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Buffering and the Reproduction Right: When is a Copy a Copy?

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BUFFERING AND THE REPRODUCTION RIGHT:
WHEN IS A COPY A COPY?

STEVEN FOLEY†

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I. INTRODUCTION

Can a buffer holding only 1.2 seconds of digital content constitute copyright infringement? The resolution depends upon how one interprets the Copyright Act. To warrant copyright protection under the statute, a work must be in the form of a copy and that copy needs to be fixed.\(^1\) Section II of this paper explores the varied and conflicting interpretations of these defined terms beginning with the legislative process that led to the Copyright Act’s enactment and subsequent readings by commissions. Two distinct viewpoints hinge upon when, or if, a copy has been fixed. Congressional intent has been interpreted to require two elements for a copy to be fixed: (1) the work must be embodied in a copy and (2) that copy must satisfy a temporal requirement to be something more than transitory.\(^2\) National Commission on New Technological Uses of Copyrighted Works (CONTU) brought confusion to the temporal requirement of the Copyright Act by stating that a work has been copied once it has been placed in a computer.\(^3\)

Section III covers judicial interpretations that established and shaped the RAM copy doctrine, which views every transfer of a work into the volatile temporary memory of a computer as making a copy for copyright purposes. This concept finds, if not its origin, at least, its epicenter, in the holding of the Ninth Circuit in *MAI Sys. Corp. v. Peak Computer, Inc.*\(^4\) Subsequently, other courts and districts have largely espoused this holding until recently. Moreover, the holding that established the RAM copy doctrine has had support from scholars and was adopted by the Clinton Administration’s National Information Infrastructure (NII) working group.\(^5\)

As digital technology and networks continue to replace analog models, courts have questioned the RAM copy doctrine. The judicial decisions of the federal district court and the court of appeals in the Cablevision cases highlight this issue.

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\(^4\) 991 F.2d 511, 519 (9th Cir. 1993) (affirming the district court’s holding that a copy is produced when a computer program is transferred from the permanent storage device to a computer’s RAM).

\(^5\) See generally BRUCE A. LEHMAN, INFORMATION INFRASTRUCTURE TASK FORCE, INTELLECTUAL PROPERTY AND THE NATIONAL INFORMATION INFRASTRUCTURE: THE REPORT OF THE WORKING GROUP ON INTELLECTUAL PROPERTY RIGHTS (1995) (discussing how high-speed, high-capacity electronic information systems will change the way people and businesses handle and understand copyright issues).
Buffering and the Reproduction Right: When is a Copy a Copy?

When is a Copy a Copy?

In *Twentieth Century Fox Film Corp. v. Cablevision Sys. Corp. (Cablevision I)*,\(^6\) the Federal District Court for the Southern District of New York followed the precedent of the *MAI Sys. Corp.* case in holding that portions of programming temporarily stored in buffer memory during operation of the cable television provider’s Remote Storage Digital Video Recorder (RS-DVR) service constitute copies and violated the plaintiffs’—content providers’—reproduction right.\(^7\) However, the Second Circuit Court of Appeals reversed the *Cablevision I* decision a year later.\(^8\) The Court held that digital media present in the buffers did not qualify as copies under the Copyright Act because the data was not fixed for more than a “transitory duration,” and therefore, fell short of the temporal requirement.\(^9\) The Court noted that the district court’s reliance on cases such as *MAI Sys. Corp.* was “misplaced.”\(^10\) Notably, a subsequent case heard by the District Court for the Southern District of New York applied both the embodiment and temporal requirements as stated by the court of appeals in *Cablevision II* to resolve facts similar to those in *MAI Sys. Corp.*\(^11\)

Section IV discusses the implications of recognizing a temporal requirement for digital media. Without a temporal component of fixation, copyright owners’ rights would be greatly expanded as a result of the functionality of digital technology and devices. Applying both an embodiment and durational requirement aligns itself more closely with the language of the Copyright Act and harmonizes the statute with judicial precedent to promote the purpose of the Copyright Act in making creative works available to the public.

II. LEGISLATIVE HISTORY

The Copyright Act grants the copyright owner exclusive rights with regard to the copyrighted work.\(^12\) These rights include the reproduction right allowing the copyright holder to make “copies.”\(^13\) The Act defines copies as

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\(^7\) *Id.* at 621–22.


\(^9\) *Id.* at 126.

\(^10\) *Id.* (stating that unlike here, the duration requirement was not at issue in *MAI Sys. Corp.*).

\(^11\) See SimplexGrinnell LP v. Integrated Sys. & Power, Inc., 642 F. Supp. 2d 167, 188–89 (S.D.N.Y. 2009) (stating that a work must be embodied in a medium and must remain thus embodied for a period of more than a transitory duration; further stating that the embodiment requirement is satisfied when a software program is loaded into a computer’s RAM).

\(^12\) See 17 U.S.C. § 106 (2006) (listing the exclusive rights provided under copyright law).

\(^13\) *Id.* § 106(1).
Material objects, other than phonorecords, in which a work is fixed by any method now known or later developed, and from which the work can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device. The term “copies” includes the material object, other than a phonorecord, in which the work is first fixed.14

Furthermore, “[a] work is fixed in a tangible medium of expression when its embodiment in a copy . . . 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 transitory duration.”15

The 1976 Act was the first incarnation of the copyright statute to include the definition of copy.16 The legislative history of the Act describes the role of copy and fixation with regard to the copyrightable work:

[A] “book” is not a work of authorship, but is a particular kind of “copy.” Instead, the author may write a “literary work,” which in turn can be embodied in a wide range of “copies” . . . including books, periodicals, computer punch cards, microfilm, tape recordings, and so forth. It is possible to have an “original work of authorship” without having a “copy” . . . embodying it, and it is also possible to have a “copy” . . . embodying something that does not qualify as an “original work of authorship.” Two essential elements—original work and tangible object—must merge through fixation in order to produce subject matter copyrightable under the statute.17

The definition of copy distinguishes between the intangible intellectual property and the material object that embodies the original work of authorship.18

Infringement of the reproduction right occurs when one makes an unauthorized copy.19 The copy must be material and have some permanence to meet the fixation requirement.20 To prevail, the copyright holder must show that the copy has been incorporated in a “material object” which can be “perceived,
reproduced, or communicated,” and is sufficiently permanent or stable “for a period of more than transitory duration.” 21 Two qualifications circumscribe fixation: (1) the “perceived, reproduced, or otherwise communicated” test, and (2) a limitation clause, which excludes representations that last for a fleeting amount of time, falling short of the “period of more than transitory duration.” 22

