

Caching and Browsing:
An Analysis of Copyright Law as it is
(Over-) Extended to the Digital Age

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The following copyright notice was found on the Canadian Online Explorer (C.A.N.O.E.) website at <http://www.canoe.ca/Canoe/copyright.html> on March 22, 1999:

This Service is protected by copyright pursuant to Canadian copyright laws, international conventions, and other copyright laws. Any reproduction, modification, publication, transmission, transfer, sale, distribution, performance, display or exploitation of any of the content of this Service, whether in whole or in part, without express written permission, is prohibited.

Ironically, applying the currently existing copyright framework to online works leads to the counter-intuitive consequence that the mere reading of the above copyright notice would violate its content. This irony highlights the inherent mistake in applying copyright to online publishing in a way that does not recognise some basic facts and intuitive distinctions concerning digital communication.

Technical Aspects of How Information is Transferred Over the Internet

Client-Server Relationship

Definitions

"Client"

The computer controlled by the user

"Server"

Stores data, and distributes files on request from Clients

Problem

Servers transfer only *copies* of files, and not the original files themselves. The files remain on the server, ready for the next request from another client. Every file transferred over the Internet is copied in one way or another. Even an e-mail message is 'sent' by making a copy on the recipient's computer. Under the established copyright regime, copying is the exclusive right of the copyright owner, yet the Internet gives this power to virtually anyone. So, it appears that there is the potential for copyright infringement in virtually every Internet transmission.

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World Wide Web

The problem of copyright on the World Wide Web is exacerbated by the technology used to implement it.

The client software programs that access documents on the Web are known as web "browsers." When the user wants to view a particular web page, the browser sends a request out over the Internet to the appropriate web server for a file called an HTML file. The web server sends a copy of the file back to the browser; the browser in turn interprets and displays on screen the text and graphics of the web document, according to the instructions contained in the HTML file.

The HTML file itself contains the text for the document, but the graphics files, being much larger, are kept as separate files on the server, and are called up individually by the browser. The end result produced on the user's screen by the browser software, combining text, layout, and images, is known as a "web page."

Definitions

"Bandwidth"

The information-carrying capacity of the Internet connection between the web server and the user's computer.

"Cache"

The browser caches, or stores, in the memory of the user's computer copies of the text and images of visited web pages. The purpose of caching is to improve access to web pages. The time it takes for an entire web page to reach the user depends on the bandwidth and information often bottlenecks, causing delays in the transfer of information. Caching is one means used to alleviate this problem of bottlenecking.

Copyright Implications of Caching

The cache in a browser has important copyright implications. Reading a web page requires making a copy of it in the memory of the client computer. At the very minimum, there must be a copy of the information in the computer's Random Access Memory (RAM); otherwise, the client software would be unable to interpret and display the web page. To lessen the impact of an ever-increasing demand on a system of only finite resources, browsers pragmatically incorporate disk caching.

Does this make the act of viewing a web page a potential copyright violation?

Both the U.S. Department of Commerce's *White Paper on Intellectual Property on the National Information Infrastructure* ("The White Paper") and *Industry Canada's Information Highway Advisory Council (IHAC)* final report on copyright maintain that the *mere viewing of a web document is governed by copyright principles*. The Canadian Final Report is of the view that "any act of [digitally] accessing a work constitutes a reproduction, [and a]s such, ... is subject to the right of reproduction."

There must be something wrong, one might argue, with an analysis that makes the common, intended use of a web page a prima facie copyright violation

Instead of providing an argument for why browsing ought to be considered a copyright violation, the Canadian report simply alludes to the crucial issue being settled "based on the United States Model." On the issue of browsing, as with several other issues, the Canadian report takes its cues from the American White Paper.

The White Paper's position is based on strict interpretation of the U.S. Copyright Act. For a work to be eligible for copyright protection under U.S. law it must be instantiated in some physical object.^{1 2}

Copyright Implications of Browsing

Web browsers typically capture copies of web page text and images and cache them on the user's hard drive. The White Paper considers these files to be reproductions for copyright purposes. Unauthorised disk caching would therefore be a violation of the copyright owner's exclusive reproduction rights. The White Paper's position on browsing, however, implicates an even more basic function of a web browser.

