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NEW WINE BURSTING FROM OLD BOTTLES: COLLABORATIVE INTERNET ART, JOINT WORKS, AND ENTREPRENEURSHIP

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IN a New Yorker cartoon somewhat less famous than the one captioned "On the Internet, no one knows you're a dog," three men are standing at the end of a very long pipe. Instead of being circular, it is C-shaped. One of the men says, "I'm afraid, Inspector, this means that everybody and everything in the country has been copyrighted." (on file with author)

If the Information Infrastructure Task Force recommendations are adopted by Congress, [FN1] copyright law will over-privatize digital works at the expense of access by individuals to our cultural information commons. [FN2] Nonetheless, I want to suggest and explore here a converse proposition: as the old "bottle" of print-based copyright law expands to cover new media and new uses, the transformative possibilities of these new uses in new media will occasionally pop the cork of existing legal categories. Typical authorship practices in networked computer environments result in works that disrupt the distinction between author and infringer and that create a type of access to works (the access of a joint author to a joint work) that is underdeveloped in current copyright doctrine. [FN3]

In Part I, I review the two major print-based principles of American copyright law: "work" and "author." The dual effects of digitization and networking of computers have exposed the limits of these two principles. I buttress doctrinal observations with some theoretical background: copyright theory influenced by the post-structuralist turn has already forecast the indeterminacy of the text (work) and the death of the subject (author), at least where the latter is based on the ideal type of a solitary genius and the former on the static, reified end-result of the genius' efforts. In Part II, I focus on a specific example of collaboration in a particular superset of networked environments: a work of visual art created on the Internet. I discuss how this project would be treated under recent judicial glosses on the doctrinal category of "joint work"; describe the awkwardness of shoehorning

the project into this doctrinal category; and thus highlight the need for copyright principles that recognize and encourage the unique attributes of creativity within a digital networked computer environment. I also show how copyright theory points to a way out of the doctrinal "problem" created by collaborative work on the Internet. Finally, in Part III, I muse on the implications of an expanded "joint work" category on entrepreneurship in a digital networked environment.

I From Print-Based to Digital Networked-Based Copyright Principles

In this section I examine two of the more important principles underlying a print-based copyright regime: the "work" principle and the "author" principle. The common theme in this abbreviated survey is that digital works, particularly networked digital works, have fundamentally and repeatedly stretched these principles, perhaps beyond the point of usefulness. Moreover, literary theory imported into copyright theory has already corroded these principles as applied to print-based media.

A. The "Work" Principle

Even as the 1976 Copyright Act was being enacted into law, basic statutory terms were contested. The 1976 Copyright Act defined the protectible subject matter of copyright ("works of authorship") [FN4] as having to be "fixed in any tangible medium of expression"; [FN5] yet its drafters recognized that the concept of "fixation" was already challenged by computer technology. [FN6] In 1974, after early hearings on what ultimately became the 1976 Copyright Act disclosed probable controversy over copyright protection in computer technology, Congress created the National Commission on New Technological Uses of Copyrighted Works ("CONTU"). [FN7] The CONTU Report ultimately endorsed the idea of copyrightability of computer programs and recommended revisions to the 1976 Act to address explicitly computer programs. [FN8] The dissenting commissioners noted unique problems caused by trying to impose the concept of fixation on a non-human-readable literary work. [FN9]

A work can be "fixed" so long as it is "sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration." [FN10] But with digital works, which are inherently transient and temporary, this definition of fixation may include fleetingly fixed works within the subject matter of copyright and thus over-extend copyright to works that have no stable form. [FN11] As others have already noted, only in the last three years have courts actually extended the doctrinal category of "copies" [FN12] with the fixation it requires [FN13] to transient computer programs specifically designed to be temporarily stored in random-access memory. [FN14]

Networked computers pose additional challenges to the concept of fixation, challenges which stem from the radical reorganization of time and space on the Internet, as well as its vastly enhanced methods of dissemination. [FN15] Significantly, fixation no longer serves as a proxy for possible use, but rather is highly disconnected from the actual use of a work. A digitized copy of a computer program in the memory of a stand-alone computer is unlikely to

be there unless the computer owner has used, is using, or is planning to use that copy. By contrast, the Internet is composed of vast stores of digitized information, and any particular use is severed from the fixation of digital information within a specific computer's hard drive or memory.

Digitized information may be transferred from one networked computer to another without ever being read or otherwise used by the owner of any particular computer. If someone sends me an e-mail message, for example, that is sufficiently "fixed" so that I could reproduce it or re-transmit it, I may choose to delete it without reading it. Yet, since it was transmitted to me, the person who sent it made a copy on my network server computer's hard drive. By deleting it, I may also be making a copy on the server computer's hard drive, since a "delete" command typically instructs the computer to place the message in a different file rather than to expunge it entirely. If I choose to open the e-mail but not read it, a copy may be made in my computer's memory and not deleted until I "exit" my e-mail application and/or shut my computer down.

