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LOTUS V. BORLAND: DEFINING THE LIMITS OF SOFTWARE COPYRIGHT PROTECTION

Lotus Development Corporation v. Borland International, Inc., 49 F.3d 807 (1st Cir. 1995)*

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"[E]verything...has been done already...who are we to improve upon them? We can only attempt, respectfully, to repeat."1

INTRODUCTION

On January 16, 1996, only eight days after hearing oral arguments in the case, an equally divided2 Supreme Court let stand the First Circuit’s decision in Lotus Development Corp. v. Borland Inter-

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2. Justice John Paul Stevens recused himself from the decision for an undisclosed reason. Paul M. Barrett, Justices Affirm Borland’s Victory in Copyright Dispute with Lotus, WALL ST. J., Jan. 17, 1996, at B2. While Justice Stevens would not reveal why he recused himself, he has a recent pattern of recusing himself in IBM-related cases. Lotus was bought by IBM last year. Justice Stevens’ financial disclosure reports indicate no ownership of IBM stock, but some speculate that a close relative of his works for IBM. Tony Mauro, The Court Speaks in Cyberspace, CONN. L. TRIB., Feb. 5, 1996, at 14. It was also reported that a source close to the proceedings said Justice Stevens recused himself because he owns stock in IBM. David Einstein, Borland Bests Lotus in 6-Year Legal Battle, S.F. CHRON., Jan. 17, 1996.

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national, Inc. The practical effect of the Court’s 4-4 *per curiam* decision is to let stand the First Circuit’s finding that the menu hierarchy of a leading spreadsheet program amounts to an uncopyrightable “method of operation,” despite expressive elements contained in its arrangement and structure. The treatment by the Court may result in “forum shopping” as plaintiffs situated similarly to Lotus seek to avoid the First Circuit. Conversely, the choice of the Court to not offer an accompanying written opinion also strengthens the lower court’s characterization of *Borland* as a matter of first impression, as well, as its determination not to follow standards for protection previously articulated by other circuits.

In *Lotus v. Borland*, the First Circuit validated appellant Borland’s contention that it had “lawfully copied” unprotectable aspects of Lotus’ popular spreadsheet program for use in a similar product. By ruling in Borland’s favor, the court provided remaining circuits with a significantly narrowed view of what constitutes protectable expression and may have affirmatively exposed the limitations of existing copyright law in the context of computer software programs.

At issue was whether Borland infringed Lotus’ copyright when it duplicated the Lotus 1-2-3 menu command hierarchy for use in its Quattro and Quattro Pro spreadsheet programs. The First Circuit

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6. The Court’s ruling in *Borland* is not binding beyond the First Circuit. Walsh, *supra* note 4, at 18.
7. The *Borland* court reviewed the leading authority from other circuits, principally the Second Circuit decision in Computer Assoc. Int’l, Inc. v. Altai, Inc., 982 F.2d 693 (2d Cir. 1992), which articulated a complex methodology for determining infringement of the code and structure of computer programs. Because *Borland* involved the literal copying of a menu hierarchy, however, the court rejected its applicability. The First Circuit agreed that the test set forth in *Altai* would have been appropriate had the case involved the nonliteral copying of the Lotus 1-2-3 computer code. *Lotus*, 49, F.3d at 815.
8. *Lotus*, 49 F.3d at 815 (emphasis added).
9. The inadequacy of copyright protection for computer software was articulated by the concurring opinion in *Borland*: “The computer program is a means for causing something to happen; it has mechanical utility, an instrumental role, in accomplishing the world’s work. Granting protection, in other words, can have some of the consequences of patent protection in limiting other people’s ability to perform a task in the most efficient manner. Utility does not bar copyright (dictionaries may be copyrighted), but it alters the calculus.” *Id.* at 819 (emphasis in original).
10. The terms “Quattro” and “Quattro Pro” will be used interchangeably throughout the text to refer to the Borland computer spreadsheet program.
11. 49 F.3d at 810.
ultimately answered this question in the negative.\textsuperscript{12} Without explicitly rejecting the district court's conclusion that Lotus engaged in expressive choices\textsuperscript{13} in the selection of its command terms, the \textit{Borland} court held that the disputed structure was a means by which the program functioned and was therefore an uncopyrightable "method of operation" under § 102(b) of the Copyright Act.\textsuperscript{14}

