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UPDATE TO: COPYRIGHT PROTECTION FOR
COMPUTER SOFTWARE IN THE NINETIES†

by Evan Finkel††

Computer software copyright law is in a constant state of flux. Discussed below are some interesting events in the software copyright field which occurred in the few months since the original article Copyright Protection in the Nineties was first published.


A final decision has now been issued by the district court in the Nintendo case.1 Plaintiff Nintendo markets its microprocessor-based Nintendo Entertainment System (NES) console in which copyrighted video game cartridges are inserted and played using a home television as the display screen. Nintendo and its licensees market copyrighted video game cartridges. The video game cartridges store a computer game program in ROM (i.e., Read Only Memory chips) which generates the game output on the television screen. Thus, two distinct copyrightable "works" are permanently fixed or stored in ROM: a computer program which is a "literary work" and the game display which is an "audiovisual work."2 Operation of the video game cartridge is controlled by a microprocessor in the console which executes the game program in the ROM of the game cartridge. Data stored at various addresses in the ROM set certain "parameters" for the game, such as the speed, starting level of difficulty, or number of "lives" that the player has before the game ends.

Defendant Galoob markets a video game accessory product known as the Game Genie Video Enhancer (Genie). Genie sits be-

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† The original article, Copyright Protection for Computer Software in the Nineties, was published in the previous issue, 7 SANTA CLARA COMPUTER AND HIGH TECH. L.J. 201 (1991).
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2. See Finkel, supra note 1, at 205 n.20 and see infra note 51 for the statutory definition of a "literary work" and an "audiovisual work" provided in 17 U.S.C. § 101 (1992).
between the console and the video game cartridge. Genie allows the user to select up to three "codes", each of which provides a new value for a game parameter and also indicates the address in the game ROM where the original value for the parameter is stored. As the game proceeds, microprocessor inquiries directed to the game cartridge's program ROM pass through Genie. If an inquiry from the microprocessor is directed to an address in ROM that matches one of the user-selected codes, Genie returns the coded data rather than the original data stored at that address. In this way, the user can alter up to three game parameters each time the game is played.

Nintendo argued that Galoob was infringing its copyright in the audiovisual display (work) generated by the game cartridges. More specifically, Nintendo contended that Genie, used in conjunction with a game cartridge, produced an audiovisual display (work) which was "derivative" of the audiovisual work normally produced by the game cartridge alone. According to Nintendo, the consumer was thus directly infringing Nintendo's exclusive right, granted to it by § 106(2), "to prepare derivative works based upon the copyrighted [audiovisual] work."3 Since the consumer was directly infringing Nintendo's copyright, Galoob was liable for contributing to such infringement.

The court soundly rejected Nintendo's argument, reasoning:

[T]his Court concludes that inherent in the concept of a "derivative work" is the ability for that work to exist on its own, fixed and transferable from the original work, i.e., having a separate "form". See § 101 (derivative work definition). The Game Genie does not meet that definition. . . . Once the Game Genie and its attached game cartridge are disconnected from the NES, or the power is turned off, those changes [to the audiovisual display of the game cartridge made using Genie] disappear and the video game reverts to its original form. No independent, fixed work is created.4

In other words, Genie was simply "a tool by which the consumer may temporarily modify the way in which to play a video game, legally obtained at market price," but did not create a separate independent work.5 The court analogized the modified audiovisual display produced when Genie is used with a game cartridge "to skipping portions of a book, learning to speed read, fast-forwarding a video tape one has purchased in order to skip portions

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5. Id.
one chooses not to see, or using slow motion for the opposite rea-

6. According to the court, "[n]one of those practices perma-

nently modifies or alters the original work, none produces a

separate work which can then be transferred in any way, none re-

places the original work, and none deprives the copyright holder of

current or expected revenue." 7 According to the court, the same is
true of Genie relative to the original game cartridge.

The court's analysis, while convincing at first blush, is fatally

flawed. The court's entire analysis stems from its interpretation of

the statutory definition of "derivative work" as requiring the work

"to exist on its own, fixed and transferable from the original work,

i.e., having a separate "form." 8 But that is simply not so.

The copyrighted work must be "fixed in any tangible medium of

expression" to be protectable and registrable. 9 There is no doubt

that Nintendo's audiovisual work is fixed in the game program

stored in ROM which produces that work. 10 Therefore, if copy-

right were to be claimed in a "derivative [audiovisual] work," that,
too, would need to be fixed in some tangible medium of expression.

