of interests is necessary whenever the growth of new technology raises issues that cannot readily be addressed under current copyright law.²⁴

In order for a copyrightable work to exist, the work must be "fixed" in a "tangible medium of expression." The Copyright Act defines "fixation" as follows:

A work is 'fixed' in a tangible medium of expression when its embodiment in a copy or phonorecord, by or under the authority of the author, is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than a transitory duration. A work consisting of sounds, images, or both, that are being transmitted, is 'fixed' for purposes of this title if a fixation of the work is being

made simultaneously with its
transmission.²⁵

THE DIGITAL REVOLUTION AND COPYRIGHT LAW

Unlike with analog print sources (like photocopies) digital copies of works can be made with no “generation loss.”²⁶ This means that each digital copy is an exact replica of the original, with no loss in quality no matter how many “generations” away the copy is from the original. Also, while both analog and digital copies can be made almost instantaneously, digital technology makes reproduction of electronic documents very inexpensive, unlike photocopying where it may be cheaper just to buy a print copy rather than photocopy a work.²⁷ Not only are digital copies more conveniently made, but in the case of computer networks, they are made at almost every point in a work’s delivery and use. In order to read and use an electronic document the technology requires that at least one copy of the work be made.²⁸

The digital revolution will affect not only copyright holders and home users, but also larger entities such as libraries. The current Copyright Law may present a substantial impairment to the functioning of libraries in an

age of electronic documents.²⁹ More and more of the materials available through libraries are moving to electronic forms. Where once patrons checked out paper books from geographically-fixed repositories, now people are interested in checking out electronic texts from on-line libraries.³⁰ Of course, checking out a book does not require the creation of an additional copy, while accessing an electronic document does. For this reason, it becomes necessary to adjust copyright law to account for electronic libraries in order to preserve their traditional function and preserve their right to “lend” electronic books.³¹ Once again, we face the problem of enforcing the new adjustments made to copyright law. How can we enforce the rule of only “borrowing” digital books? How do we prevent “borrowers” from keeping these things permanently through copying and downloading and consequently without having to purchase them and thereby reward the creator monetarily?

Also facing new challenges with the rising of the digital revolution are entities such as telephone companies. Where once telephone companies did not have to worry about suits for copyright infringement resulting from the transmission of copyrighted works, this is quickly changing.

The new digitization era is allowing Bulletin Board System (BBS) users to fall outside the lines of copyright law. When a BBS user communicates information to other subscribers, the user transfers nothing tangible. The bits displayed on a BBS are not transferred to subscribers 'by sale or other transfer of ownership, or by rental, lease or lending.'³² Rather a BBS provides subscribers with access and services. As such, BBS operators do not create copies, and do not transfer them in any way. Users post the copies on the BBS, which other users can then read or download. The shift from distribution of copies to dissemination by access is typical of the digitized environment.³³

RELATIONSHIP OF LAW AND TECHNOLOGY

The WWW raises interesting issues, because linked documents can be stored on machines anywhere on a world wide computer network, such as the Internet, and not just on the information provider's machine. This distributed information delivery may make it hard to determine who is even responsible for any copies that are being made (copies which may or may not be infringements) and for this reason, clarification of copyright law is necessary.³⁴

Since copyright law was first enacted we have had to refine the copyright act. David J. Loundy argues that

Since the birth of copyright, every age has seen the emergence of new medium of expression or technology that has led people to express their fear and concern that it defined the boundaries of existing doctrines or that the new candidate for protection was so strikingly different that it required separate legal treatment. These apprehensions were voiced about photography, motion pictures, sound recordings, radio, television, photocopying, and various modes of telecommunication. In each instance, the copyright system has managed over time to incorporate the new medium of expression into the existing framework.³⁵

The question we face now is whether the Internet can and will follow in the footsteps of its predecessors, or if it is truly the exception as many people involved with intellectual property rights fear. Quite obviously, as technology changes

so must the law in order to address any new concerns raised by the technology.

There are four primary principles that must be considered when updating copyright for computer technology. The first is that Copyright should proscribe the unauthorized copying of works. The second is that copyright should in no way inhibit the rightful use of these works. Copyright should also not block the development and dissemination of these works. Finally, copyright should not grant anyone more economic power than is necessary to achieve an incentive to create.³⁶

In order to amend the Copyright Act with the least amount of disruption, David Loundy suggests the following definition of a computer program could to be changed to read:

A 'computer program' is a set of statements or instructions to be used directly or indirectly in a computer to bring about a certain result. A computer program also includes any work of authorship in digitized form that is used in conjunction with a computer or other computer program.

