美國軟體保護法：著作權 V. 不正競業

陳起行*

在分析美國軟體著作權案件的基礎上，本文再進一步探討美國軟體保護課題。作者同意美國法學界多數學者的意見，認爲著作權已經過度地被擴張適用到軟體保護之上。本文的觀點，是保護軟體非文字侵害的著作權，實際上擔負著軟體工業界內不正競業法的功能。爲了支持筆者這項觀點，筆者將軟體著作權案件分成四組。在每一組案件中，就著作權保護與不正競業法的保護方式作一比較。筆者期望能經由此一比較，顯示出就樹立法律原則上的考量而言，援用不正競業法規範諸如程式次序，結構及組織等非文字軟體侵害的條件，似乎更爲恰當。

關鍵字：電腦軟體、著作權、不正競業，不當獲利
Computer Software, Copyright, Unfair Competition, Misappropriation

* 美國加州柏克萊大學法學博士，現任國立政治大學法律學系專任副教授。

Software Protectioni in the United states: Copyright v. Unfair Competition

Chi Shing Chen*

Table of Contents

In this article, I further examine the copyright law aspect of the software protection issues based on the analysis of the software copyright cases. I agree with the majority of the legal scholars that the copyright protection for the computer software has been excessively extended. In this essay, I submit the thesis that the non-literal copyright protection for the computer software has essentially served the function of the unfair competition laws in the software industry. To support my thesis, I categorize software copyright into four groups. A cmparison between the copyright protection and the approach based on the unfair competition laws is made in each one of these groups. I believe these comparisons can illustrate my view that the software copyright disputes analyzed in this essay can better be settled based on the unfair competition laws in terms of the construction of the legal rules and principles. This is especially true in cases where copyright protection are extended to the area of non-literal software infringement, like the sequence, structure and organization and the look-and-feel of the computer programs.

1. Introduction

Software protectioon under the copyright law regime has been established since 1980. However, other altermatives for software protection are still contemplated and debated in the legal community. This essay does not intend to propose another legal regime for software protection. It is also not an article to comment a specific software copyright decision made by the courts Through the analysis of some twenty software copyright decisions made by the courts, this essay suggests that the non-literal software copyright decisions made by the courts have essentially served the function of unfair competition laws.[1]

I first present the general consensus of the legal community regarding the excessiveness of the copyright protection for the computer software. Literatures that emphasize the unfair competition laws as the alternative for software protection are discussed. In the following section, I trace the influences that obstruct the establishment of a well constucted misappropriation doctrine. I believe such obstruction led to the expansion of the copyright law to protect the non-literal portions of the computer software. I then analyze the software copyright cases by classifying these cases into four categories. My con clusion that the non-literal softw-are copyright infringement should be approached from the perspective of unfair competition is discussed in the end.

2. The Difficulty to Construct the Misappropriation Doctrine

The majority of the legal scholars have criticized the extension of copyright protection to the non-literal portions of the computer software.[2] The misapporpriation doctrine has been considered the most favorable

1) See [Chen, C 1993] for the first software copyright cases analysis article.

2) Literature agree with courts' interpretation: see [Fetterman, D 1986] (court should expand copyright protection for software through interpretation of idea expression dichotomy) and [Middleton, A 1988] (court is right to protect user interface but is wrong not to extend the protection to command) ; disagree opinion: see [Conley Bryan 1985] (substantial similarity test in copyright is not suitable

alternative by the commentators. [3] Professor Raskind also believed that the court should begin the analysis by considering the competitive relationship and focused on the allegedly "inappropriate" conduct as an element of behavior in a competitive market context when the statutory protection specified in the Copyright, Patent and Trademark laws is inappropriate.[4]

In this essay, I am non proposing a policy scheme as an alternative to the software copyright protection. I am simply pointing out the fact that the software copyright protection for the computer software has been extended to the non-literal aspect of a computer program to serve the task of the unfair competition laws. I believe the difficulty encountered in the construction of the misappropriation doctrine contributes to this development. In this section, I trace the development of the misappropriation doctrine and the factors complicated its construction.

The federal common laws of unfair competition has derived almost a century before a landmark Supreme

---

for computer software), [Perelman, B 1985] (program structure ought to be patentable subject matter and not copyrightable), [Goldstein, P 1986] (copyright should only protect verbatim coyping), [Nimmer Krauthaus 1987] (copyright law is designed for artistic work and not incremental avanced technology like computer software), [Menell, p 1987] (Affording full copyright protection to operating systems— the source of compatibility—can sdiscourage adoption of widespread product standards), [Farrell, J 1989] (copyright's protection is inefficient, and its protection of part of a software program hurts standardization effort in the software industry), [Friedman, M 1989] (trade secret and not copyright should be used to protect the machine codes of a software), [Menell, p 1989] (the tendency of courts to view aplication programming as more akin to literary creativity than to scientific and engineering advancement treatens to give broad legal protection to basic principles of human factor analysis and software engineering without requiring the creators of the programs embodying those principles to satisfy the more exacting standards of patent law), and [Samuelon Glushko 1989] (copyright's protection of look and feel of a program is not supported by user interface community and legal scholars).

