COPYRIGHT AND MISAPPROPRIATION

Dennis S. Karjala*

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I. INTRODUCTION

Many socially desirable products of human intellectual creativity, physical or mental skill, or just plain physical effort are subject to piracy (or "misappropriation"). That is to say, such products have economic value that would justify investment in their development but for the fact that, once released to the public, competitors can rapidly appropriate the inherent value of the product without incurring comparable development costs. This permits competitors to undercut price, which in turn can deny to the original creator a return justifying the

* Professor of Law, Arizona State University. B.S.E., 1961, Princeton University; M.S., 1963, Ph.D., 1965, University of Illinois (Urbana); J.D., 1972, University of California (Berkeley). The author is indebted to Professors Pamela Samuelson and Jim Weinstein for helpful comments on an earlier draft of this article.
original investment. The products that are the primary subjects of this Symposium—computer databases, CD-ROMs, and factual compilations—all fit into the category of products potentially subject to piracy, but there are many more. This paper inquires into the role that piracy or misappropriation notions properly play in determining the existence and scope of copyright protection.\footnote{Professor Raskind has recently argued that the misappropriation doctrine should play only a limited role in the intellectual property protection scheme. He would apply the misappropriation doctrine only rarely, where the defendant’s activity is destructive of free market competition and intellectual property principles otherwise lead to perverse outcomes. Moreover, he would not allow misappropriation notions to distort the interpretation of federal intellectual property statutes. Leo J. Raskind, The Misappropriation Doctrine as a Competitive Norm of Intellectual Property Law, 75 MINN. L. REV. 875 (1991). This paper does not directly challenge any of Professor Raskind’s points on this matter. In fact, it develops a framework of analysis around another suggestion of his. See infra text accompanying notes 31 & 53-54. However, it does argue that, in fact, misappropriation notions do play a role in copyright analysis and that such a role is unavoidable given many of the types of works that are protected under copyright today. The paper seeks to rationalize that role so that works worth protecting under copyright are not arbitrarily left out and at the same time to limit the role played by misappropriation notions when they come into conflict with other copyright policies.}{1}

While the overall philosophy and goals of intellectual property law remain subjects of spirited debate,\footnote{For a recent, thorough analysis of the goals of copyright, the primary subject of this paper, see Wendy G. Gordon, An Inquiry into the Merits of Copyright: The Challenges of Consistency, Consent, and Encouragement Theory, 41 STAN. L. REV. 1343 (1989).}{2} granting legal protection against piracy for the purpose of encouraging the production of products that are otherwise thought likely to be underproduced is properly an important goal of the intellectual property system. Copyright, of course, protects against more than mere piracy. Protecting at least minimally creative and expressive aspects of the intellectual content of art, music, and literature, regardless of the effort or skill (or lack thereof) that went into their creation, is probably the major feature of copyright.\footnote{The vast majority of copyright-protected works fall into this category. This paper takes issue only with the notion that some abstract conception of the “nature of copyright” requires that protection be limited to works exhibiting such creatively expressive features.}{3} Federal copyright protection for unpublished works, such as letters, is further evidence that concerns beyond production incentives and appropriation of economic value are involved. Commentators have cited basic notions of fairness in justifying control by authors of publication and dissemination of their works.\footnote{E.g., David Ladd, The Harm of the Concept of Harm in Copyright, 30 J. COPYR. SOC’Y 421, 425 (1983) (“[T]he fundamental claim of copyright is one of justice.”).}{4} However, the rationale most often cited by the courts for copyright protection is the economic incentive it provides for the production of desirable works.\footnote{E.g., Sony Corp. v. Universal City Studios, Inc., 464 U.S. 417 (1984) (monopoly privileges of intellectual property law are intended to motivate authors and inventors); Mazer v. Stein, 347 U.S. 201 (1954) (reward to the owner is secondary to the encouragement of desirable works).}{5} In addition, many forms of
copying against which copyright protects amount to piracy as defined herein. By protecting expressive aspects of the intellectual content of the work, copyright indirectly but automatically protects against piracy of whatever skill and effort went into its production. Moreover, copyright protection afforded to certain types of works today can only be explained on antismisappropriation grounds.

Even to the extent that copyright is concerned with misappropriation, however, the statutory underpinnings also recognize the undesirability of overprotection. A healthy portion of intellectual property tradition confirms that reliance on the work of others is not always wrong per se. Because knowledge, technology, and culture advance by building on an existing base, too much protection for particular works can inhibit social progress rather than enhance it. One object of the game, at least insofar as it is based on incentive theories, is to determine where the protective lines are optimally drawn.

The legal edifice for intellectual property protection that has developed over the years is hardly elegant. Traditionally, patent law has protected innovative and useful applications of technological ideas and methods, while copyright was designed to protect cultural and informational works of art, music, and literature. State misappropriation and unfair competition law filled in some of the gaps. However, copyright has gradually expanded to protect several types of functional works.

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Feist Publications, Inc. v. Rural Telephone Service Co. reiterated this general point, notwithstanding a holding that arguably allows misappropriation of many factual compilations. 111 S. Ct. 1282, 1290 (interim ed. 1991).

6. For example, an author’s time and labor in writing a book could immediately be appropriated upon its publication, if photoreproduction and distribution were allowed, because the pirated version could be sold at a price that excluded author’s royalties.

7. See text infra part III. B. (on the nature of a “work” protected by copyright). Antismisappropriation policy is therefore only implicit in the protective scheme.

8. Copyright protection for both sound recordings of public domain musical works and for audiovisual works showing unprotected public events cannot be based on the intellectual content of the work fixed and is therefore justified only on the basis that the skill and effort of fixation are deserving of protection. See infra text accompanying notes 59-61. Moreover, the decision to include computer programs under copyright, notwithstanding their purely functional nature, was based largely on how easily they are copied in relation to the cost of their production. See infra notes 124-128 and accompanying text.

9. By the term “functional works” I mean those that fall within the definition of “useful article” in the Copyright Act: “A ‘useful article’ is an article having an intrinsic utilitarian function that is not merely to portray the appearance of the article or to convey information.” 17 U.S.C. § 101 (1988). Thus, recipes, rulebooks, maps, and factual compilations are not “functional works” as I use that term herein. Computer programs, at least in object code form, have the intrinsic utilitarian function of causing a physical device to operate in a particular way. Standardized test questions have the intrinsic utilitarian function of measuring some real world phenomenon, such as personality, IQ, or ability to succeed in law school. Both are therefore functional works. See infra notes 124-31 and accompanying text.
both consciously (as in the case of computer programs) and unconsciously (as in the case of standardized test questions). Moreover, copyright has been judicially stretched and squeezed over the years in an effort to protect against piracy certain works that otherwise might have fallen through the cracks. An important example of this was the "sweat of the brow" theory of originality for factual compilations. Commentators have even announced that copyright has in practice become ammisappropriation or unfair competition law. Nevertheless, some economically valuable products remained subject to piracy.

Feist Publications, Inc. v. Rural Telephone Service Co. and Bonito Boats, Inc. v. Thunder Craft Boats, Inc. are important in this context because both appear to deny the relevance of misappropriation notions in interpreting federal copyright and patent law, in favor either of statutory formality or an overarching theory of free public access to works falling outside the federal protection scheme. This paper suggests that, Feist and Bonito Boats notwithstanding, concepts of misappropriation still play a role in much of copyright and can and should play a greater role—in most cases a role not inconsistent with Feist's actual holding (although in some cases perhaps contrary to its spirit).

Feist admittedly takes us back to a more formally consistent theory of copyright. It is difficult to fault the logic of the decision, at least

10. I have argued elsewhere that the sole policy justification for treating programs, which are works of technology, as copyrightable is that they are subject to piracy to which traditional technological products are immune. E.g., Dennis S. Karjala, Copyright Protection of Computer Software in the United States and Japan, 13 EUR. INT. PROP. REV. 195, 195-97 (1991); Dennis S. Karjala, Copyright, Computer Software, and the New Protectionism, 28 JURIMETRICS J. 33, 40-41 (1987) [hereinafter New Protectionism]; see also infra text accompanying notes 124-28.

11. E.g., Applied Innovations, Inc. v. Regents of the Univ. of Minn., 876 F.2d 626 (8th Cir. 1989) (computer software developer's taking of copyrighted psychological test questions held to infringe); Educational Testing Servs. v. Katzman, 793 F.2d 533 (3d Cir. 1986) (granting a preliminary injunction sought by nonprofit corporation engaged in development of educational testing materials against corporation that coached persons taking Scholastic Aptitude Test against use of confidential test questions developed by corporation); see infra text accompanying notes 129-31.


16. 489 U.S. 141 (1989) (holding that a state statute prohibiting only a specific method of copying boat hulls—namely, by making a mold from an original and using that mold to churn out copies—was preempted by an assumed federal patent policy requiring all forms of copying of unpatented useful articles to go unregulated).
insofar as it is based on the language of the Copyright Act, as opposed to the Constitution. Nevertheless, the decision raises serious problems of both underprotection and overprotection. The result of the case runs counter to the basic social policy of providing an incentive for the creation of desirable works that are otherwise subject to piracy. ¹⁷ A vast array of economically valuable works, like many electronic databases and electronically encoded public domain text now appear subject to misappropriation, except to the extent that their creators can limit access and dissemination through contract or physical limits on entry. This underprotection problem is multiplied many times over if the reasoning of Feist is deemed to go beyond factual compilations—an extension that would appear compelled if Justice O'Connor was serious about her constitutional analysis. But even if the constitutional basis for the decision can be ignored as dictum, Feist's strong language interpreting the limits of statutory protection could easily be applied by lower courts to severely restrict or deny protection in works like maps and charts that have long been considered copyrightable subject matter. Therefore, Feist raises a serious potential of future underprotection of valuable works.

The potential overprotection problem arising from Feist is its emphasis on "some minimal level of creativity"¹⁸ in determining whether a work shows originality. Given that copyright's demands in this regard are indeed minimal,¹⁹ it is difficult to see what social policy is served by continuing to demand intellectual creativity as a basis for copyright protection.²⁰ It forces judges to make aesthetic determinations without supplying any standards and without any obvious benefits to society—even from free access to those few original works (in the traditional copyright sense) that are deemed unqualified on creativity grounds.²¹ Even more troublesome, Feist's emphasis on the need for

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¹⁷. Whether the specific taking in Feist should be labelled "piracy" is perhaps a question upon which reasonable persons would differ. Feist involved a value-added taking from a telephone book made by a telephone company required by law to make and distribute telephone books—by a company willing to license. Feist, 111 S. Ct. at 1286.

¹⁸. *Id.* at 1294.


²⁰. Certainly copyright must be denied or severely limited in simple geometrical shapes, perhaps even novel shapes, that might serve as basic building blocks for later authors. Tompkins Graphics, Inc. v. Zipatone, Inc., 222 U.S.P.Q. (BNA) 49, 51 (E.D. Pa. 1983). However, merger of idea and expression rather than absence of creativity is the more appropriate basis for achieving this result. Some new but simple shapes may be highly creative.

²¹. For example, in *John Muller & Co. v. New York Arrows Soccer Team*, 802 F.2d 989 (8th Cir. 1986), copyright was denied, on the ground of insufficient creativity, in a logo designed by plaintiff for the defendant soccer team. It is difficult to understand how removal from the
creativity reinforces the tendency, now seen with increasing frequency, of courts to afford copyright protection to all creative aspects of protected works, ignoring both the dictates of section 102(b)22 and the traditional limits on copyright protection of functional works.23

The potential implications of *Bonito Boats* are perhaps less far reaching than those of *Feist*, but the decision does highlight a major gap in the intellectual property protective scheme. The decision says, in effect, that permitting at least certain kinds of piracy is part of the underlying policy of intellectual property law.24 Still, while *Bonito*

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22. “In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.” 17 U.S.C. § 102(b) (1988).

23. Baker v. Selden, 101 U.S. 99 (1879). This tendency is most visible in the computer software and user interface cases. E.g., Whelan, Inc. v. Jaslow Dental Lab., Inc., 797 F.2d 1222, 1231, 1237 (3d Cir. 1986), cert. denied, 479 U.S. 1031 (1987) (developing program structure and logic is the most difficult and most valuable part of the programming process and is therefore deserving of protection); Lotus Dev. Corp. v. Paperback Software Int'l, 740 F. Supp. 37, 79 (D. Mass. 1990) (the most innovative advances are those most worthy of protection).

