lon University; Marye Anne Fox, vice president for research, University of Texas; Richard J. Mahoney, chairman and CEO (retired), Monsanto Company; Steven L. McKnight, research director, Tularik; Marcia K. McNutt, Griswold Professor of Geophysics, Massachusetts Institute of Technology; Paul M. Romer, professor of economics, University of California at Berkeley; Luis Sequeira, professor of plant pathology, University of Wisconsin; Harold T. Shapiro, president, Princeton University; and H. Guyford Stever, Trustee and Science Advisor.

3. *Allocating Federal Funds for Science and Technology* (National Academy Press, Washington, DC, 1995).
4. The report is available on the World Wide Web at http://www.nas.edu

How Does the Texaco Case Affect Photocopying by Scientists?

The National Conference of Lawyers and Scientists*

Most people who read professional journals occasionally copy articles of special interest or significance. Does this common, everyday practice break the law? A recent case from the U.S. Court of Appeals for the Second Circuit tells us that the answer is sometimes yes and sometimes no. In this case—*American Geophysical Union* v. *Texaco, Inc.*—the court held that the photocopying of eight scholarly articles from separate issues of the same scientific journal by a research scientist was not a "fair use" under the Copyright Act (*1*). The parties politely agreed to stipulated facts describing the activities of one researcher (Chickering) chosen at random as an example through which to determine the question of fair use.

The case highlights the tension between the interests of author-scientists who want their ideas to reach the largest possible audience and their editor-publishers who profit more directly from the dissemination of those ideas. The court ruled that a commercial institution may not encourage photocopying by purchasing a small number of journals to circulate among a large number of scientists. It also held that photocopying by corporate researchers for their files is an archival use rather than a fair use, and thus it violates copyright law.

The court revised the text of its opinion twice, apparently to clarify certain points that may have been missed or misunderstood by readers of the original version (*2*). In restating its decision, the court identified two kinds of copying it explicitly did not intend to address. In the final text, the court specified that it was not deciding "the case that would arise if [the researcher] were a professor or an independent scientist engaged in copying and creating files for independent research, as opposed to being employed by an institution in the pursuit of his research on the institution's behalf" (*3*). It also noted that "[O]ur ruling does not consider photocopying for personal use by an individual. Our ruling is confined to the institutional, systematic, archival multiplication of copies revealed by the record. . ." (*4*).

Before the issuance of the last amended decision, Texaco and a steering committee of publishers agreed to settle the dispute (*5*). Under the settlement, Texaco admitted to no wrongdoing but agreed to pay a large settlement amount that includes retroactive license fees for the period 1985 through 1994. In addition, Texaco agreed to a standard licensing agreement with the Copyright Clearance Center, which collects fees from corporate entities for the right to photocopy articles from those journals whose publishers use the service (*6*).

The decision appears to affect photocopying practices that have long been accepted as a reasonable and customary practice in scientific research (*7*). Because of the particular circumstances of the case, however, many issues remain unresolved; nevertheless, the decision should cause all institutions to review their photocopy and licensing policies. Meanwhile, the victorious publishers praise the outcome as an affirmation of their intellectual property rights, and scientists fear the chilling effect the decision may have on research.

Armed with this decision, publishers may press for stricter enforcement, particularly as to corporate entities. An aggressive campaign to license large research institutions through the Copyright Clearance Center or similar mechanisms can be expected, despite the court's clear denial that it was deciding whether photocopying of articles by anyone in any setting is a fair use.

Based on *Texaco*, how should various types of for-profit, nonprofit and scholarly institutions deal with photocopying and licensing? At what point does individual copying cross the line from fair use to copyright infringement? Which institutions should be paying license fees? A few answers are found in the text of the decision. For the most part, however, the *Texaco* decision leaves many questions unresolved.

