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Copyright Protection For Computer Databases: The Threat of *Feist* and a Proposed Solution

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I. Introduction.

1. With some frequency, I find myself searching madly for the little scrap of paper that fell out of my address book. It, of course, contained a friend's address or phone number, scrawled across a bar napkin, or "while you were out" page. Now, though, my problems are solved, for as easily as I can look up a piece of trivia in an electronic encyclopedia on CD-ROM, I can also look up my friend's number in Santa Cruz, California, or any other city for that matter. This is made possible by a new product called Phonedisc.[\[1\]](#) This product also has other uses. A name and address can

be obtained by entering a phone number;^[2] something useful for those occasions when one finds the napkin with only a phone number on it, yet has no recollection of whose number it is. One can also search for all the names, phone numbers and full addresses of everyone who lives on a particular street.^[3] This would be a very useful feature for people who wish to compose targeted mailing lists or telemarketing lists.

2. From the above examples, I infer that such a product as the Phonedisc has a great deal of social and individual utility. This being the case, we should make certain that the creators of the Phonedisc, and other similarly useful electronic tools, are given an opportunity to earn a return on their investment to further the constitutional directive to give writers exclusive rights to their works, and to encourage creation. This benefits consumers by giving them a greater choice of products and increased competition in the marketplace. The U.S. Constitution provides for such an incentive system by teaching that authors and inventors should be given exclusive rights to their creations and inventions for a limited period.^[4] This protection is essential to encourage innovation, as without it the value in a work will be copied by others seeking to free-ride on the innovator's investment. If the free-rider problem is not checked by the law of intellectual property, creators' economic incentives to disclose or sell publicly new creations are reduced. Therefore, creators will divert their talents to other fields in which they may reap the rewards of their work.
3. Further, it is likely that without effective intellectual property protection, creators will waste a great deal of resources attempting to gain protection for their works outside the existing intellectual property regimes.^[5] Presumably, Phonedisc's creators assume that their work is protected by the copyright regime, as they claim copyright protection in the product's accompanying literature.^[6] Despite the producer's claims, Phonedisc may not be protected,^[7] as the product may not meet the Supreme Court's test for originality announced in *Feist Publications v. Rural Tel. Serv. Co.*^[8]
4. While protection of the intellectual property rights for a product like Phonedisc does not guarantee a return on the investment in development, it should provide a system which prevents others from free-riding on the efforts of the author. This could be accomplished simply by giving the designer exclusive rights to make, use or sell his product. These are the rights currently accorded to patentees^[9] and copyright holders.^[10] The classic constitutional justification for such protection offers this bundle of exclusive rights to the inventor or author "to promote the progress of science and the useful arts."^[11]
5. In the following pages I discuss how copyright law functions to protect the rights of innovators, and encourages their work by excluding those who would copy their products, free-riding on the creator's investment. The copyright system provides creators with both "bark" and "bite" to protect their work. The former I refer to as "notice protection," and the latter comes as a right to sue for infringement of a protected creation; the "bark," I explain, is the most efficient way to protect a creation, but only functions so long as there is a credible threat to infringers of an impending "bite."
6. Next, I discuss the Supreme Court's 1991 decision in *Feist*, and subsequent lower court rulings. While *Feist* may only apply to print media, and the courts of appeals have been willing to read that case very narrowly,^[12] *Feist* still stands as a dangerous precedent which might seriously affect protection for compilation products such as Phonedisc.

7. Finally, I conclude that there is a need for new laws to provide a more effective system of intellectual property protection in America. I explain the need for new legislation and present several crucial elements that a new law should contain, thereby protecting computer software and compilations.

II. Protection for Phonedisc

A. Notice Protection

8. Protection for Phonedisc, as with any article of intellectual property, may be achieved in various ways. On the first and most superficial level, many Americans are taught to expect that useful or attractive products are likely to be protected by some legal regime. This lesson is taught through many means, including enforcement of patent, copyright, and trademark rights. Most people are aware of intellectual property protection even though they have never had any actual contact with the legal system. This protection is reinforced by such practices as printing the © symbol, or a patent number on various products, as well as warnings about copyright liability now posted on many "public" copy machines. Such protection may be referred to as "notice protection."^[13] This first layer of protection warns the public that the author, inventor, or his assigns claim certain rights in the object or expression, and that "misuse"^[14] carries with it the risk of legal challenge. Absence of a warning such as a copyright or trademark symbol does not tell people that they are free to copy; instead most people assume that the majority of creative products are in some way protected.
9. "Notice protection" may be the most cost effective type of protection for original works, as it serves to deter most people from invading the rights of the inventor/author. The cost of this protection falls on citizens, who must understand that most creative works contain intellectual property belonging to authors and are not in the public domain. Thus the creator need not expend resources to attain this level of protection; it is essentially spontaneous.
10. Although some suggest that copying is widespread in this field,^[15] the minimal amount of litigation in proportion to the abundant production of works implies that "notice protection" is effective. This allows substantial rewards to accrue to the creators of the vast array of publications produced in literature, computer software, visual arts, motion pictures and other protected areas which appear each day.
11. "Notice protection" certainly applies to Phonedisc, and indeed will apply to almost any product in the short term.^[16] However, where the law is uncertain or anomalous, the permanence of such protection can not reasonably be expected. This is because as soon as some categories of works are discovered by the public to be unprotected through the "bite" of legal enforcement, the "bark" of "notice protection" will cease to scare off copyists.