A post-*Feist* decision, however, illustrates the problem outside the software arena. In *Bellsouth Advertising & Publishing Corporation v. Donnelley Information Publishing, Inc.*, 933 F.2d 952 (11th Cir. 1991), the court based copyrightability on selection of geographic boundaries for yellow page directories and the selection and creation of business classifications. *Id.* at 957-59. It then based infringement on defendant’s taking of the directory’s format and organization (by inputting the information into a computer together with codes that permitted reconstitution of the directory). But if the selection of geographic boundaries is protected, it is difficult to understand how anyone else could ever make a competing directory without infringing. (Plaintiff’s directory was published, so access plus identity of area covered implies copying under the usual rules.) Moreover, business classification schemes should be excluded from copyright protection under section 102(b), as they constitute methods of presenting information. It is a great inconvenience to users of such directories if every maker is forced to create a different method of classification just for the sake of being different. Moreover, some methods are more “user friendly” than others, and a second-comer should not be forced to litigate every decision to adopt a useful (but unpatented) scheme invented by another. In other words, these classification schemes are functional and copyright should be denied under *Baker v. Selden.* See 101 U.S. 99 (1879). Copyright protection also inhibits gradual improvements in these schemes, as each later competitor tries slight variations on what is generally working well. What calls for antismisappropriation protection in cases like *Bellsouth* is not the invention of a new classification scheme but simply the investment in compiling the material, and *Feist* forced the court to go off in the wrong direction. *See infra* notes 85-104 (selection of map data) & 132-41 (dealing with blank forms, to which the business classification schemes of *Bellsouth* are analogous) and accompanying text.

24. *See supra* note 16.
Boats is less obviously correct even as a formal matter than Feist,\textsuperscript{25} it is also less obviously incorrect in terms of social policy. While Bonito Boats ignores antimisappropriation policy, it reaffirms the policy favoring reverse engineering of nonpatented technological products, which has long been a part of intellectual property tradition. Prohibiting reverse engineering generally would inhibit more advances than it would encourage. The problem is to draw a balance between these two policies—to distinguish between thoughtful reverse engineering, which can lead not simply to a copy but to an improvement, and blind copying that does not advance the art and, if it allows undercutting of price, can discourage innovation and its dissemination. This is often a difficult line to draw.\textsuperscript{26} One of the advantages of a federal system, however, is that when we do not know what we are doing, we can sometimes get a better handle on problems by allowing the states to experiment for awhile. By using preemption analysis to draw the social policy line at the extreme free-copying end of the spectrum, Bonito Boats prohibits state experimentation with the subject. In the absence of a federal misappropriation law, federal courts are also out of the game.\textsuperscript{27} This leaves only Congress to consider the matter, which may be appropriate, but it is not obviously appropriate.\textsuperscript{28}


\textsuperscript{26} It is also fairly easy in some cases. Computer programs, for example, call for protection different from most other technological products simply because literal code is so easily copied by electronic means. Reverse engineering of programs to determine the efficiencies of their structure and operation requires a significant investment of time, skill, and effort and often leads to improved products. In this sense, such reverse engineering does not appear to be qualitatively different from reverse engineering of any other technological product. This argues that the scope of protection for programs should be limited to literal code and mechanical translations of literal code. See generally, New Protectionism, supra note 10, at 55-57.

\textsuperscript{27} Federal copyright does not cover boat hulls, because their sculptural features cannot be separated from their utilitarian aspects. 17 U.S.C. § 101 (1988) (definition of pictorial, graphic, and sculptural works); see also infra text accompanying notes 121-23. Sometimes product design gets federal protection through the back door of trademark, as “trade dress” under section 43(a) of the Lanham Act. 15 U.S.C. § 1125 (1988). The trademark law, however, is not designed to encourage innovation and serves poorly when used for this purpose; moreover, the protection of product design as trade dress is, and should be, severely limited by functional considerations as well as the doctrine of aesthetic functionality. J.H. Reichman, Design Protection and the New Technologies: The United States Experience in a Transnational Perspective, 19 U. BALT. L. REV. 6, 115-23 (1989).

\textsuperscript{28} The argument for allowing some form of state experimentation is stronger when the purported clash of state misappropriation law is with federal patent law because of the absence of an express preemption provision analogous to section 301 of the Copyright Act. Most of the works discussed in this paper are copyright subject matter (if original), and state regulation of misappropriation through copying (or particular methods of copying) is almost surely preempted. Whether we might amend section 301 to permit such state experimentation is a question that goes beyond the scope of this article, which seeks to determine the extent to which federal copyright law in its present form can achieve an appropriate degree of protection against piracy. Still, even if we are
The "sweat of the brow" theory of copyright originality, now forcefully rejected by *Feist*, represented an attempt by courts to address the misappropriation problem. The major difficulty with this theory, besides the troublesome statutory language in the specific case of factual compilations, was its failure to link the scope of protection to its effort-based originality. Some courts found infringement even where only factual information was taken, defendants added significant value, and the resulting works were not directly competitive. These courts failed to deal explicitly with the problem of how the antimisappropriation policy they were implementing should be balanced by countervailing copyright policies limiting protection of factual content, functionality, and ideas. This paper attempts to fill that analytical gap by explicitly identifying all of the policies involved, including antimisappropriation, in affording or denying protection to particular works. It goes beyond factual compilations by identifying a variety of products that remain subject to piracy notwithstanding decades of tinkering with the legal protection system, such as carefully made art reproductions. These are desirable products that are likely to be underproduced because of our failure to grant sufficient legal protection. It then asks, based on the assumption that the products identified in fact should be granted some measure of legal protection as a matter of underlying social policy, how much of the protective gap can, in fact, appropriately be filled by approaches to copyright interpretation not necessarily prohibited by *Feist* and how much is necessarily left to other protective modes or statutory amendment.

The paper begins with an analysis of the originality problem in copyright and argues that the *Feist* interpretation demanding intellectual creativity and rejecting skill and effort is neither required by copyright tradition nor is even compatible with protection for works like original survey maps and sound recordings that, I assume, continue to be protected, constitutional dicta in *Feist* to the contrary notwithstanding. It suggests an interpretation of the originality requirement, based to consider statutory amendment, section 301 may not be the best place to start. Most of the policy balancing that is necessary to handle misappropriation involves determining the appropriate degree of copyright-like protection for functional and factual aspects of works. See, e.g., infra notes 85-104 & 116-20 and accompanying text. These are questions with which federal copyright has been wrestling for years. It therefore seems unlikely that further state experimentation would add much at this stage, and the resulting fractionation of the law might be a high price to pay for it.

29. See infra note 34 and accompanying text.
30. E.g., Schroeder v. William Morrow & Co., 566 F.2d 3 (7th Cir. 1977); Leon v. Pacific Tel. & Tel. Co., 91 F.2d 484 (9th Cir. 1937); National Business Lists, Inc. v. Dun & Bradstreet, 552 F. Supp. 89 (N.D. Ill. 1982) (defendant’s work was not initially competitive, although plaintiff ultimately expanded into the defendant’s line of business).
on a proposal by Professor Raskind, that gives copyright protection to many works that would be subject to piracy without it and the copyright protection of which raises few, if any, countervailing concerns. It goes on to apply the interpretation to other works whose protection does raise countervailing concerns and suggests how all applicable policies, including antimisappropriation, should be balanced.

The suggested interpretation looks to creativity, skill, or effort in the process of fixing a work rather than creative and expressive intellectual content in the final product. It is, in fact, merely an extension of our interpretation of the originality requirement for currently protected works that remain unaffected by *Feist*. The interpretation extends limited copyright protection to such works as exact, as well as less than exact, reproductions of public domain art, new typesettings of public domain literature (including their storage in electronic form), and original survey maps containing no new selection of geographic information or nonfactual ornamentation, although the interpretation cannot be stretched to cover telephone books or boat hulls under the current statutory language. The interpretation not only gives copyright protection to these works but in many cases precisely limits the scope of protection to what is necessary to prevent piracy, leaving in the public domain material that is already there. To this extent, the suggested approach legitimately turns copyright into a misappropriation statute. The suggested interpretation also brings into clearer focus the remaining gaps in the protective scheme, which in turn clarifies the kinds of statutory change necessary to protect more fully against piracy while


32. That is to say, it manages to limit infringement to those methods of copying that can be defined as piracy of the plaintiff's specific contribution. Other methods of copying will not infringe because they are effected in such a way that they take nothing contributed by the plaintiff.

33. Professor Reichman has pointed out to me that the approach suggested herein falls within two strands of general intellectual property tradition already well developed in Europe and elsewhere. One strand deals with many types of piracy by prohibiting direct reproduction under unfair competition law. The other treats rights in works like sound recordings, broadcasts, and performances as "neighboring rights" or, to use Professor Reichman's term, "second-class copyrights." Many Berne countries regarded these works as too unoriginal to qualify for full-fledged copyright, so they gave neighboring rights that essentially protect against duplication only (and for a shorter term than copyright). This, of course, is what the United States does for sound recordings pursuant to section 114 of the Copyright Act (except that the protection continues for the full copyright term). See *infra* note 61 and accompanying text. My approach here is to investigate the extent to which the antipiracy notions of unfair competition law and the limited scope of protection notions of neighboring rights law can in fact be fitted within copyright.
continuing to permit legitimate advances in both technology and art through reliance on the work of others.

II. THE SCOPE OF FEIST

Feist demands intellectual creativity, at least in some minimal amount, and rejects physical and other efforts as a basis for originality. On its facts the case dealt only with compilations, with respect to which the language of the statute almost compels the Feist conclusion that originality can only be found in selection or arrangement of the preexisting materials collected and assembled therein.34 Earlier courts adopting a "sweat of the brow" basis for originality in factual compilations were attempting to implement through copyright a perceived underlying social policy against piracy. The Supreme Court's confirmation that the statutory language means what it says leaves many such works vulnerable to piracy, with the result that they will be underproduced or less freely available. Protection for factual compilations lacking creativity in selection or arrangement would seem to depend on statutory amendment, and the only question left for theoretical debate is whether, given the "sweat of the brow" line of authority, the Supreme Court might legitimately have adopted a less literally correct course that nevertheless better meshed with underlying social policy.

The language of Feist, however, is much broader than was necessary for its factual holding. In particular, the breadth of Feist's discourse on the constitutional requirements for authorship raises the question of whether Feist's reasoning extends the intellectual creativity criterion beyond factual compilations to the end products of other forms of human endeavor, such as mapmaking. There are at least two problems inherent in the Feist approach of adopting a requirement of intellectual creativity—some signature of author personality—as a sine qua non of copyright protection for works generally. First, as has been

34. 17 U.S.C. § 101 (1988) (definition of compilation). "A 'compilation' is a work formed by the collection and assembling of preexisting materials or of data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship." Id. See generally L. Ray Patterson & Craig Joyce, Monopolizing the Law: The Scope of Copyright Protection for Law Reports and Statutory Compilations, 36 UCLA L. REV. 719 (1989). Notwithstanding that the statutory language "almost compelled" the Feist result, pre-Feist courts routinely protected telephone books without any finding of originality in either selection or arrangement and even found infringement when the copier completely rearranged the factual data. E.g., Leon v. Pacific Tel. & Tel. Co., 91 F.2d 484 (9th Cir. 1937); Illinois Bell Tel. Co. v. Haines & Co., 683 F. Supp. 1204 (N.D. Ill. 1988).