Similarly, it is unlikely and perhaps even illegal for anyone who operates the intermediate computers on which the original post may have been stored on its way to my computer to read or otherwise use that message. Thus that message will simply be transmitted over that computer without being used. Yet that message may reside on the transmitting machine's storage units and thus may be sufficiently "fixed" to be a copy. Under the White Paper's theory of infringement, even the passive act of storage could cause the intermediate computer operator to be liable for infringement. [FN16] In the recent order denying summary judgment in *Religious Technology Center v. Netcom On-Line Communication Services, Inc.*, Judge Whyte recognized this difficulty: "Plaintiffs point out that the infringing copies resided for eleven days on Netcom's computer and were sent out from it onto the 'Information Superhighway.' However, under plaintiffs' theory, any storage of a copy that occurs in the process of sending a message to the Usenet is an infringement." [FN17]

If in the networked environment all digitized information is presumed capable of being "fixed," then any use of the work is necessarily an infringement (assuming the originality requirement is met). [FN18] Ironically, however, there is a greater disjuncture between fixation of copies and actual hands-on use in a networked computer environment than in any other technological environment to date. Moreover, the culture that has evolved in the Internet is one in which information is highly promiscuous; even one-to-one private e-mail messages are often redistributed widely and publicly. [FN19] Treating each transmission and retransmission of digitized information as "fixed" and therefore possibly infringing copies of a work does not mirror the reality of social practices on the Internet, and may result in a drastic reduction in the stock of publicly accessible symbols necessary for a healthy creative environment. [FN20]

Furthermore, given the low threshold of fixation endorsed by the White Paper, whereby even the most transient digital works are considered to be fixed, the question naturally arises as to what version of a constantly evolving

digitized work is "the" work. The fixation principle ignores the ready morphing of digitized information that so commonly occurs in networked environments. Many works in a networked environment are profoundly rather than marginally interactive. [FN21]

B. The "Author" Principle

The models of authorship that frequently appear in the networked environment are at odds with the idea of the solitary genius. They are often, perhaps mostly, collaborative or interactive. Although the trend toward interactive programming is increasing, early stand-alone computer programs relied primarily on a division between creator (author) and user (reader). [FN22] The person who wrote the computer software could be easily analogized to the "author" of a literary work. By contrast, in the digital world created by networked computers, each user of a work is also easily transformed into a creator of that same work. In my previous e-mail example, I can reply to the original message at length, retaining some or all of the original message itself within my reply. Many works available through networked computers invite response or are otherwise designed to be interactive. This attribute is one of the biggest advantages of using a networked system of computers. In a networked environment, authorial identity and intent are profoundly malleable and interactive.

Much recent theoretical work on the idea of authorship has challenged the assumption underlying copyright law of a single authorial genius. [FN23] The creative process is complex and depends on a multiplicity of different types of production, as well as on a healthy stock of publicly accessible symbols. [FN24] For example, the concept of "recoding" brought into copyright theory by Rosemary Coombe [FN25] is a concept that makes the reader into an author and thus creates a powerful argument in favor of expanding the public domain of information. In the recoding view of authorship, "expression" is a process rather than a status, something that proliferates rather than is controlled. [FN26] The production of a "work" that is subject to protection by copyright is an activity undertaken by both author and audience. Authorial intent, based as it is on a combination of the political construct of possessive liberal individualism and the social construct of the solitary romantic genius, is rejected in favor of a more complex, contradictory meaning-making process.

The post-structuralist term "intertext," introduced into copyright theory by Richard Rotstein and Keith Aoki, denotes that ambiguous space between author and audience where authorial intent and audience interpretation intersect in a contrapuntal dynamic of coded and recoded meanings. [FN27] The copyright concept of "intertext," used to critique the notion of a user passively reading a print-based work, applies with even more force to digital networked works that take place in what is commonly termed "cyberspace." [FN28] In the intertext, each author is both creator and user; each work is deliberately created by a highly interactive process. The reader (or user) in a digitized networked environment often in turn becomes an "author" even as to works that are not intended to be collaborative.

The binary structure of copyright law, dependent as it is upon a strict division between author and reader, or original artist and copyist, is being corroded by networked digital information. The implications of the collapse of this binary structure are too enormous to be explored at length here. It is important to note, however, that the proliferation of copies in the age of digital reproduction reverses the presumptive valence of "original=good, copy=bad." Many examples of artistic and other sorts of creation on the Internet depend heavily upon the free availability of copies. [FN29]

The fixed work and individual author principles, among others, construct copyright law upon the assumptions of traditional print-based technology, which is increasingly displaced if not made utterly obsolete by digital-based technologies. They are suspect even in this macro-examination. The following section examines their application to one micro-example of collaborative Internet work.

II

Joint Work Principles and Collaborative Internet Work

In this section, I examine an Internet-based visual art piece. [FN30] I first describe the piece and the creator's articulation of it. I then examine how and why this work does not fit into the "joint work" category, a primary doctrinal category through which copyright law recognizes collaborative work. In examining a frankly collaborationist type of visual digital art housed on an Internet World Wide Web site, the very design and execution of which depended on the deliberate changing by many authors of a single author's original image, we may begin to realize the limits of existing legal doctrines that are based on print-based works. Furthermore, we can begin to imagine a copyright structure that responds to practices in the networked digitized environments.

A. Is the Chain Art Project a "Joint Work"?

An artist, Bonnie Mitchell, recently solicited art students, other artists, and anyone else on the Internet to engage in an artistic project that deliberately reworked the boundaries of individual and self. [FN31] The Chain Art project was collaborative and took place in a networked digital environment. Technically, each visual image began when a University of Oregon art student uploaded a digitized image onto an FTP [FN32] site. The person "next in line" in that student's group (typically someone from another state or country) downloaded that image, manipulated it, and uploaded the changed image onto the FTP site. There were twenty-three groups of images, and ultimately 136 participants from ten countries. The final piece is flamboyantly collaborative: each image is attributed to an author and all images are housed together.

Despite the communality in creative effort, questions of individual ownership and commercialization have arisen. Bonnie Mitchell writes: "because I developed the project and coordinated it, am I considered the primary author or editor? What if a gallery wanted to display and sell the work? Who should

get the royalties?" [FN33] Bonnie Mitchell asks how copyright law can honor the artists' need to borrow from existing idioms and at the same time accommodate their need to guard the integrity and uses of their expression?