B. The Law Of Copyright

12. A discussion of copyright's efficacy with respect to Phonedisc and other similar products must consider two issues: i) the basis of protection, and ii) the scope of protection. This is because the

protection given works as a whole is discrete from a creator's ability to secure judgments for infringement damages stemming from the theft of part of his work.

1. Basis and Scope of Protection

13. Copyright protection is allowed for any "original works of authorship fixed in any tangible medium of expression."[\[17\]](#) This command has been given broad, though shallow, effect by courts. The effect is broad in that a compilation work, one mostly made up of unprotectable facts put together in an unoriginal way, may be considered to have a sufficient basis for protection when, taken as a whole, if it contains some parts which do supply the required originality:[\[18\]](#) that originality must inhere in the compilation's selection or arrangement.[\[19\]](#) The protection is shallow though, because infringement may be found, and remedies may be awarded in such a case, where either the entire volume is copied, or where the original component (arrangement or selection) itself is copied; this is referred to as the scope of copyright protection. As I suggest in the following section, where a compilation's value lies in its nature of being a vast compilation of facts, a basis for protection of the work as a whole is nearly valueless, as copyists will take advantage of its narrow scope of protection and steal the valuable facts themselves.

2. Can Phonedisc Be Protected After *Feist*?

14. The most crucial part of the copyright regime is the part that provides its "bite," the law of infringement. This section allows the author to protect his property rights by filing a suit for relief[\[20\]](#) against an accused infringer. This form of protection is particularly important as it effectuates notice protection.[\[21\]](#) Yet it is a question of infringement that poses the greatest threat to effective protection for Phonedisc.
15. If Phonedisc's creators were to file an infringement suit, they would have to show: "1) ownership of a valid copyright, and 2) copying of constituent elements of the work that are original."[\[22\]](#) The first prong would be no obstacle, however the second will stand firmly in the way of a finding of infringement. Here, the central issue is the originality of the copyrighted material,[\[23\]](#) and the Supreme Court's 1991 decision in *Feist* that will control.[\[24\]](#) The *Feist* case answered the question of whether a printed white pages phone directory had the requisite originality to be protected under copyright. In that case, the Court held that the selection of facts (names, addresses, and phone numbers of the phone company's customers) and their arrangement (in alphabetical order of subscribers' surnames) lacked the level of originality needed to gain protection.

a. The Value of Phonedisc and its Constituent Parts

16. Before considering the *Feist* case in detail, it is critical to understand where the value of the Phonedisc lies, and for which parts of the product protection may be had.[\[25\]](#) This product is essentially a computer database, or a list of information (in this case it is a list of names,

addresses, and phone numbers), combined with a "search engine," and a user interface. The search engine is a computer program which uses certain methodical processes to identify and retrieve specific pieces of information from the database. The user interface is a computer program which acts as a go-between between the search engine and the human being who operates the computer on her desk.

17. The computer programs that serve the roles as search engine, and user interface, would most likely be protected under the current copyright law.[\[26\]](#) Yet, even if they were alone copied by an infringer, the Phonedisc's creators would probably not be terribly unhappy.[\[27\]](#) The real value of the Phonedisc lies in the data, the list of names, addresses, and phone numbers compiled for the entire country.[\[28\]](#) This information is valuable because, while the information lies in the public domain,[\[29\]](#) it is not easily accessible by anyone. This is because phone books are printed for specific geographic regions, thus if one does not know where an individual lives, her phone number cannot be found. Further, it is unusual for individuals to have ready access to telephone directories of areas outside their immediate geographical location. Thus, Phonedisc's utility to the purchaser lies in its existence as a compilation of a large quantity of information, and its ability to access that information in an efficient manner, allowing users to do something that they were not previously able to do.
18. The compilation of a vast amount of raw facts and software that makes the facts accessible would likely yield a protected product if taken as a whole. This is because there are components which would be protected (user interface and search engine software) as well as facts which would not. Yet there is a more vexing question: whether the data alone may be protected, as this is the part which may be easily stolen and repackaged with a new search engine and user interface.
19. There is however, a strong argument that Phonedisc and other such products are not separable this way. The information and the software that make the information useable are all encoded onto a disk in a form unintelligible to human beings; only through the use of a digital computer may the product be used. This being the case, it is artificial to suggest that one component can be broken apart from the others for the purposes of determining originality of a component.
20. Additionally, the functionality of the product is so completely different than any printed phone book that the originality requirement inheres. This is because of Phonedisc's unique abilities to search by fields other than surname and to then further manipulate the search output.[\[30\]](#) These features create originality which springs from the unique functionality of the product.
21. In the remainder of this paper I assume that a court would separate the Phonedisc product into its protectable components and its unprotectable ones, and thus not allow protection for the valuable compilation of facts.