In this connection it is worth noting that "originality" is defined in the Copyright Act only in reference to compilations. See 17 U.S.C. § 101 (1988). For all other types of work the term is undefined.
demonstrated by Professor Ginsburg, this requirement is inconsistent
with most of the 19th century development of labor as a source of au-
thorship. Maps and charts were listed as protected works in the Copy-
right Act of 1790. The primary value of many such works is an ab-

sence of author personality in favor of accurate depiction. To deny
protection to original survey maps containing no new selection of geo-

graphic information or nonfactual ornamentation would deviate from
longstanding copyright tradition and from the basic social policy that
seeks to protect creators of desirable works from piracy. While maps
create a particularly thorny scope-of-protection problem, given the
competing social policy against requiring second comers to reinvent
every wheel (or rediscover every fact), we should at a minimum rec-

ognize a copyright in "plain vanilla" original survey maps that protects
them from tracing, photoreproduction, and similar forms of direct cop-
ying. Second, the Feist approach to originality looks to creativity or
personality in the resulting copy, that is, the material object in which
the work is fixed. It ignores all conduct elements in the act of au-
thorship, the process of fixing the intellectual concept in a tangible
medium. In the early days of copyright, maps that resulted from basic
cartographic techniques were protected against direct copying, notwith-
standing that the only aspects originating with the mapmaker were the
survey itself, the process of fixation, the selection of landmarks shown,
and the resulting picture. Now, where the landmarks shown are the
obvious ones or the result of some standard classification scheme, as
will often be the case, there will be no creativity of selection under
Feist. Nor is there creativity in the resulting picture, at least if it fol-

lows typical mapmaking standards, because all shapes and locations are
constrained by the actual geography of the region presented. If we dis-

regard the survey itself and the process of fixation as unprotectable
"sweat," there is nothing left to protect. Moreover, extension of the

35. Jane C. Ginsburg, Creation and Commercial Value: Copyright Protection of Works of
36. Id. at 1876.
37. John S. Wiley, Jr., Copyright at the School of Patent, 58 U. Chi. L. Rev. 119, 135
(1991). Many maps undoubtedly show a good deal of creativity even when considered solely as an
end product, as opposed to the methods by which they are created. I focus here on "plain vanilla"
maps that show, perhaps for the first time, purely factual spatial-relations information in a stan-
dard way and gathered by standard or mundane techniques. Rockford Map Publishers, Inc. v.
Directory Services Co., 768 F.2d 145 (7th Cir. 1985), cert. denied, 474 U.S. 1061 (1986), is a
good example, even though the information recorded on those maps was taken from written public
records rather than surveying.
38. Charts provide even less room for the author's personality to manifest itself.
39. See infra notes 85-104 and accompanying text.
40. 17 U.S.C. § 101 (1988) (definition of copies). Under this definition, even the first fixa-
tion—what in normal parlance is called the "original"—is a "copy."
Feist reasoning would confirm the denial of protection in works, such as exact replicas of public domain paintings and new editions of public domain literary works, as to which basic social policy properly calls for protection at least against direct mechanical or photographic reproduction. Consequently, extending Feist beyond its factual holding is not obviously correct as a matter of either copyright history or social policy.

If the lower courts went too far in the direction of fact protection in adopting their "sweat of the brow" approach to originality by over-emphasizing misappropriation in drawing the copyright balance, Feist's insistence on intellectual creativity introduces an unnecessary element into the equation that tugs too far in the other direction. Feist admits the apparent unfairness of failing to protect the fruits of labor but quotes Justice Brennan's dissent in Harper & Row Publishers, Inc. v. Nation Enterprises\(^{41}\) to the effect that this is not the "unforeseen by-product" of the regulatory scheme.\(^{42}\) Justice Brennan, however, was dealing with a fair use question, not a copyrightability question. Moreover, the work at issue was not a telephone book but a history of great public concern, and the copyright balance need not necessarily be drawn at the same point for two such different works. The factual material contained in President Ford's memoirs could not have been independently generated by the defendant or anyone else, as it was solely within the mind of President Ford, an important public figure. Moreover, even Justice Brennan might have more carefully considered how the timing of the taking in Harper & Row should have entered into the fair use analysis, as the majority did at least implicitly.\(^{43}\)

Limitations on the protection of factual information are indeed an important feature of copyright, as are limitations on the protection of function. We do now protect functional works under copyright, however, at least in some cases and to some degree.\(^{44}\) That degree is properly determined by balancing the need to allow others to build freely on the existing base of knowledge against the disincentive to creation that results from failure to protect. The same policy tensions between creation incentives and free use arise when the work involves factual information. Drawing the balance through a limited scope of protection or fair use allows consideration of all the relevant policies, while outright


\(^{43}\) See infra text accompanying notes 117-19.

\(^{44}\) See, e.g., infra notes 125-31 and accompanying text (protection of computer programs and standardized test questions).
denial of copyright necessarily sacrifices creation incentives for all works affected.\textsuperscript{45}

Moreover, intellectual creativity does not serve well as a dividing line between various types of intellectual property protection. Elimination of the "flash of genius" test in favor of the inventor whose results come from methodical plodding\textsuperscript{46} indicates that intellectual creativity, for example, is not a necessary condition of patent protection. Nor is it sufficient for either patent or copyright. Einstein's theory of relativity represents one of the high points in the history of human intellectual creativity, but neither patent nor copyright would protect it. Trade secret, too, may protect the fruits of intellectual creativity but does not require it. Given that certain desirable works not the result of intellectually creative activity will be underproduced without some form of protection, the question is whether copyright-like protection would solve the problem. If it would, adding (or maintaining) an intellectual creativity requirement for copyright gets in the way of resolution and, because the requirement is so minimal, fails to separate in any meaningful way those products for which underlying social policy demands protection from those that should go unprotected.

Assuming, then, that \textit{Feist} does not state optimal overall intellectual property policy, the question is what to do about it. Statutory change offers a number of possibilities for dealing with the problem of providing legal protection as an incentive for the creation of works that are otherwise vulnerable to piracy. First, Congress could make changes in section 301 of the Copyright Act to permit protection of these works under state law.\textsuperscript{47} Second, even if \textit{Feist} is read as a constitutional decision, Congress remains free under the Commerce Clause to protect at least published works under copyright or a copyright-like statute.\textsuperscript{48}

\textsuperscript{45} The problem is particularly acute with works like fine reproductions of public domain art, with respect to which there are no factual nor functional considerations to be balanced. See \textit{infra} notes 53-71 and accompanying text.

\textsuperscript{46} 35 U.S.C. § 103 (1988) ("Patentability shall not be negated by the manner in which the invention was made.").

\textsuperscript{47} Factual compilations, for example, are within the subject matter of copyright, even though they may be denied protection for want of originality; moreover, piracy of factual compilations results from copying, one of the section 106 rights. Therefore, state protection of these works is preempted under section 301 of the current statute. The same analysis applies to state law protection of reproductions of public domain art, electronically stored public domain literature, and most of the other works considered in this article that are vulnerable to piracy under \textit{Feist} and the intellectual creativity approach to originality. See \textit{supra} note 28; see also \textit{infra} note 75 and accompanying text.

\textsuperscript{48} Assuming that publication places a work in commerce, Congress has this power unless the patent and copyright clause implies a limitation on the Commerce Clause. While that issue is beyond the scope of this article, it seems unlikely that an original intent reading of the Constitution would require such an interpretation. The concept of interstate commerce was much narrower when the Constitution was drafted than that in vogue today, and the drafters could easily have
Congress could therefore make substantive amendments to the Copyright Act to bring factual compilations and the other works considered in this article explicitly within the scope of copyright protection. Or, for those wedded to some mystical relationship between a statute we call "copyright" and human creativity (even though not very much creativity), Congress could adopt protection under a new federal misappropriation or unfair competition statute.\textsuperscript{49}

Both of these approaches, while theoretically feasible, raise serious difficulties. The second approach—major statutory overhaul—invites the political wrangling that inevitably accompanies legislative initiative in the intellectual property arena, the results of which are usually unpredictable. This article attempts to show that much can be done within the confines of copyright and largely within copyright tradition, while avoiding many of these problems of legislative process. All it takes is reduction of the intellectual creativity requirement to zero, which is no longer much of a leap in any event, coupled with a renewed respect for the antiprotection policies regarding ideas, factual information, and function that have long been a part of the copyright balance.

The first approach—leaving these matters to state regulation—could result in a variety of new protective regimes by state legislatures and courts attempting to balance misappropriation concepts against socially desirable limitations on protection of functional works and factual information. In essence, even assuming that state legislatures will act to give protection to vulnerable products that fall through the copyright cracks, state courts would have to relearn how to do the balancing that federal courts have been doing under copyright essentially from the beginning, achieving in the process an important degree

\textsuperscript{49} If the patent and copyright clause is interpreted to prohibit amendment of the Copyright Act under the Commerce Clause to cover works that lack "authorship," Congress cannot create that power simply by changing the name of the statute from "copyright" to "misappropriation." "Copyright" is not a constitutional term. And if Congress does have power under the Commerce Clause, it can effect the substantive statutory change either way. \textit{See supra} note 48.
of national uniformity. Much could be lost in the process and there is little to be gained. For this reason, an inquiry into the limits on copyright's ability to reach antimisappropriation results that achieve a desirable social policy balance is worth undertaking.

In summary, notwithstanding the extensive discussion of the constitutional requirements for authorship in the *Feist* opinion, across-the-board application of that dictum would deny copyright protection to, and thereby render vulnerable to piracy, a wide range of works, such as original survey maps containing no new selection of geographic information or nonfactual ornamentation. Copiers in cases like *Rockford Map Publishers, Inc. v. Directory Services Co.* could escape infringement by avoiding the trivial amount of nonfactual expression, if any, in plaintiff’s maps. Someday the Court may tell us that it did, in fact, intend to go this far. The result would be that not only maps but many of the other works for which I argue herein copyright could and should be made available would be subject to piracy without seriously advancing any other social interest, such as freer incremental development of improved works. For the time being, however, I simply note that the reasoning of *Feist* can be confined to factual compilations and that there is still time for courts to adopt appropriate limitations. On that basis, I suggest an approach to the originality problem that better aligns copyright protection with antipiracy policy.


51. Even prior to *Feist*, Professor Paul Goldstein would apparently have limited protection in maps to the author’s selection of geographic data, his use of color and symbols, and nonfactual ornamentation. 2 PAUL GOLDSTEIN, COPYRIGHT § 8.4.1 (1989). This not only misses the survey mapmaker's most valuable contribution; by protecting selection of geographic data, it risks giving an undesirable long-term monopoly to the first mapmaker who decides to include certain data that prove to be desirable and useful to readers. Many such selections are functional in the sense that they permit easier and more efficient use of the map, and that includes (perhaps especially includes) many creative selections. Selections of data may also constitute ideas or systems of presentation that should be excluded from protection under section 102(b). The first person who chooses to show hospital locations on a city map should not for that reason have a 75-year monopoly on showing hospitals, even in that city, let alone cities in general. This test thus both underprotects and overprotects.

52. 768 F.2d 145 (7th Cir. 1985), cert. denied, 474 U.S. 1061 (1986) (finding plat maps based on recorded deeds and other written records copyrightable).
III. Originality in Copyright

A. Originality in the Process of Fixation

Professor Raskind has pointed out, with specific reference to maps, that many interpretive problems of copyright derive from our failure to define originality in terms of the specific authorship criteria relevant to the variety of works that are in principle copyright protected. He would seek originality in the special skills applicable to the type of work in question. In the case of maps, these would be skills in displaying spatial and quantitative relationships through scale, color, symbols, and overall design, including skills in compiling new maps from existing maps. While I part company on some of the details, much of this paper attempts to develop this approach in application to a variety of works otherwise subject to misappropriation.

B. The Nature of a "Work"

A large part of the underprotection problem derives from our ambiguous notion of what constitutes a "work" as defined in section 102(a) of the Copyright Act. The standard approach to, say, an "original" painting, is that the work is the intellectual conception existing intangibly in the mind of the creator. That intangible work receives copyright protection when it is fixed in a tangible medium—a "copy." On this view, a painstakingly exact but independently painted reproduction infringes the copyright in the original copy (the "original painting" in common parlance) every bit as much as a photograph of the original copy. A painstaking reproduction would not be "piracy" in the sense used herein, because the copier would have to invest roughly the same amount of skill and labor in his reproduction as the original artist, but for artistic works we give the author a monopoly that is broader than mere protection against piracy. Therefore, even if misappropriation is an important concern of copyright, we need not worry about protecting, as such, whatever skill and effort the original artist used to

53. Raskind, supra note 31, at 127, 134.
54. Id. at 136-37, 149. Some of Professor Raskind's originality appears to involve creativity that is functional. For example, skillful spatial display can make a map more "user friendly." Because I prefer to tie copyright originality to the scope of protection, I hesitate to recognize originality in functional features. Professor Raskind perhaps avoids this problem by divorcing the originality determination from the scope of protection, but that approach raises new difficulties. See discussion infra note 98.
In addition, Professor Raskind remains loyal to the notion of finding originality in the exercise of skill and judgment, rather than mere labor. Feist clearly now requires that approach for factual compilations, and many commentators, such as Professor Goldstein, would apply it more broadly. See supra note 51; see also infra note 84. Antimisappropriation policy, on the other hand, calls for some protection of the fruits of labor. The question is, if not under copyright, where?
fix the work on canvas, because the intangible work itself—from the
composition of the figures and the arrangement of color to the thick-
ness of the brushstrokes—is part of the original authorship and is pro-
tected. Similarly, we need not worry about skill and effort in setting
type when an original work of literature is fixed, because the underly-
ing literary work itself is protected. Therefore, any piracy of the type-
setting effort infringes the copyright in the underlying work, and that
underlying copyright is sufficient to protect against piracy of both the
typesetting effort as well as the creative literary skills and efforts of the
original author. In these cases, we need not distinguish between the
method of fixing the work and the underlying work that is fixed. The
failure to do so in these paradigm cases, however, leads to analytical
difficulties in others.