The Chain Art project is partially about letting go of artistic control. As Bonnie Mitchell stated,

Interesting thing about this project is that while I was developing the concept, I envisioned the end product, the image that was created by numerous individuals, as the most important element. Before the project began, a few participants suggested saving all the in-between images. Although I had planned to save them for archival purposes, I did not realize at the time that the progression, as the image passed from hand to hand, would be much more interesting than the final image alone. [FN34]

In the end, however, Bonnie felt that "it is not possible to look at the pieces as individual works totally separate from the rest of the work. Because each piece built on to the existing piece, it is easier to look at the series of images in the group as a single work with multiple authors." [FN35]

The spirit of collaboration infused this work from beginning to end, but the particular form of collaboration changed in the middle. Instead of defining the "work" as the final image in each group, it was defined as all of the images together. (This vision of the work, however, is articulated by the person who conceived and oversaw the execution of the work rather than by all those who participated in the work.)

The Chain Art project could be treated as a joint work, in which case each artist would be one of the many artists who participated, and each would be able to license the use of the work subject only to a duty to account to the other authors. [FN36] Despite the intensely collaborative nature of the work, however, doctrinal rules may prevent it from being treated as such. "A 'joint work' is a work prepared by two or more authors with the intention that their contributions be merged into inseparable or interdependent parts of a unitary whole." [FN37] The statutory definition of "joint work" focuses on the intent of the authors that the works be merged into a whole. In the absence of express acquiescence to Bonnie Mitchell's overall concept such as a contract, [FN38] the intent question would probably be difficult to resolve without in-depth discovery, including possible depositions of all 136 participants. This will not only result in a plethora of different "intents" but also, due to the advanced stage of the litigation process, make "intent" expensive to determine.

Moreover, legislative history indicates that under the section 101 definition a work would not be "joint" unless its authors collaborated among themselves or unless all of the authors knew, at the time the work was being written, that their contributions would be integrated as "inseparable or interdependent parts of a unitary whole." [FN39] Courts such as the Second Circuit have focused less on the "collaboration" part of this statement than on the "knowledge at the time the work was being written" statement that follows the conjunctive "or". [FN40] That is, courts have construed intent narrowly to mean that all putative joint authors must intend to make a joint work at

the time of the creation of that work. Here, Mitchell's vision of the work was not static. Although she had an overall design, she did not determine in advance what pieces would be included, who would be included as other authors, and how the pieces would ultimately relate to each other. Which version of her design is the merged "work": the anticipated version where only the final image in each group was displayed, or the final version where all images in each group would be displayed? If her intent changed midway through the execution of the piece, does that change the copyrightability of the image groups created in the second half of the execution? Or does her intent at the beginning of the collaborative process control, thus foreclosing protection of the whole group of images? And what of the intent of her students and the other participants: must they be similarly unwavering? Mitchell developed the concept, but interested people immediately began to send her both artistic and technical suggestions, which often wove their way into the work. Moreover, if Mitchell herself had not contributed an image to the piece, she may have found herself in the paradoxical situation of having conceptualized the piece, but having been excluded from authorship status. [FN41]

Although the White Paper expands the possible universe of protection by recommending that transmission of transiently fixed digital information be made a section 106 right, the Chain Art Project shows that some categories of works--ironically the ones that privilege collaborative effort--may not in fact be protected even by these expansive amendments.

B. Why "Joint Work" Does Not Work

As seen from this brief analysis, courts interpreting the doctrinal category of "joint work" have put a highly restrictive spin on the collaborative process: only those collaborative efforts in which all authors agree that the work is intended to be merged into a whole are those that obtain joint work status. Print-based copyright law does not recognize the fluidity of a "work" so common in networked computer environments, and illustrated by the Chain Art Project's constant change in response to the shaping of the work itself. Immediate reflexivity of a work is an important attribute of a digitized networked environment, as well as the post-modern information epoch. [FN42] Print-based copyright doctrine also fails to recognize that Internet-based works invite nonlinear and spontaneously temporal responses to works. [FN43]

The bad news about the joint work category is that it seems not to recognize the morphability, flexibility and fluidity of networked digitized works. The good news is that there is a focus on process--on the activity of creating a work, rather than on the fixed end result of a work. [FN44] This emphasis has the potential to decenter the notion of fixation in typeset or even computer memory as the ultimate definition of a work, and help center the notion of fluidity that is so crucial to a networked environment. For this insight, we need to turn again to the theoretical idea of the "author" behind the work.

As the prior discussion indicates, where multiple authors of a consciously collaborative work exist, we encounter legal interpretations of "joint work" that are influenced by the cult of the Romantic author. [FN45] Copyright law can only recognize a joint work if each individual author intends that

his or her individual flame of genius completely and unambiguously merge into an inseparable or interdependent union with that of the other authors. [FN46] In an artistic production that foregrounds group capacities, characteristics and potentials, group effort is flattened to fit into the Romantic "author" model, in a maneuver that is antithetical to the professed spirit of the organic vision of an artistic effort like the Chain Art project. Alternatively, the "work" is deemed to be that of an individual author, either through individual or compilation copyright. While these are not necessarily evil alternatives, they do not accurately reflect the creative process that went into this work. It is not far-fetched to extrapolate from this example to other collaborative works in networked digitized environments. Whether the work is an e-mail conversation or a serialized document, the individual-based notion of "work" does not describe what is actually occurring in this new medium.