b. The *Feist* Case

22. The question of whether the valuable part (the data)[\[31\]](#) of this product is protectable through a copyright infringement suit is the issue governed by *Feist*. The *Feist* case involved the question of the level of originality required for an enforceable copyright. Particularly, the court looked at a "white pages" directory, and determined that it did not surpass the minimal threshold for originality.[\[32\]](#)

23. The Court's analysis in that case began with an exposition of well-settled issues of copyright law: first, the court explained that no protection can be had for facts.[\[33\]](#) This means that the names, addresses, and phone numbers of any or all the people in the United States, or in the world, lie in the public domain. Next, the Court went on to declare new law, stating that compilations of facts, if those compilations satisfy the minimal requirement of being "original" in their selection and arrangement, are protectable by the law of copyright.[\[34\]](#)
24. Justice O'Connor explained the rationale for the originality requirement as working to serve two functions. It isolates works which an "author" has created, as opposed to those which she has merely copied.[\[35\]](#) Originality also operates to differentiate those works which have "some minimal degree of creativity,"[\[36\]](#) from those which are merely "garden-variety."[\[37\]](#)
25. The second feature is particularly important in regimes that protect intellectual property because these regimes *de facto* give ownership of something intangible to an individual, thus taking it away from society at large. This arrangement is socially beneficial, when properly administered, as it gives the creator a right to the fruits of her labor[\[38\]](#) without depriving the public of its own property. Such a regime serves society because, by rewarding creativity, it encourages owners of intellectual property to be prolific and to bring their products to the public market. Another potential public benefit of a properly administered intellectual property system stems from creators' full disclosure of their creations. Such disclosure adds to society's storehouse of knowledge, which in turn provides a greater foundation on which future generations of creators may base their work.
26. Accomplishment of these goals is achieved by allowing the intellectual property owner to exclude others from certain uses of the property, therefore enabling that person to charge consumers for its use. This mechanism lets the rewards of creativity be determined by the free market, as those creations which are highly valued by society will be demanded in great quantities, securing to the owner significant returns to invention. Inversely, those creations that are not valued by society will not be demanded by the public, and the creator will receive little remuneration.

c. Critique of *Feist*

27. The *Feist* court explained that the originality requirement is not satisfied by putting such facts as names, addresses and phone numbers in alphabetical order, by the last name of the phone account-holder.[\[39\]](#) The court stated that the phone directory at issue is "useful" thanks to a sufficiency of effort expended by the plaintiff, yet that its creation demonstrated "insufficient creativity to make it original."[\[40\]](#) This reasoning suggests that functional works are presumed to not meet the originality requirement; the idea that functional writings are unprotectable by copyright is wrongheaded as it hampers creators' incentives to profitably bring their goods to the public. This tension which makes courts sheepish about granting protection to functional products is not new; it springs from a fear that competition will be lessened if one producer is given exclusive rights which preclude others from competing in the market. These fears should not be addressed through *ad hoc* modifications of the copyright system, as they are sufficiently controlled elsewhere by the antitrust laws.
28. The idea that functionality in a compilation cuts against its protection is backwards. It would

reward writings which are put together in an original arrangement, one which might be totally unusable, and hence valueless; this is in contrast to a work which is arranged in a "garden-variety" [41] way, hence an unoriginal arrangement which though made useful by its intuitive arrangement is also made unprotectable. [42] An example of such an original work might be a telephone directory which is arranged by phone number in descending order. Such an arrangement might be original, hence protectable, yet one wonders how valuable that protection might be. After all, who would want to buy, never mind copying such a product? The Court's arrangement doctrine, and its usefulness distinction (to the extent that it exists) would appear to preclude protection for a vast array of potential products [43] on the ground that they are only functional, but not original.