But there is no statutory requirement that a derivative work

needs to be fixed and, thus, transferable to be an infringement. The

statutory definition of "derivative work" in § 101 11 conspicuously

omits any requirement that the work be "fixed," a term used many

other places in the Act. 12 And the exclusive right granted to the

copyright owner is the right to "prepare derivative works." 13 The

term "prepare" was carefully chosen by Congress. It does not imply

that the work need be fixed. If the intent was that the work needed
to be fixed, Congress would have granted the copyright owner the
exclusive right to "create derivative works," since the Act provides

that "[a] work is 'created' when it is fixed in a copy." 14 Indeed, the

House Report accompanying the Copyright Act of 1976 expressly

states that

6. Id.
7. Id.
8. Id.

1983), aff'g 547 F. Supp. 999 (N.D. Ill. 1982), (video game audiovisual display fixed in ROM

containing program producing the display), and cases cited therein.
11. See Finkel, supra note 1, at 207 n.28 for the statutory definition of a "derivative


(definition subject matter of copyright).
[The exclusive right to prepare derivative works, specified separately in clause (2) of § 106, . . . is broader than that [exclusive] right [of reproduction provided in clause (1) of § 106] . . . in the sense that reproduction requires fixation in copies . . . , whereas the preparation of a derivative work . . . may be an infringement even though nothing is ever fixed in tangible form.\textsuperscript{15}

As to the transferability of a work to be an infringement, the exclusive right is to "prepare derivative works,"\textsuperscript{16} whether or not the work is transferred or transferrable. The exclusive right to "distribute" copies of a work is a separate right granted in § 106(3).

The court's decision is also contrary to the Seventh Circuit decision in \textit{Midway Mfg. Co. v. Artic International, Inc.}\textsuperscript{17} In \textit{Midway}, the plaintiff had an audiovisual copyright on its video game. Defendant sold a printed circuit board which sped up the video game. The court held that when the consumer used the defendant's board he generated an audiovisual work which was a "derivative work" of the plaintiff's audiovisual work and thus, infringed plaintiff's copyright. Defendant was subject to liability for contributing to that infringement.\textsuperscript{18} The \textit{Nintendo} court attempted to distinguish \textit{Midway} on two grounds, both of which are devoid of merit.

First, the \textit{Nintendo} court stated that "[t]he result [in \textit{Midway}] appeared to be based on the equities of that situation," and the equities were different in the \textit{Nintendo} case.\textsuperscript{19} However, while the equities may play an important role in determining whether the consumer's use of Genie or the speed up kit is a "fair use" under § 107 (an issue discussed below), they have no place in making a determination as to whether a work meets the unambiguous statutory definition of a derivative work.

Second, the \textit{Nintendo} court stated that "\textit{Midway}'s result, if not its analysis, appears to have turned on the fact that the licensee arcade owner, not the copyright holder, was making money from the public performance of the altered game, a violation of § 106(4)" (copyright holder has exclusive right "to perform the copyrighted work publicly").\textsuperscript{20} Once again the court made a gross error. The \textit{Midway} case was decided on the ground that the copyright owner's

\begin{footnotes}
\item[17] \textit{Midway Mfg. Co. v. Artic Int'l, Inc., 704 F.2d 1009 (7th Cir. 1983), aff'd 547 F. Supp. 999 (N.D. Ill. 1982), discussed in Finkel, supra note 1, at 238-40.}
\item[18] \textit{Artic, 704 F.2d at 1013-14.}
\item[20] \textit{Id. at 1666-67.}
\end{footnotes}
exclusive right to prepare derivative works under § 106(2) was violated, as the court therein expressly stated, and the decision never mentioned the copyright owner's exclusive right to perform the copyrighted work publicly granted under § 106(4).\textsuperscript{21}

It should be noted that Nintendo did not, and could not, properly claim that Genie violated Nintendo's exclusive right to make derivative works of the game program itself, as opposed to its audiovisual output, as set out in § 106(2). Genie did not include any program which was derived from and substantially similar to the copyrighted game program. Further, Nintendo did not, and could not, properly claim that Genie violated Nintendo's exclusive right to make or distribute copies of a game program or its audiovisual output, as set out in §§ 106(1) and (3), since Genie did not include a copy of anything from the program or its output, and did not produce any copy of anything from the program or its output. Finally, Nintendo did not, and could not, properly claim that Genie violated Nintendo's exclusive right to publicly display or perform the game program or its audiovisual output, as set out in §§ 106(4) and (5), since the only evidence before the court was that the consumer used Genie privately, not publicly. However, the court commented in a footnote that "[t]his Court expresses no view as to whether commercial arcade use of the Game Genie would be an unauthorized [public] showing under § 106."\textsuperscript{22}

As an alternative ground for finding in favor of defendant Galoob, the court held that even if the consumer can be said to create a derivative work when it uses Genie in conjunction with a game cartridge, that use is permissible as a "fair use" under § 107. Therefore, Galoob cannot be subject to liability for contributing or

\textsuperscript{21} The court stated:

Among a copyright owner's exclusive rights is the right to "prepare derivative works based upon the copyrighted work." 17 U.S.C. § 106(2). If, as we hold, the speeded up "Galaxian" game that a licensee creates with a circuit board supplied by the defendant is a derivative work based upon "Galaxian," a licensee who lacks the plaintiff's authorization to create a derivative work is a direct infringer through its sale of the speeded-up circuit board.