3) See [Samuelson, p 1984] (suggested allow copyright to become a general misappropriation law as a possible solution); [Brown, V 1988] (Congress should adopt a federal law of misappropriation, a catch-all category that would preserve a first developer's legitimate lead time and thereby provide the finishing touch to a complete scheme of software protection).

4) See [Raskind, L 1991]. However, Professor Raskind believed that the misappropriation doctrine itself should be invoked sparingly.

court decision, Erie R.R. v. Tompkins, [5] ceased its development. Since then, the state courts took over the task of construction and the unfair competition law started losing its conformity. [6] This Change essentially obstructed the forming of a federal common law of unfair comptition. This development is unfortunate since the borderline between a legitimate business competition and the unfair competition is very difficult to draw. Lacking of a jurisdiction that is consistence and uniform throughout the country only added further difficulty to the building of a consistent law of unfair competition.

Professor Mestmacker shared the experience of the German unfair competition laws. He pointed out that judge-made rules on unfair competition represented "ont of the most striking examples of case law in the framework of a codified civil law." [7] The difficulty to draw the line between legitimate competition and misappropriation is also experienced in the German Law. Professor Mestmacker stated that "the borderline of patent-like protection for unpatented articles has proved difficult to draw. ...The 'distance' [8] which has to be kept from a competitor's products is determined by taking into account such considerations as: the individuality of the product, the time and effort involved in its development, its character as technical or aesthetic, the

5) 304 U.S. 64 (1938), held that the state law where the federal court resided, and not the federal common laws, should be the binding laws of the diversity cases brought to the federal courts. The judicial administrative reform was also completed in 1939 with the enactment of the Administrative Office Act of 1939, 53 stat. 1223, 28 U.S.C. @332. For a general description of the development of the unfair competition law, see [Peterson, J 1965], p. 347-363.

6) Peterson gave an example where a federal district court in California granted an injunction against the identical copying of an ash tray except the name of the producer; however, because of the differences in the state law, a federal district court in Louisiana refused to protect the maker of a cigarette lighter whose product has been identically copied except the name of the producer, see [Peterson, J 1965], p. 356 and note 65. I believe the differences in these decisions also reflected the subjective nature of the judicial discretion needed in judging the 'fairness' of prodcut competition and simulation. However, to rendeer subjective discretion is inventiable for the business of the courts. Furthermore, judges should be the experts in rendering these discretion, if the facts of the cases are clearly laid out. This point is further elaborated later when the influences of the economic analysis on unfair competition is discusssed.

7) See [Mestmacker, E 1966], p. 18.

8) Quote is original.

purposes of the imitating competitor and the ways and means by which he obtained his knowledge."[9]

I believe more consistent and concrete tests for the misappropriation doctrine like those found in the German laws may very likely to have been constructed in the United States if there has not been the changing of the jurisdiction dictated by the Erie decision. As stated previously, the first impact of changing the jurisdiction led to the difference of judicial discretion in deciding the unfair competition issue, which is detrimental to the forming of the competitive norm.

In addition to the difference of judicial discretion, the change of the jurisdicition of unfair competition common laws from the federal to the state courts added even more puzzle to the development of the law. After this jurisdictional change, judge Learned Hand of the Second Circuit advanced an expansive view of federal constitutional preemption. According to hand, "[t]he core issue is not one of moral rights or wrongs, but of the primacy of federal law."[10]

"To judge Hand, the copyright scheme embodied in the Constitution did not permit the recognition of 'common-law property'[11] ... it is for Congress both to prescribe the extent of copyright protection and to determine what is eligible subject matter. Subject matter left unprotected and rights left unrecognized by Congress belonged to the public domain once they were published. State law protection, whether based on 'common-law property'[12] or unfair competition, is an intolerable invasion of the rights of the public under the federal copyright scheme."[13]

The effect of Judge Hand's reasoning is simply that if a subject matter is not on the list recognized by the intellectual property laws, then it is not protected at all. Record pirating provided the most severe challenge to such reasoning. None of the major decisions involving record pirating followed Judge Hand's

9) Id., p. 19.
10) See [Abrams. H 1983], p. 518-519.
11) Quote is original.
12) Quote is original.
13) Id., p. 519.

sweeping preemption doctrine. [14] However, in 1964, the Supreme Court made another pair of landmark decisions which had decisive impact on the development of the unfair competition laws. In Sears, Roebuck & Co. v. Stiffel Co.[15] and Compco Corp. v. Day Brite Lighting Co.,[16] the Supreme Court explicitly declared that state unfair competition laws were preempted by the federal intellectual property laws.