29. A similar point is raised by Jane Ginsburg in an article about the *Feist* decision. [44] She suggests that *Feist* raises a paradox in which the more complete a compilation is, the less likely a court would be able to find its selection was original. [45] Like my previous discussion of arrangement, this rule will reward producers of useless compilations which lack important information, but punish those who put together a complete compilation. Phonedisc would be a perfect example of a compilation which would lack originality in its selection of facts; since it contains listings for every person and every business in the country, it arguably involved no selection at all. In contrast, perhaps a version of this product that only listed people whose names had a "Q" in them might pass the Court's originality test, yet would likely be valueless for the same reasons suggested in the arrangement discussion.
30. The above argument does pose one good, though technical argument for allowing protection for Phonedisc. If original selection and arrangements are the *sine qua non* of copyright, [46] then one could argue that the Phonedisc has the highest level of originality with respect to these criteria. This is because the user determines, when she uses the product, what the program should search for. In that way, each use provides an output whose arrangement and selection is original. Ginsburg though suggests an opposing argument (that because it is the user and not the creator who selects the arrangement when she performs her search of the data, there is no arrangement implicit in the database at all). [47] This approach raises a further question about whether or not the user could then claim protection for the original arrangement or selection of the data. Under the *Feist* approach, such a claim might well withstand scrutiny, providing just the scenario that Phonedisc's creators likely fear. In that event, the user could buy a single copy of Phonedisc and use huge chunks of its data to create her own product, free-riding on Phonedisc's investment in compilation and development. If the copyist's product were original enough, she could even get protection for the product that she "stole" from Phonedisc.
31. The data in Phonedisc fits almost perfectly within the facts of *Feist*. Both Phonedisc and *Feist* concern compilations of names, addresses and phone numbers, and in this respect are identical. They differ only in that Phonedisc arranges the entries of many phone directories, [48] and is used in conjunction with a computer. [49] Yet the fact which Justice O'Connor cites as making the phone directory in *Feist* unprotectable by copyright is precisely the fact which makes Phonedisc an attractive target for pirates. [50]
32. The *Feist* court bases much of its decision on the idea that originality is constitutionally mandated. [51] Justice O'Connor read two 19th century opinions to say that this constitutional

mandate sprang from the words "authors" and "writings" in Article I, § 8, cl. 8.[\[52\]](#) Such a conclusion does not seem so obvious however, as the word original appears nowhere in that clause. Further, the aforementioned clause gives Congress the power to write laws that provide for both authors and inventors, yet the multiple requirements for patents are not said to spring from the term "inventor." Originality is a valid requirement thanks to the Copyright Act's command in § 102, but the Supreme Court's dicta on this subject in *Feist* seems unnatural and unfounded.

d. Factual Compilations in the Circuits After *Feist*

33. Evidence seems mixed as to whether lower courts will follow Justice O'Connor's lead in sharply reducing copyright protection for compilations of facts. In *BellSouth Advertising & Publishing Corp. v. Donnelley Information Publishing*[\[53\]](#), the Eleventh Circuit took *Feist* even farther by ruling that a yellow pages directory was unprotectable. That court reached this conclusion in part because it found that the act of separating categories of businesses would "merge with the idea of listing such entities as a class of businesses in a business directory."[\[54\]](#) The court also held that *BellSouth* had simply followed "industry standards" in arranging their entries and headings, and that the arrangement decision about which category a particular business would fall into was made by the business buying the ad, rather than by *BellSouth*. This case clearly shows the Eleventh Circuit's willingness to limit protection for compilations.[\[55\]](#)
34. The Second Circuit took a markedly different approach in the *Key Publications, Inc. v. Chinatown Today Publishing Enterprises*.[\[56\]](#) There, the court found the copied directory, one that differed only from the *BellSouth* directory in that it covered only businesses that its author thought would be useful to the Chinese-American community of New York City, to be protected as original. Yet such a finding was of no consolation to the plaintiff, as the court held that there was no infringement since the defendant took only some of the facts from the plaintiff's directory, and arranged them differently in his own. This approach, while more sympathetic to compilers in offering protection is similar to the Eleventh Circuit in that it also invites copyists to make use of a compiler's work. The *Key* decision, does however, offer the kind of protection that strikes a balance between the rights of first compilers with those of the public by suggesting that had the copyist taken sections verbatim, adding nothing new, infringement might be found.
35. The Second Circuit has followed *Key* with other opinions which further limit the application of *Feist*.[\[57\]](#) In *CCC Information Service v. Maclean Hunter Market Reports*,[\[58\]](#) the court emphasized its willingness to find originality in spite of the *Feist* precedent by stating: "we have several times since *Feist* upheld copyright claims for compilations and similar works where the originality component was *extremely modest*."[\[59\]](#) [emphasis added].

e. A Patent Analogy Suggests Protection for Phonedisc

36. I do not suggest that creative arguments could not be fashioned to support the protectability of Phonedisc. To be sure, the Supreme Court held in *Diamond v. Diehr*,[\[60\]](#) a patent case, that an algorithm otherwise unprotectable by patent law, could be protected as part of a process when the process required the use of a computer. Similarly, it might be argued that without the placement

of Phonedisc's data on a computer disk in coordination with a "search engine" and "user interface," such data would be unusable. This is due to the unwieldy nature of such a large volume of information. The necessary connectedness of the software to the data may well make all of Phonedisc sufficiently original to merit protection. However the similarity of the Phonedisc to the directory in *Feist* should worry its creators, because *Feist* could so easily be applied in an infringement case, if one were to become necessary. Though there are other methods of protecting products like Phonedisc, they are insufficient as they do not allay creators' fears of competition from copyists.