\textit{Artic}, 704 F.2d at 1013. The court seems mistaken in referring to the licensee as a "direct infringer" and the speed-up board as a "derivative work." The speed-up board alone does not generate an audiovisual work which is derived from (substantially similar to) the copyrighted audiovisual work. Thus, the speed-up board is not a "derivative work" and the licensee is not a "direct infringer." It is only when the speed-up board is used with the original Galaxian game that the copyrighted audiovisual work is modified, thereby creating the "derivative [audiovisual] work." Therefore, it would be more correct to conclude that the licensee is a contributory infringer who, through the sale of the speed-up board, contributes to the direct infringement by the person using the Galaxian game with the speed-up board.

\textsuperscript{22} \textit{Nintendo}, 20 U.S.P.Q.2d at 1667 n.4.
inducing such permissible conduct.\textsuperscript{23} The use by the consumer was a "fair use," because the four statutorily enumerated fair use factors all militated in favor of a finding of fair use: (1) the non-commercial nature of the consumer's home use of Genie creates a presumption of fair use under Supreme Court precedent;\textsuperscript{24} (2) the published nature of video games supports the fairness of a consumer's transitory alterations of those images; (3) because the consumer has the indisputable right to use the entire game, the amount of the consumer's use cannot weigh against fair use; and (4) Nintendo failed to carry its burden of proving injury.\textsuperscript{25}

The *Nintendo* case is presently on appeal to the Ninth Circuit Court of Appeals.\textsuperscript{26} It, like the *Midway* case before it, may have profound ramifications in the computer industry, well beyond the limited field of video games. Arguably *Midway* may be applied to computer software areas where a third party develops add-on software to a popular program such as the Lotus 1-2-3 spreadsheet program or Wordperfect word processing program. The add on program would operate as an extension of the original program by creating a more user friendly display, adding functionality, or speeding up operations. The modified display would be a derivative work of the original copyrighted display; and, if the add-on program actually modified the original program as it resides on a hard disk or even as it resides temporarily in RAM (Random Access Memory) during execution, the add-on program operating in conjunction with the original program would form a derivative work of the original copyrighted program. On the other hand, *Nintendo*, if

\begin{itemize}
\item \textsuperscript{24} Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 449 (1984).
\item \textsuperscript{25} *Nintendo*, 20 U.S.P.Q.2d at 1667-73.
\item \textsuperscript{26} Lewis Galoob Toys, Inc. v. Nintendo of Am., Inc., 923 F.2d 862 (9th Cir. 1991).
\end{itemize}
affirmed on appeal, might lead to an opposite conclusion. The add-on software would not create a "derivative work" display or program which was "fixed" and "transferrable," and the use of the add-on software by the consumer would be a "fair use" permissible by statute. We will simply have to await the results of the Nintendo appeal, and further decisions in this area.

2. The Importance of Rigorous Clean Room Procedures.

*Computer Associates International v. Altai* is a recent case which highlights the importance of implementing a comprehensive clean room procedure when developing a product which is compatible with, or the functional equivalent of, a competitor's product. In *Computer Associates*, the plaintiff, Computer Associates (CA), marketed a task scheduling program called Scheduler for use in IBM Series 370 mainframe computers. Scheduler included an interface module called Adapter to enable the program to interface (communicate with) a number of different IBM operating systems running on the 370 computers. Defendant, Altai, marketed a competitive program which contained a module called Oscar version 3.4 corresponding to the plaintiff's Adapter module. Oscar was written for defendant by Arney, a former employee of plaintiff. Before leaving plaintiff, Arney illegally copied the source code of Adapter. Approximately 30% of Oscar 3.4 was copied by Arney verbatim from the Adapter source code.

After being sued, defendant had programmers other than Arney rewrite that portion of the Oscar 3.4 code which had been copied from Adapter. The "clean room procedure" employed began with an earlier version of defendant's software marketed before Oscar was developed, and with a functional list of parameters and services needed for the revised code. Eight clean room programmers were used, none of which had been involved in developing or enhancing Oscar, all of which were denied access to Arney, the original Adapter code and Oscar 3.4. After the new code was produced, it was combined with the remaining portions of Oscar 3.4, tested and debugged. The entire process took approximately six work-months of effort, and resulted in Oscar 3.5. Version 3.5 was shipped to all new customers, and defendant also shipped version 3.5 as a "free upgrade" to all customers who had Oscar 3.4.

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The court blessed the clean room procedure, finding that plaintiff had not shown that version 3.5 was substantially similar to the Adapter code. In making that determination, the court compared the two programs at five different "levels of abstraction" of "increasing generality," giving a decreasing weight to each successive level. The five levels and their respective weights were: literal source and object code (1000), parameter lists (100), macros (100), list of services (1), and overall organization or high-level structure or general outline (nil).

The court found that there was no similarity in literal code; that the similarities in the parameter lists and macros were not "substantial" since such similarities related almost entirely to matters in the public domain or were dictated by the functional demands of the program; that the list of services and the organizational chart were of such minuscule importance, since they were dictated by functional considerations or were simple and obvious, they do not present sufficient evidence of substantial similarity to warrant a finding of infringement.