With the addition of 25 words, we have now made it clear that section 117 extends to electronic texts, e-mail, data files, and multi-media works.³⁷

In the past government has only had to make minor changes many of the times. One such instance is the updating of the United states Copyright Act in an answer to some new issues raised by computer technology. The changes were based on the findings of a study commissioned by Congress, which resulted in the Final Report of the National Commission on New Technological Uses of Copyrighted Works, commonly referred to as the CONTU report.³⁸ These changes were necessary and did serve their purpose, however, the increasing use of computer technology is demanding additional refinements to the Copyright Act.

CONTU began its report on changes, necessitated due to growth of photoduplication and computer technology, by stating that copyright protection should be given to works "used in conjunction with computers and reprographic systems...so long as it did not impede public access to such works

or otherwise extend monopoly power.”³⁹
the practical conclusion CONTU draws is
that where the cost of duplication is
small, copies are more likely to be made.
When copies are more likely to be made,
legal protection is necessary to preserve
the incentive to create and disseminate
the works which are subject to copying.⁴⁰

INFRINGEMENT: THREE MOTIVES

Although there are an endless number of reasons people choose to infringe upon laws protecting intellectual property, three prime types of infringers are relevant for this analysis. This means that enforcement of Copyright Law needs to be considered on three different levels. Don E. Tomlinson suggests that these three divisions are consumer pirates, professional pirates, and Internet pirates and defines these types as follows:

Consumer pirates of intellectual property would be the person who connects two VCRs to make a copy of a movie and then either sells or distributes it to a friend. The same would apply to someone who purchased a CD and made a copy to give

away or sell to another.⁴¹ This is the most difficult of infringement to punish quite obviously because it is on a smaller scale and not really detectable. The only way it is really discovered is through the billions of dollars the motion picture and music industry loses a year to these instances. The only way that copyright owners can decrease violations by consumer pirates is to somehow change the public attitude toward piracy.⁴² As it stands now, piracy is generally accepted by most of public society.⁴³

A professional pirate is similar but still differs from a consumer pirate in several ways. While consumer pirates only have minimal economic goals, professional pirates often times make a living off their piracy. Professional pirates also in general know that copyright infringement is wrong but just do not care. Once again, this type of piracy is difficult to uncover and even more difficult to punish through civil courts.⁴⁴

The most recent type of piracy facing copyright owners today is that of the Internet pirate. These infringer's motivations vary. While some may put material on the Internet for monetary gains (i.e. displaying a picture and offering a subscription price to be able to access more like it), others put

material out on the Internet for the sheer enjoyment of the process of doing so.⁴⁵

CASES TO PONDER

Although there is still much to be determined by cases concerning Internet problems with copyright, some cases have already gone through our courts and made some interesting points. The courts so far, however, have not made any drastic or major altering decisions.

PLAYBOY

VS

FRENA

In Playboy vs. Frena, Playboy, the Plaintiff, requested that the court grant partial summary judgment that Defendant Frena infringed Plaintiff's copyrights and specifically that the 170 image files in question infringed Plaintiff's copyrights in 50 of Plaintiff's copyrighted magazines.⁴⁶

Defendant George Frena operates a subscription computer bulletin board service that distributed unauthorized copies of Plaintiff Playboy Enterprises, Inc.'s (PEI) copyrighted

photographs. BBS is accessible via telephone modems to customers. For a fee, or to those who purchase certain products from Defendant Frena, anyone with an appropriately equipped computer can log onto BBS. Once logged on subscribers may browse through different BBS directories to look at the pictures and customers may also download (transfer an image from a bulletin board to one's personal computer) the high quality computerized copies of the photographs and then store the copied image from Frena's computer onto their home computer.⁴⁷ Many of the images found on BBS include adult subject matter. One hundred and seventy of the images that were available on BBS were copies of photographs taken from PEI's copyrighted materials.

The defendant admits that he was aware that these materials were displayed on his BBS and that he did not obtain consent or authorization to do so. There is no dispute that Defendant Frena supplied a product containing unauthorized copies of a copyrighted work. According to Jay Dratler Jr., "It does not matter that Defendant Frena claims he did not make the copies himself."⁴⁸

There is irrefutable evidence of direct copyright infringement. Intent to infringe is not needed to find copyright

This is also an action for copyright infringement. In this case the plaintiff is Sega Enterprises and the defendant is MAPHIA, a business of unknown structure. Plaintiff Sega Enterprises, Ltd. is a corporation organized and existing under the laws of Japan. Plaintiff Sega of America, Inc. is a California corporation, with principal place of business in the court district of San Mateo, California. SOA is a wholly-owned subsidiary of SEL. SOA and SEL are sometimes collectively referred to as "Sega."⁵⁰

