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Copyright Protection for Video Games: The Courts in the Pac-Man Maze

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COPYRIGHT PROTECTION FOR VIDEO GAMES: THE COURTS IN THE PAC-MAN MAZE*

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I. INTRODUCTION

In roughly the last ten years, video games have literally (and figuratively) skyrocketed in popularity and sophistication, from the early simple "ping pong" style games to the more recent highly complex techniques and graphics found in the many space-battle games. The expansion of the industry has been accompanied by piracy and copying, especially of the most popular games.¹ The computer programs controlling the games, which are usually encoded in microcircuit chips called ROMs, are

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¹ See *The Bandits Vs. the Lawyers*, NEWSWEEK, Dec. 20, 1982, at 76.

easily pirated by means of devices which can copy the ROMs directly. Further, the tremendous popularity of a few games seems to have spurred "copycats," who are developing games with similar, if not nearly identical, sights and sounds.² The result in the last few years has been a surge in litigation over the games, for the most part involving claims of copyright infringement.³

Video games have been described by one court as "computers programmed to create on a television screen cartoons in which some of the action is controlled by the player."⁴ Like cartoons, the design of video games requires considerable creative effort, and only those designers using the best techniques for devising game strategies and graphics can produce successful video games.⁵ That effort also entails considerable expense. Piracy, on the other hand, entails relatively little effort and expense. As a result, there is a need for some form of protection for the efforts of game-developers. It has been noted by industry officials that otherwise "high-tech innovation is going to suffer, since computer wizards are not going to produce new devices they can't protect."⁶

Copyright has proved to be an appropriate form of protection for video games. However, the application of copyright law to protect the audiovisual displays and underlying computer programs of video games has become possible only since the revision of the Copyright Act⁷ in 1976. Of further significance to the ability to protect video games has been the development of the law of copyright in the subject areas of computer programs, games, and characters. The status of copyright protection for video games has been clarified somewhat by recent court decisions. The nature of copyright law, however, is such that the final determination of the protection to be afforded a given game actually rests on policy grounds rather than on an application of black-letter law to facts. The constitutional foundation of copyright law is the attempt to protect certain individual property rights while providing an incentive for production of new works. Such a goal is achieved only through a delicate balancing of interests, and the extent of protection is based in each case on that balance of policies. An understanding of the way in which that balance is achieved in copyright for video games can be attained by first examining

² See *id.*

³ *Id.*

⁴ *Stern Elecs., Inc. v. Kaufman*, 669 F.2d 852, 853 (2d Cir. 1982).

⁵ See Crawford, *Design Techniques and Ideals for Computer Games*, BYTE, Dec. 1982, at 96-108, for a discussion of the techniques which have proved successful.

⁶ *The Bandits Vs. the Lawyers*, *supra* note 1, at 76. See *Apple Computer, Inc. v. Formula Int'l, Inc.*, 562 F. Supp. 775 (C.D. Cal. 1983). "Few companies are going to invest the time and resources to develop new programs if their products can be freely duplicated by anyone." *Id.* at 783.

⁷ Act of Oct. 19, 1976, Pub. L. No. 94-553, 90 Stat. 2541 (codified at 17 U.S.C. app. §§ 101-801 (1976 & Supp. III 1979)).

the constitutional and statutory underpinnings of copyright law, and then reviewing the development of copyright doctrines in the subject areas of computer programs, games, and characters.

II. STATUTORY PROVISIONS: COPYRIGHT

A. Copyright Clause

The Constitution grants to Congress the power "[t]o promote the Progress of Science . . . , by securing for limited Times to Authors . . . the exclusive Right to their . . . Writings"⁸ Thus, Congress may grant limited monopolies to "authors" for the purpose of promoting the progress of science.⁹ One rationale is that by securing authors' interests in their works, an incentive is created to produce more writings and to distribute their works publicly. Limited protection is necessary to prevent the grant of exclusive rights from foreclosing others from making full use of the protected works, thus hindering, rather than promoting, the "progress of science."

Congress has exercised its power to grant copyrights in an increasingly expanding way since 1790. Over the years, both increased statutory coverage and judicial interpretations have made it clear that the subject matter amenable to copyright under the Constitution—that is, within the meaning of "writings" of "authors"—is quite broad.¹⁰

Congress has never enacted a statute intended to be coextensive with the copyright clause. The House Report on the 1976 revision of the Copyright Act¹¹ indicates a concern that the statute not extend to the constitutional limits, because judicial interpretation may result in protection of subject matter outside of Congress' intended scope or in exclusion from subject matter of an area Congress might want to protect.¹²

⁸ U.S. CONST. art. I, § 8, cl. 8. The portion quoted is traditionally considered to constitute the power to grant copyrights. The full clause including the power to grant patents reads: "To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." *Id.*

⁹ Note that "science" refers broadly to the acquisition and dissemination of knowledge and information. In the sense used in the copyright clause, "science" is probably synonymous with the body of tangible works of authors. See 1 M. NIMMER, NIMMER ON COPYRIGHT § 1.03, at 1-30 n.1 (1982).

¹⁰ For a discussion of statutory developments in copyright subject matter see CONTU, FINAL REPORT OF THE NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS 15 (1979) [hereinafter cited as CONTU REPORT]. For judicial interpretation of the meaning of "writings" within the copyright clause, see *Goldstein v. California*, 412 U.S. 546, 561 (1973) (writings held to "include any physical rendering of the fruits of creative intellection or aesthetic labor") and *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53 (1884).

¹¹ Act of Oct. 19, 1976, Pub. L. No. 94-553, 90 Stat. 2541 (codified at 17 U.S.C. app. §§ 101-801 (1976 & Supp. III 1979)).

¹² H.R. REP. No. 1476, 94th Cong., 2d Sess. 51, reprinted in 1976 U.S. CODE CONG. & AD. NEWS 5659, 5664 [hereinafter cited as HOUSE REPORT].

B. *The 1909 Act*

Until Congress revised the Copyright Act in 1976, copyright law in the United States was defined by the 1909 Act.¹³ The language of that Act, with some accommodation,¹⁴ was broad enough to encompass many of the technological changes which occurred during the next six-and-a-half decades. Under the 1909 Act, copyright protection was afforded for "all writings of an author."¹⁵ As previously noted, this clause was not intended to reach the constitutional limits, although the language used is similar.

Further, under the 1909 Act, federal statutory copyright was triggered by publication of the work.¹⁶ Prior to publication, perpetual common-law rights subsisted in the works of an author.¹⁷ The rationale for divesting common-law rights by operation of the statute (upon publication) stems from the constitutional policy reflected in the copyright clause of "securing protection for limited times," and from the notion that only the grant of a limited monopoly can serve to "promote" the progress of science.¹⁸

C. *The 1976 Act*

In 1976, Congress passed the long-awaited revision of the Copyright Act (the 1976 Act).¹⁹ In many areas, the 1976 Act sought to codify existing case law rather than to change the substantive law of copyright.²⁰ However, the legislative history makes it clear that Congress was cognizant of the expansion in science and technology which had occurred since the enactment of the 1909 Act and attempted to accommodate some of the new developments through the 1976 revision.²¹ Moreover, some of the changes in the Act have in reality effected a revolution in the substantive law of copyright. Features of the 1976 Act which are of particular signifi-

¹³ Act of Mar. 4, 1909, ch. 320, 35 Stat. 1075 (codified as amended at 17 U.S.C. §§ 1-215 (1976)) (repealed 1976).

¹⁴ Motion pictures were added as subject matter in 1912, and sound recordings in 1972. CONTU REPORT, *supra* note 10, at 15.

¹⁵ 17 U.S.C. § 4 (1976) (repealed 1976).

¹⁶ For a general discussion, see 1 M. NIMMER, *supra* note 9, § 4.01.

¹⁷ Note that common-law copyright subsists in perpetuity, whereas statutory copyright is limited to a term of years (currently the lifetime of the author plus 50 years).

¹⁸ See 1 M. NIMMER, *supra* note 9, § 4.03.

¹⁹ Act of Oct. 19, 1976, Pub. L. No. 94-553, 90 Stat. 2541 (codified at 17 U.S.C. app. §§ 101-801 (1976 & Supp. III 1979)).

²⁰ See, e.g., HOUSE REPORT, *supra* note 12, at 51, reprinted in 1976 U.S. CODE CONG. & AD. NEWS at 5664 (the phrase "original works of authorship" used in the statute "was intended to incorporate without change the standard of originality established by the courts under the present copyright statute").

²¹ *Id.* Some of the technological changes occurring during the intervening years and noted by Congress include the development of the sound-recording and motion-picture industries, and the emergence of electronic media, such as radio and television, electronic music, and computer programs.

cance for the present discussion are the replacement of publication with "fixation" as the event triggering statutory rights; the expanded definitions of "fixation" and of "copies," which now include non-human-readable media; and the codification of the idea-expression dichotomy.

Subject matter for copyright under the 1976 Act includes "original works of authorship"²² as contrasted with "all writings of an author," the language used in the 1909 Act. Congress intended to avoid confusion as to whether the Act was coextensive with the copyright clause of the Constitution.²³ Section 102 of the 1976 Act also provides a list of types of subject matter specifically intended to be included.²⁴

One of the most significant changes in the 1976 Act is the codification of the fixation requirement in the definition of subject matter. Under the statute, "protection subsists . . . in original works of authorship *fixed in any tangible medium of expression*, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device."²⁵ While fixation was a requirement under the Constitution and the 1909 Act, presumably because it was essential to "a writing,"²⁶ the 1976 Act was intended to broaden the scope of fixation by allowing for later-developed tangible media of expression. Congress specifically intended to prevent the type of artificial distinctions made in *White-Smith Publishing Co. v. Apollo Co.*²⁷ between media in which the work is directly perceptible by humans—for example, the printed word—and media in which the work may not be perceived directly.²⁸ The *White-Smith* doctrine persisted in interpretations of copyright law until the enactment of the 1976 Act and served to preclude protection for works which were not embodied in human-readable media. The abrogation of *White-Smith* was also effected in the definition of "copies" under the 1976 Act. Copies are defined in section 101

²² 17 U.S.C. app. § 102 (1976 & Supp. III 1979).

²³ See *supra* note 12 and accompanying text.

²⁴ 17 U.S.C. app. § 102(a) (1976 & Supp. III 1979):

Works of authorship include the following categories:

- (1) literary works;
- (2) musical works, including any accompanying words;
- (3) dramatic works, including any accompanying music;
- (4) pantomimes and choreographic works;
- (5) pictorial, graphic, and sculptural works;
- (6) motion pictures and other audiovisual works; and
- (7) sound recordings.

Note that the list is not exhaustive of possible categories of copyrightable subject matter.

²⁵ *Id.* (emphasis added).

²⁶ See 1 M. NIMMER, *supra* note 9, § 2.03[B].

²⁷ 209 U.S. 1 (1908). The Court in *White-Smith* specifically refused to find that player-piano rolls were copies of the underlying composition because the work could not be perceived directly on a roll of paper with punched holes.

²⁸ HOUSE REPORT, *supra* note 12, at 52, reprinted in 1976 U.S. CODE CONG. & AD. NEWS at 5665. This distinction is generally referred to as the *White-Smith* doctrine.

as "material objects . . . 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.*"²⁹

Furthermore, under the 1976 Act, fixation is the event which triggers federal statutory rights.³⁰ The 1976 Act makes clear that upon fixation of the work, all common-law copyrights are preempted by the statute.³¹ The preemption provision effectively abolishes nearly all common-law copyright.³²

The 1976 Act also codifies the long-recognized principle that copyright protection will be afforded only for *expressions* of ideas and not for the *ideas* themselves.³³ The House Report indicated that the intent of section 102(b) was to restate the existing dichotomy between idea and expression and not to expand or contract the scope of copyright in any way.³⁴ The idea-expression dichotomy in copyright is important not only in determining whether a given work is copyrightable subject matter, as its treatment in section 102 would indicate, but it is also essential in determining where lawful copying ends and unlawful misappropriation begins. Moreover, the copyright clause probably mandates the distinction. The extent to which a given work is protected will depend on the degree to which it is an original expression of ideas rather than merely the necessary or inevitable embodiment of the idea itself.³⁵

Prior to passage of the 1976 Act, Congress was concerned about chang-

²⁹ 17 U.S.C. app. § 101 (1976 & Supp. III 1979) (emphasis added).