It should be noted that by giving so little weight to the fifth level of abstraction, the overall or high-level sequence, organization and structure (SSO), the Computer Associates court expressly rejected as inapplicable earlier cases which had placed much greater emphasis on similarities in SSO in making an infringement determination. Additionally, the Computer Associates court also ruled that the SSO that matters is the SSO of the computer program text, not the computer program's behavior or operation. The former — the SSO of the computer text — is proper subject matter for copyright protection. The latter the SSO of the computer program's behavior or operation may be considered a "process," "sys-

30. Id. at 1652. The "abstractions test" which the court tailored for use in a computer program copyright case, was first enunciated by Judge Learned Hand in Nichols v. Universal Pictures, 45 F.2d 119, 121 (2d Cir. 1930) as follows:

Upon any work . . . 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 [work] 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 [author] could prevent the use of his "ideas" to which, apart from their expression, his property is never extended.

32. Id. at 1649-51. See, e.g., Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc., 797 F.2d 1222 (3d Cir. 1986), cert. denied, 479 U.S. 1031 (1987), discussed in Finkel, supra note 1, at 229-30.
tem,” or “method of operation” which is excluded by statute from copyright protection. 34

The Computer Associates decision is presently on appeal to the Second Circuit Court of Appeals. 35 The case has been fully briefed and is awaiting oral argument. The scope of protection for the SSO of a computer program hangs in the balance. Will the Second Circuit affirm the district court’s decision and approve wholesale the lower court’s infringement analysis? If so, at least in the Second Circuit the SSO of a program will no longer enjoy the wide breadth of protection which it has heretofore been afforded by virtually every court, beginning in 1986 with Whelan, the landmark Third Circuit decision in this area. 36 Instead, the SSO of program would be relegated to second class status, given little real consideration in the infringement review. Thereafter, the various circuit courts would become tomorrow’s battleground for determining the majority and minority views on the protectibility of a program’s SSO, quite possibly leading to the U.S. Supreme Court accepting a petition for certiorari to resolve the conflict. 37


In Computer Associates International v. Altai, 38 plaintiff’s certificate of copyright registration was for version 2.1 of Scheduler as a “derivative work” 39 of “pre-existing material” in earlier version 1.0, and the certificate stated that copyright is claimed only in “revised code” and “added new code.” 40 However, the Adapter module was first included in an earlier, unregistered version of the Scheduler program.

34. The Copyright Act of 1976 provides that: “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.” 17 U.S.C. § 102(b) (1992). See also Finkel, supra note 1, at 221-23.
37. Indeed, one commentator has already noted that the district court’s decision in Computer Assocs. “has set in motion an engine of controversy that may ultimately generate a Supreme Court opinion in the area of software protection.” Gary Rinkerman, Highlights, 14 Computer. L. Rep. 365 (Computer Law Reporter, Inc.) (November 1991).
From these facts, defendant argued that plaintiff could not maintain an action for infringement of the Adapter code. The Copyright Act provides that "no action for infringement of the copyright in any work shall be instituted until registration of the copyright claim has been made in accordance with this title.""\(^{41}\) Defendant therefore argued that registration of the Adapter code is a statutory prerequisite for filing an action for infringement of that code. However, according to defendant, plaintiff's "derivative work" registration of version 2.1 did not extend to the Adapter code which was "preexisting material" from version 1.0; the registration only covered new or amended material added in version 2.1.\(^{42}\)

Therefore, defendant argued that plaintiff had no registration for the Adapter code upon which to base its copyright claim. It should be appreciated that by statute copyright protection for the Adapter code arose when it was created (fixed in a tangible medium of expression),\(^{43}\) and that while a registration may be a prerequisite to filing suit, "such registration is not a condition of copyright protection.""\(^{44}\) In other words, "[t]he registration is . . . merely the plaintiff's 'ticket' to court; the protection of the copyright arises at the time of creation."\(^{45}\) Further, there was no allegation by defendant that plaintiff was not the owner of the copyright in the Adapter code or that the Adapter code had fallen into the public domain. Defendant's argument was simply that plaintiff's copyright registration did not cover the Adapter code and, therefore, plaintiff could not maintain an action for infringement of its copyright in that code.

The court rejected the defendant's argument, concluding that registration of version 2.1 incorporating the preexisting Adapter code from version 1.0 "was sufficient compliance with the registra-

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41. 17 U.S.C. § 411(a) (1992). There is an exception for actions for infringement of certain works having a country of origin outside the U.S. Id. See also Finkel, supra note 1, at 206 n.24.

42. "The copyright in a . . . derivative work extends only to the material contributed by the author of such work, as distinguished from the preexisting material employed in the work, and does not imply any exclusive right in the preexisting material. The copyright in such work is independent of, and does not affect or enlarge the scope, duration, ownership, or subsistence of, any copyright protection in the preexisting material." 17 U.S.C. § 103 (b) (1992).

43. "Copyright 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." 17 U.S.C. § 102 (1992). See also Finkel, supra note 1, at 202-04.


tion requirement of § 411(a) to permit plaintiff CA to maintain this action against defendant Altai for infringement of ADAPTER.”

