A Modest Proposal: Copyright and Scholarly Journals

I am a reactionary—at least when it comes to copyright. The first copyright law in 1709 provided protection for up to 28 years. In most countries today, copyright extends for 70 years beyond an author's life, which means copyright can extend for more than 150 years! The period of 28 years was a compromise between anarchy (zero) and perpetual monopoly (infinity). It balanced the rights and interests of publishers, authors, and the public. The balance worked.

Modern copyright law seems to work for novels, music, and movies, but it doesn't work well for scholarly journals. Journals record the knowledge of one generation for the next; they are long-term affairs. Recently, scholars discovered that copyright is a major impediment to making the older literature available online because obtaining permission decades after a journal was published was often impossible. And scholars realize that these difficulties will increase as we migrate to new formats in the future. For scholarly journals, copyright protection is an obstacle, not a safeguard.

We cannot change the laws that protect novels, movies, and music for the sake of scholarly journals. Publishers have persuaded both themselves and lawmakers that our present copyright laws provide the right balance for these creative works, and we are unlikely to change their minds. We should look for practical solutions, not ideological jousts.

What's a practical solution? Be reactionary—revert to the older traditions of copyright, without changing the law. We should urge scholars when publishing journal articles to dedicate their work to the public domain after 28 years.[1] Until then, authors and publishers control their work as at present (perhaps giving free access much earlier). After 28 years the work belongs to the world, in keeping with the historical traditions of copyright.

Why not merely insist that authors retain copyright? Author-held copyright sounds convincing at first because it sounds "fair". But think what happens in practice. A publisher produces a journal with thousands of articles by thousands of authors. If all the authors retain the copyright, but give the publisher exclusive rights to publish for a period of time, anyone who wants to make the journal available to the public after that period must contact thousands of authors to obtain permission. Some authors will decline permission; some will be hard to find; some will be missing altogether. And since the publisher already has permission, it's the publisher, not the authors or the public, who retains control.

The problem of copyright is not author rights or fairness—the problem is balance.

Publishers are usually horrified when they hear the 28-year proposal, because they misunderstand copyright's purpose. Publishers point out that they will lose revenue from sales of older issues. They will. But copyright is not meant to guarantee publishers every possible penny from a publication. Copyright is meant to provide financial incentives, not guarantees that no one else can make money.

Some publishers object that they will have no incentive to archive legacy material. That is only partially true. In any case, most scholars do not trust publishers to archive their material, and many publishers have little desire to archive. As the older literature falls into the public domain, many different groups will be able to set up archives with many different motives. That is the essence of good archiving, multiplicity.

Some authors object that they will lose control as their work moves into the public domain. And it is certainly true that someone in the future can appropriate a work, either in whole or in part, without attribution. But the legal system has seldom played a role in addressing these problems. No one sues for copyright infringement in such cases—the academic community maintains high standards, and those standards come into play when scholars exhibit poor scholarship.

Finally, publishers *and* authors object that an enterprising entrepreneur may rise up in the future to repackage journal articles as they fall into the public domain, creating new ways to make them available to the public and thereby making a profit. Is that bad? Surely authors, who shared none of the profit initially, should not object to sharing none in the future.

This is a practical proposal. Because journal publishers make most of their money in the first few years after publication, a shorter copyright still provides financial incentives. Because most authors recognize that scholarship derives from the work of countless scholars who came before, placing scholarly work in the public domain appears reasonable. And because the action is simple (unlike complicated licensing arrangements), dedicating work to the public domain is easy to understand.

Why should publishers give up their exclusive right to the material after 28 years? Why should they lose even small amounts of revenue? Why should they let anyone else profit? Because restoring balance to copyright serves the public interest. But also because it is in the publishers' self-interest—our journals are under attack by people who have little understanding of scholarly publishing, but who use the evident flaws in copyright to advance their cause.

We ought to leave a better copyright legacy for the next generation of scholars than the legacy left for us.

—John Ewing, Executive Director
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[1] *Some countries declare certain rights inalienable, making it difficult to devise simple statements that place a work in the public domain everywhere. One scheme for dedicating work to the public domain can be found at* http://creativecommons.org, *although this scheme is not directly relevant to the proposal here.*

Letters to the Editor

Long Division by Hand

In the November 2003 *Notices*, Anthony Ralston reviewed *California Dreaming*. In his review, Ralston said about doing long division by hand "…the skill itself has ceased to be useful."