³⁰ Under the 1909 Act, publication triggered statutory rights. See *supra* note 16 and accompanying text.

³¹ 17 U.S.C. app. § 301 (1976 & Supp. III 1979).

³² Common-law rights may still subsist in works which are not fixed or recorded simultaneously, such as live performances, broadcasts, or unwritten speeches. Further, the fact of federal preemption extends only to "all legal or equitable rights that are equivalent to any of the exclusive rights within the general scope of copyright as specified by section 106" 17 U.S.C. app. § 301(a) (1976 & Supp. III 1979). Thus a state may in theory provide greater rights to authors of original fixed works than those provided under the statute. See *id.* § 301(b)(3).

³³ 17 U.S.C. app. § 102(b) (1976 & Supp. III 1979): "In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work." This section also appears to distinguish copyright subject matter from that of patent, which includes processes as well as machines, manufactures, and compositions of matter. 35 U.S.C. § 101 (1976). However, as in copyright, bare ideas are not patentable subject matter.

³⁴ HOUSE REPORT, *supra* note 12, at 56-57, reprinted in 1976 U.S. CODE CONG. & AD. NEWS at 5670.

³⁵ As a result, the fewer the possible variations in expression of an idea, the less likely it is that a given expression will be afforded protection. See, e.g., *Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F.2d 738 (9th Cir. 1971). This aspect of the idea-expression dichotomy has been particularly important in the video game cases.

ing technology and its impact in the area of copyright.³⁶ In 1974, Congress established the National Commission on New Technological Uses of Copyrighted Works (CONTU) to study and make legislative recommendations on computer uses, computer-assisted creation of copyrighted works, and other issues related to the impact of computers on copyright.³⁷ Because CONTU was still in the midst of its work when the 1976 Act was passed, Congress enacted section 117 to maintain the status quo in copyright law vis-à-vis computers and computer programs.³⁸ The final report of CONTU was completed in 1978,³⁹ and its recommendations were essentially embodied in the 1980 amendment to the Act.⁴⁰ The 1980 amendments added a definition of "computer programs" to the definitions of section 101.⁴¹ Section 117 of the 1976 Act was replaced by a new section limiting the exclusive rights afforded authors of computer programs, by allowing owners of copies of computer programs to make copies where essential to the utilization or maintenance of the program.⁴² By adopting statutory provisions nearly identical to those recommended by CONTU,⁴³ Congress implicitly adopted all of the CONTU recommendations.⁴⁴ While it was evident that Congress believed a computer program to be copyrightable under the 1909 Act, at least insofar as it was an expression and not merely a process,⁴⁵ the 1980 amendments and subsequent application

³⁶ See *supra* note 21 and accompanying text.

³⁷ Act of Dec. 31, 1974, Pub. L. No. 93-573, 88 Stat. 1873 (codified as amended at 17 U.S.C. § 701 note (Supp. III 1979)).

³⁸ 17 U.S.C. app. § 117 (1976 & Supp. III 1979) (repealed 1980). See HOUSE REPORT, *supra* note 12, at 116, *reprinted in* U.S. CODE CONG. & AD. NEWS at 5731. The status quo was by no means clear at this point. In 1964, the Copyright Office began accepting registration of computer programs as books. The programs of course had to be works of original authorship, and in keeping with the doctrine of *White-Smith*, copies had to be visually perceptible and in an intelligible language. See *supra* notes 27-28 and accompanying text; 1 M. NIMMER, *supra* note 9, § 2.04[c], at 2-43-44. Congress apparently believed that computer programs were in fact copyrightable under the 1909 Act as indicated in the House Report discussion on § 102. HOUSE REPORT, *supra* note 12, at 51, *reprinted in* 1976 U.S. CODE CONG. & AD. NEWS at 5664.

³⁹ CONTU REPORT, *supra* note 10.

⁴⁰ Act of Dec. 12, 1980, Pub. L. No. 96-517, § 7, 94 Stat. 3015, 3028 (codified at 17 U.S.C. §§ 101, 117 (Supp. IV 1980)). See CONTU REPORT, *supra* note 10, at 12, for the text of the recommendations.

⁴¹ 17 U.S.C. § 101 (Supp. IV 1980): "A computer program is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result."

⁴² 17 U.S.C. § 117 (Supp. IV 1980).

⁴³ The only difference was the use of the term "owner of a copy" in § 117 instead of CONTU's recommended "rightful possessor of a copy." CONTU REPORT, *supra* note 10, at 12.

⁴⁴ See H.R. REPORT No. 1037, 96th Cong., 2d Sess. 23, *reprinted in* 1980 U.S. CODE CONG. & AD. NEWS 6460, 6482. The report states that the bill "embodies the [CONTU] recommendations." *Id.*

⁴⁵ See *supra* note 38.

of the requirements of the 1976 Act⁴⁶ to computer programs have done much to clarify the issue.

III. CURRENT COPYRIGHT LAW IN THE COURTS: ANALOGOUS SUBJECT MATTER

A. Computer Programs

The status of copyright in computer programs has not been litigated extensively in the courts. Since the Copyright Office began accepting registrations of computer programs in 1964,⁴⁷ there has been a near-revolution in the computer industry with respect to available hardware and a resultant change in the demand for software.⁴⁸ The lack of copyright litigation may be attributable to the adequacy of other forms of protection generally relied on by software producers, such as trade secret, contractual and license restrictions, and actions for unfair competition and mis-

⁴⁶ Section 117 of the 1976 Act, in preserving the status quo vis-à-vis computer programs, arguably precluded application of the new definition of "copies" to computer programs, thus extending the *White-Smith* doctrine in that area, although Congress expressly ended the requirement of "human readability" of copies by application of the 1976 Act in other areas. See 2 M. NIMMER, *supra* note 9, § 8.08, at 8-103 n.4. However, the alternative view is that the 1976 version of § 117, by its language, only limited the application of §§ 106-118 to computer programs under the 1976 Act, the provisions merely defining the scope of exclusive rights granted. Thus, the "new" definitions of "fixation" and of "copy" arguably applied to computer programs upon passage of the 1976 Act. This view is supported by the House Report discussion of § 117, stating: "With respect to copyrightability of computer programs, the ownership of copyrights in them, the term of protection . . . the new statute would apply." HOUSE REPORT, *supra* note 12, at 116, reprinted in 1976 U.S. CODE CONG. & AD. NEWS at 5731. Additionally, it would seem inconsistent to allow fixation in any tangible form to trigger statutory rights in computer programs under the 1976 Act, yet not apply the new definition of "copy" (essentially any tangible form in which a work is fixed). Otherwise, the old definition of "copy" would preclude any rights, either statutory or common law, in a computer program fixed in a medium in which the work is not visually perceptible. Cf. 2 M. NIMMER, *supra* note 9, § 8.08, at 8-108.1-.2. The repeal of the 1976 version of § 117 and enactment of an entirely different § 117 discussing only "limitations on exclusive rights" clarifies the matter by negatively implying that otherwise all provisions of the 1976 Act now apply to computer programs.

⁴⁷ See *supra* note 38.

⁴⁸ "Hardware" refers generally to the computer itself and peripheral devices for input and output, etc.—in short, the "hard-wired" or permanent aspects of a computer system. "Software" refers generally to computer programs which control the functional operation of the system but are not really a permanent part of it. The distinction has been somewhat blurred by the recent development of semiconductor integrated circuit chips known as ROMs ("read only memory"). ROMs are imprinted with computer programs which form a relatively permanent part of the computer system. Some ROMs are manufactured with the program, others are programmable (PROMs), and some may be erased and reprogrammed (EPROMs). These ROMs have been termed "firmware" because they appear to fall somewhere between hardware and software. ROMs embody the programs which control video games.

appropriation.⁴⁹ However, the changes which have occurred in the computer industry, particularly the wide availability of inexpensive hardware, the development of semiconductor chips (ROMs),⁵⁰ and the ease with which ROMs may be copied, have both expanded the market for software and resulted in its widespread public distribution and use.⁵¹ Therefore, the alternative forms of protection promoted by Commissioner Hersey of CONTU⁵² and others may no longer be adequate.⁵³ It is this relatively recent upsurge in the need for copyright protection which may account for the paucity of reported cases to date. Additionally, it might be expected that the clarification of the status of copyright for computer programs provided by the 1976 Act and the 1980 amendments will encourage authors of computer programs to take advantage of that form of protection.

1. The CONTU Recommendations

Some discussion of the findings and recommendations of CONTU is helpful in gaining an understanding of cases examining the copyrightability of computer programs. CONTU identified some general objectives in the development of its recommendations for statutory change:

To provide reasonable protection for proprietors without unduly burdening users of programs and the general public, the following statements concerning program copyright ought to be true:

1. Copyright should proscribe the unauthorized copying of these works.
2. Copyright should in no way inhibit the rightful use of these works.
3. Copyright should not block the development and dissemination of these works.
4. Copyright should not grant anyone more economic power

⁴⁹ See, e.g., CONTU REPORT, *supra* note 10, at 30-31 (dissent of Comm'r Hersey). Hersey contended that copyright protection for computer programs was unnecessary because other forms were sufficient. Commissioner Hersey is a novelist and journalist and, at the time the report was issued, was president of the Author's League of America. *Id.* at 107 app.(e).

⁵⁰ See *supra* note 48.

⁵¹ For a discussion of these developments and market trends, see Root, *Protecting Computer Software in the 80's: Practical Guidelines for Evolving Needs*, 8 RUTGERS COMPUTER & TECH. L.J. 205, 209-13 (1981).

⁵² See *supra* note 49 and accompanying text.

⁵³ See, e.g., CONTU REPORT, *supra* note 10, at 16-18; Maggs, *Computer Programs as the Object of Intellectual Property in the United States of America*, 30 AM. J. COMP. L. 251, 252 (Supp. 1982) ("because of the need to maintain secrecy . . . trade secrets are unsuitable for the protection of mass-marketed software"); Root, *supra* note 51, at 225-29.

than is necessary to achieve the incentive to create.⁵⁴

CONTU's objectives restate some fundamental policies behind copyright law. CONTU's finding of the need for copyright protection for computer programs was based in part on the fact that development of computer programs costs far more than their duplication. Given that the creator will bear the expense of the development, such cost must be recovered either entirely on the first sale or over sale of multiple copies, assuming that some protection is available against unauthorized duplication. The former alternative would result in prohibitive costs; thus the latter seems more reasonable if the aim is to encourage creation.⁵⁵

CONTU, however, also recognized some constraints created by the Constitution, the statute, and judicial interpretation. The Commission pointed out that Congress viewed programs as copyrightable under the 1909 Act⁵⁶ and as literary works within the meaning of the 1976 Act.⁵⁷ Under the 1976 Act, a computer program is copyrighted⁵⁸ if it is an "original work of authorship," upon its "[fixation] in any tangible medium of expression."⁵⁹

The requirement presenting the most problems for computer programs under the scheme of the 1976 Act is that of a "work of authorship."⁶⁰ The Act codified a limitation on works to be copyrighted by precluding protection of ideas, procedures and processes, and the like.⁶¹ Congress stated

⁵⁴ CONTU REPORT, *supra* note 10, at 12.

⁵⁵ *Id.* at 11.

⁵⁶ *Id.* at 15.

⁵⁷ *Id.* at 16. "The term 'literary works' does not connote any criterion of literary merit or qualitative value It . . . includes computer data bases, and computer programs to the extent that they incorporate authorship in the programmer's expression of original ideas, as distinguished from the ideas themselves." HOUSE REPORT, *supra* note 12, at 54, *reprinted in* 1976 U.S. CODE CONG. & AD. NEWS at 5667. Note also the statutory definition: "'Literary works' are works other than audiovisual works, expressed in words, numbers or other verbal or numerical symbols or indicia, regardless of the nature of the material objects, such as books, periodicals, manuscripts, phonorecords, film, tapes, disks, or cards, in which they are embodied." 17 U.S.C. app. § 101 (1976 & Supp. III 1979).

⁵⁸ Note that the work is in fact "copyrighted" and not just "copyrightable" upon fixation because the limits of subject matter under § 102 and the triggering of statutory rights under § 301 are both defined by fixation. 17 U.S.C. app. §§ 102(a), 301 (1976 & Supp. III 1979). See CONTU REPORT, *supra* note 10, at 18.