In essence, the court held that the registration requirement was satisfied where the program version registered included the code which was copied, even though the code originated in an earlier version of the program, at least where ownership of copyright in the copied code was not in dispute. The court noted that a different result would obtain, if there had been evidence that the Adapter code had been placed in the public domain, or was owned by someone other than plaintiff. Conscientious counsel for defendants in later cases might also argue that the court’s decision should be limited to cases in which the preexisting code constituted a stand-alone computer sub-program or module, as was true of the Adapter code.

This decision is quite important to computer software companies. All too often, registration of a current version is the only registration which is secured at the time the copyright owner learns of the infringement. The copyright owner typically desires to promptly file suit for copyright infringement and, at least where the infringement is clear-cut, seek an interlocutory injunction (e.g., temporary restraining order or preliminary injunction) against further manufacture and sale of the infringing software. It would be most disadvantageous if the copyright owner was forced to delay filing suit until after a registration could be obtained on the earlier version in which the copyrighted code in question first appeared.


In Computer Associates International v. Altai, the plaintiff


47. Id.

48. In support of that argument, counsel might direct the court’s attention to the following passage from the Computer Associates International, Inc. v. Altai, Inc., decision:

Moreover, the court interprets the restriction on commencement of an infringement action contained in § 411(a) as not being a bar to CA’s claim in this case. Dr. Davis’s testimony convincingly established that a computer program such as CA-SCHEDULER 2.1, for which registration was obtained, is made up of a series or collection of sub-programs, many of which are made up of sub-sub-programs, and so on, down for several levels. As Dr. Davis pointed out, it would make no sense to permit the copyright of a computer program that is an operable entity, such as CA-SCHEDULER OR ZEKE, without including in the copyright protection all of the sub-programs and sub-sub-programs, etc., which are combined with other instructions in order to make up the copyrighted program.

also had a claim against defendant for misappropriation of trade secrets. Plaintiff alleged that defendant's incorporation of portions of its Adapter program into its own program constituted willful misappropriation of plaintiff's trade secrets. The court dismissed that claim as being preempted by § 301(a) of the Copyright Act which provides in pertinent part:

On and after January 1, 1978, all legal or equitable rights that are equivalent to any of the exclusive rights within the general scope of copyright as specified by § 106 in works of authorship that are fixed in a tangible medium of expression and come within the subject matter of copyright as specified by §§ 102 and 103, . . . are governed exclusively by this title. Thereafter, no person is entitled to any such right or equivalent right in any such work under the common law or statutes of any State. 50

The court reasoned that the Adapter program, as a computer program fixed in magnetic or paper media, was certainly a "work of authorship . . . fixed in a tangible medium of expression and . . . within the subject matter of copyright as specified by §§ 102 and 103." 51 Furthermore, one of the exclusive rights of copyright enumerated in § 106 is the right to make copies. 52 In this case, plaintiff alleged that copying the Adapter code into defendant's own program constituted a violation of this exclusive right of copyright and a violation of plaintiff's trade secret rights. Thus, according to the court, the right sought to be enforced under state trade secret laws was "equivalent to" an exclusive copyright right under § 106. Hence, the trade secret claim was preempted.

The court was careful to point out that while the claim against defendant alleging illegal copying of the Adapter code into defendant's program was preempted, a trade secret misappropriation claim against Arney, plaintiff's ex-employee, based on his illegal acquisition of the trade secret code might not have been preempted, since there is no right of copyright equivalent to protection against illegal acquisition of the trade secret code. However, in this case, plaintiff proceeded only against the defendant, and made no allega-

51. 17 U.S.C. § 301(a) (1992). 17 U.S.C. § 102(a)(1) provides that original "literary works" fixed in a tangible medium of expression are copyrightable subject matter. The definition of a "literary work" is set out in Finkel, supra note 1, at 205 n.20. As explained in Finkel, supra note 1, at 202-04 & 225-28, a computer program, defined in § 101 as a "set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result," is a "literary work." § 103 relates to compilations and derivative works.
52. 17 U.S.C. § 106(1) (1992) provides that an exclusive right of copyright is the right "to reproduce the copyrighted work in copies. . . ."
tion that it illegally acquired the code since the evidence was to the contrary until the lawsuit, defendant had no knowledge or reason to believe that Arney had pirated the Adapter code.

This case should be considered in fashioning, wherever the facts allow, a claim for trade secret misappropriation which is not preempted. As noted by the court in Computer Associates, the plaintiff "is the master of its own case" and the facts which are to be "pledged and proven."53

5. Registration of Typeface-Generating Software: The Copyright Office Rethinks its Position.

Copyright Office regulations bar registration of a typeface (or typefont or letterform) and digital data in any form (e.g., "bitmapping", "outlining", "stroke definition" and/or any other algorithm created as an alternative means of fixing data) for producing a typeface on a display device (e.g., computer display screen, printer or other output device). The Copyright Office considers the typeface and its digital representation uncopyrightable subject matter. Where a master computer program includes data that fixes or depicts a particular typeface, the application for registration must disclaim copyright in that uncopyrightable data that fixes or depicts the typeface. The Office's position as to digital typefaces is set out in a September 29, 1988 Policy Decision.54