The theoretical concepts of "recoding" and the "intertext" could begin to expand the doctrinal category of joint work to account for the ways in which collaborative work is actually authored in networked computer environments. Perhaps the idea of "recoding" can be implanted modestly in copyright law to describe a type of activity that takes place among several joint authors. For example, what if "intent" of a putative joint author were measured not by each author's conscious intent, but by the existing expectations of subcultures within the Internet? [FN47] Here, why not infer intent from the fact that the individual author voluntarily created his or her work in response to a call for participation that emphasized interactivity? If an individual would-be author's sense of self is violated by this construction, then he or she can simply choose not to participate in the construction of this kind of "work." If such intent is inferred in an environment that everyone knows is profoundly interactive, then joint works could also include other two or multi-way communications that occur regularly on the Internet, such as e-mail postings to discussion groups (particularly where the ground rules for participation include an explicit policy of interactivity). Again, this would encourage and even naturalize the flexibility that is a distinctive feature of networked communications environments.

III

New Copyright Principles and Entrepreneurship on the Internet

One major "policy" principle behind the CONTU Report was to create incentives for the development of computer programs. That principle is based on a fear of ease of reproducibility: digitized works are easy to reproduce, and such reproduction is hard to detect. [FN48] Thus creators of computer programs may lack incentive to write programs. According to the CONTU Report, that incentive comes in the form of copyright protection. [FN49]

The ghost that haunts the White Paper seems to be the same fear that animated the CONTU Report: without copyright as an incentive, no works will be produced because those that are produced could easily be reproduced. [FN50] However, many of those positioned in the digital world [FN51] as well as the legal world [FN52] question that assumption. Among the digerati, [FN53] Esther Dyson

argues that content itself should not be protected by copyright law; Internet providers presumably would recoup their investment through services such as support, customization, search engines or other content free activities. [FN54] John Perry Barlow and Richard Stallman made similar arguments at The Innovation and Information Environment Conference.

The incentive principle upon which the CONTU Report and the White Paper is based does not work easily in a digitized world where much of the "value" of information comes from the flexible uses to which it can be put. Moreover, this principle seems to be undermined empirically by the proliferation of new works already available on networked computers. [FN55] No incentive, at least in the form of formal copyright protection, seems to be necessary for many authors who already "publish" on the Internet. In a networked computer environment, many creators of works are not highly capitalized, do not expect to receive protection for their works, and even expect and welcome changes and interactive suggestions made by others. In many significant ways, the Internet has flourished in the absence of copyright protection. [FN56]

However, even in intensely collaborative environments, individual feelings of ownership (or perhaps possessiveness) emerge. An incentive question, for example, precipitated my examination of the protectability of the Chain Art project. It was one based on an artist's urge to "commercialize" the work by licensing it to an art gallery. [FN57] Another artist, Vibeke Sorenson, expressed related concerns of attribution and integrity when she wrote that the public nature of Internet art "does not mean that advertising agencies, for example, should be able to take that work and exploit it without permission and proper credit." [FN58] Perhaps not surprisingly, artists themselves (even some who are flamboyantly appropriationist or who engage in deliberately collaborative work) retain some core notion of artistic integrity that is tied to a "self," albeit a slightly modified Romantic definition of self. [FN59] Whatever the futurologists predict, the Internet has not yet erased the vestiges of earlier historical views of authorship and works--views reinforced by cultural practices that persist despite successive waves of different kinds of "mechanical reproduction," appropriation art, post-structuralist theory and critical thinking in the law. Moreover, even a view of information that privileges individual right of access over individual proprietary rights must address the interests in attribution and integrity that relate to accuracy if not ownership of information. [FN60]

How would an expanded "joint work" category affect incentive to create? To the extent that one believes in a rough positive correlation between copyright and innovation, the more joint works, the better. Because of the tenancy in common shared by joint authors, any one of them could license the use of the work (provided that the license was non-exclusive), subject only to a duty to account. The effect would be to encourage rather than discourage the broad dissemination of the work: the more authors, the more opportunities and potential for use and licensing of the joint work. Assuming that copyright protection enhances incentive to create works by enhancing the commercialization potential of a work, the recognition of a joint work category would further that end.

Broad dissemination by several joint authors of "privately" owned works might ironically simultaneously enhance access to any particular work. In fact, the "joint work" category is often raised as a defense to a claim of copyright infringement, in an attempt by the defendant to defeat the exclusive control of a work by a single author. The "joint work" defense, like the fair use defense, shows how individual rights can themselves be used as tactics against the tendency to centralize and control information that inevitably accompanies an increase in proprietary rights. This would increase the domain of accessible works essential to the progress project underlying the patent and copyright clause of the Constitution. [FN61]

Conclusion

It is probably true, as one Conference participant noted privately, that the term "new wine in old bottles" is a hackneyed metaphor among the legal digerati by now. Yet it is still useful. This paper begins to explore how the new wine of digital networked information spills out of the old bottle of the 1976 Copyright Act.

Of course, reality always spills out of the categories we impose upon it. Awkwardness of a doctrinal fit, in and of itself, is not enough to create new principles to animate existing caselaw. The most pertinent question that I have attempted to answer here is whether the print-based copyright principles unduly distort the creative process in networked computer environments. My brief examination of one Internet art project and one doctrinal copyright category yields a tentative answer of "yes." In order to accommodate and indeed capitalize on the flexibility and flux inherent in the medium of networked computer environments, copyright principles should more accurately reflect actual practice of creation in these environments.

[FN_a]. Associate Professor, Syracuse University College of Law. Thanks to Professor Bonnie Mitchell of the Syracuse University College of Visual and Performing Arts, whose Internet art projects triggered these thoughts, and to Professor Keith Aoki, whose tireless energy encouraged the translation of these thoughts into fixed form. I gratefully acknowledge the research support provided by my research assistants Rika Suzuki and Scott Mulligan. I also thank Dean Charles R. O'Kelley of the University of Oregon Law School for hosting the Innovation and Information Environment Conference, and Dean Daan Braveman of Syracuse College of Law for research support as well as for the New Yorker cartoon. I dedicate this to my father, Wan Yong Chon, who refuses to bifurcate art from science.