C. Example of Art Reproductions and Derivative Works

A good example of how our failure to make the distinction be-
tween the work fixed and the method of its fixation allows piracy is the
exact replication of, or derivative works based upon, public domain art
works. With one exception for a very highly skilled reproduction,55
courts generally deny copyright in exact reproductions of public do-
main art on the ground that there is nothing new in the final product.56
The usual statement of the rule is that the reproducer must show origi-
nality through some distinguishable variation on the public domain
original in order to have a copyright.57 Yet the value of such reproduc-
tions usually inheres in the extent to which the new copy accurately
mimics the original, so copyright protection requires the supply of ver-
sions less desirable than those society most wishes to have.58

In at least two situations the copyright statute itself requires us to
make the distinction between the method of fixation and the work
fixed. A new recording of a public domain musical work results in a
protected sound recording whose authors are the performers, the re-
cording studio, or both.59 Similarly, a film of an unprotected event,
such as a baseball game or a mass demonstration, results in a protected

55. Alva Studios, Inc. v. Winninger, 177 F. Supp. 265 (S.D.N.Y. 1959) (copyright recog-
nized in a scaled-down but otherwise exact reproduction of Rodin’s Hand of God).
56. An important recent example is Hearn v. Meyer, 664 F. Supp. 832 (S.D.N.Y. 1987),
where the court denied copyright in painstakingly reproduced illustrations from the rare original
edition of The Wizard of Oz, thereby validating the defendant’s direct photocopying of plaintiff’s
reproductions.
58. Wiley, supra note 37, at 137.
audiovisual work.\textsuperscript{60} Both the recording studio's and the film maker's authorship contributions in these cases lie entirely in the process of fixation—twiddling the knobs and filters of the recording apparatus—yet we (properly) recognize the copyright, while we (appropriately) limit the scope of protection essentially to directly duplicative copying.\textsuperscript{61}

Why can we not take the same approach to the protection of art reproductions? In reproducing a public domain painting, the copier does not have access to the original artist's techniques, or even her tools. The copier must make a whole range of skillful choices, such as what colors to mix to achieve a particular result and the order in which different elements of the composition go on the canvas. These choices involve at least as much intellectual skill and judgment as that required for most sound recordings and certainly more than that for an amateur film of some public event, but they get ignored in the search for original intellectual content or creativity in the finished work.

Moreover, if properly interpreted, there is no danger that recognizing a copyright based on these skills will remove the original painting from the public domain. When a second artist looks at our copier's reproduction and makes yet another "original" copy using his own choice of brushes, paint mixtures, etc., he takes nothing that our first copier has added to the public domain original. When he photographs our first copier's reproduction, however, he takes at least part of her contribution, which is her choice of paints, the colors that result from their mixture, and the precise brush strokes she used to reproduce the original.

Consequently, recognizing a copyright in the reproduction would protect it from piracy in the form of direct mechanical or photographic copying without removing the original from the public domain. Absent such protection we cannot expect people to spend the time and effort necessary to make careful reproductions of rare public domain works for further dissemination to the public.\textsuperscript{62}

\textsuperscript{60} Photographs of public domain art or natural objects, and even photographs of protected works made with permission, provide yet a third example of the value of distinguishing between the intellectual or artistic content of the work and the process of fixing it. See infra notes 81-84 and accompanying text.

\textsuperscript{61} If I view a television studio's film of a mass demonstration and restage the same sequence of events for filming (from different angles, with my own choice of lighting, etc.), I cannot infringe because the studio's copyright does not extend to the underlying event, which is all I have taken from their work. Consequently, infringement requires essentially that I make a direct copy of the studio's film. See also 17 U.S.C. § 114 (1988) (expressly limiting the scope of protection in sound recordings to direct copying of the actual sounds fixed).

\textsuperscript{62} Hearn v. Meyer, 664 F. Supp. 832 (S.D.N.Y. 1987); see discussion supra note 56. Who will be next to make fine but costly copies of rare edition public domain works available to the public?
This approach would eliminate the need to make aesthetic distinctions for works that in fact deviate slightly from public domain works, at least in determining whether the derivative works are copyrightable. The reduced-scale, plastic Uncle Sam bank in *L. Batlin & Son, Inc. v. Snyder* which was based on a public domain metal bank, would be protected against someone who uses the plastic version as a direct impression for a new mold but not someone who independently sculpts a new mold, incorporating features from the public domain bank or unprotectible new features of the plastic bank. *A fortiori* the more skillful capturing of the essence of Judy Garland's portrayal of the Dorothy character from the film version of *The Wizard of Oz* would be protected, at least against slavish copying, as would skillfully reproduced illustrations from the original edition of the book version.

This approach would even give a small degree of protection to certain examples of original minimalist art that might otherwise go unprotected, such as an entire canvas painted in a single color. A unicolor painting of this type must be as close to a complete merger of idea and expression as can exist in art, so anyone seeing the painting would still be free to paint a different canvas in the same color. But the copier should not be free to photograph the first painting for distribution of prints to the public.

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64. Unprotectible features of the plastic bank include the ideas of making a plastic version and reducing the scale. *Id.* Moreover, the *Batlin* court indicated that some of plaintiff's changes from the public domain version were adopted for functional reasons—leaves reproduced better in plastic than arrows, for example *Id.* at 489. Thus, the choice to use leaves instead of arrows should not be protected. The result in *Batlin* (no infringement) would therefore probably have been the same, as there is no indication in the decision that the defendant used either the same molds or made new molds directly from plaintiff's figure. *See Batlin*, 536 F.2d at 487. Similarly, in *Durham Industries, Inc. v. Tomy Corp.*, where one of two Disney licensees accused the other of copying its wind-up versions of well known Disney characters, no liability would ensue unless defendant's modeling activity involved direct mechanical copying. 630 F.2d 905, 908 (2d Cir. 1980). The defendant in *Durham* admitted using the plaintiff's toys as models. *Id.*


66. *Gracen* was probably incorrectly decided even under the traditional standard for copyright in derivative works, but demonstration of that point would take us beyond the scope of this article.


68. Other examples abound of modern art incorporating no original content yet arguably deserving of limited protection. For example, one of my students reported in class having seen a huge model of an ordinary clothespin (roughly 40 feet in height) at an art exhibition. Presumably, no one would argue that other artists are barred from making large model clothespins should the mood strike them. Nevertheless, traditional copyright respect for the creative efforts of artistic persons would give the sculptor direct reproduction rights (through photography, for example)
The degree of protection offered under this theory is indeed thin. It does, however, protect against piracy by direct mechanical or photographic copying and to that extent gives an incentive to produce desirable reproductions of public domain art without taking anything away from the public domain or denying later comers the opportunity to try their own hand at similar reproduction—though by truly using their own hands rather than those of the first reproducer of the work.

The scope of protection problem remains nontrivial, and probably requires some assessment of aesthetic quality, when a derivative work author herself seeks protection from further infringement that does not constitute direct copying. However, once outright piracy is outlawed, it may not be improper to set a higher standard of creativity. For example, it is doubtful that a licensed derivative work author should have a monopoly in minor changes she makes in the appearance of a cartoon character. On the other hand, cases like Gracen v. Bradford Exchange are a bit more difficult, notwithstanding that the court in the actual case found no copyright in the derivative pictures capturing the essence of Judy Garland's portrayal of Dorothy from The Wizard of Oz. Whether forming, in paint, a composite of two film stills and adding original but minor elements (like a rainbow) raises the result to the level of a new work whose composition should be protected from further copying seems a close call. But surely Gracen's pictures deserve protection against mechanical copying.

over this particular expression of the idea of making such a model. Looking for originality only in the resulting product, however, results in a denial of protection.

69. In Eden Toys, Inc. v. Florelee Undergarment Co., the court concluded that changing hat proportions, eliminating individualized fingers and toes, and overall smoothing of lines for the Paddington Bear character justified a derivative work copyright and found infringement by a copier who adopted those same changes. 697 F.2d 27, 35 (2d Cir. 1982). To the extent that infringement is based on the derivative form of the character, however, we are logically forced to the unpalatable conclusion that not even the original author can now decide to eliminate individualized fingers and toes or give his character a new hat similar to that of the derivative work maker. The copyright in the character as a whole belongs to the original author, until transferred, and small changes by licensees should result in protection only against mechanical takings of the derivative work as a whole.

70. 698 F.2d 300 (7th Cir. 1983).

71. Another potential scope-of-protection difficulty can arise in cases like Alfred Bell & Co. v. Catalda Fine Arts, Inc.—involving engraved mezzotint reproductions of public domain paintings. 191 F.2d 99 (2d Cir. 1951). One court expressly interpreted originality in the Alfred Bell mezzotints in the manner suggested herein, arguing that although the composition and general appearance of the engraving was identical to the original painting, each line of the engraving was original to the derivative work author who cut it. Kuddle Toy, Inc. v. Pussycat-Toy Co., 183 U.S.P.Q. (BNA) 642, 658 (E.D.N.Y. 1974).

Alfred Bell itself involved direct, mechanical copying of the mezzotints, so the scope problem did not arise. Suppose, however, that the copier had simply studied the Alfred Bell mezzotints carefully and mimicked the various line lengths, shapes, and separations in making yet another mezzotint. He is taking some of the original mezzotint producer's judgment, but can we separate
IV. Originality in the Process of Fixation—Other Applications

A. New Typographic Arrangements

The fixation approach to originality would also protect a new typographic format for a public domain literary work against the piracy of mechanical, photographic, or electronic reproduction. At least two cases have held that photographic reproduction of newly set typographic renditions of such works does not infringe the Copyright Act, and the approach of one of these cases—basing liability on state misappropriation law—would almost surely be preempted today. It seems likely that such new typographic versions will be underproduced absent some limited protection, and the approach recommended here would find originality in the process of setting new typographic arrangements. Anyone would be free to retype the same words or reset them in new type, as this would take only the words of the public domain original work (or unprotected overall format), but photographic or mechanical reproduction of the new typographic version would infringe the admittedly thin copyright by directly taking the one thing the first reproducer has added.

that which is constrained by the nature of the underlying public domain painting from new expression? Possibly we should investigate in cases like this the amount of work required of defendant in the copying process. If it is comparable to that expended by plaintiff, we should probably err on the side of finding no infringement.

72. Hand-held scanners are only one of many new digital technologies that make piracy of literary works a greater concern than in earlier times. Digital technology, however, also opens more opportunity for adding value, through the case of transmission and manipulation of data in digital form. See generally Pamela Samuelson, Digital Media and the Law, 34 COMM. OF THE ACM, Oct. 1991, at 23.


75. See 17 U.S.C. § 301 (1988). These works are within the subject matter of copyright, just as any currently protected literary work that later enters the public domain, and the piracy results from copying, one of the section 106 rights. See discussion supra notes 28 & 47; see also cases cited supra note 50. Restricting state misappropriation regulation to particular means of copying, such as photography, does not avoid preemption, as the House Report makes clear that simply offering a narrower right does not make the state claim different in kind from those preempted by federal copyright. H.R. REP. NO. 94-1476, 94th Cong., 2nd Sess. 132 (1976). Moreover, Bonito Boats reinforces the notion that state law limits on particular means of copying do not avoid preemption with respect to works in the federal public domain. See Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141 (1989).


77. The question arises of just what kind of work the new arranger of typography has created, given that she has added nothing “literary” to the public domain original. This is an interesting question because it illustrates the problem with focusing so strongly on the “work” rather than
B. Electronically Stored Public Domain Texts

The previous subsection on new typographic arrangements continues the assumption that *Feist* will be limited to factual compilations, so that the rejection of "sweat of the brow" as a basis for originality in that setting, under the explicit statutory language relating to compilations, will not apply to other types of works. Having found originality in the act of creating a new typographic arrangement, only a small further step results in limited protection for another important type of work that is likely to be underproduced without it—electronically stored text.