The strong opposition expressed by Justice Black echoed Judge Hand's expansive view of the preemption doctrine. Justice Black stated:

" [W] hen an article is unprotected by a patent or a copyright, state law may not forbid others to copy that article. To forbid copying would interfere with the federal policy, found in Art. 1, 8, 8, of the Constitution and in the implementing federal statutes, of allowing free access to copy whatever the federal patent and copyright laws leave in the pubic domain."[17]

The strong preemptive position of the court was later challenged in the legislature during the patent reform. Opponents of the strong preemption clause tried to amend the preemption clause of the patent law to explicitly state that unfair competition was not preempted by the federal patent law. [18] The amendment

14) Metropolitan Opera Ass'n v. Wagner-Nichols Recorder Corp., 199 Misc. 786, 101 N.Y. S.2d 483 (1950) , aff'd, 279 A.D. 632, 107 N.Y.S.2D 795 (1951) , is the leading state court precedent started the protection of phonorecord from illegal copying in the state courts. The preemption issue is not discussed in the decisiion, In Capitol records, Inc. v. Mercury Records Corp., Judge Hand became the minority in his own Circuit, 221 F.25 657 (2d Cir. 1955) the majority did not enter the discussion of the pressmption issue either. In the early 1970's, the phonorecord protection issue reached the Supreme Court the expansive preemption doctrine initlated by Judge Hand was once again the minority. In Goldstein v. Califorina, 412 U.S. 546 (1973) , a five-to-four decision, the majority validated a California statute that made it a misdemeanor to make unauthorized duplications of sound recordings. See discussion in [Abrams, H 1983], p. 519-537, and [Goldstein, P 1990] , p. 770-772.

15) 376 U.S. 225 (1964) .

16) 376 U.S. 234 (1964) .

17) Id., at 237.

18) This is the Scott Amendment no. 23. It was raised in the 1971 patent law revision hearing. See [Senate 1971], p. 1-4.

effort failed in the Congress. [19] Although the Copyright preemption clause was amended in the 1976 Copyright Act, [20] the question whether misappropriation ought to be explicity declared as not preempted by the federal copyright law was the center of the debate and was not put into the statutory language in the end.[21]

In addition to the subjective nature of the unfair competition judgement and the preemptive status of the state unfair competition laws, I believe there is a third element that further complicates the unfair competition doctrine. The element is the effort to fuse economic analysis into the doctrine of unfair competition, especially in the cost reduction side, i.e the misappropriation doctrine. In fact, the economic approach toward the misappropriation was used in the decision, Associated Press (AP) v. International News Service (INS), which initiated the doctrine of misappropriation.[22]

I believe the importance of AP v. INS not only lies in the fact that it initiates the misappropriation doctrine, AP v. INS is also full of thoughts and opinions.[23] The debate in AP v. INS centered around the fact that the INS, being banned on news collection about the first world war on the continental Europe, took the news published by AP in the East coast, transmitted them to the West Coast and Published there. The question is whether such practice of the INS ought to be banned?

A total of six opinions were

19) In a written testimony, some 40 legal scholars joined professor Donald Turner to oppose the amendment of the patent law preemption clause. It seems that the professors only recognizes the sales promotion side of the state unfair competition laws by stating:
"In our judgement, state courts have granted relief in this area without confining themselves to purely nonfunctional feartures, and the result is equivalent to (indeed, in excess of) patent protection. Accordingly, we believe that Sears and Compco are correct in limiting the states to restrictions relationg to advertising, trade symbols and trade dress, and requirements of labeling. If the product originator wants more, he should satisfy federal standards." See [Senate 1971], p. 311-312.

20) 17 U.S.C. 301.

21) See discussion in section 2.2.2 Preemption Clause of 1976 Copyright Act in [Chen, C 1993].

22) 240 F. 983 (1917), 245 F. 244 (1917), 248 U.S. 215 (1918).

23) See also [Baird, D 1983], [Paepke, O 1987], and pRaskind, L 1991].

given on this issue throughout the case history of AP v. INS. the district court believed INS's practice amounted to unfair trade, but the matter is one of first impression. [24] Judge Hand very reluctantly refused the granting of injunctive relief to AP.[25] On appeal, however, the majority of the circuit court, based on a strong sense of morality, answered the question with a definite yes. [26] The dissent, on the other hand, believed the injunction relief for AP ought to be rejected since no protection should be provided to AP when it communicated the news outside its members. The "rotation of the earth is slower than the electric current is a physical fact the complainant must reckon with in doing its business."[27]

In the Supreme Court, using the well known phrase "reap where it has not sown", Justice Pitney believed the news in dispute at least ought to be treated as a "quasi property" existed between AP and INS. The majority therefore granted the injunctive relief. [28] Justice Holmes dissented with the opinion that property should be created only by the law and did not arise from value. Lacking explicit legislation, what AP could obtain from INS was at most a credit in name.[29]

Justice Brandieis also wrote a dissenting opinion based on an economic reasoning. He stated:

"That competition is not unfair in a legal sense, merely because the profits gained are unearned, even if made at the expense of a rival, is shown by many cases besides those referred to above. He who follows the pioneer into a new market, or

---

24) 240 F. at 996.

25) Judge Hand stated:

"... my decision cannot be regarded as sufficiently free from doubt to justify the of a preliminary injunction upon this branch of the case.", id.

