

SUMMARY OF REMARKS
Before the
NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS

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September 1976

The Rand Paper Series

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Santa Monica, California 90406

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by

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September 17, 1976

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I am very pleased to appear before you this morning.

My name is Peter Weiner, and I am Head of the Information Sciences Department of the Rand Corporation. The views I express today are my own and are not necessarily shared by Rand or its research sponsors. I would, however, like to acknowledge the time and effort spent by two of my Rand colleagues, Drs. Norman Shapiro and Rein Turn, who helped me think through the substance of my remarks.

In the invitation I received from Mr. Keplinger, I was asked to discuss what I see as new developments forthcoming in computer and information technology which will impact on individual authorship and the creation and dissemination of information products, addressing a portion of my remarks to the "new works" issue. I also understand that the commission is concerned with developing a body of law which can deal effectively with changes in these important technologies in the long term.

The legislation that modifies the copyright laws to take account of the new technologies may well have to deal with changes in the technologies for as long as twenty-five to fifty years. It is essentially impossible to make credible predictions over this length of time. Let me therefore offer a personal speculation:

-> Within the next fifty years, computer-based systems will play an important role in the creation, storage, and dissemination of literary and other conventional works of authorship. Included in my view of this computer-based world is the prediction that readers will access these works, stored in information systems, through softcopy terminals.

In the remainder of this discussion, I will try to bring into focus some specific issues that this commission will have to deal with if it chooses to anticipate the computer-based world in the legislation it recommends to Congress. I will also discuss some specific technological developments that led me to my speculation.

I would like at this time to offer a concrete suggestion and explain my reason for it. The suggestion is that this commission include within the copyright framework a body of law that will assure access to software and data bases while recognizing the proprietary rights of those investing in their development. I fully realize that this may require a legal framework that differs considerably from the one on which our current copyright laws are based. But the point is this: The new framework required to deal today with software and data bases is very much the framework that will be needed to deal with conventional works of authorship when they become computer-based.

In today's technology, we achieve the goals of the copyright laws by controlling the "copying" of a work of authorship; that is, we control the creation of a new fixation, but do not control how this fixation is used. For example, we do not try to control how many different individuals read one copy of a book: We only control the creation of that copy. There is nothing fundamental or significant about the mechanism of controlling fixations of a work. It is a mechanism that achieves socially useful goals; it worked reasonably well in 1909 and is still largely useful today. But I do not think this mechanism should be adapted for the computer-based world.

Rather, it will be necessary to develop new concepts of intellectual property law not limited to the traditional copyright framework. This is not going to be an easy task, but I encourage the commission to undertake it now and to apply it to the issues that arise in the protection of software and data bases.

What I presume will be necessary will be definitions of what is permitted to happen within an information system and how return to authors and investors will be managed. In particular, we should consider adopting mechanisms that generate return to an author based on the use of his or her work (such as the reading of a single page). These mechanisms seem both possible and useful.

Every issue that arises now with respect to software and data bases will arise again for the conventional works when they become a part of the computer-based world. For example, conventional works

- may be represented within a computer system in ways analogous to the different representations of computer programs.
- may involve the execution of computer programs in order for the reader of the work to perceive the work.
- may be perceived by computer programs as well as people.
- may be changed by the author (or his program) often enough to be considered a dynamic work.

A question that seems to be of interest to the commission

is that of authorship and copyright interests in "new works" created with the assistance of the computer. I would like to suggest a simple rule that can be routinely applied to help answer questions about whether copyrightable interests have been created and if so who owns them. The rule is to treat a task performed by a computer program as though the task were done by a human hired to do the same job.

Thus, to decide whether a work is copyrightable use criteria that apply to the work and its relationship to other works, not to the nature of its author. Observe that highly intelligent employees can be hired to produce a work that is not copyrightable; conversely, clerks can be hired to produce a work that is.

In order to answer a specific question of authorship rights when a computer program is involved, one must first decide who retains copyright interests in the work performed by the hypothetical employee. A program you create is your proprietary property: The program is your employee. If I want to use your program to help me create a work, I must ask you to allow me to use your employee. We may have to negotiate copyright interests which result from my using your employee.

It is interesting to note that the view of a program as an employee fits the two extreme views that people have about programs. Some say that computer programs can only carry out very simple operations, although at very high speed. Others say that computer programs are capable of complex behavior that is indicative of artificial intelligence. I say that it is irrelevant if the hired human is a dumb clerk or an intelligent assistant.

I have not meant to suggest that "new works" issues will

be easy to resolve in practice. In the computer-based world, one can conceive of complex multiple party interactions that lead to the creation of a new work. Some new works may be created exclusively by computer programs and used exclusively by other computer programs, without human intervention. Thus it may be very difficult to decide or even to detect when a derived work has been produced.

The specific technological developments that led to my speculation concerning the computer-based world are developments that

- are being explored in the research laboratory today and will undergo advanced development and testing in the next five to ten years (if not sooner); and
- will probably be commercially available within the the next ten to twenty years (if not sooner), although perhaps only to specialized markets on a small scale.

The developments are in the following technologies.

- 1) Input technology -- word processing, office automation, and their relevance for the author of a creative work
- 2) Storage technologies and their archival applications
- 3) Communication technologies -- the role of networks and cable distribution systems in bringing information to homes and offices
- 4) Output technologies -- for both soft and hard copy fixations