Humanities scholars find it increasingly important to have access to the great religious works, the Greek philosophers, or the complete works of Shakespeare, for example, in electronic form. This permits searching and comparing aspects of these works in a way that was difficult or impractical before personal computers became widely available. The tedious but costly and time-consuming task of inputting the public domain texts through computer keyboards and verifying their accuracy results in a highly desirable new form of the work. Admittedly, some of this effort might be done in any event, by scholars or their research assistants whose professional demand for electronic storage is such that they are not inhibited by the absence of legal protection. Still, the costs associated with a no-protection regime are likely to outweigh the benefits. Scholars uninterested in an economic return can share freely under a protection scheme as under a no-protection scheme. Others, however, are likely to restrict dissemination of the work and, possibly, to spend a good deal of time negotiating individual contracts with users. Private publishers are most unlikely to undertake electronic storage projects without some guarantee that their efforts will not be pirated away before they can get a fair return on their investment.

Focusing on the process of fixation as a basis for originality in electronically stored public domain texts allows for precisely the degree of protection needed to protect them from piracy. When originality is recognized in the process of storing such texts electronically, it follows that copyright protection in, say, a CD-ROM storing the work will not protect the content of the public domain original. It would not even prohibit someone from calling the work to a computer screen from the
CD-ROM and reinputting the work, by hand, into a second electronic database. The value added to the public domain original is its new electronic form, and protection should extend only to methods of copying that take advantage of that new means of storage to reproduce the new form of the work exactly and without human intervention.

It will be noted that similar reasoning would apply to give limited, but potentially valuable, protection to databases storing public domain literary works, such as LEXIS or WESTLAW. Viewed as compilations, neither of these databases can survive Feist's demand for originality of selection or arrangement. Neither shows any selection, because all cases are taken, and no electronic database has any "arrangement" that can be identified as independently protectable.78 Yet it is clear that anyone seeking to create a competing judicial-decision database could gain an important advantage if he could gain physical access and download those cases already painstakingly entered by LEXIS or WESTLAW rather than reinputting all of United States judicial history from scratch. Presumably both LEXIS and WESTLAW have means of detecting and preventing anyone from doing this, and they also have direct contractual protection that prohibits their customers from doing it.79 It seems likely, however, that other databases storing similar works, especially those distributed or potentially distributable on CD-ROM, will prove more vulnerable. Treating judicial cases as literary works, although works in the public domain, allows making an end-run around Feist's limits on factual compilation protection and permits protecting the contents of such databases from the piracy of direct electronic copying simply by recognizing originality in the process of fixing these public domain works in electronic form. While this approach runs contrary to the spirit of Feist, it is not contrary to the actual holding. Moreover, such an approach is necessary to give socially desirable protection against piracy to these works.80

78. The program organizing the database is, of course, protected, as well as original, expressive aspects (if any) of its user interface. But those are independent of any arrangement in memory of the textual materials that results from their storage. The actual arrangement in memory is a hopeless jumble of electronic signals, at least as viewed by the potential copier, and in any event, the copier who electronically downloads from LEXIS case-by-case into her own newly created database (organized by her own program) does not take any of that arrangement.

79. If a non-customer somehow got access and the proprietor's detection system failed, however, it is not clear just how regulation of the copying activity by state unfair competition law would avoid preemption. See supra note 75.

80. One might ask whether copyright in electronically stored texts might imply copyright for ancient texts that are rediscovered through diligent and time-consuming research. The standard example is that of a long-lost Shakespearean manuscript. See, e.g., MELVILLE B. NIMMER ET AL., CASES AND MATERIALS ON COPYRIGHT 115 (1991). Taking Shakespeare as the example, however, raises the question, as most scholarly discoveries, even of lost literary works, are of less general interest and probably of little economic value. Recognizing copyright in the Shakes-
C. Photographs of Natural Objects or Other Works

The degree of copyright protection afforded to many photographs is determined by analysis similar to that discussed above for sound recordings and audiovisual works, in that it is sometimes necessary to distinguish between the work fixed in the photo and the method of fixation. It is clear that photographs of natural objects are protected. In the case of an Ansel Adams photograph, in which the location of the camera and choice of time and season result in an artistic composition, copyright extends to the overall composition that results from the photographer’s exercise of judgment, skill, and creativity. In this case, reproduction of the photograph by painting the composition or even by returning to the original scene and rephotographing will infringe, because the copyright in the first photograph extends to elements of the picture’s composition.

However, the only originality in a photograph of a public domain work of art (or a natural subject with only obvious elements of subject matter and composition) will extend only to those elements added by the photographer in making the picture, such as lens size, shutter speed, and type of film. Surely those specific choices, as such, are not protectable by copyright or anything else, as the available choices of this type are not only limited in number and range but are also subject to substantial constraints dictated by the nature of the equipment, the placement of the object of the photograph, and the available light. We can however, protect those choices indirectly by recognizing a limited copyright in the resulting photo. That copyright would not prevent anyone else from making similar choices in photographing the same public domain work of art, but it would prohibit anyone from photoreproducing the photograph itself.

Whether we should recognize such a copyright is a fairly close question. On the one hand, piracy would seem to be less of a problem under these circumstances, because much modern amateur photogra-

81. See supra text accompanying notes 59-61.

82. 1 Goldstein, supra note 51, § 2.11.1; see Gross v. Seligman, 212 F. 930 (2d Cir. 1914); Kisch v. Ammirati & Puris, Inc., 657 F. Supp. 380 (S.D.N.Y. 1987).
phy involves so little judgment that there will often be little worth protecting. Certainly the availability of copyright is not a factor in the incentive to produce the vast majority of amateur snapshots. Still, we do protect casual photographs of natural scenes and events, presumably on the ground that we do not wish to get into the aesthetic determination of how much judgment, skill, and creativity actually went into the production of a particular amateur photo. It is therefore difficult to see why we should not afford at least limited copyright protection, from direct copying, to a photograph of a public domain work of art. Recognizing copyright in the process of creating the photo does just that.

D. Maps

Maps present a more difficult problem than the works considered heretofore. With respect to those works, the identifiable opportunities for piracy can be prohibited by recognizing originality in the process of fixation, because none of the content of the work fixed is protected. Originality in the process of fixation results in protection limited to direct, mechanical copying, as those methods of copying are the only ones that take the contribution of the person who has effected the fixation. Preventing piracy in maps, on the other hand, may require the prohibition of copying beyond mere tracing or photoreproduction, and this brings antipiracy policy into a clash with the policy underlying section 102(b) and the long-standing principle that copyright does not protect factual information.

83. Protection of photographs is another example of our absence of concern for intellectual creativity as a copyright factor.

84. Professor Goldstein would recognize a copyright in a photograph of a work of art because it is the product of judgment, skill, and creativity in determining what camera to use, camera angle, lighting, and film. However, he would deny a copyright to someone who simply makes a photocopy of a work of art, on the ground that no judgment, skill, or creativity is involved. 1 Goldstein, supra note 51, § 2.11.1. That approach, however, unnecessarily reintroduces an aesthetic determination into the copyrightability decision. (It also may be wrong on the merits, as even photocopying does involve some judgment of what machine to use, setting the light/dark adjustment or the color tuner, and choosing the size and angle of reproduction.) Amateur photography often has value simply because of the fortuity of external events rather than the photographer's exercise of judgment. See Time, Inc. v. Bernard Geis Assocs., 293 F. Supp. 130 (S.D.N.Y. 1968) (amateur film of Kennedy assassination). Once all such photos are protected, even where the photographer uses an "automatic" camera and whose location and angle of view is determined by external factors (like the surrounding crowd at a parade), it costs little more to eschew all aesthetic judgments of the amount of skill and creativity involved and recognize copyright even in photocopies, at least as long as we strictly limit the scope of protection to further photocopying or mechanical reproduction.

85. Given the focus of this article on acts of copying that can be labelled "misappropriation," the discussion below largely assumes original survey maps as a model. Presumably, Feist does not affect traditional standards of originality for maps that themselves represent creative selections and arrangements of preexisting maps. See United States v. Hamilton, 583 F.2d 448 (9th Cir. 1978).
Originality in maps can be addressed in at least two ways: The traditional approach (which we might also label the "Feist approach") treats the map solely as a finished "work," like a novel or original painting. The difference between maps and paintings for copyright purposes is that maps contain much factual content, such as boundary lines and relative locations, sizes, or shapes of geographical features. Following the basic principle that copyright protects neither facts nor discoveries, this view would restrict protection to the mapmaker's selection of geographic data, use of color and symbols, and nonfactual ornamentation.86 A second approach to map originality would recognize that variation, creativity of expression, and personality are at most secondary features of what is desirable in many maps and that the desirable feature—accurate and easy-to-read portrayal of a geographical region—is often the result of costly production efforts but is easily copied once produced. Emphasizing these misappropriation aspects would argue for infringement where copying activity takes the value of the product without incurring similar production costs.

The Feist approach fails to protect what is most valuable in many maps and renders the mapmaker's efforts subject to piracy. Moreover, notwithstanding Feist, we can expect that many judges will continue to react negatively to what they perceive as piracy. As a result, courts purporting to follow Feist will be tempted to treat as "expression" map elements such as selection of geographic features or new methods of presentation, both of which may be determined by functional considerations like ease of use or understanding (or are in any event more properly treated as ideas, even if creative).87 Finding originality in such features then biases the scope-of-protection determination, either by allowing copiers to avoid infringement by eliminating unnecessary ornamentation or by finding infringement even where there has been no piracy (because of independent surveying efforts) but the second comer has selected the same (useful) format.

Originality in the process of fixation would recognize a copyright in the product of the first mapmaker's production efforts and prohibit its direct copying. It therefore avoids at least part of the piracy problem. It would also permit exact reproduction of the factual content of the same map through repetition of the same efforts—in surveying, for example, or in going from the "dusty books of legal jargon" of the recording office to a plat map.88 By repeating the first mapmaker's pro-

86. 2 Goldstein, supra note 51, § 8.4.1.
87. See discussion supra note 51.
duction efforts, the second mapmaker has taken nothing that is original with the first and therefore has not infringed. The difficult question is whether limiting the scope of protection to direct, mechanical copying would give adequate incentive to undertake costly production efforts.

Maps are a sort of hybrid between original paintings (in which content as well as method of fixation are protected) and art reproductions (in which only method of fixation should be protected). Maps may contain elements that are not only original in a traditional copyright sense but actually new (not previously known), and we would protect their content just as we do original works of art but for the fact that what is new is often also factual. To limit infringement to mechanical or rote copying would allow extraction of the unprotected factual information in preparing a competing map without requiring repetition of the first mapmaker’s direct observations. Yet, to prohibit extraction of the factual information for use in a competing map would appear to give protection (at least against this use) to supposedly unprotected facts, contrary to copyright tradition (not to mention the spirit of Feist).

Rockford Map Publishers, Inc. v. Directory Services Co. is a good example of the problem. There, the court found originality in the

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89. Because originality is recognized under this approach in the production efforts, the second mapmaker also has an independent copyright in her map. Professor Goldstein would deny copyright to the second mapmaker on these facts, apparently because performing the same steps does not result in an original work. 1 GOLDSTEIN, supra note 51, § 2.14.1. He analogizes to the case of a photographer who goes to a site already photographed by another and duplicates the earlier photograph. Id. But in the case of a photograph there can be copyright both in the choice of film, lens setting, etc., and in the resulting artistic composition. Reproducing the Ansel Adams photo from nature infringes the copyright in the composition and therefore receives no copyright if made without permission. In the case of maps, none of the underlying factual information (as opposed to its discovery) is original to either mapmaker, so it should make no difference to the determination of the second mapmaker’s copyright that the same region has already been mapped. Moreover, none of the elements that Professor Goldstein would recognize as expressive in maps—selection of geographical data, use of color and symbols, and nonfactual ornamentation—are picked up by the direct observation, so direct observation would seem to be simply irrelevant in his approach, which is to seek originality in the product of fixation as the physical manifestation of the mapmaker’s original intellectual conception. See id. § 8.4.1.