⁵⁹ 17 U.S.C. app. § 102(a) (1976 & Supp. III 1979).

⁶⁰ The originality requirement mandates that the program be created by the author and not copied from another work. See CONTU REPORT, *supra* note 10, at 18. The fixation requirement under the broad definition of the 1976 Act may create some problems, but generally seems easy to meet given the possibility of any media "now known or later developed." 17 U.S.C. app. § 102 (1976 & Supp. III 1979). Any problems which arise are probably in the interpretation of the words "from which [works] can be perceived, reproduced, or otherwise communicated." *Id.* The language may bear on the definition of a work of authorship vis-à-vis computer programs.

⁶¹ See *supra* note 33 and accompanying text.

that "section 102(b) is intended . . . to make clear that the *expression* adopted by the programmer is the copyrightable element in a computer program, and the actual processes or methods embodied in the program are not within the scope of the copyright law."⁶² CONTU interpreted the section to codify the rule of *Baker v. Selden*,⁶³ that a copyrighted description of a system does not preclude use of the system by unauthorized persons.⁶⁴

CONTU pointed to two limitations on the ability to copyright which have provided some guidance to the courts.⁶⁵ The first limitation seems to be that some minimum effort is probably required, i.e., that the program must be "the fruits of intellectual labor."⁶⁶ This notion should not be confused with the patent law requirement of nonobviousness.⁶⁷ The limitation is better understood as reiterating that there must be some form of *original* expression by the author, so that subject matter which does not appear to be creative will not be copyrightable unless it reflects at least some minimal effort.⁶⁸ A second limitation stems from the idea-expression dichotomy. CONTU termed this "the 'idea-expression identity' exception."⁶⁹ No protection will be afforded an expression which is one of a very few ways to express an idea. Where the alternative ways to express an idea are few, the idea and its expression are nearly one and the same. Thus, to provide protection for the expression would, in effect, block nearly all use of the idea.⁷⁰

The limitations do not erect serious obstacles in most instances. Very few programs are so simple as not to embody sufficient original expression or creative effort of the authors.⁷¹ Moreover, most complex computer processes are capable of expression in a program in a myriad of ways. The chief limitation on copyright protection under the 1976 Act is likely to be the fact that no protection will be afforded the *processes* used, however complex or creative. In no event will simple algorithms be protected,

⁶² HOUSE REPORT, *supra* note 12, at 57, reprinted in 1976 U.S. CODE CONG. & AD. NEWS at 5670 (emphasis added).

⁶³ 101 U.S. 99 (1879) (copyright of book describing an accounting system did not grant the author exclusive rights to the use of the system).

⁶⁴ CONTU REPORT, *supra* note 10, at 19.

⁶⁵ *Id.* at 20. CONTU sees the two limitations as distinct. However, they are probably just two criteria for evaluating the broader question of what is an idea and what is an expression in the context of the policy behind copyright. The broad question becomes: what can be protected from infringement without blocking too much from use by others and thus stifling competition?

⁶⁶ *Id.* (citing Trade-Mark Cases, 100 U.S. 82 (1879)).

⁶⁷ See 35 U.S.C. § 103 (1976).

⁶⁸ For example, a telephone book is not creative, but may be copyrighted because some effort is required to produce such a compilation.

⁶⁹ CONTU REPORT, *supra* note 10, at 20.

⁷⁰ See *id.* for a general discussion.

⁷¹ Such programs are unlikely to require copyright protection, at any rate.

since, even if they were not precluded as subject matter per se,⁷² they would nevertheless fail as being merely ideas.⁷³ Only the expression of the processes, embodied in the ordering of statements and steps in some program language, will be protectable even though the development of the processes constituted the major effort.⁷⁴ In a sense, this is no more harsh a requirement than is placed on any author. Very often it is the author's formulation of ideas which represents the greatest portion of the entire effort, and the embodiment in an expressive form is a much lesser one.

Commissioner Hersey of CONTU did not agree with the recommendations or the analysis concerning the copyrightability of computer programs.⁷⁵ The dissent focused on what it termed "mature programs"—that is, programs in machine-usable form, usually expressed in "object code." Hersey contended that "mature programs" do not communicate to humans, but at most to machines. Moreover, the machine-control phase of the program becomes in fact a part of the machine. Mature programs perform the mechanical work but do not give *instructions*. Thus, the dissent maintained that such programs should not be copyrightable "on constitutional grounds and for reasons of social policy."⁷⁶ Furthermore, the dissent asserted that copyright protection for computer programs is not needed. The argument is that other forms of protection, such as trade secret, licensing agreements, patent and unfair competition law, are sufficient, and wherever they are not, legislation specifically tailored to the area could be enacted.⁷⁷

To the extent that the output of a computer program expresses its content, the CONTU dissenting objection to copyright in mature programs seems unfounded, because the program would in fact communicate with the human user.⁷⁸ Such an idea may have been the basis for Commissioner Nimmer's concurrence, which suggested that perhaps only programs "which produce works which themselves qualify for copyright pro-

⁷² See 17 U.S.C. app. § 102(b) (1976 & Supp. III 1979).

⁷³ Algorithms are left essentially unprotected by either patent or copyright, while novel and inventive processes of computer programs are potentially patentable. See *Diamond v. Diehr*, 450 U.S. 175 (1981).

⁷⁴ Note that program designs and flow charts are also copyrightable. Further, the program should be protected from being copied into other program languages because those uses constitute translations and are thus derivative works. See 17 U.S.C. app. §§ 101, 106 (1976 & Supp. III 1979).

⁷⁵ See generally CONTU REPORT, *supra* note 10, at 27-37. Commissioner Karpatken concurred with Commissioner Hersey's dissent. *Id.* at 37-38.

⁷⁶ *Id.* at 27.

⁷⁷ *Id.* at 30-31. But see *supra* notes 48-53 and accompanying text.

⁷⁸ See Koenig, *Software Copyright: The Conflict Within CONTU*, 27 BULL. COPYRIGHT Soc'y 340, 364-66 (1980). Examples of such programs might be those which generate tables of data in a determined format and compiler programs which produce error messages after compiling an inputted program.

tection" should be protected.⁷⁹ However, programs the output of which is content-expressive and programs which produce copyrightable works are not categories which are coextensive and Commissioner Nimmer's distinction is probably artificial at best.⁸⁰

Regarding the remainder of mature programs, no expression of which is embodied in their output, Commissioner Hersey's objection that copyright protection is dehumanizing, because it equates human beings with machines, would seem to apply. Regardless, it is not unquestionably clear that the Constitution requires that only writings which communicate to humans may be copyrighted. The CONTU majority relied on the fact that a machine-usable form of a program may be converted into a human-readable form.⁸¹ The issue is perhaps more logically resolved by noting that the two opinions were based on fundamentally different points of view. Commissioner Hersey's viewpoint is essentially a "use-oriented" one—that is, the end result must be communication to and use by humans. In contrast, the majority's point of view is author-oriented, finding that the program in any form "embod[ies] the programmer's expression."⁸² As long as there is a human author, under this view, it should make no difference to whom (or to what) the expression is made.

The dissent's insistence that the program becomes a part of the machine and is at most only patentable ignores the fact that while a computer is a machine, it is fundamentally different from the kinds of machines to which patent has historically been applied. Under the traditional view, machines perform mechanical functions which substitute for the physical labor of humans or animals. Computers, while undoubtedly physically functioning machines, perform what is essentially the intellectual labor of humans. Most machines might be viewed as "work" machines.⁸³ A computer program in conjunction with a computer could be viewed as an "information" machine or an "information-processing" machine. Accordingly, it is not surprising that machine-usable programs have presented such a conceptual problem in the area of intellectual property protection since they are, in many ways, unlike any other forms of expression and unlike any other machines.

2. Copyrightability of Machine Programs: Judicial Interpretation

Notwithstanding that programs were apparently copyrightable under the 1909 Act, that Congress clearly intended to include programs under

⁷⁹ CONTU REPORT, *supra* note 10, at 27.

⁸⁰ See Koenig, *supra* note 78, at 357.

⁸¹ CONTU REPORT, *supra* note 10, at 21.

⁸² Koenig, *supra* note 78, at 358.

⁸³ "Work" is used in the sense of producing physical changes in something.

the 1976 Act, and that Congress adopted CONTU's recommendations,⁸⁴ the status of machine-usable programs was uncertain in the courts until recently. The fires of dispute generated by the CONTU majority and dissenting opinions arguably were fanned rather than extinguished by some courts' interpretations of the 1976 Act and 1980 amendments.

The controversy over the copying of ROMs (semiconductor chips containing machine programs)⁸⁵ appears to have begun in *Data Cash Systems, Inc. v. JS&A Group, Inc.*⁸⁶ *Data Cash Systems* was decided under the 1976 Act prior to the enactment of the 1980 amendments.⁸⁷ The district court's opinion is significant primarily for its dicta regarding the status of ROMs under the 1976 Act.⁸⁸ In a lengthy footnote the district court indicated that "[e]ven if the 1976 Act did apply, copying of the ROM would not be actionable."⁸⁹ The court recognized that under the 1976 Act "copies" need not be visually perceptible directly, but found that the 1976 Act did not apply to computer programs in their object-code phase. The court found significant⁹⁰ the fact that the ROM or a program in its object phase was a "mechanical device" which is an "essential part of the mechanical process" of the computer.⁹¹ The court viewed the mechanical devices as not subject to copyright unless they were pictorial, graphic, or

⁸⁴ See *supra* notes 40-46 and accompanying text.

⁸⁵ See *supra* note 48. ROMs contain "mature programs" in the sense used by Commissioner Hersey—that is, they are in machine or "object" code form. Additionally, ROMs are generally among the more permanent aspects of the functioning machine, while software is inputted from tape, disk, cards, etc.

⁸⁶ 480 F. Supp. 1063 (N.D. Ill. 1979), *aff'd on other grounds*, 628 F.2d 1038 (7th Cir. 1980).

⁸⁷ The district court granted summary judgment for the defendants and denied the plaintiff's motion for a preliminary injunction on the issue of copyright infringement of a ROM chip containing a program for the plaintiff's hand-held computer chess game. The court interpreted § 117 of the 1976 Act as requiring application of the 1909 Act or common law in the area of computer programs. 480 F. Supp. at 1069. *But see supra* note 46. Although both plaintiff and defendants had assumed that ROMs were "copies" and had addressed their arguments to the issues of when publication occurred, whether the 1909 or 1976 Act was applicable, and whether notice was defective, the district court found the issue of whether the ROM was a "copy" of the work to be dispositive. Finding that ROMs were not copies under either common-law copyright or the 1909 Act, the court held that the defendants had a complete defense as a matter of law and granted summary judgment. 480 F. Supp. at 1069.

⁸⁸ *Id.* at 1066-67 n.4.

⁸⁹ *Id.* at 1066 n.4.

⁹⁰ Another reason stated by the court referred to proposed regulations regarding the affixing of notice to such works reproduced in machine-readable copies. No explanation was given and it is unclear how the quoted regulations offer any negative inference about the applicability of the 1976 Act to object-code programs. In fact, it appears to the contrary—that a reasonable method to allow for notice on such programs is found in the regulations cited. *Id.* at 1067 n.4.

⁹¹ *Id.*

sculptural works.⁹²

Data Cash Systems was affirmed in the court of appeals on entirely different grounds.⁹³ The basis of the appellate decision was that publication had occurred prior to January 1, 1978⁹⁴ by the public sale of more than 2,500 units containing the ROM without restriction or notice of copyright. The plaintiff had thus forfeited his statutory rights under the 1909 Act by placing the work in the public domain.⁹⁵ While the court of appeals expressly declined to decide the issue of whether the ROM was a copy under the 1976 Act, the decision implies that in fact the court viewed it as such. The court cited the language of the 1909 Act regarding publication which refers to the distribution of "copies."⁹⁶ Thus, by finding that "publication" within the meaning of the 1909 Act had occurred, the court must have viewed as "copies" the ROMs inside the games which were distributed.⁹⁷

More recently, the view of the district court in *Data Cash Systems* was rejected in *Tandy Corp. v. Personal Micro Computers, Inc.*⁹⁸ Tandy involved a motion to dismiss a claim of copyright infringement for copying the plaintiff's home computer⁹⁹ input-output routine, which was stored in a ROM in the computer. The district court held that the program was a "work of authorship" and the ROM chip was a "tangible medium of expression" within the meaning of sections 101 and 102 of the 1976 Act,¹⁰⁰

⁹² *Id.*

⁹³ 628 F.2d 1038 (7th Cir. 1980). In fact, the parties on appeal did not address the issue of whether the ROM was a copy, but concentrated on the issue of whether the plaintiff had forfeited statutory copyright by publication without notice. Thus, the court of appeals did not consider the issue relied upon by the lower court.

