LEGAL UPDATE

RESTRICTING REVERSE ENGINEERING THROUGH SHRINK-WRAP LICENSES:

BOWERS V. BAYSTATE TECHNOLOGIES, INC.

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I. INTRODUCTION

The interaction between federal and state laws under the Supremacy Clause of the United States Constitution has been studied at length. However, the subject of preemption remains a topic of debate. Even seemingly explicit preemption clauses, like the preemption clause contained in the Copyright Act, create uncertainty among academics and judges.[1] Judges are now faced with controversies involving the interaction between state contract law and federal copyright law. This interaction, and the uncertainty that it causes, has been exemplified in cases involving contract terms prohibiting reverse engineering. The extent to which parties can agree to contract terms involving the subject matter of federal copyright protection remains unclear. Judicial decisions analyzing the preemption question under federal copyright law have produced mixed results. The most recent case to address the issue of prohibiting reverse engineering, *Bowers v. Baystate Technologies, Inc.*, resulted in a finding that the Copyright Act did not preempt the state contract in question.[2] While this result may be justified under the specific facts of the case, some criticize the decision as creating a blanket rule against preemption.[3]

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[1] 17 U.S.C. § 301 (2000).

[2] Bowers v. Baystate Technologies, Inc., 302 F.3d 1334 (Fed. Cir. 2002).

[3] *See* Andrea L. Foster, *Legal Scholars and Library Groups Seek Clarification From Court on Software Licenses*, THE CHRONICLE OF HIGHER EDUCATION, *available at* http://chronicle.com/free/2002/10/2002102501t.htm (Oct. 25, 2002).

II. FEDERAL COPYRIGHT LAW

A. Reverse Engineering As Fair Use

Reverse engineering can be defined as "starting with the known product and working backward to divine the process which aided in its development or manufacture."[4] Most computer programs are distributed only in object code form, which makes it difficult to discover and use the ideas contained in the program without reverse engineering.[5] Ideas are explicitly excluded from copyright protection.[6] One way to reverse engineer is to transform the object code into source code.[7] The result of disassembling the object code is that an intermediate copy is made of the copyrighted expression in the software.[8] Virtually all recent court decisions have interpreted the Copyright Act as allowing reverse engineering in some circumstances.[9] When the only way to obtain the ideas and functional elements of a computer program is by disassembling the object code, some courts have held that this disassembly is fair use as a matter of law.[10] Also, reverse engineering is often found to be fair use when it is done to achieve compatibility and interoperability between products and when only an intermediate copy is made in the process.[11]

B. Preemption

Preemption under federal copyright law can occur in two ways: under § 301 of the Copyright Act or under the Supremacy Clause of the United States Constitution.[12] Section 301 of the Copyright Act governs preemption of other laws which fall within the general scope of federal copyright.[13] It states that

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[4] Kewanee Oil Co. v. Bicron, Corp., 416 U.S. 470, 476 (1974).

[5] ROBERT P. MERGES, ET AL., INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE 989 (2d. ed. 2000). "Object code" consists of binary data, 1's and 0s, which a computer can read. While object code is useful, it is very inefficient and can be impossible to be read by others. *See* Universal Studios, Inc. v. Corley, 273 F.3d 429, 438-39 (2nd Cir. 2001).

[6] 17 U.S.C. § 102(b) ("In no case does copyright protection for an original work of authorship extend to any idea. . . .").

[7] MERGES, *supra* note 5, at 989. "Source code" is code written in a high-level language readable by people but not computers. Source code has to be translated back to object code for a computer to understand it. *See Corley*, 273 F.3d at 438-39.

[8] *See* Sega Enterprises Ltd. v. Accolade, Inc., 977 F.2d 1510, 1518 (9th Cir. 1992).

[9] MERGES, *supra* note 5, at 1003.

[10] *See Sega*, 977 F.2d at 1527-28.

[11] *See* MERGES, *supra* note 5, at 1003-04.