C. Protection Outside Intellectual Property Law

37. Another mode of protection is that provided by contract law, which is invoked by the "tripwire" licensing schemes^[61] that many software producers use. These schemes are very limited in their enforceability.^[62] Though, if they are of little effect, their existence appears strange.^[63] Their function is likely only as a theatrical device for use in copyright infringement suits. In such a trial, the copyright owner's attorney might make light of the infringer's "willfulness" or at least "knowledge," by showing that he infringed after acknowledging the limitation of his own rights. These charades could be avoided though, if there were comprehensive and predictable protection tailored for computer software.
38. Another alternative to the current protection vacuum is the use by plaintiffs of state common-law misappropriation law, which was originally developed by the Supreme Court in *International News Service v. Associated Press*.^[64] Such an approach has been suggested in the academic literature, though it also is speculative.^[65] One problem with attempting to use this type of litigation is the preemption which might apply from three sources: 1) § 301 of the copyright act; 2) general federal preemption springing from the congressional domination of the intellectual property realm; 3) federal preemption based on the commerce clause's prohibition of states' attempts to limit "national trade in intellectual property."^[66] Another serious consideration with respect to using misappropriation doctrine, assuming *arguendo* that none of the above applied, is that it would be very difficult and costly for a national seller of such a product as Phonedisc to maintain suits in various states to enjoin sales of copied products, or to claim damages. This is due to differences of legal interpretations between the several states, and the logistical difficulties and costs of potentially filing suits in 50 states. These concerns are some of the critical concerns that actually support a finding of preemption.

III. A Call for An Alternative Mode of Protection

39. Even if creations like the Phonedisc are protected by the current copyright law, their protection does not have great depth. Where products like Phonedisc are protected, only the most vast and flagrant act of verbatim copying will give rise to a successful cause of action under the current copyright regime. Such a conclusion is evident both in the *BellSouth* and *Key* cases discussed above, and in the behavior of marketers of these products. The particular behavior to which I refer is the extensive attempts by creators to use extra-copyright protection to gain benefits that they

sense is lacking under the current copyright regime. Examples of this extra-copyright protection include the use of "trip-wire" licenses discussed above, and the fact that most programmers never release their complete work in human readable form.[\[67\]](#)

40. It is unfortunate that creators must take many steps outside the copyright regime to attempt to protect their work. These steps reduce the efficiency of the intellectual property legal system, thus taking from the country returns that would otherwise be realized. Such a reduction in efficiency stems from creators' understanding that their intellectual property protection is very limited. They must therefore charge consumers more than they otherwise would in order to compensate for their losses due to unauthorized copying. This in turn encourages even more copying. Another cost to society is also reflected in increased product prices, and that comes from the legal expenses associated with trying to secure the rights that creators are not given under copyright, and hence must be pursued through less efficient means, like the licensing schemes discussed above.
41. A further cost of inadequate copyright protection comes from creators' refusal to disclose their "writings." Most software could be more useful if a copy of the source code[\[68\]](#) were included in the software package.[\[69\]](#) This would allow advanced users to tailor software to their own particular needs. Another function of such disclosure to a registration office, would allow programmers to learn from the work of one another to advance the art of programming computers. This is the classic social bargain envisioned by the framers when they provided for the protection of intellectual property,[\[70\]](#) something conspicuously absent from the current system of software protection.[\[71\]](#) This regime encourages, or at least tolerates nondisclosure of a programmer's source code, and therefore frustrates the incentive system endemic to the copyright law. Such a system is *de facto* transformed into a system of trade secret protection.
42. What the software industry needs is an alternative to the current system. Congress should formulate and enact a new system of protection to deal with the special needs of the computer software industry. The new regime should differentiate between the type of product which is little more than a computer-searchable list of information, and operating systems or application programs. Such a distinction is critical as it will allow protection to be more closely tailored to the creation. This is necessary because traditional software contains far more creation than does a factual compilation; its protection should therefore be more substantial.
43. A new system should contain:
 - A clear and reasoned standard for differentiating works that are worthy of protection from those that lie in the public domain.
 - A provision to allow different lengths of protection terms depending upon the type of creation; the term of protection for a product should be proportional to its useful life.
 - A rule requiring complete disclosure of all computer code in human-readable form.[\[72\]](#)
 - A system for registration that is inexpensive and quick, acknowledging the short lives of most computer software, and compilation products.
44. The new standard should track closely the current standard, which gives protection to expression, but not to facts. This approach can be applied to provide incentives to publish, and at the same time maintain the base of knowledge in the public domain. There should, in addition be a rule prohibiting verbatim copying to protect producers of factual compilations. Such a rule will

provide a remedy for compilers where a copyist takes a significant portion of the work verbatim. The purpose of this rule is to prevent others from simply free-riding on the investment used to create a product in order to produce a competing product. This rule provides an incentive to create useful compilations by assuring compilers that others will not be able to undercut them in the market by stealing the fruits of their research. Admittedly, this rule will present courts with "line-drawing" problems, but these have been faced for many years in many fields of law, and is not a substantial reason to avoid such a plan.

