

≡≡≡ *Sony Computer Entertainment, Inc. v. Connectix Corp.*
≡≡≡ 203 F.3d 596 (9th Cir.), cert. denied, 531 U.S. 871 (2000)

CANBY, J.: . . . Sony . . . produces and markets the Sony PlayStation console, a small computer with hand controls that connects to a television console and plays games that are inserted into the PlayStation on compact discs (CDs). Sony owns the copyright on the basic input-output system or BIOS, which is the software program that operates its PlayStation. Sony has asserted no patent rights in this proceeding. . . .

. . . The PlayStation console contains both (1) hardware components and (2) software known as firmware that is written onto a read-only memory (ROM) chip. The firmware is the Sony BIOS. . . .

Connectix's Virtual Game Station is software that "emulates" the functioning of the PlayStation console. That is, a consumer can load the Virtual Game Station software onto a computer, load a PlayStation game into the computer's CD-ROM drive, and play the PlayStation game. The Virtual Game Station software thus emulates both the hardware and firmware components of the Sony console. The Virtual Game Station does not play PlayStation games as well as Sony's PlayStation does. [Sony sued Connectix, claiming that when Connectix reverse engineered Sony's code during the course of creating the Virtual Game Station, it infringed Sony's copyrights. The district court granted an injunction in favor of Sony.] At the time of the injunction, Connectix had marketed its Virtual Game Station for Macintosh computer systems but had not yet completed Virtual Game Station software for Windows. . . .

C. *Connectix's Reverse Engineering of the Sony BIOS*

Connectix began developing the Virtual Game Station for Macintosh on about July 1, 1998. In order to develop a PlayStation emulator, Connectix needed to emulate both the PlayStation hardware and the firmware (the Sony BIOS).

Connectix first decided to emulate the PlayStation's hardware. In order to do so, Connectix engineers purchased a Sony PlayStation console and extracted the Sony BIOS from a chip inside the console. Connectix engineers then copied the Sony BIOS into the RAM of their computers and observed the functioning of the Sony BIOS in conjunction with the Virtual Game Station hardware emulation software as that hardware emulation software was being developed by Connectix. . . .

Once they had developed the hardware emulation software, Connectix engineers also used the Sony BIOS to "debug" the emulation software. In doing so, they repeatedly copied and disassembled discrete portions of the Sony BIOS.

Connectix also used the Sony BIOS to begin development of the Virtual Game Station for Windows. Specifically, they made daily copies to RAM of the Sony BIOS and used the Sony BIOS to develop certain Windows-specific systems for the Virtual Game Station for Windows. Although Connectix had its own BIOS at the time, Connectix engineers used the Sony BIOS because it contained CD-ROM code that the Connectix BIOS did not contain. . . .

During development of the Virtual Game Station, Connectix contacted Sony and requested "technical assistance". . . . Sony declined Connectix's request for assistance.

Connectix completed Virtual Game Station for Macintosh computers in late December 1998 or early January 1999. Connectix announced its new product at the MacWorld Expo on January 5, 1999. At MacWorld, Connectix marketed the Virtual Game Station as a "PlayStation emulator." The materials stated that the Virtual Game Station permits users to play "their favorite Playstation games" on a computer "even if you don't yet have a Sony PlayStation console." . . .

II. Discussion . . .

A. *Fair Use* . . .

1. Nature of the Copyrighted Work

Under our analysis of the second statutory factor, nature of the copyrighted work, we recognize that "some works are closer to the core of intended copyright protection than others." . . . Sony's BIOS lies at a distance from the core because it contains unprotected aspects that cannot be examined without copying. *See Sega*, 977 F.2d at 1526. We consequently accord it a "lower degree of protection than more traditional literary works." *Id.* As we have applied this standard, Connectix's copying of the Sony BIOS must have been "necessary" to have been fair use. *See id.* at 1524-26. We conclude that it was. . . .