[FN1]. Information Infrastructure Task Force, Intellectual Property and the National Information Infrastructure: The Report of the Working Group on Intellectual Property Rights, App. 1 (September 1995) [hereinafter White Paper]; H.R. 2441, 104th Cong., 1st Sess. (1996).

[FN2]. Anne Wells Branscomb, *Who Owns Information? From Privacy to Public Access* (1994); Peter Jaszi, *Caught in the Net of Copyright*, 75 Or. L. Rev. (1995); Jessica Litman, *Revising Copyright Law for the Information Age*, 75 Or.

L. Rev. (1995); Pamela Samuelson, *The Copyright Grab*, *Wired*, Jan. 1996, at 135.

[FN3]. Peter Jaszi, *On the Author Effect: Contemporary Copyright and Collective Creativity*, 10 *Cardozo Arts & Ent. L.J.* 293 (1992). Although copyright law has a category for works created by several writers working together on a preconcerted basis, the consequences that flow from the categorization of a work as one of "joint authorship" reflect the individualistic bias of American copyright doctrine.... Far from acknowledging the extent to which participation in a corporate, creative enterprise entails the surrender of individual prerogative, copyright law implicitly assumes the continued relevance of the Romantic vision of "authorship" to this domain.
Id. at 314-15.

[FN4]. 17 U.S.C. s 102(a) (1994).

[FN5]. Id.

[FN6]. The legislative history of the 1976 Act states: "Section 102(b) is intended, among other things, to make clear that the expression adopted by the programmer is the copyrightable element in a computer program, and that the actual processes or methods embodied in the program are not within the scope of the copyright law." H.R. Rep. No. 1476, 94th Cong., 2d Sess. 57 (1976), reprinted in 1976 U.S.C.C.A.N. 5659, 5670.

[FN7]. CONTU was charged with making recommendations about "the reproduction and use of copyrighted works of authorship (1) in automatic systems capable of storing, processing, retrieving, and transferring information, and (2) by various forms of machine reproduction." National Commission on New Technological Uses of Copyrighted Works, Final Report 4 (1979) [hereinafter CONTU Report]. This quaint enabling language resulted in a 154-page Final Report--colloquially called the CONTU Report--which took three years to draft (compared to the NII Working Group's one-and-a-half year sojourn on the 278-page White Paper, *supra* note 1).

[FN8]. The question of whether fixed "copies" of computer programs could exist was answered affirmatively, on the reasoning that computer programs could be stored and therefore reproduced. Among other things, the CONTU Report suggested that the placement of a copyrighted work into a computer--or, in the jargon of the trade, the "inputting" of it--is the preparation of a copy. This may be ascertained by reading together the definitions of copies and fixed found in section 101.... Because works in computer storage may be repeatedly reproduced, they are fixed and, therefore, are copies.
CONTU Report, *supra* note 7, at 22.

[FN9]. A strong dissent by Commissioner Hersey argued that [t]he mechanical phases of programs were now described as copies. On several grounds this euphemism proves as unserviceable as the previous ones.... [A] program, when keyed or run into a computer, is transformed by

a compiler program into a purely machine state. The term copy is meaningless for the reason that in this transformation the means of expression of the original work become totally irrelevant. All that matters is the program's functional use.

Id. at 32. This reasoning applies also to the question of whether intermediate digitized versions of literary, visual, or auditory works can be considered copies of those works as they are expressed in human-readable form.

[FN10]. 17 U.S.C. s 101 (1994).

[FN11]. Jessica Litman, *The Exclusive Right to Read*, 13 *Cardozo Arts & Ent. L.J.* 29, 41 (1994). A slew of computer copyright cases shows the difficulty of determining the proper subject matter of copyright even in software that is fixed for more than a temporary period. See *Lotus Dev. Corp. v. Borland, Int'l., Inc.*, 49 F.3d 807 (1st Cir. 1995), *aff'd*, 116 S. Ct. 804 (1995) (copyrightability of menu command hierarchy); *Computer Assoc. Int'l, Inc. v. Altai, Inc.*, 982 F.2d 693 (2d Cir. 1992) (copyrightability of program structure); *Whelan Assoc., Inc. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222 (3d Cir. 1986) (copyrightability of program structure); *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240 (3d Cir. 1983) (copyrightability of object code); *NEC Corp. v. Intel Corp.*, 1989 WL 67434 (N.D. Cal. 1989) (copyrightability of microcode).

[FN12]. " 'Copies' are 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." 17 U.S.C. s 101 (1994).

[FN13]. *Id.*

[FN14]. *MAI Systems Corp. v. Peak Computer, Inc.*, 991 F.2d 511 (9th Cir. 1993) ; *Triad Systems Corp. v. Southeastern Express Co.*, 1994 U.S. Dist. LEXIS 5390 (N.D. Cal. Mar. 18, 1994) *aff'd*, 64 F.3d 1330 (9th Cir. 1995); *Advanced Computer Services of Michigan, Inc. v. MAI Systems Corp.*, 845 F. Supp. 356 (E.D. Va. 1994). Not only are these decisions questionable from a copyright doctrinal perspective but they also give the plaintiff a virtual monopoly on activities ancillary to the software product, such as service and maintenance. This would be considered a form of "tying" in a patent context, and thus raises significant antitrust concerns. See *Advanced Computer Services*, 845 F. Supp. at 367-69.

[FN15]. M. Ethan Katsh, *Cybertime, Cyberspace and Cyberlaw*, 1995 *J. Online L.* art. 1, available online URL: <http://www.wm.edu/law/publications/jol/>.