**BACKGROUND**

Lotus 1-2-3 is a computer spreadsheet program that enables users to perform complex accounting functions.\textsuperscript{15} The program's 469 commands are operated through an innovative menu tree hierarchy.\textsuperscript{16} Lotus 1-2-3 also possesses the capability to create macros.\textsuperscript{17} A macro is a simple procedure created by the user to replace what would otherwise be a lengthy series of keystrokes. Macros significantly reduce the time required to operate the program.\textsuperscript{18} These features helped Lotus dominate the spreadsheet market throughout the early 1980's.\textsuperscript{19}

Borland released its first Quattro spreadsheet program in 1987. Quattro Pro users could choose to either use menu commands designed by Borland or activate the Lotus Emulation Interface that adopted 1-2-3's menu hierarchy.\textsuperscript{20} Quattro Pro also had the capability of translating and using macros created for 1-2-3 through a device known as the "Key Reader."\textsuperscript{21}

In 1990 Lotus sued Borland for copyright infringement in the United States District Court of Massachusetts.\textsuperscript{22} In a motion for summary judgment, Borland admitted copying the Lotus command structure but contended that the 1-2-3 menus were not copyrightable\textsuperscript{23} and that "no reasonable trier of fact could find that the similarity between its products and Lotus 1-2-3 was sufficient to sustain a determination

\textsuperscript{12} Id. at 815.
\textsuperscript{13} "Because so many variations were possible, the district court concluded that the Lotus developer's choice and arrangement of command terms, reflected in the Lotus menu command hierarchy, constituted copyrightable expression." \textit{Id.} at 811.
\textsuperscript{14} "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." \textit{Id.} at 815 (quoting 17 U.S.C. § 102(b) (1988)).
\textsuperscript{15} \textit{Id.} at 809.
\textsuperscript{16} \textit{Id.}
\textsuperscript{17} \textit{Id.}
\textsuperscript{18} \textit{Id.} at 809-10.
\textsuperscript{19} \textit{Lotus,} 49 F.3d at 821.
\textsuperscript{20} \textit{Id.} at 810.
\textsuperscript{21} \textit{Id.} at 811.
\textsuperscript{22} \textit{Id.} at 810.
\textsuperscript{23} \textit{Lotus,} 49 F.3d at 810.
of infringement." In response, Lotus alleged that Borland had essentially duplicated its entire user interface, thereby violating its 1-2-3 copyright.

On July 31, 1992, presiding Judge Robert Keeton granted partial summary judgment in favor of Lotus, holding that the company's selection and placement of command terms amounted to copyrightable expression. The district court found Lotus' argument strengthened by the fact that Borland had created its own command structure for the Quattro program but included the 1-2-3 structure as an alternative, presumably to attract users already familiar with the Lotus menu hierarchy.

Although the court determined that the Quattro and Quattro Pro programs had indeed infringed Lotus' copyright, it concluded that Borland had not copied the entire 1-2-3 interface, as Lotus contended. Consistent with this finding, the court determined that a jury trial was necessary to assess the actual scope of Borland's infringement.

As a result of the district court's ruling, Borland removed the Lotus Emulation Interface from its programs. Consequently, Borland spreadsheet users could no longer display 1-2-3 commands to operate the Quattro program. However, despite the removal of the interface, the Quattro programs were still partially compatible with the 1-2-3 program through the "Key Reader." Once activated by the user, the Key Reader enabled Borland's programs to recognize and perform some of the 1-2-3 macros. With the Key Reader function, the Borland programs, using Quattro Pro menus for display and interaction, were able to translate the Lotus macros. Thus, users who wrote or purchased macros for Lotus 1-2-3 were able to utilize the same commands in the Borland programs.

