

**COMPUTER INTELLECTUAL PROPERTY CLAIMS:
COMPUTER SOFTWARE AND DATA
BASE PROTECTION**

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The establishment of the National Commission on New Technological Uses of Copyrighted Works was authorized on December 31, 1974, to help integrate advancing computer technologies with the legislative process by recommending to the President and Congress necessary changes in copyright law and procedure.¹ In order to accomplish this task the Commission is authorized to:

(b) . . . study and compile data on:

- (1) The reproduction and use of copyrighted works of authorship—
 - (A) in conjunction with automatic systems capable of storing, processing, retrieving, and transferring information, and
 - (B) by various forms of machine reproduction, not including reproduction by or at the request of instructors for use in face-to-face teaching activities; and
- (2) the creation of new works by the application or intervention of such automatic systems or machine reproduction.²

Within the scope of this broad policy directive, the Commission has defined a set of subsidiary issues which have formed the basis for conducting its research and study activities. These issues include:

1. The manner in which computer software should be dealt with by copyright law.
2. How the copyright law should apply to automated data bases.
3. The copyright consequences of the input or output of a copyrighted work within a computer system.
4. The copyright status of "new works of authorship" created by the application or intervention of computer technology.
5. How the law should deal with the long range implications of photocopying and other means of replication of copyrighted works.

This paper will address the first four of these issues.

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1. 17 U.S.C. § 201 (Supp. V 1975) (effective until January 1, 1978).
2. *Id.* § 201(b).

In order to comply with its mandate to examine questions concerning computer uses of copyrighted works, the Commission authorized a Software Subcommittee to prepare a preliminary report on the application of copyright law to computer programs.³ That report, accompanied by a long and thoughtful alternative proposal by Commissioner John Hersey,⁴ has been widely circulated for comment. The Subcommittee suggests that relatively small changes in the new copyright act⁵ would be required to provide a socially desirable and effective form of protection for computer programs.⁶ Mr. Hersey argues strongly against including such works within the ambit of copyright⁷ and proposes the enactment of special legislation for the protection of computer programs.⁸

The Software Subcommittee has identified the principles underlying its recommendations as:

- 1) encouraging the broad dissemination of works of authorship such as computer programs;
- 2) enabling authors to recover their costs from the distribution of their wares; and
- 3) protecting such works against misappropriation.⁹

These principles emphasize the Commission's commitment to its mandate by assuring public access to copyrighted works while recognizing the rights of copyright owners.¹⁰

The Subcommittee has been greatly concerned that its recommendations not be tied to existing technology and that specific statutory language suggested be capable of adapting to changes in computing technology. The definition suggested for a computer program exemplifies this point: "A 'computer program' is a fixation of a series of

3. Report of the Software Subcommittee to the National Commission on New Technological Uses of Copyrighted Works (1977) [hereinafter cited as Software Report] (document available from the National Commission on New Technological Uses of Copyrighted Works (CONTU), Washington, D.C. 20558).

4. Hersey, Additional Views on Computer Software (1977) (appended to Software Report).

5. 17 U.S.C.A. §§ 101-810 (West Supp. 1977) (effective January 1, 1978 except as otherwise expressly provided).

6. Software Report, *supra* note 3, at 7-8.

7. See note 16 *infra* and accompanying text.

8. Computer Software Protection Act included in Hersey, *supra* note 4, following 24.

9. Software Report, *supra* note 3, at 1.

10. *Id.* at 5.

statements or instructions to be used in conjunction with a computer in order to bring about a certain result."¹¹ This language does not include technical jargon that would tie it to current technology and would be inserted among the definitions in the new act.¹²

It has been suggested that "[a]ny copyright applicable to a computer program shall not extend to the process embodied in the program, and a user shall be privileged to replicate the program in order to carry out the process."¹³ These concerns have been recognized and are reflected in the report of the Software Subcommittee. Furthermore, since monopolization of the processes or algorithms embodied in a program is antithetical to the basic principles of copyright, the new law specifically 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."¹⁴

Another concern dealt with by the Subcommittee's proposed revision of section 117,¹⁵ is designed to assure that the inputting of a program into a computer for use by a rightful possessor is not an infringement. This section would also permit the preparation of archival copies of a program by a lawful possessor as insurance against loss or destruction of the master; it would, however, prohibit all others from making program copies.

11. *Id.* at 16.

12. 17 U.S.C.A. § 101 (West Supp. 1977) (effective January 1, 1978).