45. The length of protection terms must be altered to provide proportionality between the term of protection and the useful life of the work. Currently, protected software is so protected for many years after the product is obsolete.[\[73\]](#) This has an anti-competitive effect, and needlessly deprives the public of property, the rights to which are withheld without good cause. Were protection keyed to product life, would-be competitors could build on the "obsolete" work of market leaders, thus lowering what are now significant barriers to entry into the field of computer software design. This would allow small companies to more easily begin their development work from the same point as the market leaders, something that is possible in other industries where disclosure of advances is more complete.
46. Further, the public could make use of the products abandoned by their publishers as obsolete; such products should by all rights belong to the public. For example, many charitable organizations and public interest groups seek functionality in their software, and might be willing to sacrifice the "cutting edge" features associated with the newest software products in order to limit their costs. They might therefore use products which would lie in the public domain, while allowing business leaders to fund the production of new software products by purchasing the newest software. This regime would take few customers out of the market for new software, as many small scale enterprises currently use unauthorized copies of software anyway because of the prohibitive price of purchasing multiple copies of new software. Additionally, this new scheme would stimulate the growth of a secondary market for used software which is in the public domain, making large corporations more able to afford new products as it could defray acquisition costs by selling its old versions.
47. The protection period for factual compilations should be very short. Such compilations (phone directories, case law, statutory law, zip code directories, etc.) tend to become out-of-date after one year or less. Therefore, a protection period of two years would give producers of these products a generous term of exclusive rights; after the producer has earned his rewards for compiling, the rights are restored to public ownership. Such a short protection period would also prevent producers from acting strategically to prevent others from competing in the market for these goods.
48. For other types of computer software, the useful life is greater, and thus a longer period of protection is required. Products such as operating systems and applications often follow a two to three year production cycle. Therefore, a five year period of protection is more than sufficient to encourage production of such products. Both types of products should receive a quid-pro-quo for these new more limited protection terms in the form of stronger more aggressive protection by courts. If the barriers to substantial recovery in infringement suits are lowered, then creators will rely more heavily on this system of protection, rather than taking inefficient and costly measures to protect their work outside intellectual property regimes.

49. Full disclosure of all software in human-readable form must be required; this means the disclosure of all program code, not just the first and last twenty-five pages as is currently the rule. This is necessary to promote the primary objective of intellectual property laws: the promotion of science and the useful arts.^[74] Such disclosure will not damage the ability of software producers to remain profitable if the protection granted them is strongly enforced. Further, full disclosure will allow programmers to learn from one another in the manner envisioned by the constitutional framers. Disclosure will also promote competition in the software field, as well as a more open exchange of information.
50. Finally, a system of registration must be devised which allows software producers to quickly, cheaply and effectively protect their work. Registration serves many functions, among them establishing notice to the world of claims to the products, and disclosure to the field of the advances represented therein.

IV. Conclusion

51. In this paper, I have discussed the Supreme Court's approach to factual compilations taken in the landmark case of *Feist v. Rural Telephone*. I suggested that the *Feist* opinion has been applied by the circuits that have considered it in a way that narrows it significantly. *Feist* may therefore only apply to printed "white pages" directories, and should not limit computerized creations at all. The precedent does however have an effect of creating uncertainty for creators of computer databases about the protection they may expect. The *Feist* approach, if applied literally, suggests that protection for computerized databases of factual information is vulnerable. This would be harmful not only because vulnerability will lead to chilling of what would be a lucrative field for their creators, but also because these databases provide America and the world with a vast quantity of information which would otherwise be inaccessible.
52. I conclude that a new approach must be fashioned which provides the computer software industry with strong protection for the fruits of its labor, while fairly balancing that protection with the rights of the public. I suggest:
 1. Clear standards that recognize the investment of creators, and the nature of their products.
 2. Periods of protection keyed to the useful life of the software
 3. A requirement of complete disclosure of programmers' code in human-readable form
 4. A registration apparatus which serves both the creator's need for cheap, and almost instantaneous protection, and the public's need for access to information about the state of the art of software design.

Together, these changes will provide a healthy and fair environment which will allow a burgeoning industry to thrive, and provide massive benefits to the American public.

[*] The author is a 1996 graduate of the University of Virginia School of Law. I wish to thank Mr. Robert O'Neil for the inspiration he provided, as well as his many hours of reviewing this manuscript. His assistance was invaluable. Mr. O'Neil is Professor of Law at the University of Virginia School of Law, and Founding Director of The Thomas Jefferson Center for the Protection of Free Expression. I must also thank my wife and parents for the many hours of editing and encouragement which they provided.

[1] L.R. Shannon, *Directory Assistance for the U.S. On a Disk*, N. Y. TIMES, August 23, 1994, at C 12.

[2] *Id.*

[3] *Id.*

[4] U.S. CONST. art. I, § 8, cl. 8.

[5] Jane C. Ginsburg, *No "Sweat"? Copyright and other Protection of Works of Information After Feist v. Rural Telephone*, 92 COLUM. L. REV. 338, 339 (1992) [hereinafter *No "Sweat"*].

[6] Licensing agreement accompanying the Phonedisc product, published by DDA, 1995.