[12] Dennis S. Karjala, *Federal Preemption of Shrinkwrap and On-line Licenses*, 22 U. DAYTON L. REV. 511, 525 (1997).

[13] 17 U.S.C. §301(a) ("On and after January 1, 1978, all legal or equitable rights that are equivalent to any of the exclusive rights within the general scope of copyright as specified by section 106 in works of authorship that are fixed in a tangible medium of expression and

other laws will be preempted if they (1) come within the subject matter of copyright; and (2) are equivalent to any of the exclusive rights specified by § 106 in works of authorship fixed in a tangible medium of expression.[14] This section of the Copyright Act has been interpreted to require an "additional element" test to be satisfied in order to avoid preemption.[15] Under this test, if the state law provides a cause of action that requires proof of at least one more element than required to prove copyright infringement, the state law will not be preempted.[16]

State laws may also be preempted under Article VI of the United States Constitution.[17] There are three bases for preemption under the Supremacy Clause: explicit preemption, conflict preemption, and field preemption.[18] In determining whether a state law is preempted, the intent of Congress in passing the federal law must be examined.[19] Explicit preemption occurs when Congress explicitly states in a statute's language, or implies in the structure and purpose of a statute, that federal law will preempt.[20] Conflict preemption occurs when it becomes impossible to comply with both federal and state law and when the state law becomes an obstacle to the purposes and objectives of federal law.[21] Field preemption occurs when "the scheme of federal regulation is so pervasive as to make reasonable the inference that Congress left no room for the States to supplement it."[22]

III. HISTORICAL PERSPECTIVE: PRE-*BOWERS*

One of the first cases to deal with a state contract prohibiting reverse engineering came out of the Fifth Circuit.[23] The facts of *Vault Corp. v. Quaid Software Ltd.* parallel the facts of the *Bower* case.[24] Vault argued that the

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come within the subject matter of copyright as specified by sections 102 and 103, whether created before or after that date and whether published or unpublished, are governed exclusively by this title.").

[14] *See id.*

[15] *See* MERGES, *supra* n. 3, at 885.

[16] *Id.*

[17] *See* U.S. CONST. art. VI ("This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land. . . .").

[18] ROBERT A. GORMAN & JANE C. GINSBERG, COPYRIGHT 902 (6th ed. 2002).

[19] *Id.*

[20] *Id.*

[21] *Id.* at 903.

[22] *Id.*

[23] Vault Corp. v. Quaid Software Ltd., 847 F.2d 255 (5th Cir. 1988).

[24] *See id.* at 256 (Vault produced disks that were purchased by software companies. The disks came with software written by Vault that prevented users from running any software without the original software disk being in the computer. Vault's software had been

contract was enforceable under the Louisiana Software License Enforcement Act.[25] However, the Fifth Circuit found that the state statute was preempted by the Copyright Act because it "touched upon the area" of federal copyright law.[26] Specifically, the Court found that the Louisiana Licensing Act conflicted with the Copyright Act because it authorized a total prohibition on copying, provided perpetual protection, and allowed even non-copyrightable elements of the software to be protected under its provision.[27]

The Federal Circuit relied on *Data General Corp. v. Grumman Systems Support Corp.*[28] and *ProCD, Inc. v. Zeidenberg*[29] in deciding the *Bowers* case.[30] Data General Corporation ("Data General") was a computer manufacturer that made most of its revenue from post-sale servicing of its computers.[31] Grumman Systems Support Corporation ("Grumman") was a competitor in the service market and was founded by former Data General employees.[32] Through a prior settlement, Grumman became a licensee of Data General's proprietary information.[33] However, after Data General created a new diagnosing software, the license given to Grumman became very restricted.[34] In response, Grumman obtained copies of Data General's software from former Data General employees and customers.[35] Data General filed suit claiming copyright infringement and violation of state trade secret law by misappropriating copies of the software in violation of confidentiality agreements binding on Data General employees and customers.[36] The First Circuit held that the state trade secret law was not preempted because it required proof of breach of a duty of confidentiality, which is an additional element beyond a cause of action under federal copyright law.[37]

The Federal Circuit's opinion in *Bowers* was supported mainly by its interpretation of the *ProCD* case. ProCD created a database of telephone

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copyrighted and included a license that prohibited copying or reverse engineering.).