The Limited Reach of the Decision

To understand the limited reach of *Texaco*, it is important to keep in mind the narrow question the Second Circuit addressed. In the final version of its opinion, the court expressly limited its decision to (*8*):

> Whether Texaco's photocopying by 400 to 500 scientists as represented by Chickering's example, is fair use. This includes the question whether such institutional, systematic copying increases the number of copies available to scientists while avoiding the necessity of paying for license fees or for additional subscriptions. We do not deal with the question of copying by an individual, for personal use in research or otherwise (not for resale) . . . .

The *Texaco* decision strongly suggests that any large, for-profit corporation in which employees systematically make copies of journal articles for archival purposes probably violates copyright. Thus, the U.S. Court of Appeals appears to have lowered the threshold at which other courts may find copyright violations, at least within the context of for-profit entities. Any for-profit institution whose copying practices resemble those of Texaco would be well advised to pay license fees or make other arrangements with journal publishers. But what if the copies are made for convenience and not archival purposes? What if the copying is isolated and not systematic? What if the institution is nonprofit? In discussing an important factor for determining fair use—the purpose and character of the use—the court characterized Chickering's use as archival because the copying was "done for the primary purpose of providing numerous Texaco scientists (for whom Chickering served as an example) each with his or her own personal copy of each article without Texaco's having to purchase another original journal" (*9*). The court noted, however (*10*):

> [W]e do not mean to suggest that no instance of archival copying would be fair use, but [this] factor tilts against Texaco in this case because the making of copies to be placed on the shelf in

*This essay was prepared for the National Conference of Lawyers and Scientists (NCLS), a joint committee of the AAAS and the American Bar Association Science and Technology Section, under the direction of Barbara Mishkin and Joseph M. Potenza, with the assistance of Victor Marton. A working draft was circulated to all NCLS members and the final text reflects comments received.

Barbara Mishkin, Hogan and Hartson, Washington, DC; Alan I. Leshner, National Institute on Drug Abuse; R. Stephen Berry, University of Chicago; Linda M. Distlerath, Merck Research Laboratories; Alicia K. Dustira, Office of Research Integrity; William P. Gardner, University of Pittsburgh; Paul Goldstein, University of Texas; Rebecca Klemm, Klemm Analysis Group, Washington, DC; Bert Black, Weinberg & Green, Baltimore, MD; Alice H. Fraenkel, Columbus, OH; Françoise Gilbert, Altheimer & Gray, Chicago, IL; Joseph M. Potenza, Banner and Allegretti, Ltd., Washington, DC; Joseph I. Rosenbaum, New York, NY; Oliver R. Smoot, Information Technology Industry Council, Washington, DC; Lee Loevinger, Hogan and Harston, Washington, DC

Chickering's office is part of a systematic process of encouraging employee researchers to copy articles so as to multiply available copies while avoiding payment.

To avoid liability and license fees, an institution might establish a policy that discourages photocopying. Even with such a policy, however, if an institution knowingly permits noncompliance, it might still be held accountable. Is archival copying fair use if it is not systematic? What does "systematic" mean? The answers will have to come from future cases.

Important Issues Remain Unresolved

Many questions of immediate concern to research scientists and engineers remain unresolved. For example, may an individual make photocopies for subsequent research from a journal received as an incident of membership in a scientific society? The *Texaco* decision suggests that such copying is a fair use because the photocopy is made for research purposes, from an individual's own copy of the journal, and likely does not substitute for additional subscriptions. May the researcher also make a second copy for a collaborator? Possibly, but at some point, making multiple copies for a group of collaborators presumably would be more akin to systematic copying than personal use.