[FN16]. White Paper App. 1 at 2 ("Section 101 of the Title 17, United States Code, is amended--in the definition of 'transmit' by inserting at the end thereof the following: 'To transmit' a reproduction is to distribute it by any device or process whereby a copy ... of the work is fixed beyond the place from which it was sent.") *Sega Enter. Ltd. v. Maphia*, 857 F. Supp. 679 (N.D. Cal. 1994) (direct liability of a computer bulletin board operator who knew and encouraged infringing activities); *Playboy Enter., Inc. v. Frena*, 839 F.

Supp. 1552 (M.D. Fla. 1993) (contributory liability for copyright infringement by a "passive" computer bulletin board operator); see generally Niva Elkin-Koren, Copyright Law and Social Dialogue on the Information Superhighway: The Case Against Copyright Liability of Computer Bulletin Board Operators, 13 *Cardozo Arts & Ent. L.J.* 345 (1995).

[FN17]. *Religious Technology Ctr. v. Netcom On-Line Communication Servs., Inc.*, 907 F. Supp. 1361, 1370 (N.D. Cal. 1995).

[FN18]. This extreme result has led some to argue that the White Paper's recommendations eliminate browsing and other currently legal uses of copies of works. See Litman, *supra* note 11, at 31-32.

[FN19]. Posting Private Mail--Comments to Matt Elkin, Dec. 5, 1995, available at cyberia-l@warthog.cc.wm.edu. A discussion of the default assumption for posts to a computer discussion group can be found at Copyright Permissions Proposal, Dec. 21, 1995, available at cyberia-l@warthog.cc.wm.edu.

[FN20]. *Sega Enterp. Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1527 (9th Cir. 1992) (finding fair use in intermediate copy of computer program where "computer programs ... distributed for public use in object code form often precludes public access to the ideas and functional concepts contained in those programs, and thus confers on the copyright owner a de facto monopoly over those ideas and functional concepts."); *Lewis Galoob Toys, Inc. v. Nintendo of America, Inc.*, 964 F.2d 965 (9th Cir. 1992); see generally Jessica Litman, *The Public Domain*, 39 *Emory L.J.* 965 (1990) (arguing that a large public domain is a prerequisite to innovation).

[FN21]. Networked computer environments do not necessarily differ in kind from stand-alone computers or even other literary works in that regard, but they differ vastly in amount of interactivity. The CONTU Report recognized that many transactions involving copies of programs are entered into with full awareness that users will modify their copies to suit their own needs, and this should be reflected in the law. The comparison of this practice to extensive marginal note-taking in a book is appropriate: note-taking is arguably the creation of a derivative work, but unless the note-taker tries to copy and vend that work, the copyright owner is unlikely to be very concerned. Should proprietors feel strongly that they do not want rightful possessors of their copies of their programs to prepare such adaptations, they could, of course, make such desires a contractual matter. CONTU Report, *supra* note 7, at 13-14.

[FN22]. Software vendors have attempted to place restrictions on software through shrink-wrap and other kinds of licenses, such as the rigid use licenses at issue in the MAI trilogy of cases. See *supra* note 14; see also David A. Rice, *Licensing the Use of Computer Program Copies and the Copyright Act First Sale Doctrine*, 30 *Jurimetrics J.* 157 (1990). The reported fair use cases involving computer programming competitors demonstrate a reliance on the creator/user divide. See *Lewis Galoob Toys, Inc. v. Nintendo of America, Inc.*, 964 F.2d 965 (1992), *Sega Enterprises Ltd. v. Accolade, Inc.*, 977 F.2d 1510 (1992).

[FN23]. See, e.g., Jessica Litman, Copyright as Myth, 53 U. Pitt. L. Rev. 235 (1991); Peter A. Jaszi, Toward a Theory of Copyright: The Metamorphoses of "Authorship", 1991 Duke L.J. 455 (1991); Rosemary J. Coombe, Objects of Property and Subjects of Politics: Intellectual Property Laws and Democratic Dialogue, 69 Tex. L. Rev. 1853 (1991); Keith Aoki, Authors, Inventors and Trademark Owners: Private Intellectual Property and the Public Domain Part II, 18 Colum.-VLA J.L. & Arts 191 (1994).

[FN24]. See generally supra note 20.

[FN25]. Coombe, supra note 23, at 1863-64 (definition of recoding).

[FN26]. As Vibeke Sorenson stated to me, "the original of a work is the experience of that work by the audience." Vibeke Sorenson, Remarks at The Innovation and Information Environment Conference (Nov. 1995).

[FN27]. Robert H. Rotstein, Beyond Metaphor: Copyright Infringement and the Fiction of the Work, 68 Chi.-Kent L. Rev. 725, (1993); Keith Aoki, Adrift in the Intertext: Authorship and Audience 'Recoding' Rights--Comment on Robert H. Rotstein, "Beyond Metaphor: Copyright Infringement and the Fiction of the Work", 68 Chi.-Kent L. Rev. 805, 810 (1993) (linking intertextuality to recoding). Rotstein pointed out that much post-structuralist criticism ... emphasizes the inevitable interrelationship--termed 'intertextuality'--among all texts. Post-structuralist thought posits that intertextuality arises out of both the reading and the writing process. Texts do not exist independently of someone reading them, and the text is never a separate 'work,' but is always permeated by other texts that the reader brings to the process of reading.
Rotstein, supra at 737.