The legislative history of the Copyright Act also illustrates the congressional intent to require fixation to last for a period of time: “[T]he definition of ‘fixation’ would exclude from the concept purely evanescent or transient reproductions such as those projected briefly on a screen, shown electronically on a television or other cathode ray tube, or captured momentarily in the ‘memory’ of a computer.” 23 The limitation clause within the Copyright Act’s definition of fixed imposes a quantitative-temporal restriction—more than transitory duration. 24 The quantitative restriction measures the length of a signal’s representation in time units. 25 Yet, Congress did not draw the line between the exact minimum duration that would be a fixation and one that would be too short. 26

However, the clear congressional language that imposed a temporal requirement for a copy to be fixed quickly became unclear. To determine what protections should be afforded to computer software, Congress, in conjunction with the passage of the 1976 Copyright Act, created CONTU. 27 The commission recommended (in a report known as the CONTU Report) that software and programs to the extent they represent original works of authorship are the “proper

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21 See 17 U.S.C. § 101 (2006); 2 NIMMER & NIMMER, supra note 20, at 8-31 to -32. The treatise states:

In order to constitute an infringing copy or phonorecord, the embodiment of the plaintiff’s work must not only be tangible (a ‘material object’); it must be of some permanence. These are two separable concepts, which are not necessarily wedded. Writing in sand is tangible in form even if the next wave will erase it forever. The image that appears on a television or theater screen is embodied in a material object, but is evanescent.

Id.; see also PATRY, supra note 16, § 9:63 (noting the “irony . . . that the definition of ‘fixed’ has been used to render infringing acts that Congress wished to exclude from the ambit of the Act”).


25 See Efroni, supra note 22.

26 See id.

subject matter of copyright and that the Act protect them.\(^{28}\) The report concurred with the House of Representative’s report that classified programs as literary works.\(^{29}\) Nevertheless, the report caused confusion regarding the temporal requirement inherent in the congressional interpretation of fixation:

The text of the new copyright law makes it clear that the placement of a copyrighted work into a computer—or in the jargon of the trade, the “inputting” of it—is the preparation of a copy. This may be ascertained by reading together the definitions of copies and fixed found in section 101 . . . Because works in computer storage may be repeatedly reproduced, they are fixed and, therefore, are copies.\(^{30}\)

The CONTU drafters attempted to limit the temporal requirement of fixation.\(^{31}\) Where the House of Representatives sought to have it as an independent condition required for fixation, CONTU members arguably interpreted fixation to be satisfied solely by a copy’s ability to be “perceived, reproduced, or otherwise communicated.”\(^{32}\)

III. JUDICIAL INTERPRETATION

A. RAM Copy Doctrine

The random access memory (RAM) copy doctrine emerged from the legislative history and subsequent judicial application.\(^{33}\) The doctrine stands for the questionable notion that every transfer of a work into the volatile temporary memory of a computer makes a copy for copyright purposes.\(^{34}\) As a result, every use of a work in digital form involves the making of numerous copies.\(^{35}\) With its

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\(^{28}\) CONTU REPORT, supra note 3, at 1.

\(^{29}\) See id. at 16; HALPERN, supra note 27.

\(^{30}\) CONTU REPORT, supra note 3, at 22. “Insofar as a contrary conclusion is suggested in one report accompanying the new law, this should be regarded as incorrect and should not be followed, since legislative history need not be perused in the construction of an unambiguous statute.” Id. at 22 n. 111.

\(^{31}\) See Efroni, supra note 22.


\(^{33}\) See Niels Schaumann, Copyright Infringement and Peer-to-Peer Technology, 28 Wm. MITCHELL L. REV. 1001, 1026 n.100 (2002) (discussing the history of the RAM copy doctrine); PATRY, supra note 16, §§ 3:24, 9:63; Efroni, supra note 22; see generally Mark A. Lemley, Dealing with Overlapping Copyrights on the Internet, 22 U. DAYTON L. REV. 547 (1997) (discussing the issue of RAM copies and fixation).

\(^{34}\) See Schaumann, supra note 33.

decision in *MAI Sys. Corp.*, the Ninth Circuit cemented the RAM copy doctrine in a brief, but enduring statement:

Peak argues that this loading of copyrighted software does not constitute a copyright violation because the “copy” created in RAM is not “fixed.” However, by showing that Peak loads software into RAM and is then able to view the system error log and diagnose the problem with the computer, MAI has adequately shown that the representation created in the RAM is “sufficiently permanent or stable to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration.”

Previously, it was unclear if loading a copyrightable RAM copy constituted infringement. Before *MAI Sys. Corp.*, a district court case in Illinois held that loading a file into a computer’s memory constitutes copying. The sources used by the court arguably provide unclear support for its decision that a RAM copy suffices to violate the copyright holder’s reproduction right. When the CONTU Report was written the term “memory” could refer to any type of computer storage, both volatile (RAM) and non-volatile (hard disk). Because the CONTU Report recommended amending § 117 to permit the rightful possessor of computer software to copy or adapt it as “an essential step” in using the software, the CONTU Report can be seen as referring to disk storage.

Despite this lack of clarity, the Ninth Circuit drew a definitive line in its holding that loading software into RAM constitutes a copy. Since *MAI Sys. Corp.*, the RAM copy doctrine has been uncritically accepted in a series of lower court cases. Shortly after *MAI Sys. Corp.* was decided, *Advanced Computer*

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36 991 F.2d 511, 518 (9th Cir. 1993).
39 See Schaumann, supra note 33.40
40 See CONTU REPORT, supra note 3, at 12–13.
41 See generally Stenograph L.L.C. v. Bossard Assocs., Inc., 144 F.3d 96, 101–02 (D.C. Cir. 1998); DSC Comme’ns Corp. v. DGI Techs., Inc., 81 F.3d 597, 600 (5th Cir. 1996); Triad Sys. Corp. v. Se. Express Co., 64 F.3d 1330, 1333–34 (9th Cir. 1995) overruled on other grounds by Gonzales v. Texaco Inc., 344 Fed. Appx. 304, 306 (9th Cir. 2009); NLFC, Inc. v. Devcom Mid-America, Inc., 45 F.3d 231, 235 (7th Cir. 1995); PracticeWorks, Inc. v. Prof’l Software Solutions
Services of Michigan, Inc. v. MAI Sys. Corp. discussed fixation in RAM, and observed, “the Act does not require absolute permanence for the creation of a copy.” The court held that once the program is transferred to RAM, useful representations of the program can be displayed or printed out almost instantaneously. As a result, the program residing in RAM is stable enough to be a fixed copy. Triad Sys. Corp. v. Se. Express Co. upheld the precedent established in MAI Sys. Corp., holding that electronic representations of digital signals on a memory component that lasted for a millisecond were fixed:

[T]he copyright law is not so much concerned with temporal “duration” of a copy as it is with what the copy does, and what it is capable of doing, while it exists. “Transitory duration” is a relative term that must be interpreted and applied in context. This concept is particularly important in cases involving computer technology where the speed and complexity of machines and software is rapidly advancing, and where the diversity of computer architecture and software design is expanding at an ever-increasing rate.