Policy-makers currently considering revisions to the copyright law apparently are focusing more on issues surrounding cyberspace than the question of photocopying (*11*). But important questions about fair use also need to be addressed, bearing in mind the context in which scientific research is conducted today. Distinctions between scientists working in industry and those employed by the government or an academic institution may no longer be valid, because scientists in all settings conduct research of potential commercial value. Although the for-profit or nonprofit status of the scientist's employer, or the institutional setting, has been a factor in the traditional fair use analysis, its continued applicability is questionable. As Judge Jacobs observed in his dissent in *Texaco* (*12*):

> Research is largely an institutional endeavor nowadays, conducted by employees pursuing the overall goals of corporations, university laboratories, courts and law firms, governments and their agencies, think-tanks, publishers of newspapers and magazines, and other kinds of institutions. The majority's limitation of its holding to institutional environments may give comfort to inventors in bicycle shops, scientists in garage laboratories, freelance book reviewers, and solo conspiracy theorists, but it is not otherwise meaningful.

Drawing the line instead between individual and institutional subscriptions may be equally inappropriate. There is a common perception that the higher subscription rate paid by institutions anticipates the kind of copying at issue in *Texaco* (*13*). The publishers reply that the higher price anticipates a broader readership, not a photocopy license. There is some irony in the result that under *Texaco*, an individual with his own (less expensive) subscription apparently may engage in at least some archival copying, whereas an employee using an institutional subscription (for which the publisher charges more) must pay additional fees to make a photocopy.

We have heard research scientists and engineers express dismay that they risk being sued by their own societies for engaging in a common practice. Their primary goal in publishing is to have their work disseminated to the widest possible audience. They receive little, if any, financial compensation for their contribution to a scientific journal. The editors, on the other hand, are concerned with the bottom line and typically do not share royalties or copying fees with individual authors. In fact, the authors sometimes must pay the journal a fee (per page) to be published.

As a legal matter, publishers may establish their own rules. For example, the AAAS allows individuals to photocopy from the printed journal of *Science* as permitted by the Copyright Act or by paying a fee to the Copyright Clearance Center, including printing a copy from pages posted on the Internet. How can an individual scientist know what the Copyright Act permits? How may a scientist lawfully obtain a copy of a research report? As the *Texaco* court acknowledges, it is not easy to obtain a copy of a single journal article (other than by photocopying) because publishers typically provide reprints "only in bulk and with some delay" (*14*). The traditional method of requesting a reprint from the author merely increases the author's cost, requiring advance purchase of hundreds of reprints to distribute in response to requests. One might legitimately ask why the author, rather than the consumer, should bear the cost of the reprints. What is the best policy for science (*15*)?

REFERENCES AND NOTES

1. 60 F.3d 913 (2nd Cir. 1995).
2. *Ibid.* The opinion was first issued on 28 October 1994. It was amended on 23 December 1994, and further amended on 17 July 1995.
3. *Ibid.* at 916.
4. *Ibid.* at 931.
5. See A. Lawler, *Science* **268**, 1127 (1995).
6. The CCC is described at 60 F.3d at 929, n. 16; *see also ibid.* at 936-939 (Jacobs, J., dissenting).
7. *Ibid.* at 924.
8. *Ibid.* at 916.
9. *Ibid.* at 919.
10. *Ibid.* at 920.
11. "A Facelift for Copyright" (editorial), *The Washington Post*, 7 September 1995 at A-18; E. Corcoran, "A Digital duel: Whose party is this?" *ibid.*, 3 September 1995 at H-1.
12. 60 F.3d at 935 (Jacobs, J., dissenting).
13. An individual subscription to *Science* (51 issues) costs $50, whereas an institutional subscription costs $228 for the same number of issues. *See*, for example *Science* **269**, 1647 (1995).
14. 60 F.3d at 927.
15. The NCLS plans to study copyright issues during the coming year and would like to know your thoughts. You need not identify yourself, but please include the date of your most recent (earned) degree, your discipline, and the setting in which you work (for example, for-profit, nonprofit, or government). Address your comments to NCLS Copyright Project, 1333 H Street, NW, Washington, DC 20005; FAX (202) 289-4950; e-mail: ncls@aaas.org

If you are interested in participating in an electronic forum on the topic of copyright law and its relation to scholarly publishing, see the "Beyond the Printed Page" section of *Science* On-Line (http://science-mag.aaas.org/science/).