However, the Copyright Office has now said that in light of possible technological advances over the last few years, it is reconsidering its earlier Policy Decision.55 To secure information on possible technological developments which might indicate a need to change its registration policy, the Office conducted a public hearing on October 4, 1991 and also accepted written statements. It seems that the overwhelming majority of firms that submitted oral or written statements, argued compellingly for repeal of the disclaimer requirement, so that computer programs for generating typefaces could be registered like other computer programs, data and all.56 These firms contend that the code of a typeface-generating program is inseparable from, and has no use when it is divorced from, the data that fixes or depicts the typeface.57 In other words, digitized typefaces have become computer programs to generate the graphic

57. Id.
images of characters; they are one and the same. Thus, disclaiming the data as is presently required impedes registration of the program, since the copyright applicant is uncertain as to what, if anything, is actually being disclaimed.

6. Copyrightability of Computer Languages and the Like Settlement of the Ashton-Tate/Fox Case.

The Ashton-Tate Corp. v. Fox Software case was being closely watched since it was expected that a final decision after a trial would shed light on important issues, such as the copyrightability of computer languages. However, it now seems that such will not happen.

The U.S. Government filed an antitrust action against Ashton-Tate Corporation and Borland International, Inc., alleging that planned acquisition of Ashton-Tate by Borland may substantially lessen competition in the market for RDBMS (Relational Database Management System) software for PCs running the DOS operating system, in violation of § 7 of the Clayton Act, 15 U.S.C. § 18. Thereafter, on October 31, 1991, the U.S. Department of Justice, Antitrust Division, published a notice stating that the parties had consented to entry of a Final Judgment. Pursuant to the proposed Final Judgment, the acquisition would be allowed to go forward. Borland would be enjoined from asserting claims alleging infringement of copyright in the command names, menu items, menu command hierarchies, command languages, programming languages and file structures embodied in Ashton-Tate’s dBASE family of products, standing alone and apart from other aspects of those computer programs such as the computer program code (including its structure, sequence and organization) and the user interface. Borland would have ninety days from entry of Final Judgment to dismiss its claims against Fox Software if Fox dismisses its counterclaims against Ashton-Tate. The proposed Final Judgment is subject to court approval after the expiration of a 60-day period in which the public may comment on the proposed Final Judgment.

It now seems that the next best case for clearing up the confusion and uncertainty which exists over the copyrightability of com-

58. Id.
59. Id.
computer languages and the like is *Lotus Development Corporation v. Borland International, Inc.*\(^63\). In that case, Lotus alleges that Borland’s Quatro and Quatro Pro spreadsheet programs infringe Lotus’ copyright in the user interface, including the menu command hierarchy, of its popular 1-2-3 spreadsheet program. Borland has moved for summary judgment in part on the asserted ground that the menu command hierarchy is not copyrightable subject matter.

7. Copyright Misuse: The Derivative Work

"Bugaboo" Continues.

The affirmative defense of copyright misuse is being asserted by defendants with ever increasing frequency, and is receiving varied treatment by the courts. Another recent case addressing the issue is *qad, inc. v. ALN Associates Inc.*\(^64\).

The plaintiff in *qad* secured a copyright registration certificate on its computer program called MFG/PRO. The application for registration, and the resulting certificate, failed to state that MFG/PRO was a “derivative work” in that it incorporated preexisting copyrightable subject matter from third party programs designated HP250 software.\(^65\) The plaintiff sued defendant for infringement of its copyright in MFG/PRO. In support of a motion for preliminary injunction, plaintiff emphasized all the similarities between MFG/PRO and the defendant’s software. Many of those similarities related to copyrightable matter which plaintiff itself copied from the HP250 software. However, plaintiff never revealed that fact to the court, and the court granted the motion. When these facts became known to defendant, it moved for summary judgment, claiming that plaintiff misused its copyright in MFG/PRO, and that it should, therefore, be barred from asserting a copyright infringement claim against defendant. The motion was granted.

According to the court, plaintiff’s failure to state on its copyright application that MFG/PRO was derived from the HP250 software, “though unlawful might not by itself constitute a misuse.”\(^66\) However, plaintiff’s assertion in the litigation of a copyright in the material copied from the HP250 software constituted copyright misuse. In essence, plaintiff “used its copyright to sue [de-
fendant] ALN and to restrain it from the use of material over which [plaintiff] qad itself had no rights" since the injunction prohibited copying of material which plaintiff itself copied from the HP250 software; and "[t]hat is a misuse of both the judicial process and the copyright laws." 67 "That copyright misuse extended [plaintiff] qad's copyright privilege beyond the scope of the grant [of copyright] and violated the very purpose of a copyright, which is to give incentive for authors to produce." 68 The court proceeded to grant defendant's motion for summary judgment, since the copyright misuse defense "is a complete bar to [plaintiff] qad's prosecution of its copyright infringement case against [defendant] ALN." 69

In a subsequent opinion, the court ruled that defendant could recover from plaintiff any damages sustained by defendant as a result of the wrongfully issued preliminary injunction. 70 The court acknowledged that "[i]t is black letter law that the amount of a preliminary injunction bond normally sets the ceiling for damages obtainable by a party that is later found to have been wrongfully enjoined." 71 However, the court reasoned that where, as in qad, plaintiff had acted in bad faith in obtaining the preliminary injunction, no such ceiling is to be imposed. Instead, because of plaintiff's bad faith, it was necessary and appropriate to "make [defendant] ALN whole." 72 The damages would be assessed against plaintiff as a sanction under Rule 65 of the Federal Rules of Civil Procedure which governs the issuance of injunctions.