⁹⁴ That point marked the effective date of the 1976 Act.

⁹⁵ Defect in notice would not be so damning under the 1976 Act because the new statute provides liberal opportunities for cure.

⁹⁶ 628 F.2d at 1042.

⁹⁷ For a discussion of the problems raised by § 117 of the 1976 Act, see *supra* note 46. The district court was probably correct in assuming that ROMs are not copies under the 1909 Act in light of the Act's apparent approval of the *White-Smith* doctrine. See *supra* notes 27-28 and accompanying text. If the court of appeals found that publication occurred prior to the effective date of the 1976 Act, then the 1909 Act should apply. However, if the 1909 Act applied, there was no publication because the ROMs distributed were not copies. Accordingly, common-law rights would have been applicable, but probably would not prohibit copying of the ROM. The district court's assumption of the inapplicability of any aspect of the 1976 Act by virtue of § 117, assuming publication occurred after January 1, 1978, is probably incorrect for reasons previously noted. See *supra* note 46. Arguably, the 1976 Act's definition of "copies" would apply and the court of appeals was correct in assuming ROMs are copies. However, that leaves open the question of whether the notice provisions of the 1909 Act or of the 1976 Act apply. The case is a good example of the gray area left by the enactment of § 117 of the 1976 Act, prior to the 1980 amendments.

⁹⁸ 524 F. Supp. 171 (N.D. Cal. 1981).

⁹⁹ Tandy Corporation makes the Radio Shack TRS-80 home computer, one of the least expensive and best selling personal computers.

¹⁰⁰ 524 F. Supp. at 173. Although the case was decided after the 1980 amendments were

thus the work was copyrighted. The defendant's contention that section 117 of the 1976 Act made only the 1909 Act applicable to computer programs was rejected by the court on two grounds. First, the court found that section 117 did not, on its face, apply to sections 101 and 102.¹⁰¹ The court noted the logical inconsistency in finding programs fixed in non-eye-readable form to be copyrighted under section 102 and finding the medium of fixation not protected as a copy.¹⁰² Second, the court interpreted former section 117 as concerned only with problems associated with inputting copyrighted materials into computers, since it refers to the use of works "in conjunction with" systems.¹⁰³ "It was not intended to provide a loophole by which someone could duplicate a computer program fixed on a silicon chip."¹⁰⁴ Moreover, the court expressly rejected the reasoning of *Data Cash Systems*.¹⁰⁵

The approach of *Tandy* concerning the copyrightability of ROMs under the 1976 Act was much sounder than that of *Data Cash Systems*. Presumably the repeal in 1980 of the former section 117 and Congress' complete adoption of the CONTU recommendations¹⁰⁶ should have ended the controversy, at least as to claims arising after the amendments. Nevertheless, the controversy continued with the district court decision in *Apple Computer, Inc. v. Franklin Computer Corp.*¹⁰⁷ *Apple v. Franklin*

enacted, they were inapplicable to the case.

¹⁰¹ *Id.* at 174 (citing the HOUSE REPORT, *supra* note 12).

¹⁰² See *supra* note 46 for a discussion of the problems posed by the 1976 Act. See further the discussion of *Data Cash Systems* *supra* note 97. Note that the presence of inconsistency could lead to either of two conclusions: that former § 117 was meant to exclude computer programs entirely from the operation of the 1976 Act; or that the section was meant only to maintain whatever exclusive rights existed previously, pending the findings of CONTU. It is not clear that the second alternative actually would result in any difference in protection for computer programs than would complete applicability of the 1976 Act. The new definitions of "fixation" and "copy" under the 1976 Act have the greatest impact in expanding the ability to copyright and the degree of protection for computer programs because they abrogate the *White-Smith* doctrine. Assuming that § 117 did not preclude the application of those requirements set forth in §§ 101 and 102, the 1976 Act necessarily expanded the scope of protection afforded computer programs notwithstanding the former § 117.

¹⁰³ 524 F. Supp. at 174.

¹⁰⁴ *Id.* at 175. The court continued: "Such a *duplication* of a chip is not the use of a copyrighted program 'in conjunction with' a computer; it is simply the copying of a chip. Moreover, any other interpretation would render the theoretical ability to copyright computer programs meaningless." *Id.* (emphasis in original).

¹⁰⁵ For a case which followed *Tandy* and also expressly declined to follow *Data Cash Systems*, see *GCA Corp. v. Chance*, 2 COPYRIGHT L. REP. (CCH) (1982 Copyright L. Decs.) ¶ 25,464 (N.D. Cal. Aug. 31, 1982). In an action for infringement of a copyrighted source code through the copying of the object code the court stated: "Because the object code is the encryption of the copyrighted source code, the two are to be treated as one work; therefore, copyright of the source code protects the object code as well." *Id.* at 17,765.

¹⁰⁶ See *supra* notes 43-44 and accompanying text.

¹⁰⁷ 545 F. Supp. 812 (E.D. Pa. 1982), *rev'd*, 714 F.2d 1240 (3d Cir. 1983).

was an action for copyright infringement in which it was alleged that the defendant had copied the plaintiff's operating system for its personal computers.¹⁰⁸ However, the court denied the plaintiff's motion for a preliminary injunction, finding that there was no reasonable probability of success on the merits.

The district court's reasoning is obscure, but the decision appears to be based on the court's conclusions that there was no clear intent on the part of Congress to copyright object programs and ROMs under the current Copyright Act¹⁰⁹ and that encoded ROMs may not be copyrighted as three-dimensional objects.¹¹⁰ While the court admitted the plausibility of the plaintiff's position that the operating system is a form of expression constituting a work of authorship and that the ROMs or floppy disks in which it is fixed are tangible media of expression,¹¹¹ it appears to have misconstrued the status of the law vis-à-vis computer programs. The court did not acknowledge that Congress adopted the recommendations of the CONTU majority when it enacted the 1980 amendments.¹¹² Rather, the court focused on the dissent of Commissioner Hersey and in fact appears to have adopted that view.¹¹³ Apparently its findings were based on a misconceived notion of the meaning of "fixation" and of "copy" under the 1976 Act. The ROM is a "copy" of the object program as a "material object . . . in which [the] work is fixed by any method . . . and from which the work can be perceived, reproduced, or otherwise communicated . . . with the aid of a machine or device."¹¹⁴ The making of ROMs, either from a list of the object code or by actually copying the ROM itself onto a PROM (a programmable ROM), is the making of a "copy" of the program within the meaning of the 1976 Act, no less than videotaping a television program is copying the program.¹¹⁵

¹⁰⁸ The "operating system" is a group of programs which control the operation of the computer. Its functions include: handling input and output; execution of programs; controlling the flow of information within all devices which make up the system; and even determining which operating system program is executed at any given time. *Apple v. Franklin* involved a claim of copyright infringement of 14 programs making up the operating system for the Apple II computer. The programs, all in object code, were imprinted either in ROMs or inscribed on floppy disks. The defendant, Franklin, manufactured a personal computer similar to Apple's computer. Apple and others also produced a number of highly marketable software packages which were compatible only with Apple's computer and operating system. The defendant claimed to have designed a system to be "compatible with the Apple-compatible software" and which was inevitably similar to the Apple system. *Id.* at 815.

¹⁰⁹ *Id.* at 817-20. The current act includes the 1980 amendments.

¹¹⁰ *Id.* at 822-24.

¹¹¹ *Id.* at 819-20.

¹¹² See *supra* note 44 and accompanying text.

¹¹³ See 545 F. Supp. at 821 n.14, 824-25.

¹¹⁴ 17 U.S.C. app. § 101 (1976 & Supp. III 1979).

¹¹⁵ The analogy would extend also to taping records or live performances, but since "copies" are distinguished from "phonorecords" under the 1976 Act, that analogy may create some confusion.

Consequent to its failure to see the ROM as a copy of the program, the district court was unnecessarily preoccupied with the issue of the copyrightability of the topography of the ROM as a three-dimensional object. A concern with the topography of the chip essentially begs the question of whether the object programs constituting the operating system will be protected. Encoded on the chip is information reflecting the intellectual labor of the author, which may or may not be a work of authorship subject to copyright.¹¹⁶ Under the 1976 Act and Congress' rejection of the *White-Smith* doctrine,¹¹⁷ it would not be suggested that a piano roll would be the fixation or copy through which the pattern of holes per se is protected, although that may be possible. Rather, the piano roll is a copy of the underlying musical work fixed in the pattern of holes, which can be reproduced by the aid of the player piano. While the pattern of printed words on a page may be in principle copyrightable, the printed words are more accurately a "copy" of the author's "literary work."¹¹⁸

Three days after the district court decision in *Apple v. Franklin*, the United States Court of Appeals for the Third Circuit made clear in *Williams Electronics, Inc. v. Artic International, Inc.*¹¹⁹ that programs embodied in ROMs were copyrightable under the 1976 Act.¹²⁰ Consequently, *Apple v. Franklin* was later reversed on appeal to the Third Circuit.¹²¹ The court found no basis for a distinction between source code and object code under copyright law.¹²² Furthermore, the status of ROMs as "copies" within the meaning of the 1976 Act was reaffirmed.¹²³ Finally, in response to objections that the operating systems themselves were uncopyrightable processes or ideas, the court upheld the copyright of the programs as instructions rather than processes.¹²⁴ The court found that if the operating system idea was "capable of various modes of expression,"¹²⁵ Apple's systems were appropriately protected by copyright.

¹¹⁶ Whether it is in fact a copyrightable work of authorship is of course subject to the requirements of originality and sufficient expression.

¹¹⁷ See *supra* notes 27-28 and accompanying text.

¹¹⁸ See HOUSE REPORT, *supra* note 12, at 53:

[A] "book" is not a work of authorship but is a particular kind of "copy." . . . [T]he author may write a "literary work" which . . . can be embodied in a wide range of "copies" . . . including books . . . [and] computer punch cards The two essential elements—original work and tangible object—must merge through fixation in order to produce subject matter copyrightable under the statute.

¹¹⁹ 685 F.2d 870 (3d Cir. 1982).

¹²⁰ *Williams* involved copyright for programs which control a video game.

¹²¹ 714 F.2d 1240 (3d Cir. 1983).

¹²² *Id.* at 1247.

¹²³ *Id.* at 1249.

¹²⁴ *Id.* at 1251. *Cf. Baker v. Selden*, 101 U.S. 99 (1879) (description of accounting system copyrightable, but system itself was not).

¹²⁵ 714 F.2d at 1253. *Cf. Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F.2d 738 (9th Cir. 1971) (jeweled "bee" pin capable of only a few forms of expression was not copyright-

The court of appeals decision in *Apple v. Franklin* may well have laid to rest the controversy over the copyrightability of object programs encoded on ROMs. Courts in other circuits have declined to follow the obscure reasoning of the district court in *Apple v. Franklin*. In *Apple Computer, Inc. v. Formula International, Inc.*,¹²⁶ the court reviewed the legislative history and the CONTU REPORT, concluding "that Congress . . . did not intend to make any distinction between 'programs which are used in the production of further copyrighted works' and the those which embody 'a system for the operation of a machine.'" ¹²⁷ The court noted that according copyright protection to Apple for the programs was in keeping with public policy considerations. Furthermore, allowing the defendant to use and market the expressions without the same investment of money and time that had been involved in the plaintiff's development of the programs "would hinder, not promote, competition and innovation in the computer market"¹²⁸ by making such developments economically unfeasible. Insofar as the development of computer programs generally does not differ from the creation of computer programs for video games, the same policy considerations will apply.

