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## Broderbund Software, Inc. v. Unison World, Inc., 7 Computer L.J. 535 (1987)

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## CASE COMMENT

### BRODERBUND SOFTWARE, INC. v. UNISON WORLD, INC. 648 F. SUPP. 1127 (1986).

#### INTRODUCTION

It is well-settled that computer programs are copyrightable as literary works under the Copyright Act. It is also well established that copyright protection extends to both the program's source code (human language and symbols) and object code (machine readable binary language).<sup>1</sup> Nevertheless, courts disagree about the scope of the protection for computer programs as literary works.

The leading case, *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*, extends copyright protection for computer programs as literary works beyond the literal aspects, source code and object code, to include the "structure, sequence and organization" of the computer program.<sup>2</sup> Additionally, there is substantial precedent that the audiovisual displays produced by computer programs are copyrightable as audiovisual works under the Copyright Act.<sup>3</sup>

Purporting to base its decision on *Whelan*, the court in *Broderbund*,<sup>4</sup> broke new ground by extending protection for computer programs as *literary works*, to "the overall structure of a program, including its audiovisual displays."<sup>5</sup> This rule expanded the scope of protection in the computer program to include the menu screen dis-

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1. *Apple Computer Inc. v. Franklin Computer Corp.*, 714 F.2d 1240 (3d Cir. 1983), cert. denied, 464 U.S. 1033 (1984).

2. *Whelen Assocs., Inc. v. Jaslow Dental Laboratory, Inc.*, 797 F.2d 1222, 1248 (3d Cir. 1986).

3. *Williams Elecs., Inc. v. Artic Int'l, Inc.*, 685 F.2d 870, 874 (3rd Cir. 1982); *Midway Mfg. Co. v. Strohon*, 564 F. Supp. 741, 749 (N.D. Ill. 1983); *Stern Elecs. v. Kaughman*, 669 F.2d 852, 855 (2d Cir. 1982).

4. *Broderbund Software, Inc. v. Unison World, Inc.*, 648 F. Supp. 1127 (N.D. Cal. 1986).

5. *Id.* at 1132 (emphasis supplied).

plays, input formats and screen sequences *produced by* the computer program.

The purpose of this Comment is not to discuss the desirability of the result in *Broderbund*. Rather, it is to show that the *Broderbund* court's reasoning is both faulty and dangerous. It is faulty because it misinterprets existing precedent for copyright protection in computer programs as literary works, and it ignores relevant precedent for separate copyright protection afforded to audiovisual displays produced by computer programs. It is dangerous because in doing so, the court sets new precedent that departs from and distorts generally accepted principles of copyright law.

### THE FACTS OF BRODERBUND

Plaintiff Broderbund developed a menu-driven computer program, "Print Shop," that allows users to create greeting cards, banners, posters, and signs with a variety of graphics, borders, and text. "Print Shop" operates only on Apple computers. Defendant Unison initiated negotiations with Broderbund to obtain the conversion rights to an IBM-compatible version of "Print Shop."<sup>6</sup> Broderbund stipulated that Unison would have to produce an exact reproduction of the original "Print Shop" if Unison received the IBM version rights.<sup>7</sup> Broderbund gave Unison commercial copies of "Print Shop" for examination. During the negotiation period, Unison instructed its personnel to "imitate" the program.<sup>8</sup> The negotiations failed, and Unison instructed its personnel to cease copying "Print Shop."<sup>9</sup> Unison did not order its programmer not to use the portions already copied. The company told the programmer to create an "enhanced" version of "Print Shop."<sup>10</sup>

The menu screens and the user interface (the visual displays that prompt interaction between a computer and its user) had already been copied.<sup>11</sup> Unison released its finished product as "Printmaster."<sup>12</sup> Broderbund brought this action against Unison, alleging copyright infringement, trademark infringement, and unfair competition.<sup>13</sup> The only issue at trial was the copyright infringement claim. Broderbund claimed that "the overall appearance, structure, and sequence of the audiovisual displays"<sup>14</sup> produced by Unison's program infringed the copy-

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6. *Id.* at 1130.

7. *Id.*

8. *Id.*

9. *Id.* at 1131.