The defendant, MAPHIA, is engaged in the business of running a computer bulletin board and related activities. Chad Sherman is in possession and/or control of the MAPHIA bulletin board, which is run from his residence where the computer and memory comprising the bulletin board are located, and does business as MAPHIA or MAPHIA Trading Company on such bulletin board. He is also one of the "system operators" of the MAPHIA bulletin board.⁵¹

Sega is a major manufacturer and distributor of computer video game systems and computer video games which are sold under the Sega trademark, a registered trademark of Sega Enterprises, Ltd. Sega's computer video game programs are

infringement. Intent or knowledge is not an element of infringement, and thus even an innocent infringer is liable for infringement; rather, innocence is significant to a trial court when it fixes statutory damages, which is a remedy equitable in nature.⁴⁹

Defendant Frena was found guilty of copyright infringement. This means that BBS users can be held responsible for the whatever is available through their service. This includes not only what they themselves download onto the system, but also what the system's users upload onto the BBS. How can we feasibly monitor all of these bulletin boards as well as their users and then enforce the laws of the Copyright Act. The liability may become too high of a risk for BBS operators to take the chance if they are to be held responsible for any information available through their service. However, if we do not hold the operator accountable who else can we identify since things are very easily uploaded anonymously onto bulletin board systems?

SEGA ENTERPRISES LTD. and SEGA OF AMERICA

VS

MAPHIA

the subject of the copyright under the laws of the united States. Sega creates and develops its games and ensures the quality and reliability of the video game programs and products sold under the Sega trademark. The Sega game system consists of two major components sold by Sega: the game console and the and software programs stored on video game cartridges which are inserted in the base unit. The computer programs for Sega are stored on the cartridges in a read-only Memory ("ROM") chip. They cannot be copied unless running devices, called "copiers," are used to copy the video game programs from a game cartridge to onto other magnetic media such as hard and floppy disks.⁵²

The MAPHIA bulletin board consists of electronic storage media, such as computer memories or hard disks, which is attached to telephone lines via modem devices, and controlled by a computer. There is evidence that the Sega games are available through the MAPHIA bulletin board and can be transferred and uploaded by the MAPHIA board's users. There is also evidence that the defendant, Chad Sherman, was aware of the transferring and uploading of these games and also that he solicited this copying to be available on his bulletin board. MAPHIA barterers for the privilege of uploading the Sega games

and therefore receives payment of some type in exchange for copies of the games.

The case result was in favor of Sega and all of the Defendant's Sega copies were seized. While Sega did receive a settlement from Defendant there is once again the question of how can the laws of copyright be enforced on a smaller scale to deter the common user from infringing? There is irreversible damage done to Sega not only because they have lost what would be profits from users legitimately purchasing the games, but also because they had no quality control over the distributed games. These unauthorized copies were not top-quality and therefore stand to damage the reputation of Sega's name concerning their quality control. How can we prevent this from occurring? Is there feasibly a way to deter people from taking advantage of these unauthorized copyrighted works?

CONCLUSION

The Internet is quickly finding its place among the many other common forms of communication in the United States. It is replacing many of the old ways about doing things. A good example of this is the fact that 95% of the research done for

this thesis was conducted through the Internet. In all the researching I have done over the past year I have found many options to revising the Copyright Law to encompass the new problems that are brought about by the rising in technology. I have yet to find anything that offers a feasible solution to enforcement of these changes , though. In fact several times authors of articles and papers even made a point to say that they were not addressing the actual enforcement of theses changes. Apparently then, this is a common problem seen and perhaps also feared by many involved in Intellectual Property and Copyright Law. People everywhere are beginning to seriously ask the question of whether or not Copyright Law and the new technologies of the day will be able to co-exist.

FOOTNOTES

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24. See 17.
25. 17 U.S.C. §101.
26. See 7.
27. See 7.
28. See 17.
29. See 8.
30. See 8.
31. See 8.
32. See 8.
33. See 17.
34. See 8.
35. See 8.
36. CONTU REPORT, *supra* note 14, at 12.
37. See 8.
38. See 36.
39. National Commission on New Technological Uses of Copyrighted Works 7 (1979).
40. *Sony Corp. of Am. v. Universal City Studios, Inc.*, 777 F.2d 393, 398 (8th Circ 1985).

41. Don E. Tomlinson, *Beyond the Internet: Settling the Electronic Frontier*, vol. 6:1, (1994).
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45. See 41.
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50. See 18.
51. See 18.
52. See 18.