[25] *Id.* at 268-69 (The statute permits software producers to impose contractual terms on purchasers that are set out in a contract consistent with the statute. The statute identifies enforceable contractual terms as including a prohibition on copying of any kind and a prohibition on reverse engineering.).

[26] *Id.* at 269-70.

[27] *Id.*

[28] 36 F.3d 1147 (1st Cir. 1994).

[29] 86 F.3d 1447 (7th Cir. 1996).

[30] *Bowers*, 302 F.3d at 1341-42.

[31] *Data Gen. Corp.*, 36 F.3d at 1152.

[32] *Id.* at 1152-53.

[33] *Id.* at 1153-54.

[34] *Id.* at 1154.

[35] *Id.* at 1154-55.

[36] *Id.* at 1155.

[37] *Id.* at 1164.

directory information and software to allow users to search the database.[38] The software was sold with a shrink-wrap license that limited use of the database and the software to non-commercial uses.[39] Zeidenberg bought a copy and ignored the license by placing the information on the Internet for a price.[40] The Seventh Circuit held that the Copyright Act does not preempt enforcement of ProCD's shrink-wrap license because it does not interfere with federal objectives.[41] The non-copyrightable information that ProCD took from telephone directories remains in the public domain.[42] The Court was careful to note though that a rule placing contracts automatically outside the possibility of preemption would not be prudent.[43]

IV. BOWERS V. BAYSTATE TECHNOLOGIES, INC.

A. Facts

Harold L. Bowers ("Bowers") created a template to improve a computer aided design ("CAD") software called Cadkey.[44] Cadkey allows users to manipulate computer functions through a set of menu commands.[45] In general, it is difficult to use the commands in Cadkey because the command menus are buried under several layers.[46] Bowers' template works with a computer device known as a "digitizing tablet," which rests underneath a pointing device

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[38] *ProCD*, 86 F.3d at 1449.

[39] *Id.* at 1450. A "shrink-wrap" license is a "license 'agreement' setting forth the terms under which the developer was 'selling' a right to use the software product." It is "typically printed on the packaging containing the media on which the software code is loaded. The shrink wrap 'agreement' typically includes restrictions on use and limitations on the scope of the developer's warranty and liability. The 'agreement' is intended to take effect upon the opening of the media packaging." Jeffrey A. Levine, *Software Licensing*, THE INDEPENDENT COUNSEL, *at* http://www.swiggartagin.com/aigc/tic64.html (last visited, Nov. 22, 2002).

[40] *Id.*

[41] *Id.* at 1454-55.

[42] *Id.* at 1455.

[43] *Id.*

[44] *Bowers*, 302 F.3d at 1338.

[45] Baystate Technologies, Inc. v. Bowers, 81 F. Supp. 2d 152, 154 (D. Mass. 1999).

[46] *See id.*

> Selecting a specific command from a menu often brings up another menu from which the user can make another selection. For example, Cadkey contains eight "Main Menus", denominated "CREATE", "CONTROL", "TRANSFORM", "EDIT", "DISPLAY", "DETAIL", "DELETE" and "FILES". A user who wants to draw a line would first click on the "CREATE" menu and be presented with a list of the various figures that can be "created", e.g. "Line", "Circle", "Arc", etc. The user may then select "Line" and be presented with another menu listing different kinds of lines, whereupon he/she may select the specific line desired and the computer will draw it.