26) Judge Hough stated:

"If defendant takes what some one else owns, and sells it as of right, in rivalry with the owner, such competition is more than unfair; it is patently unlawful and the wider term comprises the narrower. ... the business method of selling, in competition with plaintiff and its members, something falsely repressented as gatered by defedant otherwise than from bulletins and early editions, is unfair, because it is parasitic and untrue. It is immoral, and that is usually unfair to some one.", 245 F. at 252.

27) 245 F. at 254.

28) 248 U.S. At 239, 240, and 242.

29) Id., at 246 and 248.

who engages in the manufacture of an article newly introduced by another, seeks profits due largely to the labor and expense of the first adventure, but the law sanctions, indeed encourages, the pursuit. He who makes a city known through his product, must submit to sharing the resultant trade with who, perhaps for that reason, locate there later."[30]

Professor Raskind believed Justice Brandeis dissent might better have been the majority opinion for the case from a competitive market point of view. In other words, under an economic approach, the conduct of INS should be examined more as a business competitive behavior. Likewise, the solution for such dispute should also be market-oriented. AP could copyright its stories, secure its bulletin, or enhance the enforcement of its by-laws. AP could also prevent INS form taking AP's news by arranging the news release time of the two coasts.[31] None of these response required any legal solution. The market approach focusing on the cost saving and market entrance of the competitive rivalry also enabled the courts to provide a clearer rationale for their decisions and relieved the courts from rendering "subjective assessments of the ethical nature of certain competitive behavior."[32]

The reason why competition is viewed in quite a different way under an economic approach is not hard to understand. McNulty outlined the two basic meanings of competition in economic sense. Competition is first a basic force to assure allocative efficency through equating prices and marginal costs. In fact, the force is so fundamental, it is analogous to the gravitation force in the physical science. The second meaning of competition is a descriptive one, denoting an ideal status, i.e. perfect competition. It is not an ordering force, but a state of affairs. This perfect situation may be unrealistic, but it still serves as a good analytical device.[33]

30) Id., at 259. Justice Brandeis also thought that the right of exclusion for private property was absolute, but if the property was affected with a public interest, its right of exclusion should be qualified. The fact that it costed AP to gather those news itself was not sufficient for property protection. The Court was really ill-equipped to investigate the public interests and property status of the subject matter involved in this case, see id., at 250 and 267.

31) See [Raskind, L 1991],at 905.

32) Id., at 906.

33) See [McNulty, P 1968], p. 643.

The difference of opinion between legal and economic community regarding business competition is thus evident. No one ought to be allowed to reap where it is not sown is a legal principle for the maintenance of market as well as social order. To interpret the meaning of unfair competition based on this principle is destined to be different from one based on the economic approach where competition is seemed as the driving force to a perfect market structrue. The derivation of the common law of unfair competition is inevitably further complicated by the different level of acceptance of the law economic approach by the judges throughout the courts of the United States.

3. Viewing Software Copyright Cases From Unfair Competition

I believe the uncertainty of the unfair competition laws discussed in the previous section has a direct effect on the software protection, i.e. govern software unfair competition under the name of software copyright protection. My analysis of the software Copyright cases in this section is intended to illustrate this view.

I categorize software copyright cases into four groups. The first group of cases contains the literal copying cases. I believe this group of cases is well placed in the copyright regime. Actually, these cases can be tried either by copyright infringement or unfair competition, which is what the parties of these caese essentiany did. The group one cases includes SAS, [34] EFJ [35] and Broderbund.[36]

In each one of these cases, there exists evidences of direct copying. In SAS, plaintiff's company name 'SAS' was shown 145 times in the early version of the defendant's product. In EFJ, the defendant took the expressions of plaintiff's software program including some errors during the reverse engineering process. And in

34) SAS Institute Inc. v. S&H Computer Systems, Inc., 605 F. Supp. 816, 225 U.S.P.Q. (BNA) 916, March 6, 1985.

35) E.F. Johnson Co., v. Uniden Corporation of America, 623 f. Supp. 1485; 228 U.S.P.Q. (BNA) 891, December 13, 1985.

36) Broderbund Software, Inc. and Pixellite Software, v. Unison World, Inc., 648 F. Supp. 1127, 231 U.S.Q. (BNA) 700, October 8, 1986.

Broderbund, the defendant's programmer Hughes copied the screens of several functions of plaintiff's software product "Print Shop". Hughes even had an idea for a totally different user interface in one of the functions, but he still copied the "Print Shop" interface.

All the claims of these cases included both copyright infringement and unfair competition, only that the unfair competition claim was either not discussed or severed by the court because clear evidence of expression copying were found in each of these three cases.