13. *Copyright Law Revision: Hearings on S. 597 Before the Subcomm. on Patents, Trademarks, & Copyrights of the Senate Comm. on The Judiciary, 90th Cong., 1st Sess. 567 (1967) (statement of Edison Montgomery) [hereinafter cited as Copyright Hearings].*

14. 17 U.S.C.A. § 102(b) (West Supp. 1977) (effective January 1, 1978).

15. Software Report. *supra* note 3, at 19. Proposed § 117 provides:

Notwithstanding the provisions of § 106, it is not an infringement for the rightful possessor of a copy of a computer program to make or authorize the making of another copy of that computer program *provided*:

- (1) that such new copy is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner, or
- (2) that such new copy is for archival purposes only and that all archival copies are destroyed in the event that continued possession of the computer program should cease to be rightful.

Any copies prepared in accordance with the provisions of this section may be leased, sold, or otherwise transferred by the person making such copies only as part of the lease, sale, or other transfer of all rights in the program.

The alternative proposal of Commissioner Hersey proceeds on the premise that a computer program, at some point in its development, "is embodied in material form and becomes a *mechanical device*, which is engaged in the computer to become an essential part of a mechanical process."¹⁶ Thus, a computer program is not a writing that sets forth instructions but rather the mechanical embodiment of the instructions themselves. In light of this distinction, Mr. Hersey suggests the enactment of special legislation which would "protect *both the expression* (appropriate to copyright) *and the innovative ideas* (appropriate to patent) involved in the creation of computer programs."¹⁷

16. Hersey, *supra* note 4, at 2.

An argument commonly made in support of the copyrightability of computer programs is that they are just like ordinary printed (and obviously copyrightable) lists of instructions for mechanical work. The Software Subcommittee calls a program (p. 3) "a writing which sets forth instructions or sets of instructions." But this analogy, or metaphor, does not hold up. Descriptions and printed instructions tell human beings how to use materials or machinery to produce desired results. In the case of computer programs, *the instructions themselves* become an essential part of the machinery that produces the results. They may become (in chip or hardwire [*sic*] form) a permanent part of the actual machinery; or they may become interchangeable parts, or tools, insertable and removable from the machine. In whatever material form, the object phase of the program enters into the mechanical process. The former language of the instructions is converted into a device commanding a series of electrical impulses which—to use a slightly inexact layman's image—set and operate the switches of the computer in such order as to produce the desired result.

At different times, then, a given program is both "source" and "object," both a writing and a mechanical tool or machine part. Printed instructions tell how to do; programs both tell how *and* do. The language used to describe and discuss computer programs commonly express this latter, active, functional phase, not the "writing" phase. For example, an earlier draft of CONTU's Data Base Subcommittee, discussing automated data bases, spoke of a "program which does the searching and retrieving"—note the operative verb, "does." It was not said that the program "describes" or "gives instructions" for functions of search and retrieval. It "does" them. This is the mechanical fact. A true writing has never before done work in this way—no matter how fervently many an author may have wished his words could "do" something.

Id. at 2-3.

17. *Id.* at 22-24.

This statute places the protection of an essentially industrial and commercial article where it belongs, and it avoids the pollution of copyright by mechanical devices.

Why does this matter? Proponents of copyright for computer programs say that it is a matter of semantics whether one calls a form of protection "copyright" or "beanbag." They reason that if the characteristics of protection are somewhat similar to those provided writings under copyright, it would be wiser to bend the copyright law than to devise a separate statutory scheme to provide the desired protection.

But the entitlement of computer programs to copyright would set a radical precedent. For the first time, copyright would protect a device which is cap-

The report of the Data Base Subcommittee¹⁸ also responds to concerns regarding the copyright consequences of “input” and “output” of works to or from computer systems,¹⁹ as well as the copyright status of a computer data base itself. An automated data base, the report suggests, is a new embodiment of a kind of work long recognized as eligible for copyright. Protection for dictionaries, encyclopedias, and other works of compilation has been available under the 1909 act and will continue to be available under the 1976²⁰ act. The principle recommendation of the Subcommittee is that the present section 117,²¹ which freezes the law relating to computer uses of copyrighted works into the patterns of the 1909 Act, be deleted to permit application of the principles of the new law. The proposed law provides generally that:

Copyright protection subsists, in accordance with this title, 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*.²²

able of “communicating” only with machinery—thus equating machines with human beings as the intended recipients of the distribution that copyright was designed to foster.