Most decisions have not engaged in a critical examination of the RAM copy doctrine and its meaning. In fact, the RAM copy doctrine as set forth in MAI Sys. Corp. has become a mainstream judicial trend, leaving an “unequivocal and irremovable imprint on case law.” No decision challenged the RAM copy doctrine.
doctrine for approximately 15 years, and the government’s NII White Paper Report endorsed the MAI Sys. Corp. approach as settled law.

Despite the Ninth Circuit’s widely espoused RAM copy doctrine, the doctrine has not escaped criticism. Critics highlight that the MAI Sys. Corp. court did not refer to the legislative history, it did not discuss the “transitory duration” prong of the fixation test, and the sources it cited are inapplicable. In addition, some cases deriving from the MAI Sys. Corp. holding distinguish between RAM copies that last for a period of time where a user can interface with the program and implicating the reproduction right from those instantaneous and incidental copies that are necessary to the functionality of a digital network. A tension exists in courts applying the MAI Sys. Corp. holding regarding RAM data as constituting a copy. This friction arises from determining at what point a work in a digital network is fixed. Some cases that have adopted this holding do not apply the durational requirement within the Copyright Act’s definition of “fixed.” Yet,

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47 See Efroni, supra note 22.
48 See Lehman, supra note 5, at 64–66.
49 See, e.g., Lemley, supra note 33, at 551 n.24 (stating that despite the court’s own acknowledgment, its decision relied upon 2 Nimmer & Nimmer, supra note 20, § 8.08, which cited the CONTU REPORT, supra note 3, that referred to inputting data into permanent computer memory, not to the automatic generation of RAM copies). The court also cited Vault Corp. v. Quaid Software Ltd., 847 F.2d 255, 260 (5th Cir. 1988), which was unclear as to whether the case referred to loading a copy into RAM or into the internal hard drive of a computer.
52 See, e.g., Marobie-FL, Inc. v. Nat’l Ass’n of Fire Equip. Distrib., 983 F. Supp. 1167, 1177–78 (N.D. Ill. 1997) (holding that a copyrighted work held momentarily in a RAM buffer that was immediately transmitted from a host computer to the Internet was a fixed copy).
others have interpreted MAI Sys. Corp. as requiring the RAM copy to last for more than a “transitory duration.”  

B. Twentieth Century Fox Film Corp. v. Cablevision Sys. Corp. (Cablevision I)  

The holding in Cablevision I comports with the established interpretation of the RAM copy doctrine and its precedential weight as established by various courts. The court held that portions of programming temporarily stored in buffer memory during operation of the cable television provider’s Remote Storage Digital Video Recorder (RS-DVR) constitute copies and violate the plaintiffs’—content providers’—reproduction right.  

In Cablevision I, the plaintiffs provided copyrighted television programming, and the defendants owned and operated cable television systems in New York, New Jersey, and Connecticut. Offered as an alternative to set-top DVR in the customer’s home that records directly to a hard disk in the unit’s box, Cablevision’s RS-DVR would store recorded programming remotely on computer servers at a central facility (head-end) that houses much of the software and hardware needed to operate the digital cable system. The customer would use her remote control and cable box to select, record, view, store, and delete

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53 See, e.g., CoStar Group, Inc. v. Loopnet, Inc., 373 F.3d 544, 550–51 (4th Cir. 2004) (holding that an Internet Service Provider does not create fixed copies by providing a hosting service that makes temporary RAM copies).  
When an electronic infrastructure is designed and managed as a conduit of information and data that connects users over the Internet, the owner and manager of the conduit hardly ‘copies’ the information and data in the sense that it fixes a copy in its system of more than transitory duration. Even if the information and data are ‘downloaded’ onto the owner’s RAM or other component as part of the transmission function, that downloading is a temporary, automatic response to the user’s request . . . . While temporary electronic copies may be made in this transmission process, they would appear not to be ‘fixed’ in the sense that they are ‘of more than transitory duration’ . . . .

Id.


55 See supra note 41 (listing MAI Sys. Corp. progeny decisions).

56 See Cablevision I, 478 F. Supp. 2d at 622.

57 Id. at 609–10 (Plaintiffs are The Cartoon Network LP, LLLP; Cable News Network LP, LLLP; Turner Broadcasting System, Inc.; Turner Network Sales, Inc.; Turner Classic Movies, LP, LLLP; Turner Network Television LP, LLLP; Twentieth Century Fox Film Corporation; Universal City Studios Productions LLLP; Paramount Pictures Corporation; Disney Enterprises, Inc.; CBS Broadcasting Companies, Inc.; and NBC Studios, Inc.).

58 Id. at 610 (Defendants are Cablevision and CSC [Holdings, Inc.]).

59 Id. at 610, 612.
programs that are included in her cable subscription that would then be stored on servers at the cable provider’s facilities.60

The court provided a detailed description of RS-DVR technology. Cablevision collects all the digital feeds for its linear broadcasting into an aggregated programming stream (APS).61 For its RS-DVR service, the cable provider splits the APS stream into two with the second stream going through a router, which places a portion of the streamed programming into buffer memory.62 Digital devices use a form of RAM memory called transient data buffers, which are regions that temporarily hold data.63 Before customers select programming, Cablevision buffers the content at two points. The Big Broadband Multimedia Router (BMR) is the first buffering that occurs in RS-DVR.64 Afterwards, the router divides the APS into single streams and feeds them into the Arroyo servers where the RS-DVR programming is recorded and stored.65 The servers receive these streams through the primary ingest buffer that can hold three frames of video from each of the linear channels carried by Cablevision.66 Each packet of information is stored in the buffer for up to a tenth of a second.67 Three frames of video equal 6,000 packets.68 Portions of programming are copied to the BMR and primary ingest buffer regardless of whether any cable subscriber requested a particular program.69

Plaintiffs alleged that Cablevision’s RS-DVR produces unauthorized copies and violates their right to reproduce the work.70 Unauthorized copies are made when a customer requests a program and it is stored on Cablevision’s servers, and when portions of the program are temporarily stored in the buffer memory of the servers.71 Cablevision argued that the buffer copies were not fixed and are de minimis, but the court determined that the data in the buffer memory satisfied the