The second group of software copyright cases are reviewed under the section 43(a) of the Lanham Act. The group two cases are Synercoml,[37] Synercom2,[38] Digital,[39] Manufacturer,[40] Telemark[41] and Lotus.[42]

I believe Manufacturer is right in holding the defendant's liability under section 43(a) of the Lanham Act. In this case, the court also focused on whether there exists a likelihood that a substantial number of consumers would be misled or confused as to the source of defendants' screen displays. The court held affirmative on this issue. Actually, I believe the Manufacturer court could well settle the case on the unfair competition ground alone without delving into the chore of deciding the coopyrightability and idea v. expression of various features of the infringing program.[43] I wonder why other cases in this group did not take the same

37) Synercom Technology, Inc. v. University Computing Co. and Engineering Dynamics, Inc., 462 F. Supp. 1003; 199 U. S. P. Q. (BNA) 537, August 24, 1978.

38) Synercom Technology, Inc., v. University Computing Co. and Engineering Dynamics, Inc., 474 F. Supp. 37; 204 U.S.P.Q. (BNA) 29, Feburary 7, 1979.

39) Digital Communications Associates, Inc. v. Softklone Distributing Co. and Foretec Development Corporation, 659 F. Supp. 449, 2 U.S.Q.2D (BNA) 1385, March 31, 1987.

40) Maunfacturers Technologies, Inc. v. Cams, Inc., Edward D. Cormier, Kenneth J. Laviana, and Norman St. Martin, 706 F. Supp. 984, 10 U.S.P.Q.2D (BNA) 1321, January 30, 1989.

41) Telemarketing Resources v. Symanted Co., John L. Friend, and dba Softworks DEvelopment, 12 U.S.P.Q.2D (BNA) 1991, September 6, 1989, Decided.

42) Lotus Development Co. v. Paperback Software International and Stephenson Software, Ltd, 740 F. Supp. 37, 15 U.S.P.Q.2D (BNA) 1577, June 28, 1990.

43) Court's copyrightablity and idea v. expression analysis were commented in [Chen, C 1993], 3. Software Copyright Cases Review.

route. My only explanation is that the complication of the unfair competition doctrine discussed in the previous section make it the less favorable cause of action compared to the copyright protection. Other legal protection means, especially copyright is sought after instead.

In Lotus, the defendant realized that the only chance to succeed in the spreadsheet software business is to be compatible with Lotus 1−2−3. Accordingly, defendant changed the design of its spreadsheet program to "ensure that the arrangement and names of commands and menus in VP−Planner conformed to that of Lotus 1−2−3."[44] It seems really questionable whether an inquiry into the possibility of the false designation of origin is more proper than a finding of idea v. expression of a program's menu structure.

Likewise, the dispute of all the cases in this group all center around the screen display or user interface of a software program. They are all decided under the copyright law regime except Synercom2. Synercom2 did try the unfair competition route. Unfortunately, instead of choosing the section 43(a) of the Lanham Act or passing off, plaintiff of Synercom2 sued under the common law misappropriation claim and the claim was preempted by the federal Copyright law.[45]

The third group of cases are the ones that I believe a better inquiry should be the unfair competition with confidential relationship. The group three cases includes Whelan,[46] Q−Co,[47] Plain,[48] Health[49] and Johnson.[50] All

44) See supra note 41, 740 F. supp 69.

45) "Strictly speaking, the tort of unfair competition requires the additiional element of secondary meaning, or" passint off. "As there is no claim that EDI or UCC passed off their product as that of Synercom, the analysis here will focus upon the doctrine of misappropriation", see note 1 of Synercom2.

46) Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc., Dentcom, Inc., Edward Jaslow, Rand Jaslow, and Joseph M. Cerra., 797 F. 2d 1222, Aug. 4, 1986.

47) Q−Co Industries, Inc. v. Sidney Hoffman, Dillip Som and Computer Prompting Co., 625 F. Supp. 608; 228 U.S.P.Q. (BNA) 554, DEcember 24, 1985.

48) Plains Cotton Cooperative Association v. Goodpasture Computer Service, Inc., William James Godlove, Richard R. Fisher, Peter H. Cushman, and Clarence Michael Smith, 807 F.2d 1256, 1 U.S.P.Q.2D (BNA) 1635, January 21, 1987.

49) Healthcare Affiliated Services, Inc., and Blue Cross of Western Pennstlvania v. Leslie V. Lippany, indiidually and doing business as Hospital Mycrosystems, Inc., 701 F. Supp. 1142, August 11, 1988.

50) Johnson Controls, Inc., v. Phoenix Control Systems, Inc., Rodney Larsen and Irene Larseb, JohnSchratz and Martha Schratz, 886 F. 2d 1173, 12 U.S.P.Q.2D (BNA) 1566, October 3, 1989.

of these cases involve competition from former employees, except that Whelan is a dispute derived from a dissolved joint venture.

I believe Q-Co and Health are the right approach in this category since unfair competition and copyright claims were at least treated equally. Since the defendants of both of these two cases lawfully gained the idea for the disputed program through their employment and the copyright infringement occurred only at the idea level, the copyright claims of both of these cases were not sustained. On the other hand, the plaintiffs of these two cases were successfully protected through the unfair competition cause because the defendants misappropiated the trade secrets of their former employers.