I'm a mathematics undergraduate, and the following day (after reading the article) my teacher was going over the integration of rational functions. One of the methods used when the numerator is of higher degree than the denominator is division. In that case, knowing how to do long division by hand is very useful in dividing the functions.

I think that K–12 students should be taught to do long division (and other arithmetic) by hand simply to teach the basics and get a good foundation.

—Patrick Baker
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California Dreaming Reviewer Partisan

Anthony Ralston's review of *California Dreaming* [November 2003] approvingly describes the author's perspective of the "California Math Wars": roughly paraphrased, *there are extremists on both sides; the solution to the controversy lies squarely in the middle*. If only it were that simple!

I have no first-hand knowledge of the "California Math Wars", but I experienced a similar controversy in Massachusetts quite directly. Together with a high school teacher (Bethe McBride), I carried out the final round of revisions of the Massachusetts Mathematics Curriculum Framework. It was adopted in July 2000 by the Massachusetts Board of Education over the passionate protest of the Massachusetts chapter of the NCTM [National Council of Teachers of Mathematics] and the NCTM president. *The Framework mandates a drill-and-kill approach*, the critics charged; *it is hostile to technology, violates the NCTM's Equity Principle, and deprives teachers of proper guidance*—in short, an extremist document!

What enraged the critics so much? The Massachusetts Framework asks for "…understanding of and the ability to use the conventional algorithms for addition and subtraction…and multiplication…," as well as "…division …with a single-digit divisor." The Framework encourages the use of technology, including computers and calculators, but warns that "…appropriate use of calculators is essential; calculators should not be used as a replacement for basic understanding and skills.…Elementary students should learn how to perform thoroughly the basic arithmetic operations independent of the use of a calculator." At the high school level, the Framework specifies learning standards separately for a sequence of integrated courses and for the standard single-subject sequence (Algebra I, Geometry, Algebra II, Precalculus); the standards for the two sequences are almost equivalent in content but are arranged in different chronological order. To the uninitiated, this requires explanation: the reformers are eager to abolish the single subject sequence—what better way to do that than to have the state frameworks effectively impose an integrated sequence on all students? The Massachusetts Framework is studiously neutral about teaching styles. It does not advocate exclusive use of discovery learning and group learning—thereby depriving teachers of guidance, in the view of its critics—but neither does it discourage a progressive approach in the classroom.

Standard algorithms, limits on the use of calculators, neutrality on the choice of an integrated curriculum over a single-subject sequence, and neutrality on teaching practices are seen as extremist positions by many—but far from all!—mathematics educators. Most academic mathematicians, on the other hand, regard these as unremarkable choices. Extreme or not, who is to decide? Parents, teachers, and politicians are the arbiters, whether or not the educators like it. In California and Massachusetts educators recently lost exclusive control of the framework adoption process, a control they had come to regard as rightfully theirs. The charges of extremism reflect this loss of control as much as they reflect issues of substance.

According to the reviewer, the author of *California Dreaming* occupies the middle ground in the mathematics education debate, where the reviewer presumably also places himself. The final section of the review elaborates his position. Ralston asks the reader to contemplate the recommendation of the Cockroft Report (Great Britain, 1983) to abandon teaching the long division algorithm now that calculators are widely available—a proposal that I personally do not dismiss out of hand. He goes on to question the wisdom of "teaching children to become adept at" using the algorithms for addition, subtraction, and multiplication.

When the reviewer writes for an audience of educators, his language becomes less guarded. In a 1999 paper in the *Journal of Computers in Mathematics and Science Teaching*, Ralston "proposes that paper-and-pencil arithmetic no longer be taught …," to be replaced by an emphasis on mental computation, with "calculators…used for instructional purposes in all grades including kindergarten". Does Ralston believe this is a middle-ground position? Maybe not; in any case he knows who stands in the way of his grand vision of mathematics education: "politicians, parents, mathematicians—all those antediluvian groups." After an on-the-record comment like that—even if it was made in jest—Ralston should have had the good sense to disqualify himself from reviewing *California Dreaming* for the *Notices*. At the very least, he should have identified himself as a partisan in this debate.