24. Id.
25. Id.
26. Id. at 811.
27. See Lotus, 49 F.3d at 810-12.
28. Id. at 811.
29. Id.
30. The Lotus Emulation Interface function allowed Quattro users to access the 1-2-3 menu command hierarchy. Id. at 811.
31. "As a result, Borland users could no longer communicate with Borland's programs as if they were using a more sophisticated version of Lotus 1-2-3." Lotus, 49 F.3d at 811.
32. Id.
33. "Because Borland programs could no longer display the Lotus menu command hierarchy to users, the Key Reader did not allow debugging or modification of macros, nor did it permit the execution of most interactive macros." Id. at 811, n.3.
34. Id. at 811-12.
35. Lotus, 49 F.3d at 812.
The United States Court of Appeals for the First Circuit reversed the district court’s decision. In a controversial opinion written by Judge Stahl, the court held that the 1-2-3 menu command structure was not copyrightable because it was a method of operation under 17 U.S.C. § 102(b). The court further ruled that Borland’s use of the 1-2-3 macros was proper, finding that Lotus’ argument would require users of multiple programs to learn how to perform the same function in several ways. The court stated that this result fundamentally contradicted Congressional intent underlying § 102(b) of the Copyright Act.

DISCUSSION

A. Method of Operation

Lotus was understandably upset by Borland’s actions. The 1-2-3 command structure had become the industry standard for electronic spreadsheet programs. Lotus spent large sums of money developing 1-2-3 and did not want competitors to benefit from its research and development. However, awarding copyright protection to Lotus

36. After the parties agreed to try the remaining issues without a jury, the district court held two separate trials. The Phase I trial covered all remaining issues in the original complaint (relating to the Emulation Interface function). The Phase II trial covered issues raised in Lotus’ supplemental complaint (those relating to the Key Reader function). At the close of the Phase I trial, Borland amended its answer to include a defense of “fair use.” Because Borland had presented all of the evidence supporting its fair use claim at the Phase I portion of the trial, but Lotus had not presented any rebuttable evidence on fair use (because the defense had not been raised before the conclusion of the Phase I trial), the court considered Lotus’ motion for judgment on partial findings of fact. See Fed. R. Civ. P. 52(c). The court subsequently held that Borland had failed to show that its use of the Lotus 1-2-3 menu command hierarchy in its Emulation Interface was a fair use. 49 F.3d at 812.

37. 49 F.3d at 819.
38. Id. at 815.
39. “[I]f the user wanted the computer to print material, then the user would have to learn not just one method of operating the computer such that it prints, but many different methods. We find this absurd.” Lotus, 49 F.3d at 818 (emphasis added).
40. Id.
41. “Apparently, for a period Lotus 1-2-3 has had such sway in the market that it has represented the de facto standard for electronic spreadsheet commands.” Id. at 821 (Boudin, Circuit Judge, concurring).
42. In its Petition for a Writ of Certiorari to the United States Supreme Court, Lotus contends that its founder, Mitchell Kapor, “spent hundreds of hours” developing menus in the 1-2-3 menu hierarchal structure:

Because there was no precedent for the menu structure we envisioned, we had no formal market research or other data to guide us in making these determinations. We did, however, conduct a number of informal user tests both internally at Lotus
could have given it a monopoly over the spreadsheet market. Users would not be willing to switch to rival platforms, even if technologically superior, because they would have to learn new commands.\textsuperscript{43}