In any event, repeated direct observations are socially valuable for maps, even more than in the case of art reproductions, because they can correct errors in earlier versions. Just as direct observation maps may be underproduced without some legal protection, so might desirable correction activity. If we recognize copyright based on the process of gathering the data and putting it into a picture, it should be available for both first and second mapmakers of the same geographical region.

90. See text supra part III. B. (discussion of the nature of a “work”).

91. See supra notes 55-62 and accompanying text.

92. See supra notes 15-23 and accompanying text.

93. 768 F.2d 145 (7th Cir. 1985), cert. denied, 474 U.S. 1061 (1986).
process of "translation from dusty books of legal jargon to a picture."\textsuperscript{94} The \textit{Rockford Map} court did not have to inquire into the limits of the infringement analysis, because the presence in defendant's maps of "traps" laid in plaintiff's maps proved that defendant had used plaintiff's maps as templates.\textsuperscript{95} But had the defendant not traced but simply measured the relative distances and angles of the boundaries and used this information as if they were new "metes and bounds" descriptions to make a comparable and competing map, in what sense has it taken plaintiff's original contribution of translation from the actual metes and bounds descriptions to a picture?

Even if we stop the infringement analysis at direct, mechanical copying, originality in the process of fixation gives the original mapmaker more protection than the \textit{Feist} approach would allow,\textsuperscript{96} as it results in protection against at least some piracy. Since the suggestion herein to extend map originality to the process of mapmaking is itself based on the social policy favoring protection against piracy, it makes sense to inquire whether that same policy gives further clues as to whether the protective line should be drawn to cover acts of copying that involve more skill or creativity than direct, mechanical reproduction.

It seems likely that taking factual information from a protected map through measurement (using compass, protractors, etc.) and reassembling that information to produce an identical map would greatly ease the copier's mapmaking burden, and the result would be a no-value-added product for society. Antipiracy policy argues that defendant should be required to make roughly the same investment in producing its competing maps as plaintiff did in making its originals. For most maps, that is likely to mean essentially that the copier must repeat the original mapmaker's observational steps, possibly using those original

\textsuperscript{94} \textit{Id.} at 149. The court also stated that the copyright covered the arrangement and presentation, which it equated to this translation from deeds to pictures. But the court immediately followed this with the observation that defendant was required to do the same basic work to avoid infringement. That same basic work would presumably have produced essentially the same map, so it cannot be the arrangement or presentation that was covered by plaintiff's copyright. \textit{Id.}

\textsuperscript{95} \textit{Id.} at 147. The court did not predicate its infringement determination on any taking by defendant of original "expression" in these traps, which were bogus middle initials in the names of some of the property owners shown on plaintiff's maps.

\textsuperscript{96} But for the problem of functionality, expressive use of colors and symbols and original nonfactual ornamentation are protected under the suggested approach as well as under the \textit{Feist} approach. The point here is that originality should be \textit{extended}, for antipiracy purposes, to cover the mapmaking process.
maps for confirmation. It is not clear, however, how to reach this scope of protection solely by reliance on notions of originality.

The scope-of-protection problem, moreover, does not stop with directly competitive maps. An even more difficult problem is that of value-added works based partly on factual content of a copyright protected map. We might have, for example, a more comprehensive map, fully surveyed by the second mapmaker except for the inclusion of the first map. This larger map could be of considerably higher value than the first map alone, and it seems a waste of resources to require the second mapmaker to repeat all that effort. On the other hand, notwithstanding the added value, the piracy flavor remains strong not only when the first mapmaker's entire work is verbatim but also when its detailed factual information is reassembled in the larger map. Moreover, it seems likely that the first mapmaker would be willing to license use of his map in these circumstances.

The piracy flavor gets weaker, however, and the policy underlying section 102(b) stronger, as we move further away from exact reproduction of the original map. When only a part of plaintiff's map is used in the more comprehensive version, the new map is not directly competitive, not all of plaintiff's effort is appropriated, and transaction costs of bargaining for a license relative to value increase. At the extreme end, defendant may simply take factual information from a protected map and put it into an entirely different form, such as measuring the distances between various geographic points and compiling them in a table or incorporating them into a computer program that calculates

97. The Rockford Map court would require repeating plaintiff's efforts but would have permitted reference to plaintiff's maps for confirmation. Rockford Map, 768 F.2d at 149.

98. Professor Raskind would apparently divorce originality in the first work from the scope-of-protection, or infringement, question. He would simply demand further originality of the second mapmaker, in the sense of having followed cartographic norms rather than copying, and would find no infringement if the second map added value "in the sense of expressing more than a 'trivial variation' of the preexisting, protected work." Raskind, supra note 31, at 150, 154. This approach has the advantage of eliminating the need to inquire into the nature of the second mapmaker's use of the first map (provided it was not largely copied). It has the disadvantage of requiring us to seek added value even where there has been no piracy (because the second mapmaker has made the same investment as the first).

99. Cf. Rand McNally & Co. v. Fleet Management Sys., Inc., 600 F. Supp. 933, 939 (N.D. Ill. 1984). The court in Rand McNally held that indication of mileage distances between towns on road maps is protected as a compilation, independent of any copyright in the map itself. Under Feist's approach to compilations, taking these mileages and rearranging them in tabular form would not infringe any copyright, unless (possibly) there was some expressive selection of the cities shown. However, where mileages are not indicated directly on the map but can be inferred from physical measurement and the map scale, we are no longer dealing with a compilation. We simply have a map, and an issue remains of whether the copyright in the map should extend to cover such distances that have been directly observed and indirectly recorded by the mapmaker.
transportation charges. In these cases, defendant is still building on plaintiff’s labor and investment, so the aroma of piracy is not entirely absent. However, progress in many fields depends upon later workers’ reliance on the conclusions and discoveries of earlier workers, and society’s interest in not requiring these later workers always to repeat the efforts of others is strong.

Traditional case law shows a trend to deny infringement when the defendant has added value or new expression to what he takes from plaintiff’s map. Professor Raskind, too, would look to added value both for determining whether a second work is entitled to a copyright and in deciding whether a second work infringes. At the infringement stage, he would permit the court to invoke fair use principles, without their having been raised as a formal defense. Once copying of (or, presumably, direct reliance on) plaintiff’s map has been shown, he would find infringement where defendant’s map does not enhance, facilitate, or improve accessibility to the underlying information. Inherent in this approach seems to be a notion that too much protection contravenes the policy underlying section 102(b), which allows second comers to make free use of facts, ideas, and systems to make new and better products.

Therefore, it seems useful to try to draw the infringement line in such a way that prohibits direct, mechanical copying for any purpose, whether competitive or not, but that otherwise considers the degree of added value in the later work together with the degree to which it directly competes with the original map. In general, this may be the closest single-sentence approximation of what pre-Feist courts have actually been doing, even if they have rarely been explicit about their reasons. In contrast to the works discussed earlier, such as art repro-


101.  E.g., Rosemont Enters., Inc. v. Random House, Inc., 366 F.2d 303 (2d Cir. 1966), cert. denied, 385 U.S. 1009 (1967). “It is just such wasted effort that the proscription against the copyright of ideas and facts . . . [is] designed to prevent.” Id. at 310. This language was quoted with approval in Feist. Feist Publications, Inc. v. Rural Tel. Serv. Co., 111 S. Ct. 1282, 1292 (interim ed. 1991).

102.  2 Goldstein, supra note 51, § 8.4.1.

103.  Raskind, supra note 31, at 150-54; see also discussion supra note 98.

104.  Section 102(b) does not include “facts” in its list of elements to which copyright does not extend. See 17 U.S.C. § 102(b) (1988), reproduced supra note 22. Although Feist purports to elevate noncopyrightability of facts to a constitutional question, Congress presumably remains free to protect facts, at least in published works, under the Commerce Clause. See Feist, 111 S. Ct. at 1287-89; see also supra note 48 and accompanying text. Protection of facts would of course have to comply with the First Amendment, an issue that Feist does not address, but aside from that, the degree to which copyright may protect factual information may be a matter of congressional rather than constitutional policy.
ductions and new typographical arrangements, this approach to the scope of protection is not directly tied to originality, either as defined herein or by Professor Raskind. Rather, it finds originality for copyrightability purposes in the applied skill and efforts of the mapmaker as reflected in her final product. Because the product as a whole is copyright protected, direct mechanical copying is prohibited. When the taking is less direct, we must balance antipiracy protection against value-added free use.

In summary, the notion of originality in the process of fixation can serve to prohibit many forms of map piracy—certainly the egregious form of direct, mechanical copying of the map as a whole. It might be wise to stop there, with no further protection of any kind for map content, except of course for elements like expressive (and nonfunctional) use of color and nonfactual ornamentation. That would give full weight to the age-old principle, given new vibrancy by Feist, that copyright does not protect factual information to any extent. It would, however, deny any weight to the equally old tradition of protecting much of the factual content of original survey maps against certain uses (such as using the factual information to produce a directly competing map). It might well result, as Feist threatens to do for many factual compilations and electronic databases, in a severe disincentive to produce new original survey maps. In view of that tradition, we could decide that maps deserve protection somewhat beyond verbatim copying without deviating from established law, even though the scope of protection is difficult to capture in an objective standard. The courts would be enjoined to balance the degree of piracy involved in the particular method of copying against the degree of value added by the second comer.

The need in the case of maps to balance antipiracy policy against the policy favoring free use of factual information leads naturally to a discussion of other works for which misappropriation notions must play a different role than they do for works like art reproductions, with respect to which originality is the main issue: These works include certain literary works, like research reports, as well as directly functional works, like computer programs, with respect to which originality is rarely an issue, but misappropriation notions must be balanced against other policies limiting protection. Before undertaking that discussion, however, I take up briefly the protection of factual compilations, which would raise problems similar to those raised by maps were we to overrule Feist and decide that industrious collections lacking expressivity in selection or arrangement should be copyright protected.

E. Factual Compilations

Although both Feist and the statutory language prohibit recognizing originality in the process of collecting and presenting data in a fac-
tual compilation, it is worth asking how copyright might usefully serve to protect such works were these barriers not present. Should copyright protection appear desirable, this analysis may inform as to how the statute should be amended. Factual compilations raise many of the same issues discussed above for original survey maps.  

It is undisputed that many valuable factual compilations are costly to produce, notwithstanding that the end product may lack even a modicum of creative expression. Once such a compilation is published, it is subject both to the piracy of direct copying of the entire work for use in competition with the original and to less complete takings, some of which may add value to create only indirectly competitive or even non-competitive works. How much factual information we should allow to be taken from factual compilations in creating value-added works seems little different from the similar question with respect to maps.

Factual compilations share with maps as well the feature that recognizing originality in the process of fixation alone—collection and presentation of the information—may underprotect. Adoption of this approach to originality would protect against direct, mechanical copying of the entire compilation, but it demarks no clear line that tells us where protection should give way to legitimate use of factual information contained in the compilation. Moreover, the tradition of protecting at least some of the factual content of factual compilations against certain kinds of takings, while far from nonexistent, 106 is spottier than that for original survey maps. 107 Still, we are left with the same choice: Should we limit protection to direct, mechanical copying of the whole compilation or should we expand the scope of protection to include substantial takings of part of the original compilation for use in a competing work or even takings that form only part of a value-added work that may be only indirectly competitive or not competitive at all? 108 Limiting protection to direct takings of the whole has the advantage of relative objectivity and runs into less direct conflict with the policy underlying section 102(b). A more expanded scope of protection may

105. I am still proceeding on the assumption that Feist's discourse on the patent and copyright clause of the Constitution will be treated as dictum. Even if this is not the case, however, presumably Congress could still enact protection, at least for published works of economic value, under the Commerce Clause. See supra notes 48 & 104 and accompanying text.


107. One decision, although much criticized, concluded that only original survey maps could be copyright protected. Amsterdam v. Triangle Publications, Inc., 189 F.2d 104 (3d Cir. 1951).

108. At least one "sweat of the brow" case extended the scope of protection this far. Schroeder v. William Morrow & Co., 566 F.2d 3 (7th Cir. 1977).
comport better with the incentive rationale for copyright and the policy against misappropriation, but it requires adoption of a vague standard for infringement that balances antimisappropriation policy against free use of factual information. Probably this balance cannot be drawn in the abstract and we would have to rely on case-by-case judicial balancing, as we do for maps. We can get to this result simply by deleting that portion of the "compilation" definition that now demands originality in selection or arrangement.  