Surely it is especially vital, in a time of a hurtling and insatiable technology, that the Nation’s laws reflect, whenever possible, a distinction between the realm and responsibility of human beings and the realm and responsibility attributed to machines. This statute would help to do that.

Id. at 24.

18. Report of the Data Base Subcommittee to the National Commission on New Technological Uses of Copyrighted Works (July 1976) [hereinafter cited as Data Base Report] (document available from CONTU, Washington, D.C. 20558).

19. *Copyright Hearings*, *supra* note 13, at 567.

20. 17 U.S.C.A. § 101 (West Supp. 1977) (effective January 1, 1978) defines “compilation” as “a work formed by the collection and assembling of preexisting materials or of data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship. The term compilation includes collective works.”

21. 17 U.S.C.A. § 117 (West Supp. 1977) (effective January 1, 1978) provides:

Notwithstanding the provisions of sections 106 through 116 and 118, this title does not afford to the owner of copyright in a work any greater or lesser rights with respect to the use of the work in conjunction with automatic systems capable of storing, processing, retrieving, or transferring information, or in conjunction with any similar device, machine, or process, than those afforded to works under the law, whether title 17 or the common law or statutes of a State, in effect on December 31, 1977, as held applicable and construed by a court in an action brought under this title.

22. 17 U.S.C.A. § 102(a) (West Supp. 1977) (effective January 1, 1978) (emphasis added).

This statement of principle, in the absence of the constraints imposed by section 117, would answer most of the concerns regarding the input or output of copyrighted works, as well as the copyrightability of a work that exists solely in magnetic media. The protection afforded to a work, regardless of its medium would preclude the unauthorized input, output, or storage of a work within the memory components of a computer system.²³

Principles of fair use²⁴ would be applicable in limited circumstances to permit research or scholarly uses of computer readable works. The creation of a concordance or index to facilitate the syntactic analysis of a work would be possible.²⁵

The New Works Subcommittee is dealing with the issues posed by the use of computers as aids to human creativity. Familiar examples in this area are computer produced art and music; however, the creation of more common works also involves computers to process data bases by the application of programs, both of which may be subject to copyright. How much human creativity should be required to copyright such works? Who is the author of a computer-produced work? Is it the programmer, the compiler of the data base, or the machine operator? The Data Base Subcommittee report addresses some of these problems and suggests that the proprietor of a copyrighted data base has a legitimate interest in derivative works prepared from the data base.²⁶

23. Data Base Report, *supra* note 18, at 5, 6.

24. 17 U.S.C.A. § 107 (West Supp. 1977) (effective January 1, 1978).

25. Data Base Report, *supra* note 18, at 7-8.

Exemplifying such fair uses could be the creation of a copy in computer memory in order to prepare a concordance of a work, or to perform a syntactical analysis of a work, which but for the use of a computer would require a prohibitive amount of human time and effort. To satisfy the criteria of fair use, any copies created for such research purposes should be destroyed upon completion for the research project for which they were created. Should the individual or institution carrying on this research desire to retain the copy for archival purposes or future use, it should be required to obtain permission to do so from the copyright proprietor.

Id.

26. It appears that adequate legal protection for proprietary rights in extracts from data bases exists under traditional [*sic*] copyright principles as expressed in the new law, supplemented by still-available relief under common law principles of unfair competition. The unauthorized taking of substantial segments of a copyrighted data base should be considered infringing, consistent with case law developed from infringement of copyright in various forms of directories. In addition, common law principles of misappropriation, which according to

The Commission's efforts will culminate in a final report to the President and Congress.²⁷ Before that report can be prepared, hearings on the various subcommittee reports must be held. In the fall of 1977, hearings on computer software and data bases will be conducted, and as soon as reports from the Photocopying and New Works Subcommittees are prepared they will be circulated to provide a basis for additional hearings. When the hearings are completed on these preliminary reports, a draft final report may be the subject of a final round of hearings. By this process the Commission hopes to encourage the widest possible public participation in its decisionmaking process to assure that the best possible final report is prepared.

the legislative reports accompanying the new law are not preempted with regard to computer data bases, are available to enforce proprietary rights in these works.

Id. at 11 (footnotes omitted).

27. CONTU under the terms of 17 U.S.C.A. § 206(b) (West Supp. 1977) (effective until January 1, 1978) is required to deliver this final report on or before December 31, 1977. The Commission has requested an extension to July 31, 1978.