[7] After I finished writing this article *ProCD Inc. v. Zeidenber* was reported at 908 F. Supp. 640 (W.D. Wis. 1996), which confirmed many of my most dire predictions. The court held that a product almost identical to Phonedisc could be copied and made available to the general public over the internet, as long as the copyist produced his own software which accesses the data. The basis for the decision was the Supreme Court's decision in *Feist*; holding that the arrangement of the compilation was insufficiently original. The court also found the "shrinkwrap license" in that case to be non-binding as it was found to contravene the relevant UCC provisions.

[8] 499 U.S. 340 (1991).

[9] See 35 U.S.C. § 154 (1988).

[10] Rights for copyright holders are slightly more complicated, and have various exceptions such as fair use, though they are based on this same trilogy. See Copyright Act of 1976, codified 17 U.S.C. §§ 106-120 (1994).

[11] U.S. Const. art. I, § 8, cl. 8.

[12] See *infra* ¶¶ 33-35.

[13] Cf. J. Houtt Verkerke, *Notice Liability in Employment Discrimination Law*, 81 VA. L. REV. 273 (1995) (discussing the role of "notice" in context of employment discrimination).

[14] What constitutes "misuse" will depend on the body of intellectual property protection asserted, and the medium of the property itself. Different rights are accorded to owners of patents, copyrights, trademarks, trade secrets, etc. Further, even within the particular protective statutes, there is diversity of protection. For example, within copyright there is different protection accorded to dramatic or performance art works than to literary works. See 17 U.S.C. § 110 (1994).

[15] Some may argue that infringement of copyrights is frequent especially where the cost of copying is minimal and the cost of independent development is great. Pamela Samuelson, *Creating a New Kind of Intellectual Property: Applying the Lessons of the Chip Law to Computer Programs*, 70 MINN. L. REV. 471, 514-517 (1985) [hereinafter *Chip Law*].

[16] This type of protection is analogous to a threat to all the world. It is very functional when the threat is credible, as when there is a strong system of protection for intellectual property, or where

there are information asymmetries, such that most infringers believe the threat. Such a system may be undermined where the asymmetries are reversed.

[17] 17 U.S.C. § 102 (1994).

[18] An example of this might be a phone directory like the one discussed in *Feist*, which contains a section at the beginning or at the end that provides "original" information about the community, such as maps or lists of local attractions.

[19] *Feist*, 499 U.S. at 348.

[20] Relief may be injunctive (§ 502), for confiscation (§ 503), for damages (§ 504) and/or for attorney's fees (§ 505). Criminal charges may also be filed (§ 506). 17 U.S.C. §§ 502-506.

[21] See *supra* note 15.

[22] *Feist*, 499 U.S. at 361.

[23] I assume that there would be no problem proving copying, as this element is usually easy to prove. The producer of the copied work often places fictitious entries into his work. He may then simply look up the entry, and if it appears copying may be inferred. See RALPH S. BROWN & ROBERT C. DENICOLA, *CASES ON COPYRIGHT, UNFAIR COMPETITION, AND OTHER TOPICS BEARING ON THE PROTECTION OF LITERARY, MUSICAL, AND ARTISTIC WORKS 98* (The Foundation Press, Inc. 1995). Presumably, Phonedisc contains several such entries.

[24] This is assumed, *arguendo*, however there may be a significant issue as to whether or not that case will affect electronic media. The *Feist* case may well be limited only to print media, and has in other respects been given very narrow application by the various circuits which have considered it. See *infra* ¶¶ 36-37.

[25] *Feist* explains that "the mere fact that a work is copyrighted does not mean that every element of the work may be protected." 499 U.S. at 348.

[26] These programs, would not present an originality problem, as the threshold for originality is quite low. 1 M. NIMMER & D. NIMMER, *COPYRIGHT* § 1.08 (1990). Though, there is some small chance that these programs are not, in fact, property of Phonedisc's creators. In some cases these modules are derivative works of other "tool" products, which help software developers by giving them "turnkey" systems or systems which build search engines from an array of preprogrammed choices. This would allow Phonedisc's authors to simply add their own data or variables.

[27] These programs would probably not be copied because they are quite easy to create using programming "tools." See *supra* note 25. Though, even if they were, they would be of little value to the copyist, if he copied the programs without the data. This is because the programs would have to be modified in order to be usefully applied to a differently structured database.

[28] This is precisely the type of information to which the Court refers as the product of "sweat of the brow", and thus unprotectable under copyright. *Feist*, 499 U.S. at 353.

[29] The *Feist* court exclaims emphatically that facts are not protectable under copyright. *Id.* at 344.

[30] The search results can be imported into other computer programs or documents, or even added to other computer databases.