—Wilfried Schmid
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Response

Prof. Schmid suggests that I should have recused myself as a reviewer of *California Dreaming* because I am a "partisan" in the Math Wars. But I reject the implicit assumption that only someone with no prior views on a controversial subject is fit to review a book on that subject.

Yes, I have strong opinions on issues related to the Math Wars, as evidenced by the excerpts from a paper of mine that Prof. Schmid so kindly quoted in the last paragraph of his letter. But my language was more "guarded" in my review than in my paper, not because the *Notices* audience is different, but because the opinions expressed in the paper would have been inappropriate in a review of this book anywhere.

Indeed, I am not really a partisan in the Math Wars. While I deplore almost all the pronouncements on one side of these wars, I am not sympathetic to much of what is attributed to the other side. Most of what I have said or written about school mathematics education has few supporters among mathematicians or mathematics educators.

—Anthony Ralston
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More Examples of Fuzzy Math

I would like to dispute two points made by Anthony Ralston in his lengthy, fair, and balanced review of Suzanne Wilson's fair and balanced book on the California math wars. First, Ralston states that mathematical errors in the *NCTM Standards* are minor and trivial. Possibly so, but they show that the drafters of the standards were unable to distinguish mathematical right from wrong. The New York City math standards claim that "it is common to approximate $\sqrt{a+b}$ by $\sqrt{a}+\sqrt{b}$." It is unsettling that the author of this (unfortunately true) statement is helping to guide the mathematical education of hundreds of thousands of kids. The present California math standards might be misguided, but at least the authors knew enough math to have an informed opinion.

Then there is the nature of research supporting fuzzy math. Anyone who has opposed fuzzy math in a public forum has been frustrated by claims that "research" supports this or that. For example, there is the "research-based" claim that a kid's ability to learn mathematics is lessened if the kid is exposed to the standard algorithms of arithmetic. This chestnut was repeated, for example, in a letter to New York City parents from school officials. Ralston thinks the pile of fuzzy math research is so high that not all of it can be wrong, but he does not cite any specific research that he feels is useful. The fuzzy math studies I've read have at least one of the following traits: (i) evidence is anecdotal rather than statistical; (ii) proper controls are not applied; (iii) the authors have a conflict of interest; (iv) differences in performance, while statistically significant (small probability of being zero, assuming all kids are independent), are not educationally significant (small percentage difference); (v) do not publish enough raw data for independent evaluation.

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New Math

Anthony Ralston's book review (November 2003) "California Dreaming: Reforming Mathematics Education" pointed out that the New Math curricula "were mainly the brainchild of university mathematicians." It is equally true, however, that many mathematicians criticized the excessive formalism and abstraction of the New Math. This is demonstrated by the memorandum, signed by 75 leading mathematicians, that was published in the March 1962 issue of *The American Mathematical Monthly* ("On the mathematics curriculum of the high school", pp.189–193).

Ralston also claimed that the new math failed "most notably because teachers were not prepared to teach this mathematics nor were they given adequate support." This major canard continues to be repeated by those who are unable to accept responsibility for having demolished the traditional college preparatory mathematics curriculum in the United States.

Ralston's comment that the New Math's "trajectory spann[ed] little more than the decade of the 1960s" is patently absurd. In fact, the New Math strand developed by E. G. Begle's School Mathematics Study Group (SMSG) had become completely institutionalized by 1970. This was accomplished through the Houghton Mifflin series of books, which were copied by other publishers, coauthored by Mary P. Dolciani. A priceless article describing how this occurred was published in the *Everett School News*, Vol. 3, No. 2, Everett, Massachusetts (Winter 1970). This article is posted at:

http://mathforum.org/epigone/math-teach/blerdzhiclon/

and was reprinted as a filler item in *The American Mathematical Monthly*, January 2002, page 12.

The impeccable SMSG credentials of Dolciani and her coauthors are posted at:

http://mathforum.org/epigone/math-teach/skypablimp/tj3dd0o2xmip@forum.mathforum.com/.

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