60 Id. at 612–13.
61 Id. at 610 (citations omitted):
   Digital signals are transmitted as compressed data in the form of binary digits, or ‘bits.’ The number of bits that can be sent in a second is known as the ‘bitrate.’ Digital signals allow for a greater variety in television programming—because more signals can be transmitted in the same space—as well as interactive services and, often, better audio and image quality than analog television.
62 Id. at 613.
63 Id.
64 Id.
65 Id. at 613–14.
66 Id. at 614.
67 Id.
68 Id.
69 Id. at 615.
70 Id. at 617; see 17 U.S.C. § 106(1) (2006).
71 See Cablevision I, 478 F. Supp. 2d at 617.
fixation requirement.\textsuperscript{72} Material residing in buffer memory was used to make permanent copies of the entire program subsequently stored on the servers.\textsuperscript{73} As a result, the material can be reproduced and the resulting copy satisfied the temporal requirement of lasting for “a period of more than transitory duration.”\textsuperscript{74} Despite the fact that the ingest buffer only holds three frames of a program at any time, the court reasoned that the whole program would pass through the primary ingest buffer.\textsuperscript{75} This countered the de minimis argument.\textsuperscript{76}

In addition to its interpretation of the language of the Copyright Act, the court also cited previous court decisions that have held that RAM “creates a ‘copy.’”\textsuperscript{77} It further supported its decision by citing the United State Copyright Office Report on the Digital Millennium Copyright Act which concluded “that temporary copies of a work in RAM are generally ‘fixed’ and thus constitute ‘copies’ within the scope of the copyright owner’s right of reproduction, so long as they exist for a sufficient amount of time to be capable of being copied, perceived, or communicated.”\textsuperscript{78} Therefore, the court found that the RS-DVR copied content providers’ programming in buffer memory and violated the plaintiffs’ reproduction right.\textsuperscript{79} The court granted the plaintiffs’ summary judgment motion and enjoined Cablevision from launching its RS-DVR.\textsuperscript{80}

C. Cartoon Network LP v. CSC Holdings, Inc. (Cablevision II)\textsuperscript{81}

Cablevision appealed and the court of appeals found that buffering did not create copies.\textsuperscript{82} The court addressed whether Cablevision’s manipulation of the content through the BMR and primary ingest buffers before and without subscriber request reproduces the work in copies and infringes the copyright holders’ reproduction right.\textsuperscript{83} The primary ingest buffer holds up to 0.1 second of

\begin{itemize}
\item \textsuperscript{72} Id. at 621.
\item \textsuperscript{73} Id.
\item \textsuperscript{74} See id. (quoting 17 U.S.C. § 101 (2006)).
\item \textsuperscript{75} Id.
\item \textsuperscript{76} See id.
\item \textsuperscript{77} See Schaumann, supra note 33.
\item \textsuperscript{79} See id. at 622.
\item \textsuperscript{80} See id. at 624.
\item \textsuperscript{81} 536 F.3d 121 (2d Cir. 2008), cert. denied, Cable News Network, Inc. v. CSC Holdings, Inc. (Cablevision III), 129 S. Ct. 985 (2009).
\item \textsuperscript{82} See id. at 130.
\item \textsuperscript{83} See id. at 127.
\end{itemize}
each channel’s programming at any moment. Consequently, the buffer erases and replaces data on the buffer every tenth of a second. In addition, the BMR holds a maximum of 1.2 seconds of programming at any time.

In its analysis, the court of appeals first looked at the definition of “copies” and “fixed” in § 101 of the Copyright Act. To be “fixed,” the work must satisfy two conditions: the embodiment requirement (the work is in a medium that enables it to be “perceived, reproduced, or otherwise communicated”) and the duration requirement (the work’s embodiment must last for a “period of more than transitory duration”). Both requirements must be met to consider the material of the copyrighted work in the buffers fixed and therefore a copy of the original work.

This is the point where the court of appeals diverged from the interpretation of the district court. The district court focused primarily on the embodiment requirement:

As a result of this error, once [the district court] determined that the buffer data was “[c]learly . . . capable of being reproduced,” i.e., that the work was embodied in the buffer, the district court concluded that the work was therefore “fixed” in the buffer, and that a copy had thus been made.

This conclusion stems from relying on MAI Sys. Corp., and the subsequent line of cases that established the RAM copy doctrine. Furthermore, the district court relied on the Digital Millennium Copyright Act of 1998, Section 104 Report (DMCA Report), which the court of appeals interpreted to state that an embodiment is fixed “[u]nless a reproduction manifests itself so fleetingly that it cannot be copied.”

84 Id. at 124.
85 Id. Note here that the RS-DVR uses buffering technology elsewhere but the primary ingest and BMR are the only areas where Cablevision acts alone. Id. at 125.
86 Id. at 125.
87 See id. at 127.
88 Id. (quoting 17 U.S.C. § 101 and citing 2 NIMMER & NIMMER, supra note 20, at 8-32.
89 See id. at 127.
90 See id.
92 Id. (citing MAI Sys. Corp. v. Peak Computer Inc., 991 F.2d 511, 517 (9th Cir. 1993)).
93 Id. (quoting DMCA REPORT, supra note 78, at 111).
The court refuted the lower court’s analysis in *Cablevision I* by distinguishing the *MAI Sys. Corp.* cases and marginalizing the DMCA Report.\(^9^4\) Generally, these cases concluded a copy is fixed without expressly addressing the duration requirement.\(^9^5\) However, the *Cablevision II* court asserted that this does not assume or establish that the duration requirement does not exist.\(^9^6\) Moreover, in these cases, the duration requirement was not an issue and was therefore distinguishable.\(^9^7\) The issue in *MAI Sys. Corp.* was whether loading software into the computer’s RAM created a copy as defined by the Act and this depended on whether the version of software present in the RAM was fixed.\(^9^8\) The RAM embodiment of the operating software constituted a copy because the technician was able to view the system’s error log and diagnose the problem.\(^9^9\) In *Cablevision II*, the court surmised that the parties did not litigate the duration requirement.\(^1^0^0\) Besides, the court assumed this analysis of duration was not necessary in the line of RAM copy doctrine cases because the “program was embodied in RAM for at least several minutes.”\(^1^0^1\) As a result, duration analysis was not needed and the reasoning is not dispositive to the facts present here:

> [W]e construe *MAI Systems* and its progeny as holding that loading a program into a computer’s RAM can result in copying that program. We do not read *MAI Systems* as holding that, as a matter of law, loading a program into a form of RAM always results in copying. Such a holding would read the “transitory duration” language out of the definition, and we do not believe our sister circuit would dismiss the statutory language without even discussing it. It appears the parties in *MAI Systems* simply did not dispute that the duration requirement was satisfied; this line of cases simply concludes that when a program is loaded into RAM, the embodiment requirement is satisfied . . . .\(^1^0^2\)

Accordingly, in *Cablevision II*, the court distinguished the *Cablevision* facts from the facts in *MAI Sys. Corp.*, and rendered the *MAI Sys. Corp.* analysis inapplicable to the set of facts present here. The court held that a fixed copy must satisfy both

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\(^9^4\) *See id.* at 127–30.