Based on the same reasoning, I tend not to agree with the approach of the other three cases. Defendants of all these three cases lawfully obtained the idea of the disputed software either through their former employment or joint venture relationship. It seems natural to have similarity on the idea level between the competing software in dispute.

It is therefore reasonable to question the ruling of the Whelan court, which extended the copyright protection for the software program to the sequence, structure and organization of the program. This is especially true when the facts of the case clearly stated that the defendant illegally took a copy of the source codes of the disputed program. 41 A stronger emphasis on the inquiry of trade secret misappropriation in this case may have led to the same result without commiting the court to extend such a broad copyright doctrine for software protection.

Similarly, through the coypright infringement test, the Plain court found no infringement since the similarity of programs is dictated by the externalities of the cotton market. In fact, however, the idea of the two competing programs came from the same source, the former employer of the defendants. One of the defendant also took a complete copy of the source codes before he resigned from the plaintiff.[52] Again, I believe a better rule may be obtained if the main

51) In footnote 22, Whelan court quoted the finding of the district court that defendant "had surreptitiously and without consent" of the plaintiff obtained a copy of the source code of the disputed program and that the had "utilized the source de in his attempt to develop the IBM-PC Dentcom program," see Whelan, 797 F.2d at 1232.

52) See Plains, 807 F. 2d at 1258.

inquiry of the case is unfair competition, i.e. misappropriation of trade secret in this case. However, the Plain court dismissed the copyright infringement claim because the court found no copying occurred on any level.[53]

The fourth group of cases are reviewed based on the unfair competition without confidential relationship. The group four cases include Datacash,[54] Franklinl,[55] Franklin2,[56] Formula,[57] and NEC.[59] I believe the cases in this group deal right with the core of the misappropriation doctrine and thus are the most difficult ones in terms of resolving through a well reasoned and established legal principle, since the construction of the msiappropriation doctrine is complicated by the factors discussed in the previous section.

I believe all the three factors complicates the unfair competition doctrine, namely the highly subjective nature of the judical discretion regarding how and to what extent a product can be lawfully simulated, the law economic influence on the concept of competition, and the preemption issue, are all very likely to create hardship during the development of the legal rules and principles for the cases of this group.

However, Datacash is the rare exception. The Datacash court ruled that the Read Only Memory (ROM) is not a copy of the computer program and rejected the copyright infringement claim. On the other hand, the Datacash court sustained plaintiff's unfair competition claim and held the claim was not preempted by the federal copyright law.

Using copyright law to decide the issue of unfair competition did

53) Id., at 1263.

54) Data Cash Systems, Inc. v. JS&A Group, Inc., at al., 480 F. Supp. 1063; 203 U.S.P.Q. (BNA) 735 September 26, 1979.

55) Apple Computer, Inc. v. Franklin Computer Co., 545 F. Supp. 812, 215 U.S.P.Q. (BNA) 935, July 30, 1982 Reversed and Remanded August 30, 1983.

56) Apple Computer, Inc., v. Franklin Computer Co., 714 F.2d 1240, 219 U.S.P.Q. (BNA) 113, August 30, 1983.

57) Apple Computer, Inc., v. Formula International Inc., 725 F.2d 521, 221 U.S.P.Q., (BNA) 1520, July 15, 1988.

58) Pearl Systems, Inc., v. Competition Electronics, Inc., 8 U.S.P.Q.2D (BNA) 1520, July 15, 1988.

59) NEC Corporation, and NEC Electronics, Inc. v. Intel Corporation, 10 U.S.P.Q.2D 1177, February 6, 1989.

not really simplify any other cases found in this category. After a lengthy and scholarly opinion, the Franklin court decided that it was still questionable whether the binary version of an operating system of the personal computer resided in Rom is copyrightable subject matter. This decision was soon overruled by Franklin2, which ascertained the copyrightability of the disputed subject matter.

I believe the question whether ROM is copyrightable is really an open ended question for the court to answer. However, if the court considered that the plaintiff and the defendant have been placed in a different comptitive horizon since the defendant does not have to bear a substantial cost to develop the operating system residing in the ROM, the decision could be made easier and the legal rules set by the courts can also be better comprehended.

It is not my opinion that cases in this category can be litigated and decided better if they are tried as a case of unfair competition. The fairness of product simulation is in need of a cooperative research from the legal and economic community. And the research of this subject can only help the court to a certain extent. I believe the subjective assessments of the judges are inevitable. Examining strictly the result of the software copyright cases, I don't believe anyone can seriously challenge the result of the decisions of the court.[60]

The concern I have is really over the building of legal rules and principles. The over expansion of the software copyright doctrine may only hide and hurt the development of a better rules and principles for software unfair competition, which are really needed. This is the view point this section is intended to illustrate.

4.Comments

The copyright law has been over expanded to provide protection for the computer software is the majority opinions found in the legal literature.[61] In this essay, I present the view that such expansion is due to the

60) Pearl is the only case I have doubt about whether the disputed product has been unfairly simulated, since no trade secret was misappropriated and the similarity on the subroutine level, like NEC, should not be so seriously challenged. However, I am even more subjective without exposing to the facts of the case as the court did.