V. BALANCING MISAPPROPRIATION, FACT, AND FUNCTION IN OTHER WORKS  

A. Literary Works (Other than Computer Programs)  

For most literary works, originality of expression is evident in the final product, so there is no need to appeal to the process of fixation to find copyright protection. Moreover, antimisappropriation policy has already been incorporated through the idea/expression distinction into the scope-of-protection standards applied by courts in determining infringement. For example, the scope of protection in novels and plays is broad, extending well beyond verbatim language to elements of structure and plot. The scope of protection in scientific articles, histories, and rulebooks is much thinner, limited to verbatim language or close paraphrases. In setting these standards, the courts have not been insensitive to a certain apparent unfairness in allowing later authors to use factual information sometimes arduously unearthed by others. It is even possible that some historical research is discouraged by the existing standards. Still, the judicial purpose is to draw the balance between incentives and free use to maximize overall social gain, particularly through the productive use of factual information by later researchers and authors. If the balance is now improperly drawn, it can  

109. In other words, a compilation would become "a work formed by the collection and assembling of preexisting materials or of data." See supra note 34 and accompanying text. Feist itself indicates that if Congress wanted to protect every collection of facts, it would have stopped the definition at this point. Feist Publications, Inc. v. Rural Tel Serv. Co., 111 S. Ct. 1282, 1294 (interim ed. 1991). If Feist's dictum on the constitutional basis for copyright is given effect, perhaps this change would have to be limited to published works. See supra note 48.  

110. But see supra text accompanying notes 72-80 (new typography and electronic storage of public domain literary works).  

111. E.g., Sheldon v. Metro-Goldwyn Pictures Corp., 81 F.2d 49, 55 (2d Cir.), cert. denied, 298 U.S. 669 (1936) (stating that copyright in a play can be infringed without taking even a single line of dialogue).  


113. Wiley, supra note 37, at 169-79.
be remedied through the ever-malleable idea/expression distinction,\textsuperscript{114} unless, of course, \textit{Feist}'s strong dictum concerning the total non-protectability of facts extends beyond factual compilations.\textsuperscript{115}

Other literary works contain factual products of research that are of little long-term social concern but have considerable short-term economic value. The economic research reports in \textit{Wainwright Securities v. Wallstreet Transcript Corp.}\textsuperscript{116} are a good example. Here the defendant abstracted the conclusions of expensive industrial research reports in its weekly newspaper. The court responded to the claim of copyright infringement by emphasizing misappropriation notions essentially without regard to the stricture against copyright protection of facts. The dispute obviously does not fit well within copyright, which gives long-term protection to expression and supposedly none to facts. What is needed for the conclusions of these research reports is short-term protection for facts—which is to say some sort of antimisappropriation law.

The danger of trying to stretch copyright to fit cases like \textit{Wainwright}, moreover, is shown by the Supreme Court's similar antimisappropriation response in \textit{Harper & Row Publishers, Inc. v. Nation Enterprises},\textsuperscript{117} which brought in its wake the Second Circuit's severe limitations on the use that biographers can make of unpublished sources.\textsuperscript{118} Still, the problem may be that the Supreme Court did not explicitly ground its decision on misappropriation notions rather than its reliance on copyright as such to decide the case. It was not the unpublished nature of the work in \textit{Harper & Row} that called for a response, notwithstanding the Court's emphasis on that factor; rather, it was the "hotness" of the material and the economic value that such

\textsuperscript{114} Professor Wiley has suggested that we abandon the idea/expression distinction altogether as wholly lacking in meaningful content and convert the inquiry into whether the creation of plaintiff's work required costly investment in reliance (presumed unless refuted) on copyright protection. Wiley, \textit{supra} note 37, at 179-80. I remain unconvinced that Professor Wiley's standard for determining infringement would be any more easily or consistently applied than traditional standards. Even more problematic, however, is that his reliance on creation incentives alone ignores a number of different policy tensions that are now resolved through idea/expression analysis, such as restricted protection for functionality and the need of later authors to use basic tools and concepts first propounded by others. There is a reason that functional works have traditionally been protected only under patent law and that copyright protection of facts and historical theories has been "thin."

\textsuperscript{115} \textit{See supra} text accompanying notes 34-52.

\textsuperscript{116} 558 F.2d 91 (2d Cir. 1977), \textit{cert. denied}, 434 U.S. 1014 (1978).

\textsuperscript{117} 471 U.S. 539 (1985) (unauthorized acquisition of unpublished manuscript of President Ford's memoirs and a rush to beat the authorized publisher into print on key quotes and paraphrases).

“hotness” gave to first, imminent publication. Both Wainwright and Harper & Row, in fact, are strongly reminiscent of International News Service v. Associated Press, the seminal misappropriation case. The difference today is that state misappropriation law is almost surely preempted by federal law. Perhaps it is therefore time to incorporate antipiracy notions more explicitly into the idea/expression distinction for purposes of determining infringement or into the fair use defense. Nothing can be done in this regard, of course, without ignoring much of Feist as dictum. Nor do misappropriation notions fit tidily into traditional copyright analysis, as the foregoing discussion indicates. Still, research reports like those in Wainwright, like the daily bond cards in Financial Information, Inc. v. Moody’s Investors Service, Inc., seem likely to be underproduced unless their key economic predictions and conclusions are protected. Moreover, limited protection for such products would appear to put few constraints on later authors, at least later authors who add value and whose efforts we worry most about chilling. It should be noted that neither recommendations and conclusions of research reports nor any other factual information need be protected for the full copyright period, even if copyright is chosen as the protection vehicle. Rather, fair use could be invoked to allow later authors to use the results and conclusions after they cease to be “hot.” Economic historians or other scholars would not be inhibited, as scholars do not need to use such reports immediately upon their issuance, and fair use could easily protect scholarly extraction of factual information in the (unlikely) event that scholars might sometime have to refer to them. This is, after all, no more than what the “sweat of the brow” courts were attempting to do prior to Feist. Those courts were trying to achieve what appeared to them to be just results, notwithstanding the doctrinal difficulties their approach raised. If their goal was sensible, we should try to find some way to reach it, insuring as best we can that we do not create new problems along the way.

B. Industrial Designs

Even before Feist industrial designs could be protected under copyright only to the extent that they incorporated pictorial, graphic, or sculptural features that met the separability test, and of course

119. 248 U.S. 215 (1918).
120. 808 F.2d 204 (2d Cir. 1986), cert. denied, 484 U.S. 820 (1987). The daily bond cards in this case contained essentially no literary expression at all, so they could only be protected as a compilation and not as a literary work. As such, they clearly fall outside the protective net permitted by Feist for such works.
Feist has changed none of this. Because the shape of a boat hull, for example, is intimately and inseparably bound up with its function, its design does not qualify as a pictorial, graphic, or sculptural work, and no other category in section 102(a) is even close. Consequently, no amount of fiddling with originality notions can bring copyright to bear on the misappropriation that results from plug-mold copying—the three-dimensional equivalent of photocopying—because the work in question is not copyright subject matter.

Moreover, Bonito Boats now makes it clear that unpatented designs cannot be protected by state unfair competition law, even a state law narrowly tailored to meet a specific method of misappropriation, namely, plug-mold copying. It seems unlikely that this level of nonprotection for unpatented useful articles is socially optimal. Nevertheless, as for factual compilations after Feist, it appears that statutory change is necessary to fill much of the gap. The type of statutory change needed to protect these now vulnerable works, however, is probably very different than that for compilations. Factual compilations might be accommodated under copyright provided that infringement is limited to wholesale appropriation and that fair use explicitly recognizes added value as an important analytical factor. The functional nature of useful articles and the social advantages derived from permitting incremental improvements on them by people other than their creators make the long term of copyright protection wholly inappropriate. What is likely necessary is a copyright-like statute with a much shorter period of protection and a provision permitting legitimate forms of reverse engineering.

C. Copyright Protected Functional Works

As discussed above, useful articles and “hot” factual information are examples of works subject to piracy that copyright does not, or at least arguably does not, protect. With inegalence, the latter can be squeezed into the copyright scheme without necessarily distorting socially valuable use of the information by others, but the long period of protection simply makes copyright inappropriate for functional industrial designs, notwithstanding the vulnerability of some of them (boat hulls, for example) to piracy.

122. Another approach might be to recognize compulsory licenses for factual compilations. See Ginsburg, supra note 35, at 1924-36.
123. Reichman, supra note 27, at 141-47. Whether such a statute could meaningfully distinguish between plug-mold copying (or its equivalent for other types of useful articles) and legitimate reverse engineering requires some analysis.
124. See supra text accompanying notes 116-20.
Other functional works are protected by copyright, however. In some cases this is by design, as for computer programs and (perhaps) architectural works, in some cases by accident, as for measuring tools like standardized test questions (which are under copyright simply because they probe with words rather than needles), and in some cases depending on how the court is feeling, as for blank forms. Failure to recognize the role that misappropriation notions should, and should not, play in determining the availability and scope of copyright protection in these works can and has led to overprotection, just as a similar failure has led to underprotection of some of the types of works discussed earlier.

1. Computer programs

This is not the forum to go deeply into the issue of the appropriate scope of copyright protection for computer programs. The debate continues to rage on nearly all aspects of this question. Some commentators believe that computer programs are literary works analogous to poetry and on that ground would afford a broad scope of protection. My own analysis, on the other hand, starts from the proposition that computer programs are works of technology and that the only justification for protecting them under copyright is that they are subject to a kind of misappropriation to which few other works of technology are

125. An architectural work includes the overall form of a building as well as the arrangement and composition of spaces and elements in the design. 17 U.S.C. § 101 (1990) (definition of architectural works). It is clear that some arrangements of spaces in a building can be functional, in that they render the building more efficiently usable for its intended purpose. The drive-through feature of some restaurants, for example, poses constraints on the rest of the design, and some ways of providing this feature may be more efficient than others. It is less clear whether Congress intended that such functional aspects be protected. The House Report does state that Congress deliberately avoided the separability test now used to distinguish form from function in pictorial, graphic, and sculptural works. H.R. Rep. No. 101-735, 101st Cong., 2nd Sess. (1990), reproduced at, 41 Pat. Trademark & Copyright J. (BNA) 141, 150 (1990). It goes on to say that protection will be denied where functional considerations determine a design element but to imply that where there exists more than one method of obtaining a particular result, copyright protection may be available, without addressing the question of efficiency. Id. at 151. On the other hand, the report also distinguishes between "internal language" of architecture that is intrinsic to the building and determined by pragmatic and technical requirements and "poetic language" of architecture that is "responsive to issues external to the building," stating that the legislation protecting architectural works is intended to protect only the "poetic language." Id. at 149. The degree to which the new provisions protect functional design aspects is thus unclear.

subject. That is, they can be blindly and rapidly copied in large numbers without any of the effort of traditional reverse engineering and without supplying any added value.\textsuperscript{127} Copyright does solve the piracy problem for computer programs, because electronic copying is precisely the piracy against which we wish to protect, and copyright by definition protects against copying. It is a mistake, however, to afford \textit{broad} protection to technological works for the very long period of copyright, without any provision for compulsory licensing of technologically efficient aspects and without any showing that the work makes a substantial technological advance. Given that misappropriation notions caused us to include computer programs under copyright in the first place, those same notions should guide us in limiting the scope of protection to activity that constitutes misappropriation—activity that permits an unfair competitive advantage by reducing the lead time that normally accompanies technological innovation.\textsuperscript{128} That arguably would limit the scope of protection to literal program code and mechanical or electronic translations of literal code.

2. Standardized test questions

Standardized test questions raise piracy considerations of a different sort, problems rather more analogous to maps and factual compilations than computer programs. First, we should recognize that standardized test questions are in fact useful articles within the definition of the Copyright Act.\textsuperscript{129} Although they are comprised of words and superficially appear to constitute a literary work, their purpose is to evoke responses from human beings that inform concerning these respondents' intellectual or psychological makeup. That is to say, they measure real world phenomena, just as the markings on a measuring rod or the height of the mercury in a thermometer. Consequently, because they are functional, they should be excluded from copyright protection unless they are subject to a type of misappropriation from which copyright alone can protect them. Moreover, even if they are subject to misappropriation justifying copyright protection, such protection should be limited to the scope necessary to protect against the perceived piracy.