\(^9^5\) *See id.* at 127.

\(^9^6\) *See id.*

\(^9^7\) *See id.* (stating that the line of cases following *MAI Sys. Corp.* do not address the issues in *Cablevision II*).

\(^9^8\) *Id.* at 127–28 (citing *MAI Sys. Corp.* v. Peak Computer, Inc., 991 F.2d 511, 517 (9th Cir. 1993)).

\(^9^9\) *Id.* at 128 (citing *MAI Sys. Corp.*, 991 F.2d at 518).

\(^1^0^0\) *See id.*

\(^1^0^1\) *Id.*

\(^1^0^2\) *Id.*
the embodiment and the duration requirement, and that the MAI Sys. Corp. analysis was not applicable.\textsuperscript{103}

\textit{Cablevision II} also dispensed with the district court’s reliance upon the Copyright Office’s 2001 DMCA Report for finding an embodiment to be fixed unless the reproduction is so fleeting that it cannot be “copied, perceived, or reproduced.”\textsuperscript{104} Further adding that the DMCA Report does not expressly state that fixation does not have a temporal aspect.\textsuperscript{105} However, the durational prerequisite appears to be limited in the report because if the work can be copied from that medium for any amount of time, the embodiment and duration requirement of fixed is met.\textsuperscript{106} The court viewed the Copyright Office’s interpretation as negating the duration requirement and ignoring the congressionally developed language of the statutory definition.\textsuperscript{107} The court did not refute the DMCA Report, but neutered its authoritative weight by giving it only \textit{Skidmore} deference based on its “power to persuade.”\textsuperscript{108}

After dispensing with the sources of the district court’s holding, the court concluded that the definition of fixed imposes both an embodiment and a durational requirement.\textsuperscript{109} The court determined that the data present in the buffer meets the embodiment requirement “where every second of an entire work is placed, one second at a time.”\textsuperscript{110} However, the buffer stores data for no more than “a fleeting 1.2 seconds.”\textsuperscript{111} The court sees this as transitory and failing the duration requirement.\textsuperscript{112} Plaintiffs argued that the duration is not transitory because the data lasts long enough for complete reproductions to be ultimately copied onto the cable provider’s servers.\textsuperscript{113} The court rejected this because it does not account for the “more than transitory duration” language present in § 101.\textsuperscript{114} The court concluded that the buffering within the RS-DVR does not create copies as defined by the Copyright Act because it does not satisfy the

\begin{flushleft}
\textsuperscript{103} See \textit{id.} at 129.
\textsuperscript{104} \textit{Id.} (citing DMCA REPORT, supra note 78, at 111).
\textsuperscript{105} See \textit{id}.
\textsuperscript{106} See \textit{id}.
\textsuperscript{107} See \textit{id}.
\textsuperscript{108} \textit{Id.} (quoting \textit{Skidmore v. Swift & Co.}, 323 U.S. 134, 140 (1944)).
\textsuperscript{109} \textit{Id}.
\textsuperscript{110} \textit{Id.} (noting that Cablevision does not dispute this point).
\textsuperscript{111} \textit{Id}.
\textsuperscript{112} See \textit{id.} at 130.
\textsuperscript{113} \textit{Id}.
\textsuperscript{114} \textit{Id}.
\end{flushleft}
requirements of a fixed copy. This made the de minimis argument irrelevant.

D. Cable News Network, Inc. v. CSC Holdings, Inc. (Cablevision III) — Petition for and subsequent denial of a writ of certiorari

The content providers—copyright holders—appealed the Second Circuit Court of Appeals decision in Cablevision II. Initially, the Supreme Court deferred hearing the case, inviting the Solicitor General to file a brief expressing the views of the United States concerning the issues in this case. The petitioners appealed all the issues raised in the lower courts, including whether the data in the buffers are fixed to constitute a copy as defined in § 101. The argument propounds that Cablevision II conflicts with MAI Sys. Corp. arguing that the facts of each case were not distinguishable. Under MAI Sys. Corp. and subsequent cases espousing the RAM copy doctrine, the petitioners contend that the embodiment requirement alone satisfies a copy being fixed provided the work lasts long enough to be perceived, reproduced, or communicated. The Second Circuit allegedly departs from precedent by imposing an independent duration requirement in addition to the embodiment requirement. Moreover, petitioners argue that the Second Circuit misread the statutory definition to produce its “outcome determinative” holding. Petitioners contended further that the Second Circuit incorrectly interpreted “embodiment” in § 101 to be qualified by the phrase “for a period of more than transitory duration,” where this phrase should have been read to modify “perceived, reproduced, or otherwise communicated” and not “embodiment.”

115 See id.
116 See id.
118 Cablevision III, 129 S. Ct. at 985.
119 See Petition for Writ of Certiorari, supra note 118 (Cable News Network also questioned whether Cablevision is directly liable for the copies made using the RS-DVR and whether playback of the recorded transmissions violate the copyright holders’ public performance right under § 106(5)); see also Cablevision II, 536 F.3d 121 (2d Cir. 2008).
120 See Petition for Writ of Certiorari, supra note 118, at *30.
122 See Petition for Writ of Certiorari, supra note 118, at *31.
123 Id. at *32.
124 Id. (quoting 17 U.S.C. § 101 (2006)).
Second Circuit’s decision in *Cablevision II*. Ultimately, the Supreme Court denied the writ for a petition of certiorari.

IV. ANALYSIS

A. The RAM Copy Doctrine Without a Temporal Component Coupled with Digital Functionality Would Expand the Rights of Copyright Owners.