B. Games

Copyright protection for games is closely tied to the idea-expression dichotomy. Those aspects of games which reflect merely the idea of the game have not been afforded copyright protection,¹²⁹ while those aspects of a game which contain sufficient original expression are in principle copyrightable.¹³⁰ In *Whist Club v. Foster*,¹³¹ the court stated that "[i]n the conventional laws or rules of a game, as distinguished from the forms or modes of expression in which they may be stated, there can be no literary property susceptible of copyright."¹³² Thus, the courts have established the principle that the rules of a game are not per se copyrightable, although an author's particular expression of the rules may be. The degree of protection which can be afforded the author's particular expression of game rules is further limited by the number of possible variations in expression of the subject matter.¹³³ In *Chamberlin v. Uris Sales*

able because merely an idea).

¹²⁶ 562 F. Supp. 775 (C.D. Cal. 1983).

¹²⁷ *Id.* at 782.

¹²⁸ *Id.* at 783.

¹²⁹ See *Chamberlin v. Uris Sales Corp.*, 150 F.2d 512 (2d Cir. 1945); *Morrissey v. Proctor & Gamble Co.*, 262 F. Supp. 737 (D. Mass. 1967); *Whist Club v. Foster*, 42 F.2d 782 (S.D.N.Y. 1929); 1 M. NIMMER, *supra* note 9, § 2.18[H][3].

¹³⁰ See 1 M. NIMMER, *supra* note 9, § 2.18[H][3].

¹³¹ 42 F.2d 782 (S.D.N.Y. 1929) (infringement action for publication of a rule book on auction bridge).

¹³² *Id.* at 782.

¹³³ See *supra* notes 69-70 and accompanying text for a discussion of this principle as ap-

Corp.,¹³⁴ the court noted that the similarity in the rules of two games resulted from their derivation from the same source and not from the copying of plaintiff's language. Further, *Morrissey v. Proctor & Gamble Co.*¹³⁵ emphasized the significance of the degree of variation inherently possible in the subject matter. No creative authorship was found in a sweepstakes entry-form rule which elicited information which was "substantially the same information that anyone conducting [such] a game or sweepstakes . . . would perforce be required to elicit from a would-be contestant."¹³⁶ The court found the applicable principle to be whether the similarity was "necessary" because the idea used was the same.¹³⁷

While games, insofar as they are merely the processes underlying their rules, may not be copyrightable per se, there are aspects of games which in principle should be copyrightable. Professor Nimmer suggests that, among other aspects, the "pattern or design of game boards" are copyrightable as pictorial or graphic works or as maps.¹³⁸ *Chamberlin* implicitly supports the notion that game boards are copyrightable in its holding that there was no infringement of the plaintiff's game board because the portion that was copied was not original to the plaintiff, and therefore not protected by the plaintiff's copyright.¹³⁹ *Durham Industries v. Tomy Corp.*¹⁴⁰ supports the susceptibility to copyright of graphic or sculptural aspects of games. The court rejected a claim of infringement because the only aspects of the game which were copied were the mechanical and utilitarian features even though the games were "mechanically identical and structurally similar."¹⁴¹ The court reasoned that those aspects of the games which were "decoration," "aesthetic," or "sculptural" features were copyrighted but were not infringed.¹⁴²

While courts have not routinely afforded substantial (if any) copyright protection to games, the decisions are best understood as congruent with the general principles of copyright law that limit protection to expressions of ideas rather than the ideas themselves. Thus, there is no reason

plied by CONTU to the area of computer programs.

¹³⁴ 150 F.2d 512 (2d Cir. 1945) (action for infringement of plaintiff's copyrighted Acy-Ducy game).

¹³⁵ 262 F. Supp. 737 (D. Mass. 1967) (action for infringement of plaintiff's sweepstakes game contest rules).

¹³⁶ *Id.* at 738.

¹³⁷ *Id.* (quoting *Gaye v. Gillis*, 167 F. Supp. 416 (D. Mass 1958)).

¹³⁸ 1 M. NIMMER, *supra* note 9, § 2.18[H][3], at 2-213 (citing Copyright Office Circular 17 (Dec. 1961) for the proposition that game boards are copyrightable). Nimmer also suggests that labels for games and designs of playing cards should be copyrightable. The ability to copyright is of course subject to the requirement of originality, and protection could only be afforded to the expressive aspects of the design.

¹³⁹ 150 F.2d at 513.

¹⁴⁰ 630 F.2d 905 (2d Cir. 1980).

¹⁴¹ *Id.* at 914.

¹⁴² *Id.* at 914-15.

to suggest that the otherwise-copyrightable aspects of games, such as the particular way in which rules are expressed, the pictorial or graphic aspects of the game materials, or the non-functional sculptural aspects of the game, may not be protected simply because games are not generally thought to be copyrightable.

C. Characters

Character protection encompasses two areas of concern: characters as copyrightable subject matter and the scope of protection which is accorded to characters under copyright law.¹⁴³ Both issues are inextricably tied to the idea-expression dichotomy, especially in the realm of character copyright. Judicial interpretations have substantially clarified the discernment of idea and expression in the context of copyright, as well as the proper test for infringement.¹⁴⁴ In the area of character copyright, a distinction has been made between literary characters which are created primarily through "word portraits" and cartoon or other graphic characters which are created through visual representation, actions, and personality.¹⁴⁵ Professor Nimmer suggests that "[a] character is most readily protectable where both the original work and the copied work consist of cartoons or other graphic representations rather than 'word portraits.'" ¹⁴⁶ The present discussion focuses on cartoon or other visually represented characters.

Copyright in cartoon characters was recognized in *King Features Syndicate v. Fleischer*,¹⁴⁷ where the defendant's toy horse was held to be an infringement of the plaintiff's copyrighted cartoon character horse. The significance of the decision lies in its finding that a three-dimensional figure could infringe a copyrighted illustration of a character. The copyright in the character is not limited to illustrations which copy the original.¹⁴⁸ Copying the "attributes and antics" of a comic-book character was found to constitute infringement in *Detective Comics, Inc. v. Bruns Publications, Inc.*¹⁴⁹ The court stated: "So far as the pictorial representations and verbal descriptions of 'Superman' are not a mere delineation of a benevolent Hercules, but embody an arrangement of incidents and literary expressions original with the author, they are proper subjects of copy-

¹⁴³ See 1 M. NIMMER, *supra* note 9, § 2.12, at 2-169.

¹⁴⁴ Of particular significance is *Sid & Marty Kroffts Television Prods., Inc. v. McDonald's Corp.*, 562 F.2d 1157 (9th Cir. 1977), discussed *infra* notes 158-67 and accompanying text.

¹⁴⁵ See 1 M. NIMMER, *supra* note 9, § 2.12, at 2-173.

¹⁴⁶ *Id.* (citing *Ideal Toy Corp. v. Kenner Prods.*, 443 F. Supp. 291 (S.D.N.Y. 1977)).

¹⁴⁷ 299 F. 553 (2d Cir. 1924).

¹⁴⁸ See also *Fleischer Studios, Inc. v. Ralph A. Freundlich, Inc.*, 73 F.2d 276 (2d Cir. 1934) (infringement found where the defendants made a doll of the plaintiff's character "Betty Boop").

¹⁴⁹ 111 F.2d 432 (2d Cir. 1940).

right. . . ."¹⁵⁰ The idea-expression distinction thus emerges as the central issue in character copyright.

The opinion of Judge Learned Hand in *Nichols v. Universal Pictures Corp.*¹⁵¹ confirmed the copyrightability of characters generally, including that of literary characters.¹⁵² The opinion further described an idea-expression continuum and acknowledged the difficulty in drawing a dividing line between the two concepts:

Upon any work, and especially upon a play, a great number of patterns of increasing generality will fit equally well, as more and more of the incident is left out. The last may perhaps be no more than the most general statement of what the play is about, and at times might consist only of its title; but there is a point in this series of abstractions where they are no longer protected, since otherwise the playwright could prevent the use of his "ideas," to which, apart from their expression, his property is never extended. . . . Nobody has ever been able to fix that boundary and nobody ever can.¹⁵³

To the extent that the expression of a character is barely more than the idea of the character itself, no protection can be afforded. The determinative criterion for copyright protection of characters, whether in the literary realm or in visually represented forms, appears to be the distinctiveness with which they are delineated. "[T]he less developed the characters, the less they can be copyrighted; that is the penalty an author must bear for making them too indistinctly."¹⁵⁴ Cartoon characters, by virtue of their visual representation, may be more easily copyrightable since they are more likely to be distinctive. The addition of attributes such as the character's "antics" further delineates the character so as to expand the scope of copyright protection beyond the mere copying of the visual representation.

¹⁵⁰ *Id.* at 435.

¹⁵¹ 45 F.2d 119 (2d Cir. 1930) (action by playwright against motion-picture maker for infringement of plaintiff's plot).

¹⁵² See 1 M. NIMMER, *supra* note 9, § 2.12, at 2-170.

¹⁵³ 45 F.2d at 121 (citations omitted).

¹⁵⁴ *Id.* The quoted passage was immediately preceded by Judge Hand's frequently cited statement concerning the ability to copyright characters and its limitations:

If *Twelfth Night* were copyrighted, it is quite possible that a second comer might so closely imitate Sir Toby Belch or Malvolio as to infringe, but it would not be enough that for one of his characters he cast a riotous knight who kept wassail to the discomfort of the household, or a vain and foppish steward who became amorous of his mistress. These would be no more than Shakespeare's "ideas" in the play, as little capable of monopoly as Einstein's Doctrine of Relativity, or Darwin's theory of the Origin of the Species.

Id.

In *Walt Disney Productions v. Air Pirates*,¹⁵⁵ the district court held that the plaintiff's cartoon characters were protectable components of a copyrighted work. The court emphasized that "the various drawings of each character have a consistency that gives each character a recognizable image quite apart from the setting of the particular panel."¹⁵⁶ The court of appeals affirmed,¹⁵⁷ distinguishing between literary and cartoon characters. Nevertheless, the distinctiveness and definition of the characters were essential to their protectability.

In *Sid & Marty Kroffts Television Productions, Inc. v. McDonald's Corp.*,¹⁵⁸ the court clearly explained that the idea-expression distinction was the central issue for determining scope of protection. The defendants' television commercials and promotional products portraying a fantasyland with "fanciful costumed characters" infringed the plaintiffs' copyright for their television series which also portrayed costumed characters in a fantasyland.¹⁵⁹ The court noted that the "boilerplate" test for infringement, "ownership [of valid copyright], access, and substantial similarity,"¹⁶⁰ does not adequately explain the real issues and the way in which they are resolved. The idea-expression dichotomy "attempts to reconcile two competing social interests: rewarding an individual's creativity and effort and permitting the nation to enjoy the benefits and progress from use of the same subject matter."¹⁶¹

The court articulated two components in the "substantial similarity" requirement. It termed the first component, a test for substantial similarity of *ideas* in the copyrighted and allegedly infringing work, an "extrinsic test. It is extrinsic because it depends not on the responses of the trier of fact, but on specific criteria which can be listed and analyzed. . . . [A]nalytic dissection and expert testimony are appropriate."¹⁶² Determination of substantial similarity of *expressions* requires an "intrinsic" test: whether an ordinary observer would perceive the allegedly infringing work as appropriating the expression of the copyrighted work. The ordinary-observer test includes the characteristics of the target audience, in this instance children. The test is one for the trier of fact and "analytic

¹⁵⁵ 345 F. Supp. 108 (N.D. Cal. 1972), *aff'd*, 581 F.2d 751 (9th Cir. 1978) (infringement of Mickey Mouse characters in a work claimed to be a parody).

¹⁵⁶ *Id.* at 109.

¹⁵⁷ 581 F.2d 751 (9th Cir. 1978).

¹⁵⁸ 562 F.2d 1157 (9th Cir. 1977).

¹⁵⁹ *Id.* at 1161. The series involved was "H.R. Pufnstuf," a children's program. "McDonaldland" was featured in the commercials. At the time, plaintiff's show was the most popular children's show on television. The characters were licensed for commercials and promotional products. The issue of the defendants' access to the plaintiff's work was not in dispute.

¹⁶⁰ *Id.* at 1162.

¹⁶¹ *Id.* at 1163.