\textsuperscript{127} \textit{See supra} note 10. \textit{See Report of the National Commission on New Technological Uses of Copyrighted Works (CONTU)} (1978). "The cost of developing computer programs is far greater than the cost of their duplication." \textit{Id.} at 10. "One is always free to make the machine do the same thing as it would if it had the copyrighted work placed in it, but only by one's own creative effort rather than by piracy." \textit{Id.} at 21. Every example offered by CONTU of activity that would be infringing involves direct and literal copying. \textit{Id.} at 22-23.

\textsuperscript{128} \textit{See New Protectionism, supra} note 10, at 41, 87-88.

\textsuperscript{129} \textit{See discussion supra} note 9.
Standardized test questions are in fact subject to piracy, but it is not the piracy that we normally associate with the copying of literary works. As part of a functional work, a test question that, for example, purports to test knowledge of square roots is both common and fairly trivial. Such a question does not, in itself, cry for protection. A certain degree of skill and judgment may be helpful in devising questions that purport to delve into personality, but even here the crucial factor in test development lies elsewhere. What in fact occurs in the development of these standardized tests is that a large number of questions are devised that are simply tried out in controlled situations. Many of the questions are eventually discarded as uninformative concerning the trait or traits that the tester is trying to measure, and new questions are added to the trials. Finally, after a long process of validation, a set of questions emerges that, to some degree of validity and reliability, measures the trait or traits sought. If competitive testers were allowed to take these test questions verbatim after they have been arduously and expensively validated, much incentive to produce tests would be reduced. On the other hand, if the competitor only paraphrases the original questions, which for normal copyright purposes is too trivial a change to escape a charge of infringement of a literary work, she will have to revalidate completely. Piracy in the sense of being able to undercut costs of this measuring tool is thereby reduced, if not entirely eliminated, when revalidation is necessary.

Thus, what would ordinarily be infringement when treated as a literary work should not be treated as infringement when the work in question is a measuring tool. Some ways of asking questions may be directly functional, in that questions must be asked in that way to measure the trait sought. I take it as given that those ways of posing questions should not be protected by copyright. Most likely, however, part of a given question may be necessary to the measuring process and part may be superfluous. The problem is that no one really knows which part is which. To treat as infringement paraphrasing that requires revalidation protects more than is necessary to counteract the social evil of piracy and runs the risks of protecting function and reducing competition in the market for these functional but unpatented works.

Another problem results from the de facto monopoly that certain testing agencies have in particular markets. Most students who wish to go to college in the United States, for example, must take the Scholastic Aptitude Test. Nobody knows exactly what that test measures, but

131. See Applied Innovations, Inc. v. Regents of the Univ. of Minn., 876 F.2d 626 (8th Cir. 1989).
it has been validated and shown to correlate (together with other factors) with success in college. Students who wish to practice for the test, or to get some preliminary idea of how well they can expect to score to help in their initial planning for college, really have to take that particular test, not someone else's questions on the same general subject matter.

Therefore, while we might condemn as piracy verbatim copying of validated test questions for use in a test that competes in the primary market, different considerations apply in secondary markets, such as that for practice and review courses. If the test preparer gets a fair return from sale of the test in the primary market, which would seem to be a prerequisite expectation in attempting to design such a test in the first place, the piracy problem is solved. This fair return can be assured by requiring competitive testers in the primary market to validate their tests independently. At that point, the general prohibition against long-term copyright protection of function advises that we allow competition in the secondary markets. That competition can only come from competitors' use of exact test questions, because no one knows whether newly designed questions will even correlate with the original test itself, let alone with the trait that the original test is supposed to measure.

3. Blank forms

The problem of whether or to what degree blank forms should be protected by copyright has been around at least since Baker v. Selden, which is to say more than 100 years, and it continues to elude principled resolution. It represents another example where misappropriation notions, coupled with the general principle against using copyright to protect function, can assist in finding an answer.

Notwithstanding Baker's great contribution to copyright jurisprudence in seeing functionality as demarcating the proper spheres of copyright and patent, much of the difficulty in resolving the blank form problem stems from Baker's purported distinction between copying for use and copying for explanation. This distinction resulted in a regulation of the Copyright Office that denies registration to blank forms that do not convey information, and the courts are in a tizzy trying to decide which forms convey information. They remain split over whether the formmaker's selection of items to be answered on the form

132. 101 U.S. 99 (1879).
133. Section 202.1(c) of title 37 of the Code of Federal Regulations denies copyright to "[b]lank forms . . . which are designed for recording information and do not in themselves convey information." 37 C.F.R. § 202.1(c) (1991).
is sufficient to meet this "conveyance of information" requirement. Some courts support copyright in blank forms on the ground that the author's choice of items to be filled in conveys information to users that that group of categories is important. Others point out that every form selects information to be entered, so to find originality on that basis would largely negate the rule against the copyrightability of blank forms. A recent court, purporting to follow the "conveyance of information" rule, looked solely for creativity in the selection of items for inclusion on the form.

This search for whether information is conveyed by a blank form is fruitless. It simply has nothing to do with the social policies calling either for protection or for withholding protection. No one seriously doubts that complex explanatory text on a form that also contains blanks to be filled in by the user can contain expression that copyright protects, at least against verbatim copying. The problem with protecting the blank form portion is not that it fails to convey information but rather, as Baker so cogently points out, that it is functional—it is a system for recording information.

In fact, such forms can be functional in more than one way. First, the selection of items can itself be functional. For many forms, certain information is very nearly mandatory in terms of the use to which the form is put, just as the selection of information to include in maps can be functional. Second, forms can become more and more useful as variations are tried, perhaps by different suppliers, and the suppliers get reactions from users. In other words, blank forms, like many other useful articles, improve in increments as different people supply new ideas for inclusion, exclusion, and arrangement. Third, there may be

135. E.g., Bibbero Sys., Inc. v. Colwell Sys., Inc., 893 F.2d 1104, 1107-08 (9th Cir. 1990).
136. Kregos v. Associated Press, 937 F.2d 700, 708-09 (2d Cir. 1991). Apparently the court felt that creative selection would convey information in some way that noncreative forms would not. One would think, however, that even a noncreative form might convey information about categories that someone thought to be important. This is another illustration of the danger of Feist's emphasis on creativity as a source of copyright protection. When some courts find creativity, they often forget to ask whether copyright should still be denied or limited because the creativity they have found is functional, is idea, or is otherwise unprotected under section 102(b).
138. See supra note 51.
139. In Kregos v. Associated Press, the Second Circuit held that copyright could be recognized in a baseball pitching form, used by gamblers to predict the results of baseball games, provided it showed creativity in selecting the statistical categories presented. 937 F.2d at 709. Although no prior form had used plaintiff's nine categories exactly, according to the district court opinion "virtually every nuance" of plaintiff's forms existed in prior forms with the exception of a single statistic called the "men on base average," which plaintiff was the first to include in such a
one best way to arrange the items for easy or efficient entry that optimizes the user’s time and effort. We should not protect efficiency of use for the long period of copyright. Finally, there may be value in having only one form for a particular purpose even if many others are equally efficient a priori, because standardization eases the movement of people from one office system to another and eliminates inefficiencies incurred by processors of many different versions of forms supplying essentially the same information.

Still, it would do little harm to recognize copyright in blank forms if the scope of protection were limited to direct, mechanical copying. Once someone has invested time and money in creating a particular form, there is little social policy justification for allowing someone else to photocopy the form and use that copy as a basis for competitive production. At the very least, we might require the copier to set his own type. This result could be achieved by treating everything in the form, including the selection of items and their arrangement (but not original explanatory text), as belonging to the public domain (because they constitute an unpatented system). Then, in the same way that new typography for public domain works can be protected from the outright piracy of direct copying, setting type for a form would constitute sufficient originality to protect it against the same piracy. As long as we remember that the scope of protection is limited to direct copying, such an approach to copyright protection of blank forms may do some modest good and little harm. Beyond that, however, the strong policy against copyright protection for functional works, deriving from Baker, greatly outweighs the modest contribution that is made by blank form designers, so adoption and/or improvement of their forms that does not involve mechanical copying should not only be permitted but applauded.

VI. Conclusion

Many works are today subject to piracy—that is, they are costly to create but inexpensive to copy—and are likely to be underproduced without some form of legal protection. Notwithstanding the recent Supreme Court decisions in Feist and Bonito Boats, which widen the


140. In Bibbero Systems, Inc. v. Colwell Systems, Inc. the defendant photocopied plaintiff’s form, removed the copyright notice, and advertised it as its own. See 1988 Copyright L. Dec. (CCH) ¶ 26,270 (N.D. Cal. 1988) (trial court decision). Nevertheless, copyright in the form was wholly denied, and therefore, no infringement was found. Bibbero Sys., Inc. v. Colwell Sys., Inc., 893 F.2d 1104, 1108 (9th Cir. 1990).

141. See supra text accompanying notes 72-80.
piracy crack into which valuable works can fall, notions of misappropriation or piracy can, do, and should play an important role in copyright interpretation. Antimisappropriation of authorial skill and effort is an implicit part of all forms of copyright protection, even where protection extends broadly to the intellectually creative and expressive content of the finished product. Protection of authorial skill, effort, and judgment in the making of the product is all that is protected, however, where the content of the finished product falls outside copyright protection. This is the case, for example, for such works as sound recordings of public domain works and audiovisual works showing unprotected public events. This paper argues that we should be more explicit about the role that misappropriation notions play in copyright interpretation, both so that appropriate protection is extended to desirable works otherwise vulnerable to piracy and so that countervailing policies, such as limited protection of ideas, factual information, and function, can be more carefully weighed in the balance.

*Feist* admittedly makes this approach more difficult. In fact, *Feist* would make misappropriation essentially an irrelevant factor for factual compilations, and language in *Feist* unnecessary to the actual decision potentially extends its denial of protection much further. This paper assumes, however, that *Feist* did not really intend to open the piracy door so widely, as many works now thought to be protected, such as original survey maps, would then be vulnerable. On that basis it offers a framework for copyright analysis that accepts misappropriation as a legitimate copyright concern, albeit only one of several, and inquires into the role that misappropriation notions should play in the analysis.

For some works, such as art reproductions, new typographic arrangements, and electronic storage of public domain literary works, none of the content of the finished product is or should be protected. Recognizing originality in the process by which these works are fixed results in copyright protection limited to direct, mechanical methods of copying that constitute the type of piracy to which these works are susceptible and takes nothing from the public domain that was there before their creation. This approach to originality would also protect original survey maps at least against direct copying, which solves part of the piracy problem for maps but perhaps not all of it. Consideration of the type of misappropriation to which such maps are subject helps focus on the degree, if any, to which we might afford limited protection to the factual content of such maps to balance more appropriately production incentives and the values of free use. Similar considerations would be applied to the protection of factual compilations showing no originality in either selection or arrangement should we elect to amend
the Copyright Act to protect such works. Finally, even for works in which originality is not an issue, such as economic research reports, computer programs, standardized test questions, and blank forms, explicit consideration of the antis misappropriation argument for protection leads to a better understanding of how the limits on protection of ideas, functional aspects, and factual content should be applied and interpreted.

Some would argue that this approach simply spreads copyright too thin and perhaps even makes copyright a series of sui generis statutes applying different infringement tests to the expanded range of subject matters covered. Moreover, by applying copyright to such a wide range of works we necessarily afford them the very long period of copyright protection as well as the traditional copyright remedies, such as the guarantee against compulsory licensing. A more nearly perfect scheme of protection might be a new unfair competition or antis misappropriation statute that could address the specific characters of the works protected and make appropriate adjustment not only in the scope of protection (infringement) but also in duration and remedies.

The problem, as was discussed at the Symposium, is that there is currently no consensus as to the kind of statutory change that is necessary. There is not even a consensus concerning whether Feist compels statutory change specifically addressing factual compilations, let alone the wide variety of works I have discussed herein. In the absence of a broad consensus it is unlikely that statutory change can be effected. Moreover, copyright has already grown to cover a wide range of works that bear very little relation either to each other or to the traditional types of artistic and literary works for which copyright was originally designed. Computer programs and standardized test questions are clearly covered, as are sound recordings, amateur photographs, and mundane product-use instructions. Even within specific and traditional copyright domains, such as literary works, the scope of protection and the fair use analysis vary according to the type of work in question. In other words, we are even today applying different copyright standards to different types of works. This article simply starts from where we are now, argues that Feist’s focus on intellectual creativity can lead to both under- as well as over-protection depending on the type of work, and suggests an approach not strictly prohibited by Feist’s actual holding that leads to better results when measured against the applicable social policies underlying copyright.