The nature of RAM data and digital technologies involve making multiple copies. To qualify these copies as satisfying the definition of copy and fixed in the Copyright Act would make many activities potentially infringing in the digital arena. Where an analog device processes incoming voltage pulses as a continuous stream, such as a sine wave with a particular amplitude and frequency, a digital unit takes the same incoming voltage stream, divides it into thousands of separate pieces (bits) and assigns a numeric value (a 1 or 0) to each segment based on the incoming voltage. Buffering stores the data because the incoming stream can exceed the operating speed of a computer. Buffering temporarily enables the digital device to enhance the accuracy of its reproduction of the incoming stream and also allows the device to combine later-arriving data with that which has already been received for further processing. All digital devices necessarily and automatically create temporary buffer copies to process digital information unlike analog transmissions. Traditional copyright law primarily

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126 See Brief for the United States as Amicus Curiae, Cable News Network, Inc. v. CSC Holdings, Inc. (*Cablevision III*), 129 S. Ct. 985 (2009) (No. 08-448), 2009 WL 1511740, *5–6, 8* (May 29, 2009) (explaining that the Solicitor General favored the court of appeal’s decision because its holding recognized a duration requirement which did not conflict with previous holdings but merely distinguished this holding based upon the facts).


129 See generally Robert W. Taylor, *Buffer*, in *ENCYCLOPEDIA OF COMPUTER SCIENCE*, supra note 128, at 160–61 (“[A] buffer exists in order to accommodate the different rates at which data is produced or consumed by the processor or peripherals involved.”).

130 See id.; see also Alan Jay Smith, *Cache Memory*, in *ENCYCLOPEDIA OF COMPUTER SCIENCE*, supra note 128, at 180–87 (“[A] cache memory is small, high-speed buffer memory used to hold temporarily those portions of the contents of some larger memory that are (believed to be) currently in use.”); SOOKMAN, supra note 128, at 35.

contemplated works in tangible form where it is easy to pinpoint when a copy has been made.\textsuperscript{132} Coupling the nature of buffering with the previously established interpretation of \textit{MAI Sys. Corp.} would make all the various stages of data transfer within a digital framework seen as producing copyrightable copies.\textsuperscript{133}

If the functioning of digital technologies and devices makes multiple copyrightable copies, then the rights of the copyright owners would be enlarged while the user’s access and freedoms would be diminished.\textsuperscript{134} The copyright owner would be given the additional rights of transmission and access.\textsuperscript{135} If RAM copies are seen as reproductions, copyright holders’ exclusive rights would be enhanced and subsume an individual’s right to read, view, or listen to works in digital formats.\textsuperscript{136} Under this interpretation, the reproduction right has been expanded to an exclusive reading right because digital technology makes a copy

\begin{footnotesize}
\begin{enumerate}
\item[132] See Hayes, supra note 50, at 3.
\item[133] See id. at 101:
\begin{quote}
Virtually every activity on the Internet—such as browsing, caching, linking, downloading, accessing information, and operation of an online service—involves the making of copies, at least if the law treats electronic images of data stored in RAM as copies for purposes of copyright law. In short, copying is both ubiquitous and inherent in the very nature of the medium. If the law were to treat all forms of copying as infringements of the copyright holder’s rights, then the copyright holder would have very strong control over Internet use of the copyrighted work. Which forms of copying the law should deem to be within the control of the copyright owner and which should not presents a very difficult challenge.
\end{quote}

See also DMCA REPORT, supra note 78, at 10; NATIONAL RESEARCH COUNCIL, THE DIGITAL DILEMMA: INTELLECTUAL PROPERTY IN THE INFORMATION AGE 28 (2000) (“[W]hen information is represented digitally, access inevitably means making a copy, even if only an ephemeral (temporary) copy. This copying action is deeply rooted in the way computers work.”).
\item[134] See Hayes, supra note 50, at 4.
\item[135] See id. at 101; see also LAWRENCE LESSIG, REMIX: MAKING ART AND COMMERCE THRIVE IN THE HYBRID ECONOMY 98–100 (2008):
\begin{quote}
[E]very time you use a creative work in a digital context, the technology is making a copy . . . . No matter what you do, your actions trigger the law of copyright. Every action must be justified as either licensed or ‘fair use’. . . . To read a book requires permission . . . . All the ordinary uses of a creative work are now regulated because all ordinary uses trigger the copyright law—because again, any use is a copy . . . .
\end{quote}

See also JESSICA LITMAN, DIGITAL COPYRIGHT 179–80 (2006) (“[W]hile copyright law permits the owner of a copy to transfer that copy freely, the privilege does not extend to any transfer by electronic transmission . . . [with] the crucial distinction between lawful and unlawful activity . . . turn[s] on whether something has been reproduced in the memory of some computer somewhere.”).
\end{enumerate}
\end{footnotesize}
for the user to see the work.\footnote{See id. at 40.} Although this idea has been derived from the MAI Sys. Corp. precedent and CONTU Report, and adopted by the NII working group, these sources have unclear authority for this proposition and actually contradict express legislative intent.\footnote{Id. at 40, 41 nn.55, 59–60 (stressing that the RAM copy doctrine finds support in “three recent cases, a stray remark in the CONTU Report, and brief discussions in a couple of recent law review articles”).} An expanded reproduction right will subsume other exclusive rights such as the public display right potentially held by others.\footnote{See 17 U.S.C. § 106(5) (2006) (granting the copyright holder exclusive rights to display the copyrighted work publicly); see also R. Anthony Reese, The Public Display Right: The Copyright Act’s Neglected Solution to the Controversy Over RAM “Copies,” 2001 U. ILL. L. REV. 83, 141 (2001) (highlighting the fact that multiple copies of a work are made by viewing the work online; accordingly “a claim of infringing reproduction by means of RAM storage will generally allow copyright owners to control the use of their works over computer networks without any recourse to the public display right”).} Conversely, an individual lawfully using a digital device would be seen as making copies that potentially infringe the copyright owner’s rights simply through using the device.\footnote{See Lemley, supra note 33, at 554–55: If one accepts the argument that RAM copies are actionable under 106(1), the number of copies made in even the most routine Net transactions increases dramatically. Obviously, each act of uploading or downloading makes a RAM copy in the recipient’s computer, but that is only the beginning. When a picture is downloaded from a Web site, the modem at each end will buffer each byte, as will the router, the receiving computer, the Web browser, the video decompression chip, and the video display board. Those seven copies will be made on each such transaction. Further since most Internet transmissions do not travel directly between sender and receiver, more copies will be made of the individual packets at each node they pass through on their way to the endpoint. . . . Some [of these copies] are generated by the computer where the message originates . . . [b]ut others are made automatically by the recipient’s computer . . . . anyone who browses the Net and unintentionally runs across infringing material is making infringing copies under this rationale. See also Wendy J. Gordon, Fine-Tuning Tasini: Privileges of Electronic Distribution & Reproduction, 66 BROOK. L. REV. 473, 485–86 (2000). The practical issues here are large . . . [I]f appearance in RAM form would be considered a ‘reproduction,’ even private actions by individual consumers at their home computers would trigger a copyright owner’s prima facie right. To hold that every private person is ‘copying’ when they receive something in RAM may extend the copyright owners’ rights impermissibly, creating problems both for free speech and for privacy.}

As a result, control over all access to information may be shifted away from the public in favor of content providers. In some instances, copyright owners who hold the reproduction right would be vested with superior rights over others who
have copyright claims in the work, such as the public display right. Some argue that a shift in copyright interests should be dictated by policy and not the technology that delivers the work.