¹⁶² *Id.* at 1164. According to the court, the "question may often be decided as a matter of law." *Id.*

dissection and expert testimony are not appropriate.”¹⁶³ The distinction is essentially the same as one made by other courts between “copying” and “unlawful appropriation.”¹⁶⁴ Substantial similarity is important because copying usually can be inferred only from the fact that the defendant had access to the plaintiff’s work and that the two works are so similar that it is unlikely that the defendant created his work. In this context, expert testimony and analysis of the differences between the works may be useful in establishing the likelihood that the defendant’s work is not original.¹⁶⁵ However, the second question of whether the appropriation was *unlawful* turns on whether the defendant used the plaintiff’s protected *expressions*. Once it is determined that the differences are insufficient to negate an inference of copying, the focus shifts to the *nature* of the similarities. The similarities are to be judged by viewing each work as a whole, allowing for the subjective quality of the combination of elements. The question of whether the copy exceeded the bounds of material in the public domain is essentially one of policy and is therefore one for the trier of fact.¹⁶⁶

Nevertheless, there are a few gaps in the *Kroffts* court’s analysis. First, it is not clear that the first prong of the test is only that of substantial similarity of *ideas*, particularly if the test is equated with proof of *copying*. The ideas used in two works could be nearly identical; however, even if access were shown, an inference of copying would not necessarily be justified. For example, there are no doubt countless painters and sculptors who have portrayed a madonna and child, most of whom probably had “access” to their predecessors. To infer that the later artist copied the earlier because he had access and the idea was the same stretches the meaning of copying. Surely in such an instance, more similarity than mere identity of ideas would be necessary.

Furthermore, while the court made clear that it is the ordinary observer who decides whether the expression in the two works is substantially similar, it did not provide a more definitive guideline as to where ideas stop and expressions begin. While the court is probably correct that the issue should be one for the factfinder, the question becomes one of balancing the competing policies of copyright and, as with negligence,

¹⁶³ *Id.*

¹⁶⁴ *Id.* (citing *Arnstein v. Porter*, 154 F.2d 464 (2d Cir. 1946), *cert. denied*, 330 U.S. 851 (1947)).

¹⁶⁵ Compare this concept to negligence law, where expert testimony may be useful in determining that the defendant’s conduct actually or factually caused the plaintiff’s injuries.

¹⁶⁶ Compare the second issue to that of negligent conduct or duty and breach of duty in negligence law, a question which is almost exclusively one for the trier of fact. Also analogous is the question of proximate causation as opposed to factual causation. Both the standard of care and proximate cause are policy-based tests determined by the factfinder. Expert testimony is needed only where a standard of care different from the reasonably-prudent-person standard is appropriate—for example, in a medical malpractice action.

such balancing of policies should be a question of fact, not law. The process of finding infringement may not be so clear where the copies of the works are not so easily "observable," perhaps a problem emerging since the 1976 Act abolished the requirement of human-readability. Some areas of unlawful appropriation may require expert testimony, just as some areas of negligence law require expert testimony to establish the applicable standard of care.¹⁶⁷

IV. COPYRIGHT FOR VIDEO GAMES

Two aspects of video games have been the subject of copyright. Authors of video games (or their assignees) have sought copyright protection for the computer programs which control the games and for the audiovisual display or "sights and sounds" of the games. Interpretation of copyright law in the subject areas of characters, games, and computer programs has proven important in video game litigation. Most of the reported cases are dispositions of motions for preliminary injunctions, and in most instances the preliminary injunction has been granted.¹⁶⁸ The importance of granting preliminary injunctions in litigation over video game copyright infringement should not be underestimated. Individual video games enjoy a rather short-lived or at least unpredictable span of popularity.¹⁶⁹ Thus, a preliminary injunction may be the only means of relief, because the "game may fade from the scene before the final rights of the parties are adjudicated."¹⁷⁰

A. *The Issues Raised*

Two major issues have arisen in recent litigation over video game copy-

¹⁶⁷ One such area may be that of object programs for computers.

¹⁶⁸ Preliminary injunctions were granted in *Atari, Inc. v. North Am. Philips Consumer Elecs. Corp.*, 672 F.2d 607 (7th Cir.), *cert. denied*, ___ U.S. ___, 103 S. Ct. 176 (1982); *Stern Elecs, Inc. v. Kaufman*, 669 F.2d 852 (2d Cir. 1982); *Midway Mfg. Co. v. Strohon*, 564 F. Supp. 741 (N.D. Ill. 1983); *Midway Mfg. Co. v. Bandai-America, Inc.*, 546 F. Supp. 125 (D.N.J. 1982); *Nintendo of Am., Inc. v. Bay Coin Distribs., Inc.*, 2 COPYRIGHT L. REP. (CCH) (1982 Copyright L. Decs.) ¶ 25,409 (E.D.N.Y. May 28, 1982); *Midway Mfg. Co. v. Artic Int'l, Inc.*, 547 F. Supp. 999 (N.D. Ill. 1982), *aff'd*, 704 F.2d 1009 (7th Cir. 1983); *Midway Mfg. Co. v. Dirkschneider*, 543 F. Supp. 466 (D. Neb. 1981). A permanent injunction was granted in *Williams Elecs., Inc. v. Artic Int'l, Inc.* 685 F.2d 870 (3d Cir. 1982). Preliminary injunctive relief was denied in *Williams Elecs., Inc. v. Bally Mfg. Corp.*, 568 F. Supp. 1274 (N.D. Ill. 1983) (involving combination rolling ball/video-arcade games); *Atari v. Williams*, 2 COPYRIGHT L. REP. (CCH) (1982 Copyright L. Decs.) ¶ 25,412 (E.D. Cal. Dec. 28, 1981); *Atari v. Amusement World, Inc.*, 547 F. Supp. 222 (D. Md. 1981).

¹⁶⁹ See *Atari, Inc. v. North Am. Philips Consumer Elecs. Corp.*, 672 F.2d 607, 620 (7th Cir.), *cert. denied*, ___ U.S. ___, 103 S. Ct. 176 (1982); *Midway Mfg. Co. v. Bandai-America, Inc.*, 546 F. Supp. 125, 154 (D.N.J. 1982); *Midway Mfg. Co. v. Dirkschneider*, 543 F. Supp. 466, 484 (D. Neb. 1981).

¹⁷⁰ *Midway Mfg. Co. v. Bandai-America, Inc.*, 546 F. Supp. 125, 154 (D.N.J. 1982). See *Midway Mfg. Co. v. Dirkschneider*, 543 F. Supp. 466, 484 (D. Neb. 1981).

right: 1) whether the works are fixed; and 2) what constitutes infringement, in terms of the scope of the author's rights. A few minor issues have arisen, including whether it is necessary that the underlying program be copyrighted and not merely the display¹⁷¹ and whether either the programs or the games are copyrightable at all.

1. Susceptibility to Copyright Generally

The courts have analyzed the copyrightability of video games in the same manner as games in general. That games as such may not be protected by copyright was noted in *Atari, Inc. v. North American Philips Consumer Electronics, Inc.*¹⁷² The court, however, acknowledged Professor Nimmer's view that some aspects of games involving artistic expression such as game boards are probably copyrightable.¹⁷³ Furthermore, the issue which is raised vis-à-vis games is more properly one of *scope* of protection rather than the susceptibility to copyright per se, because what is precluded from protection is the *idea* of a game, including the rules which define that idea. In principle, all expressive aspects of a game are copyrightable. This fact has been recognized in the video game cases despite the defendants' challenges to the copyrightability of the games.¹⁷⁴ The courts have properly framed the issues as to what aspects of the game are expressive and to what degree the expressive aspects have been infringed.

In video game cases the susceptibility to copyright of the underlying computer programs embodied in ROMs inside the game cabinet (or cartridge) has not been extensively litigated. In most cases it appears that the plaintiffs have chosen to register copyright only in the audiovisual display. This may be because it is the specific game display which sells the game and is likely to be the subject of misappropriation. Additionally, while the problem of program piracy is important because of the large cost of program development and the relative ease with which ROM chips may be copied, any copy of an author's program, without substantial alteration, is likely to produce, and thus infringe, the sights and sounds of the original work. Accordingly, protection of the audiovisual display is

¹⁷¹ The issue of whether it is necessary to register the program will not be discussed in detail. In three cases courts have held that it was unnecessary that the copyright be registered in order for the program to sustain an action for infringement of the audiovisual display: *Stern Elecs., Inc. v. Kaufman*, 669 F.2d 852, 855 (2d Cir. 1982); *Atari, Inc. v. Amusement World, Inc.*, 547 F. Supp. 222, 226 (D. Md. 1981); *Midway Mfg. Co. v. Dirkschneider*, 543 F. Supp. 466, 481 (D. Neb. 1981).

¹⁷² 672 F.2d 607, 615 (7th Cir.), *cert. denied*, ___ U.S. ___, 103 S. Ct. 176 (1982).

¹⁷³ 1 M. NIMMER, *supra* note 9, § 2.18[H][3], at 2-212. *See supra* text accompanying note 84.

¹⁷⁴ *See Atari v. North Am. Philips Consumer Elecs., Inc.* 672 F.2d 607, 615 (7th Cir.), *cert. denied*, ___ U.S. ___, 103 S. Ct. 176 (1982); *Midway Mfg. Co. v. Artic Int'l*, 547 F. Supp. 999, 1009 (N.D. Ill. 1982), *aff'd*, 704 F.2d 1009 (7th Cir. 1983); *Midway Mfg. Co. v. Bandai-America, Inc.*, 546 F. Supp. 125, 148 (D.N.J. 1982).

likely to discourage copying of the underlying program. However, where the program embodies expressions requiring a great amount of creative effort; where these expressions can be appropriated for use in games with little effort; and where the appropriated audiovisual display will not infringe the original, copyright protection for the programs as well as the display is probably desirable. Illustrative of the need for dual protection is *Midway Manufacturing Co. v. Strohon*,¹⁷⁶ where the defendants' modification kits for the plaintiff's PAC-MAN game were found to infringe the copyright in the underlying programs but not in the audiovisual display.¹⁷⁶ The court found that the audiovisual work and the computer programs were not "intertwined," but rather "distinct creation[s],"¹⁷⁷ and separately susceptible of copyright. Finding that a substantial portion of the two programs were identical¹⁷⁸ and that there were "virtually an infinite number of ways to write [the] program,"¹⁷⁹ the court concluded that infringement of the program copyright had occurred.¹⁸⁰

The issue of copyright protection of programs embodied in ROMs was raised in *Williams Electronics, Inc. v. Artic International, Inc.*¹⁸¹ The defendant argued that ROMs were not "copies" of the programs but rather part of the machine and that consequently, loading the plaintiff's program into ROMs was not an infringement. The defendant cited the reasoning of the district court in *Data Cash Systems, Inc. v. JS&A Group, Inc.*¹⁸² The *Williams* court, however, rejected that reasoning and followed *Tandy Corp. v. Personal Micro Computers, Inc.*,¹⁸³ finding that

¹⁷⁶ 564 F. Supp. 741 (N.D. Ill. 1983).

¹⁷⁶ The defendants produced and sold ROMs that would replace some of the ROMs in the PAC-MAN circuit board. The replacement ROMs would speed up and change certain aspects of the play of the game. Additionally, the purchasers of the modification kits were instructed to disconnect the sound and remove a ROM which controlled the appearance of the characters from the PAC-MAN circuit board so that the game as modified did not appear or sound like PAC-MAN. The court declined to hold that the defendants were contributory infringers although it was likely that a game owner would fail to remove the ROM controlling the characters and would thus offer the game as a more difficult version of PAC-MAN. *Id.* at 747-48.

¹⁷⁷ *Id.* at 749.

¹⁷⁸ *Id.* at 752.

¹⁷⁹ *Id.* at 753.

¹⁸⁰ The finding of substantial similarity was based in part on expert testimony. The question arises as to the proper method of proof of infringement in computer-program copyright actions in light of the "ordinary observer" test commonly used. See further the discussion of *Sid & Marty Kroffts Television Prods., Inc. v. McDonald's Corp.*, 562 F.2d 1157 (9th Cir. 1977), *supra* notes 162-67 and accompanying text. Expert testimony may be appropriate in program-infringement actions because the "ordinary observer" is one versed in computer programming.

¹⁸¹ 685 F.2d 870 (2d Cir. 1982).

¹⁸² 480 F. Supp. 1063 (N.D. Ill. 1979), *aff'd on other grounds*, 628 F.2d 1038 (7th Cir. 1980). Recall the discussion of *Data Cash Systems* and *Tandy*, *supra* notes 85-105 and accompanying text.