61) See supra note 1.

complication of the unfair competition laws. Such confustion demands more thoughts be given to the legal regime especially when an emerging industry is created through technological innovation.

The sound recording industry and the computer software industry are the two prime examples. All leading cases involving phonorecord pirating ran against the principle required that the state misappropriation protection be preempted by the federal intellectual property laws. [62] The reason seems to be quite straight . There simply is a need in the sound recording industry to have the competitive norm. Likewise, in the software industry, the cases examined in the previous section seem to suggest that software copyright protection has been expanded to serve as the unfair competition laws for the industry. To have a federal unfair competition legal regime is really what is needed.[63]

Expanding copyright protection for the non-literal aspects of the computer software tends to over-burden the copyright law regime. In this century, the copyright law has been used as the primary means for the protection of a series of technological innovation, such as the radio, motion pricture, phono-record, photo-copying and now the computer software technology. I believe the rulings extending copyright protection to the non-literal aspect of the computer software have an undesirable effect of complicating the overall copyright law regime. This development should not be encouraged especially when there does exist another approach to derive the competitive norm for the software industry.

Over expansion of the software copyright doctrine may lead to another drawback to the development of the software industry, which is shared by all four categories of the cases reviewed. From an economic point of view, Farrell pointed out strong intellectual property protection tends to obstruct the derivation of a de facto standard, destroy network benefit and fragment the market.[64]

The fact that the Open Software Foundation (OSF), a nonprofit membership organization established in 1988 to promote a standardized UNIX operating system, tried as its

62) See supra note 13 for a discussion of the 3 main phonorecord pirate cases.
63) See [Peterson, J 1965] and [Brown, V. 1988].
64) See [Farrell, J 1989].

first task to standardize the user interface portion of the operating system is therefore noteworthy.[65] Even such effort of the OSF is not inspired by the courts' decisions to grant copyright protection to screen display and user interface of a program in the personal computer world, OSF's emphasis on a standardized user interface environment at least suggests a strong need for such a standard. As suggested in this section, the expansion of the copyright protection is really not necessary if the unfair competition laws are placed at the center of the software litigation.

I believe some conceptual clarification will help the derivation of a consistent legal regime of unfair competition law. First, I believe the law of misappropriation and the federal intellectual property laws really protect different legal interests and are serving quite different goals. The intellectual property laws are instituted to promote the progress of science and useful arts.[66] On the other hand, the unfair competition laws, no matter in the sales promotion or cost reduction side, are aiming at the creation of a fair environment for businesses to compete with each other. Therefore the preemption discretion ought to be restrained in its exercise in cases claiming the violation of the state laws of unfair competition.

I also believed copyright protection for the computer software has been very effective in the sense of enforcing software owners' right to prevent unauthorized duplication by the software users. Such protection is especially useful with the help from the software trade association, like Software Publishers Association (SPA), to carry out the enforcement,[67] However, as the software copyright cases indicated, the copyright law may be over burdened in guiding the competition among software competitors. The unfair competition laws should be the better candidate.

I believe the seocnd conceptual help needed is a better understanding and application of the laws of economics to the unfair competition field. As discussed in section 1, economic

65) See "OSF faces challenge of choosing Unix interface; Open software Foundation", PC Week, October 10, 198, Vol. 5; No. 41; Pg. 13, Sussman, Ann.

66) See Article one, section 8, clause 8 of the Constitution of the United States.

67) See "SPA finds 41 percent decrease in software piracy since 1990", PC Week, November 16, 1992, Vol. 9; No. 46; Pg. 224.

sense of competition really describes an ideal status of affairs. It is also a fundamental factor lead to such ideal situation, i.e. perfect competition. However, competition alone does not provide any norms for the order of a market.

As McNulty pointed out, competition is by far the most fundmental and pervasive yet least developed concept in economics. [68] Applying such concept to determine the fairness between two disputed competitors requires extreme caution if not dangerous. Factors lead to the ideal model of economists is still vaguely known. The legal purpose to derive the norms of fair competition should therefore based primarily on the method and tradition that are long familiar to the legal community. The economic analysis should be used mainly for reference only. A subjective assessment of the fairness issue by the judges is always inevitable.

68) See [McNulty, P 1968], p. 639.

References

[Peterson, J 1965]

The Legislative Mandatte of Sears and Compco: A Plea for a Federal Law of Unfair Competition, John R. Peterson, Dickinson Law Review, Vol. 69, Summer 1965, No. 4, p. 347-378

[Mestmacker, E 1966]

The Relation of the Law of Unfair Competition to the Law on REstraint of Competition in Germany, Dr. E. J. Mestmacker, p. 17-27 in [Thompson, D 1966].