B. Without a Durational Requirement, the RAM Copy Doctrine does not Comport with the Copyright Act.

To find that buffering technologies, which can hold less than a second of audiovisual data, constitute copyrightable copies, rests on the assumption that only the embodiment requirement is needed for a copy to be fixed. Reliance upon this assumption misreads the statutory language of the Copyright Act. This reasoning ignores the duration requirement of the “fixed” definition in § 101. Statutory construction demands that all language therein be given effect. Furthermore, the rationale that transient RAM copies are fixed runs contrary to the congressional intent regarding the 1976 Act, which stated that fleeting reproductions of information are not copies.

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141 See Reese, supra note 139, at 142, 146; Litman, supra note 135, at 91–92 (characterizing the MAI Sys. Corp. decision as “the watershed moment in the transition from an incentive model of copyright to a control model” founded upon “this crazy but brilliant theory under which every unlicensed use of any work in digital form is potentially an infringement . . . [where] any act of reading or viewing the [digital] work would, under this interpretation, involve an actionable reproduction.”).

142 See, e.g., Hayes, supra note 50, at 63 (quoting Raymond T. Nimmer, Information Law ¶ 4.08[1], at 4-30 (1996)); see also Lessig, supra note 135, at 99 (“This change in the scope of control came not from Congress deciding the copyright owner needed more control . . . . Technological changes dramatically increased, and the scope of control that the law gave copyright owners over the use of creative work increased dramatically.”).

143 Twentieth Century Fox Film Corp. v. Cablevision Sys. Corp. (Cablevision I), 478 F. Supp. 2d 607, 621 (S.D.N.Y. 2007) rev’d in part, vacated in part sub nom., Cartoon Network, L.P. v. CSC Holdings, Inc. (Cablevision II), 536 F.3d 121 (2d Cir. 2008) (holding that because the transient buffer copies automatically created by RS-DVR “are used to make permanent copies of entire programs” elsewhere in the RS-DVR system, they are “[c]learly . . . capable of being reproduced,” and therefore are copies); see 2 Nimmer & Nimmer, supra note 20, at § 8.02[2]:

In order to constitute an infringing copy or phonorecord, the embodiment of the plaintiff’s work must be not only tangible (a ‘material object’); it must also be of some permanence. These are two separable concepts, which are not necessarily wedded. Writing in sand is tangible in form even if the next wave will erase it forever. The image that appears on a television or theater screen is embodied in a material object, but is evanescent.

See also Pamela Samuelson, Legally Speaking: The NII Intellectual Property Report, 37 Comm. of the ACM 21, 23 (1994) (explaining that by such logic, holding a mirror up to a book would constitute infringement “because the book’s image could be perceived there for more than a transitory duration, i.e., however long one has the patience to hold the mirror”).

This lack of acknowledgment of a temporal requirement for the “fixed” definition stems from the precedent that perpetuated the RAM copy doctrine and which confused the meaning of “copy” and “fixed” used to determine if a work deserves copyright protection with “copy” in the infringement sense.145 “Copy” for the reproduction right defined in § 101 of the Copyright Act is concerned with distinguishing between the material object and the copyrighted work embedded therein.146 “Copy” for infringement analysis has been developed as a common law concept.147 These definitions are not coextensive.148 An infringing copy results from an unauthorized, temporally and economically material reproduction that is contained in a copy.149 The cases that developed the RAM copy doctrine which was followed in Cablevision I conflated the two “copy” definitions: “MAI Systems engaged in a semantic sleight of hand: The statutory definition of a material object became the definition of the statutory term for infringement—reproduction . . . MAI Systems’ misconstruction of the statute was devastating economically as it was revolutionary in its legal errors.”150

The Copyright Office’s DMCA Report also does not account for the temporal requirement of fixed:

Congress intended the copyright owner’s exclusive right to extend to all reproductions from which economic value can be derived. . . . The dividing line, then, can be drawn between reproductions that exist for a sufficient period of time to be capable of being

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146 See id.
147 Id.
148 Id.
149 See id. § 9:63.
150 Id. Emphasizing that this flawed approach:

has been followed in cases involving . . . most objectionably for the buffering and caching that occurs automatically as an incident to Internet or other digital transmissions. Arguments have been made in connection with RS-DVRs . . . where buffering is no more the making of an infringing copy than in an Internet context. MAI Systems involved the deliberate creation of a shadow, viewable copy of an entire work used for diagnostic purposes. . . . By contrast, caching and buffering is not hearable or viewable by consumers, usually consists of extremely small amounts of data, is a function of the manner in which digital transmissions occur rather than being a volitional act, and have no independent economic value. These facts take caching and buffering well outside MAI systems. Yet, the allegation that buffering and caching represents an infringing reproduction has served to retard severely lawful online distribution of music, providing music publishers and record labels with undeserved windfalls and leverage in litigation. It is well past time for the courts to put an end to such efforts.
‘perceived, reproduced, or otherwise communicated’ and those that do not.\textsuperscript{151}

The foundations for the report rely on interpretations of \textit{MAI Systems Corp.} and its subsequent endorsement by the National Information Infrastructure Task Force that all RAM data are copies within the reproduction right of the Act as long as they can be “perceived, reproduced, or otherwise communicated.”\textsuperscript{152}

In \textit{Cablevision II}, the Second Circuit properly distinguished the facts to harmonize itself with precedent, and to enable the RAM copy doctrine to be aligned with the Copyright Act. As a result, a RAM copy \textit{can be} a copy but is no longer automatically one. This results from applying the two prongs—embodiment and duration—of the fixed definition:

\begin{quote}
Unless both requirements are met, the work is not “fixed” in the buffer, and, as a result, the buffer data is not a “copy” of the original work whose data is buffered . . . \textsuperscript{153}
\end{quote}

Therefore, the RAM copy doctrine does not negate the temporal requirement. In \textit{MAI Sys. Corp.}, the temporal requirement was not an issue because the software was loaded into RAM and remained there for a matter of minutes.\textsuperscript{154} Yet, the courts provide no bright-line interpretation regarding the duration requirement. There is an infinite set of points between the 1.2 second duration found in MAI Sys. Corp., and a matter of minutes. For instance, choosing where the temporal requirement is satisfied and where it fails will depend on the facts. Currently, without clear legislative direction, this non-bright-line, fact-driven temporality analysis seems to be an appropriate judicial stance that recognizes both requirements of the statutory language of the fixed requirements of copyrightable copies.