10. *Id.*

11. *Id.*

12. *Id.*

13. *Id.*

14. *Id.* at 1132.

right in plaintiff's *computer program*. Broderbund did *not* claim that Unison infringed the *audiovisual works* produced by "Print Shop." In fact, Broderbund did not register with the Copyright Office any claim to protection for the "Print Shop" screen outputs as 'audiovisual works'.

### THE COURT'S REASONING

The court's ruling set new precedent in copyright law by deciding that the menu screens and user interface portions of a computer program are copyrightable as *literary works*, that is, as part of the underlying computer program. In doing so, *Broderbund* cites *Whelan* for two propositions, the first with justification, the second without. The court first determines that *Whelan* "held that the overall structure, sequencing, and organization of the computer program could be distinguished from the idea underlying the program, and that the former constituted expression of the latter."<sup>15</sup> Second, the court interprets the *Whelan* rule as standing for the proposition that "copyright protection is not limited to the literal aspects of a computer program, but rather, that it extends to the overall structure of a program, *including its audiovisual displays*."<sup>16</sup>

The *Broderbund* court's interpretation of the *Whelan* rule as extended to audiovisual displays is not justifiable. In holding that the "structure, sequence, and organization"<sup>17</sup> of a computer program is proper subject matter for copyright, *Whelan* focused on the ordering and structure of the logic that underlies a computer program. This is different than the visual screens that *result from* a computer program. The *Broderbund* court ignores the distinction between the copyrights in literary works, and those in audiovisual works. It is precisely this oversight in the court's reasoning that leads to its unjustifiable interpretation of *Whelan*.<sup>18</sup>

The *Whelan* court's description of the stages of computer program development illustrates the scope of the technology the court ruled upon, and aids in the analysis of the distinction between that technology and the audiovisual works at issue in *Broderbund*. *Whelan* describes three steps in developing a computer program. The first step is for the programmer to define the task that the program is supposed to perform.<sup>19</sup> In *Whelan* that step was determining the administrative needs of a dental laboratory. In *Broderbund*, that step would have been deter-

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15. *Id.* at 1133.

16. *Id.* (emphasis added)

17. 797 F.2d at 1230.

18. See *Digital Communications Assocs., Inc. v. Softklone Distributing Corp.*, 659 F. Supp. 449, 455 (N.D. Ga. 1987).

19. 797 F.2d at 1230.

mining the kinds of cards, signs, banners, etc., and variations of graphics, borders, and text that the program was supposed to allow the user to generate. Defining this task is different than defining what the visual screens would look like. Doing the latter would be the first step in developing the audiovisual work, not the computer program that produces it.

The second step for the programmer is to design the flow charts that break down the task into smaller units called "subroutines" or "modules."<sup>20</sup> In *Whelan*, an example of a subroutine is the structure, sequencing, and organization of the logic of how the inventory function will work. Note that this is different than the structure, sequencing and organization of the *results* that the program produces on the computer screen.

The third step is to encode each subroutine or module into a language that computers recognize. First the programmer represents the design in "source code," which is a language like BASIC or FORTRAN. Next, the source code is translated into "object code," which is the binary language that directs the computer functions.

*Whelan* did not rule on the copyrightability of the overall structure, sequence, and organization of the visual screens produced by the computer program. All the *Whelan* holding did was move copyright protection up the step ladder to step two, the overall structure, sequence and organization of the underlying computer program. The plaintiff in *Whelan* asserted no claim of copyright infringement with respect to screen outputs.<sup>21</sup> Screen outputs were analyzed only as *evidence* of substantial similarity between the plaintiff's computer program and the alleged infringing work. *Whelan* held that screen outputs have some probative value in determining substantial similarity between the computer programs that produced those outputs, but that screen outputs cannot be *direct* evidence of infringement of the underlying computer program.<sup>22</sup>

The *Whelan* court acknowledged that screen outputs are "audiovisual works" under the Copyright Act,<sup>23</sup> but made clear that the evidentiary issue in *Whelan* was a different question than those discussed in the caselaw on copyrightability of screen outputs.<sup>24</sup> *Whelan* cites these cases for propositions which illustrate the distinction between a copy-

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20. *Id.* at 1231.