8. Fraud on the Copyright Office: The Derivative Work "Bugaboo" Continues Here as Well.

Another affirmative defense being asserted more frequently is fraud on the Copyright Office, where the alleged fraud was an intentional failure to state in the copyright application that the work to be registered was a "derivative work" incorporating preexisting copyrightable subject matter from an earlier work. 73

A recent case in this area is GB Marketing USA Inc. v. Gerolsteiner Brunnen GmbH & Co. 74 In GB, plaintiff sued defendant for

67. Id. at 1267.
68. Id. at 1270.
69. Id. at 1266.
71. Id. at *4.
72. Id. at *11.
73. See Finkel, supra note 1, at 270-77.
infringement of its registered copyright in a label for bottled water. Defendant moved for summary judgment of copyright unenforceability on the ground that plaintiff intentionally misled the Copyright Office by failing to state in the copyright application that the label to be registered was a derivative of earlier labels of a third party. The court agreed, held the copyright unenforceable, and dismissed the copyright infringement claim. Interestingly, the court found the non-disclosure of the derivative status to be particularly egregious because, under existing law, a label requires a higher degree of originality than other writings. The derivative nature of the label in suit was therefore especially critical, since it could have led the Copyright Office to conclude that the label was not sufficiently original and accordingly reject the application.

9. Intermediate Copying The Atari/Nintendo Case on Appeal.

In *Atari Games Corp. v. Nintendo of America, Inc.*,75 the district court preliminary enjoined Atari from "intermediate copying" of Nintendo's computer program which the court opined constituted copyright infringement. The case is now on appeal to the Court of Appeals for the Federal Circuit. A decision is expected shortly as the case was presented for oral argument on November 6, 1991.76 The issue of the permissibility of intermediate copying is squarely presented on appeal, and should be decided by the Federal Circuit. For example, in its reply brief on appeal Atari attacked the district court's holding, and Nintendo's attempt to support that holding, as follows:

Nintendo urges a rule of law that would preclude software competitors from making intermediate copies of copyrighted computer programs in order to analyze their functionality and, based on learning acquired, to develop compatible, non-infringing products. Such a rule would effectively merge copyright and patent, and eviscerate competition in software development. It is contrary to both statute and judicial precedent, and cannot save the injunction.77

10. Copyrightability of a "Control Program" in PLA.

On October 9, 1991, Intel Corp. (Intel) filed a copyright in-

fringement action against Advanced Micro Devices (AMD) alleging, among other things, that AMD's microprocessors (e.g., the AM386) infringe Intel's registered copyrights in (1) the microcode program stored in the ROM (Read Only Memory) of Intel's 80386 microprocessor chips (386SX and 386DX chips); and (2) the "control program" stored in the PLA [Programmable Logic Array] of the same chips.  

While it is settled law that microprocessor microcode stored in ROM is a copyrightable "computer program" protected under U.S. copyright laws, no reported case has considered the issue of whether the contents of a PLA is also protectable as a computer program. The programmed PLA in suit is apparently used as a decoder for decoding each object code instruction (e.g., Add contents of register A and register B and place the sum in register C) into an address in the microcode ROM where the first microinstruction for executing the object code instruction is stored.

Unfortunately, this case may never come to trial, and a determination of the copyrightability of PLA contents will have to await another legal confrontation between these or other parties. In April 1987, Intel and AMD entered an arbitration proceeding centering on allegations by AMD that Intel was in breach of a February 1982 Joint Technology Exchange Agreement. After the liability phase, the arbitrator held that Intel had in fact committed multiple breaches of the subject agreement. On February 24, 1992, after the remedies phase, the arbitrator entered an "Award of Arbitration" in which AMD was granted a perpetual right (license) dating back to the day AMD first began development of its AM386 chips, to make and sell AM386 chips, including the copyrighted ROM-embedded microcode program and PLA-embedded "control program" which are the subject of the October 9, 1991 copyright infringement litigation between the parties. If the award is confirmed, Intel's


82. The award states (in reformatted form for clarity):

AMD is hereby awarded a permanent, royalty-free, non-exclusive, non-trans-
present copyright claims should be dismissed, as the license granted by the arbitrator should be a complete defense to Intel's copyright infringement claims.83


A recent case decided by a district court in Louisiana, following precedent in the Fifth Circuit,84 and rejecting what it perceived to be the precedent elsewhere,85 has held that "input and output formats" are not copyrightable. That case is Engineering Dynamics Inc. v. Structural Software Inc.86