The First Circuit denied Lotus copyright protection ruling that the 1-2-3 command hierarchy was a method of operation.\textsuperscript{44} The first step in analyzing the First Circuit’s decision is to determine whether 1-2-3’s menu hierarchy and macro commands constitute a method of operation under § 102(b).\textsuperscript{45} According to the court, a method of operation refers to the “means by which a person operates something, whether it be a car, a food processor, or a computer.”\textsuperscript{46} The court cited an instruction manual as an example by stating that the text describing how to operate something does not extend copyright protection to the operation itself.\textsuperscript{47} Another individual should be able to employ that method and explain it in their own words.\textsuperscript{48}

The First Circuit concluded that 1-2-3’s menu and macro structures are methods of operation by stating:

The Lotus menu command hierarchy provides the means by which users control and operate Lotus 1-2-3 . . . . Users must use the command terms to tell the computer what to do. Without the menu command hierarchy, users would not be able to access and control, or indeed make use of, Lotus 1-2-3’s functional capabilities.\textsuperscript{49}

The First Circuit compared 1-2-3’s menu hierarchy with buttons used to operate a video cassette recorder (“VCR”).\textsuperscript{50} Viewers press a series of buttons that are typically labeled “Record, Play, Reverse, Stop/Eject” in order to operate a VCR.\textsuperscript{51} The arrangement of the buttons is not copyrightable expression because they are required to control the machine.\textsuperscript{52} As with VCR’s, users press keys to run 1-2-3’s commands.\textsuperscript{53} However, without the Lotus hierarchy, users cannot run as well as outside the company. In the end, the menu tree organization was based largely on my intuition and subjective judgment, informed by feedback from the user tests, trying as best I could to imagine myself in the [role] of a typical user.

\textsuperscript{43} \textit{Lotus}, 49 F.3d at 820.'
\textsuperscript{44} \textit{Id.} at 815.
\textsuperscript{46} \textit{Lotus}, 49 F.3d at 815.
\textsuperscript{47} \textit{Id.}
\textsuperscript{48} \textit{Id.}
\textsuperscript{49} \textit{Id.}
\textsuperscript{50} \textit{Lotus}, 49 F.3d at 817.
\textsuperscript{51} \textit{Id.}
\textsuperscript{52} \textit{Id.}
\textsuperscript{53} \textit{Id.}
Unlike labels on VCR buttons, 1-2-3's menu structure is essential to running the program. A spreadsheet without 1-2-3's command structure is like a buttonless VCR. Both are inoperable and thereby useless.

Based on the VCR analogy, the court noted that 1-2-3's menu command hierarchy did not merely explain and present the program's functional capabilities; it was how users communicated with the system. Quite simply, the Lotus command structure was the means by which users operated the program. The court explained: "If specific words are essential to operate something, then they are part of a 'method of operation' and, as such, are unprotectable." Although Borland programmers could have designed Quattro Pro's commands differently, it was not relevant in determining whether the Lotus menu hierarchy was a method of operation. In short, the fact that there are numerous ways to operate a computer program, does not make the actual method of operation chosen copyrightable. In addition, the First Circuit rejected the district court's finding that the Lotus menu structure was copyrightable expression. The fact that Lotus selected and arranged its commands did "not magically change the uncopyrightable menu command hierarchy into copyrightable subject matter."

55. Id. at 816.
56. Id. at 816.
57. Borland presents an excellent analogy in the conclusion of its Petition for a Writ of Certiorari to the United States Supreme Court:

Twenty years ago, the first personal computers had no screens or keyboards; the users operated the machines by pressing buttons or switches on the front of the machines. No one would ever claim that such buttons were copyrightable. Twenty years from now, users will operate personal computers with spoken words, and without any physical buttons or keyboards. It is inconceivable that anyone could claim that such spoken methods of operation will be copyrightable. At the intermediate stage of technology relevant here, Lotus used typed words as the buttons or switches to operate its spreadsheet program. Those words are no more copyrightable than physical buttons were twenty years ago, or than spoken commands will be twenty years from now.