[FN28]. "Cyberspace" is derived from William Gibson's cyberpunk novel. See William Gibson, Neuromancer 52-53 (1984). Alternative terms include: "infobahn" (attributed to John Perry Barlow, Jackboots on the Infobahn, Wired (Apr. 1994)), "information superhighway," "metaverse," "datasphere," "the Web," "the Net." See Timothy C. May, What's the opposite of cyberspace (Jan. 5, 1996) archived at <http://www.law.cornell.edu/listservs/cyber/>. I use the term "intertext" to refer to the process of textual or informational meaning-making that occurs in cyberspace.

[FN29]. Jeremy Waldron, From Authors to Copiers: Individual Rights and Social Values in Intellectual Property, 68 Chi.-Kent L. Rev. 841, 842 (1993) (shifting focus of moral justification in intellectual property law from authors to copiers).

[FN30]. I am not making the claim that this one piece represents all of the activity that goes on in a digitized networked environment, or even all of different types of digitized networked art.

[FN31]. Professor Bonnie Mitchell's first Internet art piece, Chain Art, is

the subject of this analysis. It can be reached at <http://ziris.syr.edu>. Housed on the same Web site are examples of Professor Mitchell's more recent work, which is not analyzed here.

[FN32]. FTP is named after the application protocol it uses: the "File Transfer Protocol" (FTP). As the name implies, the protocol's job is to move files from one computer to another. It doesn't matter where the two computers are located, how they are connected, or even whether or not they use the same operating system. Provided that both computers can "talk" the FTP protocol and have access to the Internet, you can use the FTP command to transfer files.

Ed Krol, *The Whole Internet: User's Guide & Catalog* 59 (1992) (emphasis in original).

[FN33]. Bonnie Mitchell, *Creative Connections--International Networked Collaborative Art*, paper presented to the College Art Association 83rd Annual Conference (Jan. 1995) (on file with author).

[FN34]. *Id.*

[FN35]. *Id.*

[FN36]. Alternatively, the work could be treated as a compilation, a work-for-hire, or a derivative work. These possibilities are not explored here.

[FN37]. 17 U.S.C. s 101 (1994).

[FN38]. Of course, if there is an express agreement, then a party probably will not raise a joint work defense.

[FN39]. H.R. Rep. No. 1476, 94th Cong., 2d Sess. 120 (1976), reprinted in 1976 U.S.C.C.A.N. 5659, 5736. See generally Scott C. Brophy, *Joint Authorship Under the Copyright Law*, 16 *Hastings Comm. & Ent. L.J.* 451 (1994); Nancy Perkins Spyke, *The Joint Work Dilemma: The Separately Copyrightable Contribution Requirement and Co-Ownership Principles*, 40 *J. Copyright Soc'y U.S.A.* 463 (1993).

[FN40]. *Childress v. Taylor*, 945 F.2d 500, 505-07 (2d Cir. 1991) (requiring two-part showing: (1) the contribution of each joint author must be copyrightable; and (2) the parties must have intended to be joint authors such "that their contributions be merged into a unitary whole"). See also *Erickson v. Trinity Theatre, Inc.*, 13 F.3d 1061, 1068-69 (7th Cir. 1994); *Weissman v. Freeman*, 868 F.2d 1313, 1318 (2d Cir. 1989).

[FN41]. For those courts demanding independent copyrightability of each author's contribution, a putative joint author such as Mitchell "must supply more than mere direction or ideas. An author is 'the party who actually creates the work, that is, the person who translates an idea into a fixed, tangible expression entitled to copyright protection.'" *Erickson*, 13 F.3d at 1071 (quoting *Community for Creative Non-Violence v. Reid*, 490 U.S. 730, 737

(1989)). This one-size-fits-all definition does not allow courts to take into account the custom of each copyright industry in treatment of authorship. See Brophy, *supra* note 39, at 488. For example, in the screen-writing area, the "idea" person may not be considered typically the author of a work. However, in the conceptual or visual art area, the "idea" person is often the person who is regarded as the primary author.

[FN42]. See Anthony Giddens, *The Consequences of Modernity* 39 (1990) ("We are abroad in a world which is thoroughly constituted through reflexively applied knowledge, but where at the same time we can never be sure that any given element of that knowledge will not be revised.").

[FN43]. See generally Katsh, *supra* note 15.

[FN44]. This is reminiscent of the *Sega* decision, in which the Ninth Circuit found fair use in the intermediate copying of a computer video game program. *Sega Enterprises Ltd. v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir. 1993). The court's inquiry focused less on the final product (the competing video game software) than on the intermediate copying. *Id.* at 1518-19. The court was forced to consider the process of producing a work, rather than the final work itself, in reaching its fair use decision. By shifting its perspective from end result to intermediate process, the *Sega* court was able to discern reasons for keeping the computer code in the public domain. *Id.* at 1520-28.

[FN45]. See Mark Rose, *Authors and Owners: The Invention of Copyright* 122- 24 (1993) (arguing that Shakespeare engaged in collaborationist cultural production, but that his image was refashioned as the quintessential Romantic genius); Rosemary J. Coombe, *Challenging Paternity: Histories of Copyright*, 6 *Yale J.L. & Human.* 397 (Summer 1994) (reviewing Rose, *supra*; Martha Woodmansee, *The Author, Art, and the Market: Rereading the History of Aesthetics* (1994); David Saunders, *Authorship and Copyright* (1992)); James D.A. Boyle, *The Search for An Author: Shakespeare and the Framers*, 37 *Am. U. L. Rev.* 625 (1988) (arguing that Shakespeare illustrates the indefinite contours of "authorship"); Jaszi, *supra* note 23, at 468 (arguing that lobbying around the Statute of Anne and subsequent copyright statutes required the invention of an "author").