Id.

similar to a mouse.[47] Users can select a particular command by placing the pointing device over a particular area of the "digitizing tablet" and clicking the button.[48] Bowers' template rests on top of the "digitizing tablet" and provided a visual indication to users as to where to place the pointing device in order to achieve a desired command.[49] Bowers filed a patent application for his template in February of 1989, and in June of 1990, United States Patent No. 4,933,513 was issued.[50] Bowers then began to commercialize his invention as Cadjet to be used with Cadkey.[51]

Baystate Technologies, Inc. ("Baystate") produces a similar product to Cadjet both in form and function, called DRAFT-PAK.[52] In 1988 and 1989, Bowers attempted to form a relationship with Baystate and proposed that Cadjet and DRAFT-PAK be sold as a bundle.[53] Baystate rejected the proposal.[54] At the same time, a development engineer named George W. Ford III was designing a DOS-based add-on program to CAD named Geodraft that would improve Cadjet and CAD software.[55] Ford obtained a registered copyright for the program.[56] In 1989, Ford approached Bowers with an exclusive license to Geodraft.[57] Bowers agreed and in 1990 began selling Geodraft and Cadjet as a bundle named the Designer's Toolkit.[58] The Designer's Toolkit was sold with a shrink-wrap license that prohibited reverse engineering.[59] Baystate obtained copies of the Designer's Toolkit in January of 1991 and three months later introduced a new product that incorporated many of its features.[60]

B. Procedural History

On May 16, 1991, Baystate sued Bowers for declaratory judgment that Baystate's products do not infringe Bowers' patent and that Bowers' patent is both invalid and unenforceable.[61] Bowers filed counterclaims for copyright

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[47] *See id.*
[48] *Id.*
[49] *Id.*
[50] *Bowers*, 302 F.3d at 1338.
[51] *Id.*
[52] *Baystate*, 81 F. Supp. 2d at 155.
[53] *Bowers*, 302 F.3d at 1339.
[54] *Id.*
[55] *Id.*
[56] *Id.*
[57] *Id.*
[58] *Id.*
[59] *Id.*
[60] *Id.*
[61] *Id.*

infringement, patent infringement, and breach of contract.[62] Both parties' motions for summary judgment were denied.[63] A jury trial then followed in the United States District Court for the District of Massachusetts.[64] The jury returned a verdict in favor of Bowers, awarding him $1,948,869 for copyright infringement, $3,831,025 for breach of contract, and $232,977 for patent infringement.[65] The district court later set aside the copyright damages as duplicative of the contract damages and entered judgment for $5,270,142, which included pre-judgment interest.[66] Baystate filed timely motions for judgment as a matter of law or for a new trial on all of Bowers' claims.[67] Baystate's motions were denied.[68]

C. Federal Circuit Opinion

Baystate appealed the district court's denial of its motions for judgment as a matter of law or for a new trial, while Bowers appealed the district court's denial of copyright damages.[69] On appeal, Baystate argued that the Copyright Act preempts the prohibition on reverse engineering contained in Bowers' shrink-wrap license.[70] The Federal Circuit held that under the law in its jurisdiction, the Copyright Act neither preempts nor narrows Bowers' contract claim.[71]

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[62] *Id.* at 1340.

[63] *Baystate*, 81 F. Supp. 2d at 162.

> The parties argue that there are no material facts genuinely in dispute. Each party, however, has submitted a volume outlining alleged "undisputed facts," which, upon examination, reveal many disputed facts. Ultimately, the Court's interpretation of Claim 1 differs slightly from those proffered by either party. The Court declines, therefore, to grant summary judgment in favor of either Baystate or Bowers.

Id.

[64] *Bowers*, 302 F.3d at 1340.

[65] *Id.*

[66] Bowers v. Baystate Technologies, Inc., 112 F. Supp. 2d 185, 187 (D. Mass. 2000) (The Court instructed the jury that the contract only covered copyrighted software, so the Court awarded damages only for breach of contract and patent infringement. If the Court had also awarded damages for copyright infringement, Bower would essentially recover the same lost profits on the copyrighted material twice.).