[Thompson, D 1966]

Unfair Competition, Some Comparative Aspects of the Laws of the United States, Germany, France and the United Kingdom, A Report of a Symposium held on May 20, 1965 by the British Institute of International and Comparative Law at the Law Society Chancery Lane, London, W.C.2, Ed. by Dennis Thompson, 1966

[McNulty, P 1968]

Economic Theory and the Meaning of Competition, 82 Quarterly Journal of Economic 639-656, 1968

[Senate 1971]

Hearing before the Subcommittee on Patents, trademarks, and Copyrights of the Committee on the Judiciary United States Senate, 92nd Congress, Ist session, to S. Res. 32 on S. 643, S. 1253 and S. 1255

[McClure, D 1979]

Trademark & Unfair Competition: Acritical history of legal thought, 69 Trademark Reporter 305, 1979.

[Abrams, H 1983]

Copyright, Misappropriation, and Preemption: Constitutional and Statutory Limits of State Law Protection, Howard B. Abrams, The Supreme Court Review, 1983, p. 509-581.

[Baird, D 1983]

Common Law of Intellectual Property and the Legacy of International News Service V. Associated Press, 50 U. Chi. L. Rev. 411, Spring, 1983, Douglas G. Baird

[Samuelson, P 1984]

Article: CONTU Revisited: The Case Against Copyright Protection for Computer Programs in Machine-Readable Form, Duke Law Journal,

[Conley Bryan 1985]

A Unifying Theory for the Litigation of Computer Software Copyright Cases, 63 N.C.L.Rev. 563, Notrh Carolina Law Review, April, 1985, John M. Conley and Robert M. Bryan

[Perelman, B 1985]

Proving Copyright Infringement of Computer Software: An Analytical Framework, 18 Loy.L.A. Law Rev. 919, Loyola of Los Angeles School of Law, 1985, Bruce Perelman

[Fetterman, D 1986]

The scope o copyright iprotection for computer software: exploring the idea/expression dichotomy. (Ist prize) (1986 Nathan Burkan Memorial Competition) , Copyright Law Symopsium (ASCAP) , Vol 36, pp 1-32, January 10, 1991, -Winter, Fetterman, Daniel J

[Goldstein, P 1986]

Symposium: The Future of Software Protection, Infringement of Copyright in Computer Programs, University of Pittsburgh School of Law, Summer, 1986, Paul Goldstein, 47 U. Pitt.L.Rev. 1119-

[Menell, P 1987]

Tailoring Legal Protection for Computer Software, STandford Law Review, July, 1987, 39 Satn. L. Rev. 1329, Peter S. Menell

[Nimmer Krauthaus 1987]

Copyright and Software Technology Infringement: Defiring Third Party Development Rights, 62 Ind, L.J. 13, Indiana University School of Law, Bloomington, 1986/1987, Raymond T. Nimmer, Patricia A. Krauthaus

[Paepke, O 1987]

An Economic Interpretation of the Mis-

appropriation Doctrine: Common Law Protection for Investments in Innovation, 2 High Tech. L. J. 55, Boalt Hall School of Law, University of California, Berkele, Spring, 1987, Paepke, owen
[Brown, V 1988]

The Incompatibility of Copyright and Computer Software: An Economic Evaluation and a Proposal for a Markeplace Solution, Vance Franklin Brown, The Northe Carolina Law Review, Volume 66, June 1988, No. 5, p. 977-1016
[Middletion, A 1988]

Note: A Thousand Clones: The Scope of Copyright Protection in the 'Look and Feel' of Computer Programs-Digital Communications Associates, Inc. v. Softklone, Distributing Corp., 659 F. supp. 449 (N.D. Ga. 1987). 63 Wash.L.Rev. 195, University of Washington School of Law, January, 1988, Alan S. Middleton
[Fariedman, M 1989]

Sandardization and Intellectual Property, 30-OCT Jurimeetrics J. 35, October, 1989,
[Friedman, M 1989]

Copyrighting machine language computer software-the case against, v9 Computer/Law Journal p1-36 Winter '89, Friedman, Mark
[Menell, P 1989]

An Analysis of the Scope of Copyright Protection for Application Programs, Stanford Law Review, May, 1989, 41 Stan. L. Rev. 1045, Peter, S, Menell
[Samuelson Glushko 1989]

Last Frontier Conference of Copyright Protection of Computer Software: Other Presentations, Comparing the Views of Lawyers and User Interface Designers on the Software Copyright "Look and Feel" Lawsuits, Section of Science & Technology of the American Bar Association, Fall, 1989, Pamela Samuelson, Robert J. Glushko
[Goldstein, P 1990]

Cases and Materials on IP law Copyright, Patent, Trademark and Related State Doctrines, Cases and Materials on the law of Intellectual Property, 3rd. Ed., 1990, University Casebooks Series, The Foundation Press, 982 P.
[Raskind, L 1991]

The Misappropiation Doctrine as a Competitive Norm of Intellectual Property, 75 Minn. L. Rev. 875, February, 1991, Leo J. Raskind
[Chen, C 1993]

United States Computer Software Copyright Cases Analysis, Chengchi Law Review, June 1993, Chishing Chen