58. *Lotus*, 49 F.3d at 815.
59. Id. at 816.
60. Id. at 816.
61. Id. at 818.
63. Id. at 816.
Regarding the issue of macro compatibility, the First Circuit forwarded an even stronger statement. The fact that various computer programs offer different ways of writing macros is of little consequence in determining protectability because the end result, the macro itself, is the user's own work product. Forcing users to rewrite their macros challenges the fundamental underpinnings of § 102(b). The menu hierarchy of Lotus 1-2-3 and its macro structure functioned as a method of operation and was, therefore, uncopyrightable. The First Circuit also analyzed *Baker v. Selden* in which the Supreme Court held that the utility the public derives from a product is not copyrightable. Lotus wrote its menu hierarchy for individuals to learn and use its product. The court, therefore, reasoned that Lotus should be barred from essentially copyrighting the expertise that users acquired from learning the 1-2-3 command structure.

In his concurring opinion, Judge Boudin reemphasized the importance of the user in terms of economic and policy considerations. Unlike traditional areas of copyright law such as literary works, novels, plays, and films, computer programs have a utilitarian nature. Computer programs are a means to complete a task. Granting copyright protection for utilitarian items can limit "other people's ability to perform a task in the most efficient manner." As a policy concern, granting protection in this area may be more harmful to society than denying it.

Judge Boudin then acknowledged that although computer menus may be creative work, over time their importance resides more in the

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64. *Id.* at 818.
65. *Id.*
66. This is especially critical to users who have invested a great deal of time and energy creating macros that may exceed 1,000 commands. *Id.* at 818.
67. *Id.*
68. *Id.* at 817 (referring to *Baker v. Selden*, 101 U.S. 99 (1879)).
69. *Id.*
70. Although the First Circuit found Borland's argument strengthened by the seemingly utilitarian holding of *Baker*, it firmly rejected Borland's contention that the cases were identical:

> We do not think that *Baker v. Selden* is nearly as analogous to this appeal as Borland claims. Of course, Lotus 1-2-3 is a computer spreadsheet, and as such its grid of horizontal rows and vertical columns certainly resembles an accounting ledger or any other paper spreadsheet. Those grids, however, are not at issue in this appeal, for, unlike Baker, Lotus does not claim to have monopoly over its accounting system.

*Id.* at 814.
71. *Id.* at 819-22.
72. *Id.* at 819.
73. *Lotus*, 49 F.3d at 819.
74. *Id.*
75. *Id.*
investment made by users in learning the menu and building their own macros than in reliance on the program’s structure.\textsuperscript{76} He also noted that menu structures have a functional purpose and the menu itself has little value without people relying on it. Judge Boudin observed that “the purpose of the menu is not to be admired as a work of literary or pictorial art.”\textsuperscript{77} He also emphasized that “[t]he menu commands (e.g., ‘print,’ ‘quit’) are largely for standard procedures that Lotus did not invent and are common words that Lotus cannot monopolize.”\textsuperscript{78} Therefore, they are best defined as methods of operation.\textsuperscript{79}


In its analysis of the facts underlying \textit{Borland}, the First Circuit rejected the applicability of the test developed by the Second Circuit’s decision in \textit{Computer Assoc. Int’l, Inc. v. Altai, Inc.},\textsuperscript{80} a leading case in computer software protection. \textit{Altai} is especially notable because it articulates a thoughtful, though complex, methodology for assessing the proper level of protection for a program’s “non-literal” elements.\textsuperscript{81} The First Circuit’s decision not to apply \textit{Altai} also illustrated what the court viewed to be the critical issue in the case, namely, whether a menu hierarchy is afforded any protection under copyright law.

The \textit{Altai} court developed a three-part analysis for determining whether copyright infringement had occurred through the nonliteral copying of a protected computer program.\textsuperscript{82} Instances of nonliteral copying arise when the concepts underlying a protected program, which are copyrighted as literary work, are reproduced in a manner that paraphrases the original work rather than copying it outright or literally duplicating it.\textsuperscript{83} The Second Circuit employed its analysis to ascertain whether one program’s nonliteral expression was improperly obtained from another program’s underlying code.