¹⁸³ 524 F. Supp. 171 (N.D. Cal. 1981).

under the 1976 Act "Congress opted for an expansive interpretation of the terms 'fixation' and 'copy' which encompass technological advances such as those represented by the electronic devices in this case."¹⁸⁴ The court refused to provide a loophole whereby programs on ROM chips could be pirated simply by copying the ROM directly and not copying the text.¹⁸⁵ Similarly, the court in *Midway Manufacturing Co. v. Stroh*¹⁸⁶ rejected the arguments that the 1976 Act and 1980 amendments did not apply to object programs and that copyright ought not to apply to ROMs.¹⁸⁷ Although the plaintiff had not registered a program copyright, the issue of whether ROMs were copies of the audiovisual work was raised in *Midway Manufacturing Co. v. Artic International, Inc.*¹⁸⁸ The issue was not susceptibility to copyright, but rather whether the defendant's sale of speed-up-kit circuit boards infringed any of the plaintiff's exclusive rights in its audiovisual work.¹⁸⁹ The *Midway* court also refused to adopt the *Data Cash* approach, that ROMs could not be copies, and instead followed *Tandy*, finding that ROMs are clearly copies within the meaning of the 1976 Act.¹⁹⁰ The Seventh Circuit affirmed, holding that the 1976 Act was properly applied to determine that ROMs were "copies" of the programs, even prior to the 1980 amendments.¹⁹¹

Although the copyrightability of programs per se has not been the primary issue in video game litigation, the status of ROMs as copies in which the work is fixed and through which the work can be infringed is a particularly important issue. Despite some uncertainty with respect to copyright for computer programs under the 1976 Act, the courts to date have adopted what seems to be the more reasonable and probably the only correct approach given Congress' clear language and express intent in passing the 1976 Act.

¹⁸⁴ 685 F.2d at 877 (footnotes omitted).

¹⁸⁵ *Williams* was decided 3 days after the district court decision in *Apple Computer, Inc. v. Franklin Computer Corp.*, 545 F. Supp. 812 (E.D. Pa. 1982). See *supra* notes 107-18 and accompanying text. The court of appeals decision in *Williams* immediately cast doubt on the validity of the district court opinion in *Apple v. Franklin*. In August, 1983, the Third Circuit confirmed that the district court had been in error. 714 F.2d 1240 (3d Cir. 1983).

¹⁸⁶ 564 F. Supp. 741 (N.D. Ill. 1983).

¹⁸⁷ *Id.* at 749-52. This case was decided prior to the court of appeals decision in *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240 (3d Cir. 1983), and thus in the midst of the relative confusion in judicial interpretation of the applicability of copyright law to object programs encoded on ROMs.

¹⁸⁸ 547 F. Supp. 999 (N.D. Ill. 1982), *aff'd*, 704 F.2d 1009 (7th Cir. 1983). Note that the defendant was the same as in the *Williams* case.

¹⁸⁹ The speed-up kit causes the game to play faster, making it more difficult. As a result, the commercial game owner generates more revenue because players tend to play a shorter time for each coin inserted.

¹⁹⁰ 547 F. Supp. at 1012-13.

¹⁹¹ 704 F.2d at 1012.

2. Fixation

In several of the copyright infringement suits the defendants have claimed that the plaintiffs' works are not protected because they fail to satisfy the statutory requirement of fixation.¹⁹² It is argued that the work is not fixed because every time the game is played the interaction with the player makes it a different work expressed only in evanescent images.¹⁹³ However, the courts have invariably found no merit in this argument.¹⁹⁴ Some courts have reasoned that many of the audiovisual features of the game are repeated each time the game is played, and that in any event the "attract mode," in which a sequence demonstrates the game before it is played, is always the same.¹⁹⁵

The analysis is unnecessary. The entire expression of the author is fixed in the microcircuits of the game when it is produced. That expression includes the statements and their ordering embodied in the *program*, and the characters and their "antics," the auditory effects, and the interaction of elements embodied in the *audiovisual display*. Furthermore, one court has noted that "the images generated by the character ROMs move on the screen in a finite but enormous number of sequences."¹⁹⁶ Notwithstanding that the display appears to be different every time the game is played, the sequence of images for each configuration produced by the player is fixed and predetermined in the game's circuits. In a sense the player could be viewed as part of the "machine or device" with the aid of which the work is "perceived, reproduced, or otherwise communi-

¹⁹² Recall that an original work of authorship is copyrighted when it is "fixed," as that event triggers federal statutory rights under the provision of 17 U.S.C. app. § 301 (1976 & Supp. III 1979). As defined in § 101, "[a] work is fixed in a tangible medium of expression when its embodiment in a copy . . . is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration." The Act further defines "copies" as

material objects . . . 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 . . . [and] includes the material object . . . in which the work is first fixed.

17 U.S.C. app. § 101 (1976 & Supp. III 1979).

¹⁹³ This contention has also been argued to negate the originality requirement, the claim being that the player co-authors a new work each time the game is played. See *Midway Mfg. Co. v. Artic Int'l, Inc.*, 704 F.2d 1009, 1011 (7th Cir. 1983); *Williams Elecs., Inc. v. Artic Int'l, Inc.*, 685 F.2d 870, 874 (3d Cir. 1982); *Stern Elecs., Inc. v. Kaufman*, 669 F.2d 852, 856 (2d Cir. 1982).

¹⁹⁴ *Midway Mfg. Co. v. Artic Int'l, Inc.* 704 F.2d at 1011-12; *Williams Elecs., Inc. v. Artic Int'l, Inc.*, 685 F.2d at 874; *Stern Elecs., Inc. v. Kaufman*, 669 F.2d at 856; *Midway Mfg. Co. v. Artic Int'l, Inc.*, 547 F. Supp. 999, 1008 (N.D. Ill. 1982); *Atari, Inc. v. Amusement World, Inc.*, 547 F. Supp. 222, 226 (D. Md. 1981); *Midway Mfg. Co. v. Dirkschneider*, 543 F. Supp. 466, 480 (D. Neb. 1981).

¹⁹⁵ *Williams Elecs., Inc. v. Artic Int'l, Inc.*, 685 F.2d at 874; *Midway Mfg. Co. v. Artic Int'l, Inc.*, 547 F. Supp. at 1008.

¹⁹⁶ *Midway Mfg. Co. v. Artic Int'l, Inc.*, 547 F. Supp. at 1002.

cated" under the provisions of sections 101 and 102 of the 1976 Act. Alternatively the play of a video game may be viewed as

a little like arranging words in a dictionary into sentences or paints on a palette into a painting. The question is whether the creative effort in playing a video game is enough like writing or painting to make each performance of a video game the work of the player and not the game's [author].¹⁹⁷

The Court of Appeals for the Seventh Circuit held otherwise, comparing playing a video game to changing channels on a television, because "[t]he player . . . [has no] control over the sequence of images that appears on the . . . screen,"¹⁹⁸ but rather selects from the few sequences stored in the circuits.¹⁹⁹

Whether the work is fixed also depends on what is defined as "the work." Clearly the program, as a work of authorship, is fixed. But the "audiovisual work"²⁰⁰ need not be defined as an entirely fixed sequence of sights and sounds which reappear every time the game is activated.²⁰¹ The definitional phrase "series of related images"²⁰² could be so construed. However, the Seventh Circuit has adopted a broader construction of the statute as "refer[ring] to any set of images displayed as some kind of unit,"²⁰³ noting that the legislative history suggests that the act should be interpreted flexibly so as to encompass new technologies.²⁰⁴ The audiovisual work comprises the visual representations of the characters, their movements, the sounds produced, and the way the elements interact. All of these game aspects are permanently fixed in the memory boards. Moreover, "the copyright [is not] defeated because the audiovisual work and the computer program are both embodied in the same components of the game."²⁰⁵

¹⁹⁷ Midway Mfg. Co. v. Artic Int'l, Inc. 704 F.2d at 1011.

¹⁹⁸ *Id.* at 1012.

¹⁹⁹ It is interesting to note that one reason the popularity of a particular game declines rapidly is that the game sequences tend to be repetitive. Once a player finds a technique to master a game, the player will often play the same sequence every time because it is successful. Maze games like PAC-MAN are particularly susceptible to this phenomenon.

²⁰⁰ Some courts have stated that the work must fall into one of the statutory categories and have described the games as audiovisual works. Atari, Inc. v. Amusement World, Inc., 547 F. Supp. 222, 226 (D. Neb. 1981); Midway Mfg. Co. v. Dirkschneider, 543 F. Supp. 466, 479 (D. Neb. 1981). This is not a requirement of the statute. The categories stated in 17 U.S.C. app. § 102(a) (1976 & Supp. III 1979) are not all-inclusive.

²⁰¹ Audiovisual works are defined in the 1976 Act as "works that consist of a series of related images which are intrinsically intended to be shown by the use of machines or devices such as . . . electronic equipment. . . ." 17 U.S.C. app. § 101 (1976 & Supp. III 1979).

²⁰² *Id.*

²⁰³ Midway Mfg. Co. v. Artic Int'l, Inc., 704 F.2d at 1011.

²⁰⁴ *Id.* See *supra* note 21 and accompanying text.

²⁰⁵ Stern Elecs. v. Kaufman, 669 F.2d at 856. The court found analogous the fact that a phonorecord embodies both the sound recording and the underlying musical composition.

It is clear that video games are not works the nature of which Congress envisioned would be outside the scope of the Act when it articulated the fixation requirement. As discussed by the district court in *Midway Manufacturing Co. v. Artic International, Inc.*: “[P]urely evanescent or transient reproductions’ referred to by Congress are those arising from live telecasts or performances that are nowhere separately recorded. Clearly the lack of any recording of such events would preclude their ever again being identically reproduced.”²⁰⁶ Furthermore, the scope of works which should be considered not to be fixed within the meaning of the 1976 Act is quite narrow, given Congress’ intent to preempt virtually all common-law copyright by enacting section 301.²⁰⁷

3. Infringement

While some video game cases have centered around the issue of whether the statutory requirements for copyright have been met, others have focused on issues of infringement and the scope of protection to be accorded a given game. The courts have followed the general approach articulated in *Sid & Marty Kroffts Television Productions, Inc. v. McDonald’s Corp.*²⁰⁸ In most cases the issue of copying has been easily resolved. Access was a virtual certainty, given the wide distribution and popularity of the games involved. Substantial similarity to prove copying was easily shown where the games were nearly identical.²⁰⁹ The primary issue has been whether there was unlawful appropriation of the plaintiff’s games. The courts have applied the “ordinary observer” test and have focused on what aspects of the audiovisual display constitute the author’s expression and are not merely the inevitable consequence of the ideas involved.

The best articulation of this analysis is in *Atari, Inc. v. North American Philips Consumer Electronics Corp.*²¹⁰ Atari involved a claim of infringement of the copyright for the plaintiffs’ PAC-MAN game, “a maze-chase game in which the player scores points by guiding a central figure through various passageways of a maze and at the same time avoiding collision with certain opponents . . . which move independently about the maze.”²¹¹ In its analysis of the idea-expression dichotomy, the court described an approach sometimes used regarding copyright in literary

An alternate analogy is to a motion picture, which embodies both the screenplay and the works of the director, cinematographer, and film editors.

²⁰⁶ 547 F. Supp. at 1008.

²⁰⁷ See *supra* notes 31-32 and accompanying text.

²⁰⁸ 562 F.2d 1157 (9th Cir. 1977). See *supra* notes 153-67 and accompanying text.

²⁰⁹ See, e.g., *Midway Mfg. Co. v. Bandai-America, Inc.*, 546 F. Supp. 125 (D.N.J. 1982) (partial summary judgment granted on the issues of access and substantial similarity in an action involving PAC-MAN and Galaxian).

²¹⁰ 672 F.2d 607 (7th Cir.), *cert. denied*, ___ U.S. ___, 103 S. Ct. 176 (1982).

²¹¹ *Id.* at 617. The defendant’s game was entitled “K.C. Munchkin.”

works. The approach attempts to distinguish *scènes à faire* from the expressive elements of the work. "*Scènes à faire* refers to 'incidents, characters or settings which are as a practical matter indispensable, or at least standard, in the treatment of a given topic.'"²¹² *Scènes à faire* are not part of the author's expression and thus not protected (except perhaps from identical copying). The court noted that the scope of protection of the works will be directly related to the degree "[to] which fairly complex or fanciful artistic expressions predominate over relatively simplistic themes and which are almost entirely products of the author's creativity rather than concomitants of those themes."²¹³ The *Atari* court then attempted to discern those elements of the plaintiffs' audiovisual work which were protectable before turning to the issue of whether the ordinary observer would find those elements of the two games to be substantially similar.