[FN46]. This focus partially accounts for the failure of the Second Circuit in both *Childress* and *Weissmann* to recognize a "joint work." See *Childress v. Taylor*, 945 F.2d 500 (2d Cir. 1991); *Weissmann v. Freeman*, 868 F.2d 1313 (2d Cir. 1989). The sole author is the one who gets the legal presumption of validity, to be rebutted by contrary evidence.

[FN47]. It is hard nowadays to conceptualize a distinct Internet culture, but certainly it is (or at least was) characterized in part by a public domain rather than proprietary ethic. This is exemplified by, among other things, John Perry Barlow's slogan "information wants to be free," Richard Stallman's shareware ethic, and Eric Hughes' cypherpunk spirit. John Perry Barlow, Richard Stallman & Eric Hughes, *Remarks at The Innovation and the Information Environment Conference* (Nov. 1995). In other words, the cultural norm on the Internet is to maximize freedom of expression through a narrow construction of

proprietary rights, and from that norm an intent to create a joint work can be inferred. In other areas of the law, intent is often measured by something other than Vulcan mind-meld of possessive liberal individualists. For example, the intent in the tort of intentional infliction of emotional distress can be inferred from recklessness.

[FN48]. For example, the following proposition seems sound: if the cost of duplicating information is small, then it is simple for a less than scrupulous person to duplicate it. This means that legal as well as physical protection for the information is a necessary incentive if such information is to be created and disseminated. CONTU Report, *supra* note 7, at 10.

[FN49]. *Id.* at 11.

[FN50]. See White Paper, *supra* note 2, at 10 (stating that "[a]uthors are wary of entering this market because doing so exposes their works to a higher risk of piracy and other unauthorized uses than any of the traditional, current modes of dissemination").

[FN51]. Esther Dyson, Intellectual Value, *Wired*, July 1995, at 136; John Perry Barlow, The Economy of Ideas: A Framework for Rethinking Patents and Copyrights in the Digital Age (Everything You Know About Intellectual Property is Wrong), *Wired*, Mar. 1994, at 84.

[FN52]. Samuelson, *supra* note 2; Litman, *supra* note 11.

[FN53]. "Digerati," a play on "literati," is described in Paul Keegan, The Digerati!, *The New York Times Magazine*, May 21, 1995, at 38.

[FN54]. As Esther Dyson comments:

So, what happens in a world where software is basically free? Successful companies are adopting business models in which they are rewarded for services rather than for code. Developers who create software are rewarded for showing users how to use it, for installing systems, for developing customer-specific applications. The real value created by most software companies lies in their distribution networks, trained user bases, and brand names--not in their code.

Dyson, *supra* note 51, at 141. See also David J. Teece, Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy, 15 *Research Policy* 285 (1986) (arguing that "complementary assets" such as distribution and service mechanisms are necessary for innovators to benefit from newly developed product protected by law).

[FN55]. Alfred C. Yen, Home Pages, 75 *Or. L. Rev.* 331 (1996).

[FN56]. Moreover, the West page-numbering debate illustrates the danger of overextending copyright protection to digitized works where a market exists for different digital versions of the same content. Gary Wolf, Who Owns the

Law?, *Wired*, May 1994, at 98; James Love, Note on West Copyright of Page Numbers of Published Judicial Decisions, TAP-INFO Internet Distribution List, Nov. 1, 1993, available in CNI-copyright mailing list.

[FN57]. The existence of the Chain Art project does not necessarily refute this concern, as Bonnie Mitchell is an academic and thus does not need incentive purely through commercialization of her works.

[FN58]. Vibeke Sorenson, *Thoughts of a Computer Artist*, 75 *Or. L. Rev.* 309 (1996). Sorenson recognizes the impulse toward public access, however, stating that "[s]ome artists feel that the Internet is a public space and that art on the network should be considered public art.... In this electronic town square environment, I would have a dilemma in asking people to pay for my art, especially if they are just looking." *Id.* at 315. See also Jane C. Ginsburg, *Exploiting the Artist's Commercial Identity: The Merchandizing of Art Images*, 19 *Colum.-VLA J.L. & Arts* 1 (fall 1994/winter 1995). J.S.G. Boggs remarks:

If another artist drew on top of a print of my drawing, ... I could accept that as a creative act. The original would remain, after all, unaltered. This is difficult for me. I might not like ... the additional drawing, but I could accept the addition as valid where my creative contribution was significant under three conditions:

1. My original work must be acknowledged.
2. The new work must be properly identified as an additive work.
3. I must receive my fair share of the proceeds.

J.S.G. Boggs, *Who Owns This?*, 68 *Chi.-Kent L. Rev.* 889, 892 (1993) (emphasis in original).

[FN59]. For example, Bonnie Mitchell states, It was very interesting to watch the students [sic] reactions as they received the new images each week. They felt very attached to the image that the [sic] had started and were very upset when someone changed the image in a way they were unhappy with.... They often referred to the image as belonging to them, but did it really? Mitchell, *supra* note 33. Moreover, even in the absence of a commercial incentive, there might be a moral-rights basis for ensuring the inviolability of a work through copyright. The articulation of an inviolable artistic self is perhaps rooted in modernist impulses that are outdated in the context of the networked communications and the reality of any particular collaborative digitized work. It certainly seems at odds with the basic premises of the Chain Art project. Despite the seeming contradiction, however, I simply want to note and honor it for purposes of this paper.

[FN60]. See Mark Lemley, *Rights of Attribution and Integrity in Online Communications*, 1995 *J. Online L.* art. 2.

[FN61]. U.S. Const. art. I, s 8, cl. 8; see also Margaret Chon, *Postmodern "Progress": Reconsidering the Copyright and Patent Power*, 43 *DePaul L. Rev.* 97, 102-03 (1993) (arguing for the existence of a constitutional right of access to information).

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