21. 797 F.2d at 1244.

22. *Id.*

23. 797 F.2d at 1244.

24. See *Williams Elecs. Inc. v. Arctic Int'l Inc.*, 685 F.2d 870, 874 (3rd Cir. 1982); *Midway Mfg. Co. v. Strohon*, 564 F. Supp. 741 (N.D. Ill. 1983). See also *Stern Elecs., Inc. v. Kaughman*, 669 F.2d 852 (2d Cir. 1982).

right in a computer program and a copyright in the screen outputs.<sup>25</sup>

The *Broderbund* court ignores the distinction between the literary work and the audiovisual work, and instead, analyzes the copyrightability of the screen outputs as if they were part of rather than the product of the computer program. The court's discussion of the notice issue in *Broderbund* illustrates the court's failure to make the appropriate distinction. Unison argued that Broderbund's copyright notice on "Print Shop" gave a reasonable warning to others of protection for only the literary work<sup>26</sup> and *not* for the audiovisual displays.<sup>27</sup> The court rejected this argument, holding that "the general notice that appears on the 'boot up' screen implies that the copyright holder claims protection for as much of the work as is allowable under the copyright law."<sup>28</sup> Furthermore, Broderbund did not register any claim to copyright protection in the audiovisual works. Thus the *Broderbund* rule effectively gives Broderbund the right to sue for an infringement despite the absence of a separate copyright registration for the audiovisual displays. This result is contrary to the express language of the Copyright Act, which requires for a valid copyright, proper notice,<sup>29</sup> and which requires registration of a work before one can sue for infringement of that work.<sup>30</sup>

Further, the court ignores precedent set in *Williams Electronics*,<sup>31</sup> *Midway*,<sup>32</sup> and *Stern*.<sup>33</sup> All of these cases treat as separate the copyright in the audiovisual work and the copyright in the computer program that produced the screen outputs. Also, in each of these cases the plaintiff had separate copyright registrations for the audiovisual displays. The plaintiff in *Stern* held an audiovisual copyright in the sights and sounds produced by its computer program.<sup>34</sup> The plaintiff purposely chose to secure the audiovisual copyright rather than the literary copyright in the underlying program because the plaintiff knew that

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25. *Whelan* cites *Williams Elecs.*, 685 F.2d at 874, and *Midway Mfg. Co.*, 564 F. Supp. at 749, as "distinguishing audiovisual copyright in display of videogame from copyright in program that creates the audiovisual display," and cites *Stern Elecs.*, 669 F.2d at 855, for the proposition that "many different computer programs can produce the same 'results,' whether those results are an analysis of financial records or a sequence of images and sounds." 797 F.2d at 1244.

26. 648 F. Supp. at 1135.

27. *Id.*

28. *Id.*

29. 17 U.S.C. § 405 (1976).

30. 17 U.S.C. § 411(a) states in relevant part that "no action for infringement of the copyright in any work shall be instituted until registration of the copyright claim has been made in accordance with this title."

31. 685 F.2d at 872.

32. 564 F. Supp. at 743.

33. 669 F.2d at 855.

34. *Id.*

someone could write a different, non-infringing program that would produce the same sights and sounds on the computer screen.<sup>35</sup> The *Stern* court acknowledged this distinction: "Such replication is possible because many different computer programs can produce the same 'results,' whether those results are an analysis of financial records or a sequence of images and sounds."<sup>36</sup>

Similarly, the *Midway* court acknowledges this distinction: "[T]he audiovisual display and the computer program are not so intertwined as to preclude their separate consideration. In fact, the computer program is a distinct creation."<sup>37</sup> In discussing the difference between the visual characters that appeared on the screen of a video-game and the underlying computer program that produced those images, the court stated that:

The skill, ingenuity and effort that is required to design the computer program which operates the game is altogether different from the process of conceiving and designing the distinctive PAC-MAN characters. Accordingly, the Third Circuit in *Williams Elecs., Inc. v. Arctic Int'l Inc.*, 685 F.2d 852, 873-77, tacitly recognized, as we expressly do today, that the computer program copyright connected with a video-game is protectible, separately from the audiovisual copyright.<sup>38</sup>

The *Broderbund* court should have analyzed the copyrightability of the screen outputs at issue in that case (menu screens and user interface) under the caselaw that ruled upon the audiovisual works embodied in a computer program. The court probably would have been able to support a holding that the screen outputs were copyrightable as audiovisual works under the videogame and other audiovisual computer software cases.<sup>39</sup> Notwithstanding, the court would have had to discuss

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35. *Id.*

36. *Id.*

37. 564 F. Supp. at 749.