Applying the analysis to the games before it, the court found the maze, scoring table, use of dots, and tunnel exits in the two games to be *scènes à faire*. The characters, however, were found to distinguish PAC-MAN from other games with similar ideas and to be "wholly fanciful creations." The size, shape, and manner of movement were protectable expressions. Additionally, the method by which the role-reversal process of the game was expressed was protectable.²¹⁴

In applying the ordinary-observer test to the two games, the court, as in *Kroffts*, looked to the overall similarities and not the specific differences between the two works. Differences are only important, according to the court, insofar as they "influenced the impressions of the ordinary observer."²¹⁵ Further, the specific audience to whom the work was directed was considered in applying the ordinary-observer test, as suggested by the analysis of *Kroffts*. The test used demands substantial similarity in "the total concept and feel"²¹⁶ of the protectable elements of the two works from the standpoint of the ordinary observer to whom the work is directed. Thus, the court found that the facts presented a reasonable probability of success at trial on the merits.²¹⁷

Other courts have found a reasonable probability of unlawful appropriation on the particular facts of the cases before them. Two such cases also involved claims of infringement on PAC-MAN, as well as on a game called "Galaxian," which is a space-battle game in which the player fights off a squadron of insect-shaped aliens, some of which peel off in smaller formations to attack the player's ship.²¹⁸ Other games have been found to

²¹² *Id.* at 616 (quoting *Alexander v. Haley*, 460 F. Supp. 40, 45 (S.D.N.Y. 1978)).

²¹³ 672 F.2d at 617.

²¹⁴ *Id.* at 618.

²¹⁵ *Id.*

²¹⁶ *Id.* at 620.

²¹⁷ The case was reviewed on motion for preliminary injunction.

²¹⁸ In *Midway Mfg. Co. v. Bandai-America, Inc.*, 546 F. Supp. 125 (D.N.J. 1982), the

contain protectable expressions. Preliminary injunctions have been issued to halt infringement of games such as *Scramble*, where a player's spaceship moves horizontally through different scenes, encountering obstacles and attempting to destroy his enemy's installations while fighting off attacks,²¹⁹ and *Donkey Kong*, in which the player attempts to move a man through a series of obstacles up a structure to save a woman from a gorilla at the top.²²⁰ The expressions found to be protectable include the distinctive visual representations of the characters and scene, the antics of the characters, the sound effects, especially musical themes, and specifically, aspects of the interactions among the characters. Additionally, substantial similarity has been found notwithstanding the fact that differences in media may restrict the degree to which the works can be similar, as where an arcade video game has been copied by a hand-held electronic game version.²²¹

No infringement has been found under the same substantial-similarity standard where the copied elements of the game have been deemed *scènes à faire* and where the expressive elements were not deemed to be sufficiently similar. In *Atari, Inc. v. Amusement World, Inc.*,²²² the plaintiff's game, *Asteroids*, was allegedly infringed by the defendant's game, *Meteors*. While the court found the plaintiff to have a valid copyright and found that the defendant had probably copied the plaintiff's game, the elements which were copied were really *scènes à faire*. Since those elements were not copied identically there could be no infringement. The analysis implies that where *scènes à faire* are involved it may be appropriate to view the *differences* between the works to determine if there is identical copying. The court found that there were "certain forms of expression that one must necessarily use in designing a video game in which a player fights his way through space rocks and enemy spaceships," and that those forms "account[ed] for most of the similarities" between the games.²²³

court found a reasonable probability of success on the merits as to unlawful appropriation of both games. The court refused to grant summary judgment on that issue, finding it to be a jury question. No preliminary injunction was granted for *Galaxian* because no irreparable injury to the plaintiff was shown, as it no longer sold the game. In *Midway Mfg. Co. v. Dirkschneider*, 543 F. Supp. 466 (D. Neb. 1981), preliminary injunctions were issued against the defendants for their counterparts to *PAC-MAN*, *Galaxian*, and *Rally-X* (a maze-chase game involving cars).

²¹⁹ *Stern Elecs., Inc. v. Kaufman*, 669 F.2d 852 (2d Cir. 1982).

²²⁰ *Nintendo of Am., Inc. v. Elcon Indus., Inc.*, 564 F. Supp. 937 (E.D. Mich. 1982); *Nintendo of Am., Inc. v. Bay Coin Distribs., Inc.*, 2 COPYRIGHT L. REP. (CCH) (1982 Copyright L. Decs.) ¶ 25,409 (E.D.N.Y. May 28, 1982).

²²¹ *Midway Mfg. Co. v. Bandai-America, Inc.*, 546 F. Supp. 125 (D.N.J. 1982).

²²² 547 F. Supp. 222 (D. Md. 1981).

²²³ *Id.* at 229. See *Williams Elecs., Inc. v. Bally Mfg. Corp.*, 568 F. Supp. 1274 (N.D. Ill. 1983). *Williams* involved a claim that the defendant's combination rolling ball/video-arcade game infringed the plaintiff's copyrighted game. The court found the fact that the games

No infringement was found by the court in litigation involving PAC-MAN in *Atari, Inc. v. Williams*.²²⁴ Although the court acknowledged the protectable elements in the game, the defendant's game, *Jawbreaker*, was held not to contain substantially similar expressions in its use of a set of teeth instead of the PAC-MAN "gobbler" and smiling faces instead of the "ghost monsters" found in the PAC-MAN game. In the final analysis, the delineation between idea and expression and findings regarding substantial similarity are policy-based decisions.

B. Policy Considerations

While the courts' language and the specific factual settings of the cases provide some guidance for the line-drawing mandated by the idea-expression distinction, the line-drawing inevitably rests on policy grounds. This is true whether the dichotomy between idea and expression is raised on issues of proper subject matter or on scope of protection afforded by copyright in a particular work. The distinction will usually come into play in questions concerning the scope of protection, because excluding a work entirely on the basis that the subject matter is not copyrightable tends to foreclose future protection for that type of work. Allowing some copyright protection, but greatly limiting its scope in works in which the idea and the expression are nearly the same, allows for more flexibility in future cases involving similar subject matter.²²⁵

Implicit in the copyright clause and the Copyright Act is a policy "to encourage individual effort and creativity by granting valuable enforceable rights."²²⁶ The idea-expression dichotomy embodies a balancing of the conflicting policies of rewarding individual efforts and allowing free access to knowledge and ideas. The desired outcome of that balance is a system which "promote[s] the progress of Science"²²⁷—that is, fosters the productivity of authors. Free public use of ideas is essential to that end, so that an author may enjoy only a limited monopoly which will not block others from the use of the raw materials of authorship—ideas. The idea-expression boundary is defined by the rather tautological policy decision

were of the same type to be irrelevant. All of the elements which the games had in common were *scènes à faire*, or "common to virtually all pinball and video games." *Id.* at 1278. The unprotectable elements were those which had "no conceptual significance apart from the role they play[ed] in the mechanical operation of the game." *Id.* at 1280-81.

²²⁴ 2 COPYRIGHT L. REP. (CCH) (1982 Copyright L. Decs.) ¶ 25,412 (E.D. Cal. Dec. 28, 1981).

²²⁵ See, e.g., *Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F.2d 738 (9th Cir. 1971) (jewelled "bee" pin could only be protected from virtually identical copying because the idea and expression are indistinguishable).

²²⁶ *Atari, Inc. v. North Am. Philips Consumer Elecs. Corp.*, 672 F.2d 607, 620 (7th Cir.), cert. denied, ___ U.S. ___, 103 S. Ct. 176 (1982). Alternatively, copyright may be viewed as securing an author's property interest in his original expression.

²²⁷ U.S. CONST. art. I, § 8, cl.8.

that "ideas" are those aspects of a work which, if monopolized, will block *too much*. The line is drawn wherever it appears that the balance favors the reward of only a single author, and further individual effort and creativity can no longer be fostered.

In the video game industry, it is the games' lucrative marketability which ultimately encourages their development. However, original video game development entails a large investment in dollars and in creative effort.²²⁸ Given the availability of mechanical means for and ease of copying the games, a video game designer may make that large investment only to have it pirated at very little cost. Copyright protection for video games is appropriate in light of the fact that "writings" are involved in both the audiovisual displays and in the underlying computer programs. Copyright is also ideally suited to encouraging development of games by providing for a balance between the reward of individual efforts and the maintenance of the free use of ideas. The free use of ideas is particularly important given the relatively short-lived popularity of individual games. Without some form of protection, however, there would be virtually no incentive to bear the high cost of development of new games. Furthermore, trade secret, misappropriation, and other common-law forms of protection may be unavailable for video games. At least one court has found state common-law doctrines of misappropriation and trade secret to be preempted by the Copyright Act insofar as property interests in video games were concerned.²²⁹

There are two aspects of a video game which contribute to its marketability. First, the type of game and the rules of play involved are important. It must be challenging, interesting, and yet playable.²³⁰ But the specific audiovisual characteristics of the game will contribute to its popularity as well. The graphic representations,²³¹ the characters, their antics, and the sound effects are what make a game distinctive and may cause players to choose it over others. The type of game and the rules and procedure of play will generally be non-protectable ideas. To some degree, those aspects of a game may be protected by the copyright in the underlying program, since piracy of the program is probably a common form of copying, especially with very complex games. On the other hand, many aspects of the audiovisual display will be protectable expressions. The more creative and distinctive the audiovisual display is, the greater the scope of protection which inheres in its copyright because more aspects are likely to be viewed as expression rather than ideas.

Such an application of copyright law to video games, it would seem, is

²²⁸ For a discussion of the techniques involved in game design and the author's view that "game design is an art form" see Crawford, *supra* note 5, at 96.

²²⁹ Videotronics, Inc. v. Bend Elecs., 564 F. Supp. 1471, 1476-77 (D. Nev. 1983).

²³⁰ Crawford, *supra* note 5, at 96.

²³¹ *Id.*

desirable. There are many ways to express a given game concept. For example, several games utilize a maze-chase concept.²³² Several have used the theme of a character's climbing a structure while encountering obstacles and fending off opponents.²³³ In all of these instances the same game concept has been used, yet completely different characters, visual effects, and sound effects are presented. As long as the ideas remain available to game designers, there will be ample opportunity for the development of new games. This is presumably essential in an industry where an individual game enjoys fleeting popularity. It appears that copyright law, as it has been applied to video games, and with a special emphasis on a balancing of policies given the facts of individual cases, is an acceptable vehicle for protecting an author's interest in his games.

V. CONCLUSION

The need for some form of protection from copying for video games is clear. Copyright appears to fulfill that need without exceeding the bounds of the policies implicit in both the Constitution and in our economic system of extending at most only limited monopolies. Furthermore, video games are clearly within the realm of subject matter and media that Congress intended to protect in its 1976 revision of the Copyright Act, both as audiovisual works and as computer programs. The principles of copyright law provide adequate limits on the scope of protection to be afforded a work, primarily through the idea-expression dichotomy. The balance which has been achieved by the courts in video game litigation to date seems adequate to promote the underlying policies involved.

The single area which was problematic was the courts' interpretation of copyright law with respect to computer programs in machine form. Despite the clear intent of the 1976 Act, confusion persisted until recently. Another aspect of computer-program copyright, in the midst of the confusion, has not been addressed. Assuming the availability of copyright for machine programs, what standard is to be applied in ascertaining where infringement has occurred? Who is "the ordinary observer?" Perhaps the ordinary observer should, as in the cases of characters and games, take on the characteristics of the audience to whom the work is directed. Expert opinion may be necessary to ascertain infringement in this area.

The uncertain status of computer programs has not proved fatal to video game copyright because authors have generally relied on copyright in the audiovisual display. However, the problem of program piracy has in some instances made a copyright in the program essential. Moreover, the best protection for a video game will be achieved where both the display and the program are copyrighted. Video game developers should,

²³² Some examples are PAC-MAN, Rally-X, and Take the Money and Run as variants of this theme.

²³³ Some examples are Donkey-Kong, Climber, and Amidar.

however, be cognizant of the fact that their works will, in the final analysis, be protected only to the degree to which they embody distinctive and original expressions and not merely simple game ideas.

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