Subsequently, the District Court for the Southern District of New York applied the holding in \textit{Cablevision II} to a case that had facts similar to \textit{MAI Sys. Corp.} in determining that the loading of copyrighted software programs into the RAM of a computer constitutes a copy where it remains in the computer for

\begin{footnotesize}
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\item[\textsuperscript{151}] DMCA REPORT, \textit{supra} note 78, at 110–12.
\item[\textsuperscript{152}] See \textit{id}.
\item[\textsuperscript{153}] Cartoon Network LP v. CSC Holdings, Inc. (\textit{Cablevision II}), 536 F.3d 121, 128 (2d Cir. 2008).
\item[\textsuperscript{154}] 991 F.2d 511, 517 (9th Cir. 1993).
\end{itemize}
\end{footnotesize}
minutes to hours. This holding that recognizes the two statutory requirements for a copyrightable copy demonstrates that imposing both embodiment and durational requirements harmonizes the Copyright Act with the RAM copy doctrine as established in MAI Systems Corp.

C. A RAM Copy Doctrine that Incorporates Both an Embodiment and Temporal Requirement for Fixation Upholds the Constitutional Copyright Mandate.

To interpret the RAM copy doctrine as having both an embodiment and temporal requirement to be a copy not only finds more support in the text and legislative history of the Copyright Act, but also furthers the underlying purpose of copyright law, which is to “promote the science and the useful arts” as stated in the copyright clause of the U.S. Constitution. The primary purpose of copyright is to enrich the public by making creative works broadly available. To achieve broad dissemination copyright law strikes a balance of rewarding an author with a limited monopoly in her work before it is freely given to the public:

In a case like this, in which Congress has not plainly marked our course, we must be circumspect in construing the scope of rights created by a legislative enactment which never contemplated such a calculus of interests:

The limited scope of the copyright holder’s statutory monopoly, like the limited copyright duration required by the Constitution, reflects a balance of competing claims upon the public interest: Creative work is to be encouraged and rewarded, but private motivation must ultimately serve the cause of promoting broad public availability of literature, music, and the other arts. The immediate effect of our copyright law is to secure a fair return for an ‘author’s’ creative labor. But the ultimate aim is, by this incentive, to stimulate artistic creativity for the general public good. ‘The sole interest of the United States and the primary object in conferring the monopoly,’ this Court has said, ‘lie in the general benefits derived by the public from the labors of authors’.

The embodiment requirement is satisfied when a software program is loaded into a computer’s RAM . . . and Cartoon Network suggested that the duration requirement would be satisfied where the program remained in RAM for at least several minutes or where the program remained in RAM until the computer is shut off . . . .

See generally id.

U.S. CONST. art. I, § 8, cl. 8.
When technological change has rendered its literal terms ambiguous, the Copyright Act must be construed in light of this basic purpose.\textsuperscript{158}

By applying the RAM copy doctrine without using the temporal analysis required for a copy to be fixed and copyrightable, copyright owners would garner greater control with regard to their work simply because of the buffering that is inherent in processing digital data.\textsuperscript{159} The reproduction right would expand to cover the act of simply looking at material.\textsuperscript{160} This would limit the reach of digital technology and deprive the public of an increased access to creative works.\textsuperscript{161} Using both the embodiment and temporal requirement of the “fixed” definition gives greater deference to the statutory language, and, in turn, promotes the public’s access to works by not limiting digital technology simply because of its functionality.

V. CONCLUSION

In a world that has shifted from analog to digital technology, 1.2 seconds of digital data and three frames (0.1 second) of a television program that remain in the transitory buffers of Cablevision’s RS-DVR represent fleeting trifles, yet stand to assume the stature of a defining moment in copyright law. In \textit{Cablevision I}, the district court found the buffer data to be fixed, and, therefore, an infringing copy, noting that all digital devices use “transient data buffers, which are regions of memory that temporarily hold data.”\textsuperscript{162} The district court viewed its holding as a natural progression of \textit{MAI Sys. Corp.} and subsequent cases that established data loaded into RAM is a copy. However, the district court’s holding would greatly expand liability associated with the normal use of digital devices that function by making temporary buffer copies. As a result, the public’s access and use of digital technology would be confined and limited simply by the threat inherent with the normal operation of a digital device as constituting infringement. This result undermines the Copyright Act’s policies and its constitutional mandate of promoting the “progress of science and useful

\textsuperscript{158} Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 431–32 (1984) (quoting Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975)).

\textsuperscript{159} See generally id.

\textsuperscript{160} See Litman, \textit{supra} note 136, at 31–32.

\textsuperscript{161} See id.

\textsuperscript{162} Twentieth Century Fox Film Corp. v. Cablevision Sys. Corp. (\textit{Cablevision I}), 478 F. Supp. 2d 607, 613 (S.D.N.Y. 2007) \textit{rev’d in part, vacated in part sub nom.}, Cartoon Network, L.P. v. CSC Holdings, Inc. (\textit{Cablevision II}), 536 F.3d 121 (2d Cir. 2008).
arts” by encouraging the proliferation of creative works and increasing the public’s access to these works.\textsuperscript{163}

In \textit{Cablevision II}, the Second Circuit Court of Appeals reversed this holding by determining that these brief reproductions were not “fixed” and therefore not “copies” within the meaning of the Copyright Act.\textsuperscript{164} This holding merely distinguishes itself factually from \textit{MAI Sys. Corp.} and purports that this precedent that established the RAM copy doctrine has always recognized a durational requirement for a copy to be fixed under the Copyright Act. Although this decision appears to adhere to the statute, it does not create certainty. From the minute the technician loaded and used the software in \textit{MAI Sys. Corp.} to the three frames of television programming held in the primary ingest buffer of Cablevision’s RS-DVR system exists an infinite set of points where the duration requirement exists or falls short. This ad hoc analysis is not strange to courts facing copyright issues.\textsuperscript{165}

The antithetical holdings of the lower courts highlight the growing tension affecting the interests at play concerning the Copyright Act and its purpose of promoting authors to create in order to enrich the public’s access to a greater number of these works, which, in turn, are increasingly being facilitated and delivered by digital means.\textsuperscript{166}

\textsuperscript{163} U.S. CONST. art. I, § 8, cl. 8.


\textsuperscript{165} See, \textit{e.g.}, Nichols v. Universal Pictures, 45 F.2d 119, 121 (2d. Cir. 1930) (discussing the difficulty in determining what is protectable expression and what is non-protectable idea and that previous court decisions cannot provide a holding applicable to subsequent cases).