A deposit copy of the work (or, in some cases, identifying portions of the work) must be submitted along with an application for registration of the work. On September 19, 1991, the Copyright Office issued a final rule, amending its regulations to provide that "[w]here a work [e.g., automated database, compilation, statistical compendia and the like] is fixed in a CD-ROM format, the deposit must consist of one complete copy of the entire CD-ROM package,

ferable, worldwide right (but not the right to assign, license or sublicense such right to any other party) under any and all Intel copyrights, patents, trade secrets and maskwork rights contained in the current versions of AMD's reverse-engineered 80386 family of microprocessors, to make, have made by a third party solely for AMD, use and sell the prior, current and future revisions and modifications of those products.

Id.

83. Indeed, the award specifically states that "[t]he rights awarded above shall be deemed effective continuously since the time AMD commenced reverse engineering the 80386 and shall extend indefinitely into the future," and explains:

The intent of this paragraph [5] is to provide a complete and dispositive defense to AMD as to the Intel claims against AMD regarding the technology and intellectual property used in AMD's current versions of the 80386 in such lawsuits as Intel Corp. v. Advanced Micro Devices, Inc., (A 91 CA 800) in the United States District Court for the Northern District of California, and Intel Corp. v. Advanced Micro Devices, Inc., (C 90 20571 WAI) in the United States District Court for the Northern District of California, and to preclude and defeat other potential Intel intellectual property infringement claims with respect to the technology used in AMD's afore-described past and current versions, and future revisions and modifications, of the 80386.

Id.


including a complete copy of any accompanying operating software and instruction manual, and a printed version of the work embodied in the CD-ROM, if the work is fixed in print as well as a CD-ROM."87 This new regulation was adopted because the Copyright Office determined that "The CD-ROM package is emerging as a major format for dissemination of important information and reference works."88


The Registrar of Copyrights has recently been authorized to record and provide a certificate of recordation with respect to shareware, and to compile, periodically publish, and offer for sale, information with respect to such recordation. Effective October 8, 1991, the Copyright Office issued an interim regulation, establishing the Computer Software Registry for recording shareware software and registering documents pertaining to shareware software (e.g., licenses), and establishing procedures for donating copies of public domain software (i.e., software which has been publicly distributed with an explicit disclaimer of copyright protection by the copyright owner).89 The interim regulation requires that documents be submitted in the form of photocopies or facsimile reproductions,90 and also "encourages the submission of a machine-readable copy of the document in the form of an IBM-PC compatible disk."91

The Copyright Office explained that the term "shareware" refers to copyrighted software widely distributed by the copyright owner (e.g., through electronic billboards or disks) with relatively few restrictions, to give potential users an opportunity to test and review the software.92 If a potential user elects to retain and use the software under license from the copyright owner, such person must

register the use with the owner and pay a registration fee, usually far below the cost of purchasing comparable software marketed through more conventional commercial (e.g., mass-marketing) channels. The Copyright Office believes that "[t]he shareware system of marketing software is an increasingly popular way for authors of computer software to enter the software market," and "[t]he Computer Software Registry is intended as a means for notifying the public of the licensing terms applicable to individual programs marketed on a shareware basis."

It is critical to note that registering shareware software in the Computer Software Registry is not a substitute for registration of a claim to copyright in the software, which is generally a prerequisite to filing suit and entitlement to certain remedies in an action for infringement. Further, recordation of a license or other agreement relating to an interest in shareware software is not a substitute for recordation under § 205, which apparently remains the exclusive means for perfecting a security interest in a copyright.

94. 56 Fed. Reg. 50,657.
95. 56 Fed. Reg. 50,657: "The Copyright Office strongly urges shareware authors to register their copyright claims in their programs through usual procedures. Only through prompt registration can authors be assured of statutory damages and attorney's fees under section 412 of title 17. Participation in the Computer Software Registry is not a substitute for registration of the claim to copyright."
96. 37 C.F.R. § 201.26(a): "Documents transferring the ownership of some or all rights under the copyright law of computer software marketed as shareware and security interests in such software should be recorded under section 205 of title 17, as implemented by § 201.4 of these regulations"; see also 56 Fed. Reg. 50,657-58:

The legal effect of recording a document in the Computer Shareware Registry is at the discretion of the courts. . . . [D]ocuments transferring ownership of the rights under copyright of programs marketed on a shareware basis should be recorded under section 205 rather than solely in the Computer Shareware Registry. . . . In addition, security interests, wills, and bequests regarding programs marketed as shareware should be recorded under section 205. Timely recordation pursuant to 17 U.S.C. § 205 is necessary to be assured of constructive notice effect against a subsequent bona fide purchaser of the same rights. See also In re Peregrine Entertainment, 16 U.S.P.Q.2d (BNA) 1017 (C.D. Cal. 1990) (recor-
dation under 17 USC § 205 is the exclusive means to perfect a security interest in copyright), discussed in detail in Finkel, supra note 1, at 286-88.