[67] *Bowers*, 302 F.3d at 1340.

[68] *Id.*

[69] *Id.*

[70] *Id.* at 1341 (Circuit Judge Rader noted that Baystate voiced this objection in the district court and as a result, the district court judge instructed the jury that reverse engineering would only violate the shrink-wrap agreement if it also violated Bowers' exclusive right to copy protected material. Bowers objected to this instruction.).

[71] *Id.*

In examining the preemption issue, the Federal Circuit began by articulating its interpretation of the preemption clause in the Copyright Act.[72] The Federal Circuit held that this clause does not require preemption "as long as a state cause of action requires an extra element, beyond mere copying, preparation of derivative works, performance, distribution or display."[73] The Court then looked at prior precedent established by *Data General* and *ProCD*.[74] The Court relied heavily on what it perceived to be the reasoning of the *ProCD* decision.[75] Although stating that an extra element is required to escape preemption, the Court failed to articulate what that extra element was in this case before it dismissed the preemption claim.[76] In defining the scope of Bowers' contract, the Court upheld the district court's use of Massachusetts contract law.[77] The Court noted that the contract terms unambiguously prohibited any reverse engineering of the subject matter of the shrink-wrap license and found that the record supported the jury's finding that Baystate had in fact reverse engineered Bowers' product, thus breaching the contract.[78]

Some have criticized the Court's holding as promulgating a blanket rule that shrink-wrap licenses can automatically ban reverse engineering without being preempted.[79] Legal scholars and library groups are asking the Court to clarify its ruling to make clear that sometimes established copyright provisions do trump the terms of shrink-wrap licenses.[80] These groups argue that the Court erred in failing to analyze the conflict between federal copyright law and state contract law in terms of the Supremacy Clause of the Constitution and that the Court's blanket rule undermines limitations, such as fair use, that are built into the Copyright Act.[81] Computer-science researchers are particularly concerned

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[72] *Id.* (citing 17 U.S.C. § 301(a) (2000) (The Copyright Act provides that "all legal or equitable rights that are equivalent to any of the exclusive rights within the general scope of copyright . . . are governed exclusively by this title.")).

[73] *Id.*

[74] *Id.* at 1341-42.

[75] *Id.* at 1342 (". . . the court in *ProCD* reasoned: 'A copyright is a right against the world. Contracts, by contrast, generally affect only their parties; strangers may do as they please, so contracts do not create 'exclusive rights.'' This court believes that the First Circuit would follow the reasoning of *ProCD* and the majority of other courts to consider this issue.").

[76] *See id.*

[77] *Id.* ("[C]ontract terms receive 'the sense and meaning of the words which the parties have used; and if clear and free from ambiguity the words are to be taken and understood in their natural, usual and ordinary sense.'").

[78] *Id.* at 1342-43.

[79] *See* Foster, *supra* note 3.

[80] *Id.*

[81] Br. of Amici Curiae at 6-8, *Bowers v. Baystate Technologies, Inc*., 302 F.3d 1334 (Fed. Cir. 2002) (noting that the holding of the Federal Circuit carries with it ramifications that go beyond restricting reverse engineering if licensors are able to require licensees to waive all their privileges under the Copyright Act).

with the Court's allowance of the prohibition on reverse engineering due to the effect it will have on innovation and competition in the area.[82]

V. CONCLUSION

Despite the *Bowers* case, the relationship between state law and federal copyright law remains in the balance. The Federal Circuit's lack of analysis on the issue of preemption, especially in the Court's interpretation of the *ProCD* case, has caused the decision to be heavily criticized. While there seems to be a consensus that in some respects private parties should have the freedom to contract in situations involving intellectual property, there is also consensus that the federal goals and objectives of the Copyright Act must be respected in order to promote the "progress of the useful Arts."[83] Where that balance will fall remains uncertain.

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[82] *Id.* at 8-15.

[83] U.S. CONST. art. 1, § 8, cl. 8.