When faced with instances of alleged nonliteral copying, the court examining the facts must determine if similarities between the

\textsuperscript{76} It appears that as the 1-2-3 menu structure became the industry standard, its level of copyright protection diminished. \textit{Id.}
\textsuperscript{77} \textit{Lotus}, 49 F.3d at 821.
\textsuperscript{78} If Lotus is allowed to retain complete control over its 1-2-3 command structure, users who have learned the system would be confined to use Lotus products. While this may be appropriate if 1-2-3 is the superior product, a problem exists when superior electronic spreadsheet programs are created. \textit{Id.} at 821.
\textsuperscript{79} \textit{Id.}
\textsuperscript{80} 982 F.2d 693 (2d Cir. 1992).
\textsuperscript{81} The term “non-literal” in the \textit{Altai} context refers to aspect of a computer program that has not been reduced to computer code. \textit{Id.} at 696.
\textsuperscript{82} \textit{Lotus}, 49 F.3d at 814.
\textsuperscript{83} \textit{Id.}
programs are due merely to the sharing of a common, unprotectable idea or whether actual infringement of protected expression has occurred. An Altai analysis, therefore, requires a court to dissect a disputed program and then separate protectable expression from unprotectable ideas.

The Altai test consists of an abstraction, filtration, and comparison phase in which elements of the program are broken down and examined. The abstraction phase allows the court to identify the appropriate framework in which to isolate idea from expression. The next phase involves “filtration,” in which the court scrutinizes each element of the protected work to “filter” aspects of the program that were included because of function, efficiency or standard treatment of the subject. In the final phase, the court compares elements of the work that survive the filtration process to corresponding elements contained in the allegedly infringing work to determine whether a finding of infringement is justified. The Second Circuit concluded that infringement would be found only if substantial similarity existed in those aspects of the protected program that were not dictated by efficiency, external factors, or taken from the public domain.

While the court acknowledged that an Altai analysis would be applicable had the facts involved the nonliteral reproduction of the computer codes underlying the 1-2-3 program, it noted that Borland involved literal duplication and that the application of Altai would serve to confuse the fundamental issue of whether the Lotus menu hierarchy could be protected at all.

CONCLUSION

Legal analysis of software copyright is anything but simplistic. However, arguments advocating more or less protection typically turn
on the perceived economic consequences of granting either wider access or affording greater enforcement of ownership.\footnote{92}{See, e.g., Lee T. Gesmer, \textit{Implications of Lotus v. Borland Decision, Mass. L. Wkly.}, May 1, 1995, at B4.}

\textit{Borland} illustrates the difficult balance that the courts must strike between overprotection and access. Indeed, the innovation and entrepreneurship responsible for products, such as Lotus 1-2-3 or Borland's Quattro programs, may be creating something of a turmoil in the courts as to the proper amount of legal protection for computer software.\footnote{93}{This apparent conflict is illustrated by the \textit{Borland} court's criticism over the Tenth Circuit's decision in Autoskill, Inc. v. National Education Support Systems, Inc., 944 F.2d 1476 (10th Cir. 1993). \textit{Lotus}, 49 F.3d at 818-19.}

The judiciary is increasingly being placed in the unenviable position of upholding or discarding a specific copyright based on their interpretation of the law, while at the same time remaining impartial to the potential effect their decision will have on business and the innovation of future products.

Depending on one's view, the \textit{Borland} decision could either result in greater technological innovation or a relative stagnation caused by the belief that copyright law is insufficient for the protection of software.\footnote{94}{Gesmer, \textit{supra} note 92.} However, despite speculation on \textit{Borland}'s ultimate impact, the powerful economic incentives that have resulted in high technology's phenomenal growth will most likely continue to drive innovative efforts regardless of the degree of protection afforded by the courts.