38. *Id.*

39. The issues for the subject matter question are whether a work is an original work of authorship and whether the work is fixed in a tangible medium of expression from which the work can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device. 17 U.S.C. § 102(a).

The work must also satisfy the provisions in § 102(b), which limit the scope of copyrightable subject matter: "In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work." Pub. L. No. 94-553, Title I, § 101, Oct. 19, 1976, 90 Stat. 2544.

In *Stern*, the appellant sought to defend an infringement claim by arguing that works allegedly infringed were outside the scope of copyright protection. The appellant claimed that the screen displays at issue lacked originality because they were determined not by human creativity, but by the underlying computer program which instructs the computer to produce the images and sounds on the screen. 669 F.2d at 856. The court restated its

the absence of separate copyright registration for Broderbund's screen displays. This omission would deny Broderbund the right to sue for infringement of its audiovisual work, and the suit would have been dismissed.

If Broderbund *had* registered its screen outputs separately as audiovisual works, *and* the screen outputs satisfied the subject matter tests for audiovisual works the court could have reached the same rule with different reasoning. The court may have been justified in holding that the overall sequence, structure, and organization of Unison's menu screens and user interface infringed Broderbund's audiovisual works because there was undisputed evidence of direct copying. *Whelan* established that Congress did not intend the computer field to be excepted from the general rule that sequencing and ordering are protected.<sup>40</sup> It may not be unreasonable to infer that the overall structure, sequence and organization of an audiovisual work *embodied in a computer program* is also protected.

The court may have used this reasoning as the link between the holding in *Whelan* and its own rule.<sup>41</sup> But insofar as the court's holding extends the *Whelan* rule regarding the protected portions of a com-

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position that the audiovisual displays produced by the computer program are not the same entity as the program itself. The court analogized the distinction to an audio tape which embodies both a musical composition and a sound recording, each of which are protected under separate copyrights. Then speaking more directly to the appellants originality challenge, the court rejected the argument by describing where it saw originality in the stages of development of the screen displays:

[T]he [appellant's] argument overlooks the sequence of the creative process. Someone first conceived what the audiovisual display would look like. Originality occurred at that point. Then the program was written. Finally, the program was imprinted into the memory device so that, in operation with the components of the game the rights and sounds could be seen and heard. *Id.* at 856. The resulting display satisfies the requirement of an original work. *Id.* at 857.

40. 648 F. Supp. at 1133 (citing *Whelan*, 797 F.2d at 1241).

41. Such a position could be supported by looking to the policy behind *Whelan*. *Whelan* extended copyright protection to the structure, organization and sequencing of the computer program because of the commercial value and required labor involved: "the coding process is a comparatively small part of programming. By far the larger portion of the expense and difficulty is attributable to the development of the structure and logic of the program." 797 F.2d at 1231. *Whelan* explains that "a program's efficiency depends in large part on the arrangements of its modules and subroutines," and that this is a "critical factor for any programmer" because efficiency is what gives a program commercial value. *Id.* at 1230. *Whelan* can be criticized as extending copyright protection to more than a program's expression. The court used "idea/expression" language, but the heart of its reasoning focused not on the metaphysical question of the separation of idea and expression, but on the commercial value and labor involved in the work. Arguably, this instrumental reasoning is justifiable in light of the copyright law's purpose, which is "to create the most efficient and productive balance between protection (incentive) and dissemination of information, to promote learning, culture and development." *Id.* at 1235 (citing U.S. CONST. art. I, § 8, cl. 8). Whatever view one takes of the reasoning in *Whelan*, it is clear that the



puter program to screen displays, without distinguishing the separate copyright for the audiovisual works, the case was wrongly decided.

*Celeste Tito*

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court's holding is very different than the *Broderbund* court's interpretation of the holding.