To perform any sort of computation in connection with a web page, the software must first form a representation of that page in the computer's RAM, on which to conduct the necessary computations. In other words, the very act of reading a web page has, as a condition, the making of a copy of it, if only in RAM. The White Paper considers such copies in RAM to be "reproductions" of the work. Consequently, the White Paper finds

¹ "Copyright protection subsists ... in original works of authorship fixed in any tangible medium of expression," 17 *United States Code* sec. 102(a) (1988 & Supp. V 1993)

² "...any method now known or later developed, and from which the work can be perceived, reproduced, or otherwise communicated," 17 *United States Code* sec. 101 (1988)

that the copying of information from one computer to another across a network is subject to the exclusive reproduction rights referred to in section 106 of the U.S. *Copyright Act*.

***MAI Systems Corp. v. Peak Computer Inc.* 991 Federal Reporter 2d 511 (9th Circuit 1993)**

The White Paper supports the application of the decision of the United States Federal Court for the 9th Circuit in *MAI v. Peak*.

In *MAI v. Peak*, the court looked to the *Final Report of the National Commission on New Technological Uses of Copyrighted Works* (1978) ("CONTU"), and to the decision in *Vault Corp. v. Quaid Software Ltd*³ for the authority that browsing constitutes copyright infringement.

Although the court pointed out that neither of these authorities made a distinction between RAM and more permanent forms of memory, such as ROM (Read Only Memory), it found no reason to believe that the copy created in the RAM is not fixed. The court found that, because the copy created in RAM can be "perceived, reproduced, or otherwise communicated," the loading of software into RAM creates a "copy" under section 101 of the *Copyright Act*.

Canadian Case Law

***Apple Computer, Inc. v. Mackintosh Computers Ltd* (1987), 10 CIPR (3d) 1 (FCTD)**

The Canadian Federal Court has considered the copyright status of software loaded in computer memory. In the authoritative⁴ decision of *Apple Computer, Inc. v. Mackintosh Computers Ltd*,⁵ Federal Court Justice Reed ruled that software embodied in ROM chips is under the protection of section 3 of the Canadian *Copyright Act*.

Although Reed did recognise the distinction between RAM and ROM, her ruling concerned only the latter. There is, therefore, no direct Canadian authority citing the conclusions in the IHAC final report concerning browsing. As a result, the IHAC report simply defers to the White Paper in its statement that, "In some countries, accessing a work in a digital environment is considered a reproduction, even where the work is temporarily stored in the ... RAM of a computer."

³ 847 Federal Reporter 2d 255, 260 (5th Circuit 1988)

⁴ (The decision has been upheld by both the Federal Court of Appeal and the Supreme Court of Canada.)

⁵ (1987), 10 CIPR (3d) 1 (FCTD)

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Is the current standard "good" law?

Since the IHAC report defers to the White Paper on the crucial issue of the status of information stored in RAM, and the White Paper relies on *MAI v. Peak* as its authority, the validity of both reports rests on *MAI v. Peak* being a good rule of law.

Objections to *MAI v. Peak*

There are essentially two objections that could be made against *MAI v. Peak*. These objections pertain to whether or not the ruling is a good decision in and of itself, and whether or not this ruling should be applied to the Internet.

Is *MAI v. Peak* good law?

Critics characterise the case as controversial in its own right, with ample authority and legislative history to the contrary. This objection maintains that copies in RAM are not sufficiently fixed to be copies, because the stored information is lost as soon as the power to the computer is switched off. Copies stored in RAM are too ephemeral and impermanent to be considered copies for the purpose of copyright. Section 101 of the U.S. *Copyright Act* states that for a copy to be fixed, it must exist for "more than a fleeting moment".

Further, Anglo-American law has traditionally held the existence of an embodied, physical form as integral to copyright law, because this area of law was created to protect revenue, and it was only through the sale of "hard copies" that copyright holders could obtain such revenue from their intellectual property. It was through this right of reproduction and this right of distribution over hard copies that a copyright holder held good control over its intellectual property.