[31] Pamela Samuelson has argued that protection is most needed for those pieces of intellectual property which are very expensive to develop independently, yet may be copied cheaply. *Chip*

Law, *supra* note 15, at 491-2. This is precisely the problem in the *Phonedisc* case. The creators of this product likely paid a considerable sum to compilers of telephone directories so as to get the data for this product in digital form. Else, they paid many data entry technicians to type in all the data manually. Either way, a significant amount of investment was required to compile this data, and similarly would be required to duplicate it independently. Yet, for under \$1000, one can purchase a machine which, when attached to an ordinary personal computer, will create a CD-ROM. One could then take such a disk and have it professionally duplicated in quantity for only pennies per copy. Therefore, the cost of copying this product to resell it commercially would be minimal, even if one developed independently, a search engine and a user interface to avoid the protectable portions of this product. See *supra* notes 25 and 26.

[32] *Feist*, 499 U.S. at 364.

[33] *Id.* at 344.

[34] *Id.* at 349.

[35] The Court infers this from the use of the word "author" in the Constitution and the Copyright Act of 1909; the suggestion is that "a work is not the product of an author unless the work is original." *Id.* at 351-52 (quoting NIMMER § 2.01).

[36] *Id.* at 345.

[37] *Id.* at 362.

[38] See *Chip Law*, *supra* note 15, at 511.

[39] *Feist*, 499 U.S. at 363-4.

[40] *Id.* at 363.

[41] *Id.* at 362.

[42] See *No "Sweat"*, *supra* note 5, at 344-5.

[43] Similar products currently on the market include a national yellow pages directory on CD-ROM, a product that contains zip-codes and the associated addresses, and others.

[44] See *No "Sweat"*, *supra* note 5.

[45] *Id.* at 345.

[46] *Feist*, 499 U.S. at 345.

[47] *No "Sweat"*, *supra* note 5, at 345.

[48] Presumably, the quantity of information contained in a work would be irrelevant when applying the *Feist* analysis, but see *Diamond v. Diehr*, 450 U.S. 175 (1981).

[49] This distinction might seem irrelevant in a *Feist* analysis, but see discussion of *Diamond v. Diehr*.

[50] By this I mean that the usefulness of the product makes it very attractive, especially in light of Professor Samuelson's insight that protection is needed where the costs of independent creation are high and the costs of copying are low. See *supra* note 27.

[51] *Feist*, 499 U.S. at 346.

[52] Justice O'Connor cited *The Trade-Mark Cases*, 100 U.S. 82 (1879), and *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53 (1884), for this proposition.

[53] 999 F.2d 1436 (11th Cir. 1993), [hereinafter *BellSouth*].

[54] *BellSouth*, 999 F.2d at 1444.

[55] The Eleventh Circuit has retreated significantly from this position in the subsequent case *Warren Publishing, Inc. v. Microdos Data Corp.*, 52 F.3d 950 (11 th Cir. 1995). In *Warren*, the court said that "*Feist* has been accorded very narrow scope," and then went on to distinguish *BellSouth* to find that a factual compilation about the cable television industry met the originality requirement for copyright, due to the publisher's system of selecting communities for inclusion. *Id.* at 953.

[56] 945 F.2d 508 (2d Cir. 1991), [hereinafter *Key*].

[57] See, e.g., *Kregos v. Associated Press*, 937 F.2d 700 (2d Cir. 1991), and *CCC Information Serv. v. Maclean Hunter Mkt. Reports*, 44 F.3d 61 (2d Cir. 1994).

[58] 44 F.3d 61 (2d Cir. 1994).

[59] *Id.* at 66.

[60] 450 U.S. 175 (1981).

[61] By this I mean the type of licensing agreement commonly used by software producers, otherwise known as "shrinkwrap licenses." These usually provide that either by opening the package containing the disks on which the software is stored, or by "clicking" on the "accept" button on a licensing agreement screen, the user accepts such agreement and binds himself to all the terms thereof. I call this a "tripwire" agreement because it is as though one necessarily trips through such an acceptance indicator, or mechanism, in order to make use of the software product.

[62] See *Chip Law*, *supra* note 15, at 516 n. 216; see also *ProCD Inc. v. Zeidenber*, 908 F. Supp. 640 (W.D. Wis. 1996), holding that a shrinkwrap license was unenforceable under UCC §§ 2-206, 2-207, or 2-209.

[63] Though maybe not so strange, as they may function to provide the same kind of notice protection as was discussed *supra* at ¶¶ 8-11

[64] 248 U.S. 215 (1918).

[65] *No "Sweat"* at 354.

[66] *Id.* at 354.

[67] See *Chip Law*, *supra* note 15, at 513.

[68] This refers to the "author's" original instructions, or commands that, when compiled into a machine-readable binary executable file, tells the computer hardware how to behave in order to provide its expected function.

[69] If source code were shipped with software products, then those users with the ability to adapt the product very closely to their own needs could do so. This is very desirable to software users yet something that software vendors are unable to offer because they must sell many copies of a given software product in order to make it cheap enough for their customers to be able to afford.

[70] U.S. CONST. art. I, § 8, cl. 8.

[71] See *Chip Law*, *supra* note 15, at 522-3.

[72] *Id.* at 522-3.

[73] *Id.* at 514.

[74] U.S. CONST. art. I, § 8, cl. 8.