Should *MAI v. Peak* be applied to communication on the Internet?

Critics charge that only mechanical, positivist reasoning would elevate *MAI v. Peak* to the decisive case on which to build a new legislative regime for the coming information age.

The problem that arises when one is dealing with digital communications over the Internet is one of characterising that communication. Is the transmission over the Internet "distribution", "duplication" or both? Further, there is a significant degree of interpretation and manipulation of the information being transferred on the part of the user. Does this have relevance to copyright law?

IHAC (Unsuccessfully) Attempts to Strike a Balance

The IHAC Report suggests amending the Canadian *Copyright Act* to include a definition of browsing to include the "temporary materialisation of a work on a video screen, television monitor, or similar device ... but not to include any permanent reproduction of the work in any material form."

It is ironic that IHAC is astutely attempting to deal with this relatively academic issue of caching and browsing while failing to consider the practical problem that computer monitors require intelligent computer components including RAM and CPU to function! (Recall that we already know that IHAC follows the White Paper in holding that copies in RAM are sufficiently fixed to trigger copyright infringements.)

IHAC At Odds with the Principles and Policies Underlying Copyright Law

Copyright law was created to encourage the production of new works by means of an economic incentive. Essentially, copyright protects an author's expectation of fair financial return for creative work

MAI v Peak, however, gives copyright holders control over the use of the work, and not simply over its creation and distribution.⁶ This would be the natural application of the principles held in that case. This is so, because if one assumes that the use of a digital work inherently involves the reproduction of that work, then the holder of the rights over the creation of copies of that work should also be able to control the use of the work as its use and copying are *a priori* inseparable.

This counter-intuitive conclusion only arises, however, if one blindly applies over-extended concepts of copyright law, out of their original context, to the Internet.

Policy Related Concerns

All of the above can lead one to ask the following question: "Who cares?" or more particularly, "Why should I care?"

The reason that people should care about the fate of copyright law as it comes to be applied to the Internet, is that every piece of info on online will come with a price tag as every use of info on the Internet becomes a potential licensing opportunity. What we now call the "information highway" will turn into a toll highway! This would change the

⁶ Incidentally, in the case of *MAI v. Peak*, one computer company used copyright law to prevent another computer company from turning on its computers that used the copyrighted work as its operating system!

Internet from being a means of allowing the free flow of information to a mechanism that divides those who can afford the information from those who cannot.

Suggested Solution: Implied License

After reading the above, it should be obvious to anyone that there is clearly a problem arising in copyright law as the Internet grows to be more entrenched in the everyday life of the public. The question that one comes to then is, what possible solution is there?

It is this writer's suggestion that the courts should develop a concept of an "implied license" when using the Internet. This would mean that those who publish online do so with the understanding that the work will be there for all to use, unless that publisher proactively takes technological steps to prevent such use.

What would an implied license cover?

Reading, Viewing and Clicking

My proposed implied license should cover ones engaging in all things with information found online considered normal. This would include reading text, viewing graphics and clicking hypertext links to other pages.

Restricted v. Unrestricted Access Web Pages

Furthermore, holders of copyright **should not be able to sue for copyright infringement to a web page that allows unrestricted access. Allowing such unmeritorious claims would be tantamount to using the court as a collection agent for license fees.** Those who want such compensation should implement technological means of acquiring it, such as passwords

Caching and RAM

Finally, caching and RAM must obviously be seen as normal use of information found online as these are necessary to ones use of the Internet in any capacity whatsoever.

One final point... Mirroring

As a final comment, it seems to me that concern should not be over server to client copying of files anyway, but over server to server copying. this is the real threat to the rights of copyright holders. This practice is known as mirroring and it is analogous to taking book from the library, photocopying the entire work and distributing the copies. It

is my opinion that in order to address mirroring, **a clear demarcation addressing this must be written into the *Copyright Act*** as one does not currently exist⁷.

⁷ Perhaps this could tie in with a revamped understanding of 'fair dealing'; i.e. the allowed use of certain otherwise copyrighted information, to allow for normal browsing by distinguishing it from mirroring.

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