We also reject the argument, urged by Sony, that Connectix infringed the Sony copyright by repeatedly observing the Sony BIOS in an emulated environment, thereby making repeated copies of the Sony BIOS. These intermediate copies could not have been "necessary" under *Sega*, contends Sony, because Connectix engineers could have disassembled the entire Sony BIOS first, then written their own Connectix BIOS, and used the Connectix BIOS to develop the Virtual Game Station hardware emulation software. We accept Sony's factual predicate for the limited purpose of this appeal. Our doing so, however, does not aid Sony.

Sony contends that Connectix's reverse engineering of the Sony BIOS should be considered unnecessary on the rationale that Connectix's decision to observe the Sony BIOS in an

emulated environment required Connectix to make more intermediate copies of the Sony BIOS than if Connectix had performed a complete disassembly of the program. Under this logic, at least some of the intermediate copies were not necessary within the meaning of *Sega*. This construction stretches *Sega* too far. The “necessity” we addressed in *Sega* was the necessity of the method, i.e., disassembly, not the necessity of the number of times that method was applied. *See* 977 F.2d at 1524-26. In any event, the interpretation advanced by Sony would be a poor criterion for fair use. Most of the intermediate copies of the Sony BIOS were made by Connectix engineers when they booted up their computers and the Sony BIOS was copied into RAM. But if Connectix engineers had left their computers turned on throughout the period during which they were observing the Sony BIOS in an emulated environment, they would have made far fewer intermediate copies of the Sony BIOS (perhaps as few as one per computer). Even if we were inclined to supervise the engineering solutions of software companies in minute detail, and we are not, our application of the copyright law would not turn on such a distinction. Such a rule could be easily manipulated. More important, the rule urged by Sony would require that a software engineer, faced with two engineering solutions that each require intermediate copying of protected and unprotected material, often follow the *least efficient solution*. (In cases in which the solution that required the fewest number of intermediate copies was also the most efficient, an engineer would pursue it, presumably, without our urging.) This is precisely the kind of “wasted effort that the proscription against the copyright of ideas and facts . . . [is] designed to prevent.” *Feist Publications, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 354. . . . We decline to erect such a barrier in this case. If Sony wishes to obtain a lawful monopoly on the functional concepts in its software, it must satisfy the more stringent standards of the patent laws. *See Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 160-61; *Sega*, 977 F.2d at 1526. This Sony has not done. The second statutory factor strongly favors Connectix.

2. Amount and Substantiality of the Portion Used

With respect to the third statutory factor, amount and substantiality of the portion used in relation to the copyrighted work as a whole, Connectix disassembled parts of the Sony BIOS and copied the entire Sony BIOS multiple times. This factor therefore weighs against Connectix. But as we concluded in *Sega*, in a case of intermediate infringement when the final product does not itself contain infringing material, this factor is of “very little weight.” *Sega*, 977 F.2d at 1526-27. . . .

3. Purpose and Character of the Use

Under the first factor, purpose and character of the use, we inquire into whether Connectix’s Virtual Game Station

merely supersedes the objects of the original creation, or instead adds something new, with a further purpose or different character, altering the first with new expression, meaning, or message; it asks, in other words, whether and to what extent the new work is “transformative.”

Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 579 (1994) (internal quotation marks and citations omitted). . . .

We find that Connectix’s Virtual Game Station is modestly transformative. The product creates a new platform, the personal computer, on which consumers can play games designed for the Sony PlayStation. This innovation affords opportunities for game play in new environments, specifically anywhere a Sony PlayStation console and television are not available, but a

computer with a CD-ROM drive is. More important, the Virtual Game Station itself is a wholly new product, notwithstanding the similarity of uses and functions between the Sony PlayStation and the Virtual Game Station. . . .

Finally, we must weigh the extent of any transformation in Connectix's Virtual Game Station against the significance of other factors, including commercialism, that militate against fair use. . . . Connectix's commercial use of the copyrighted material was an intermediate one, and thus was only "indirect or derivative." *Sega*, 977 F.2d at 1522. Moreover, Connectix reverse-engineered the Sony BIOS to produce a product that would be compatible with games designed for the Sony PlayStation. We have recognized this purpose as a legitimate one under the first factor of the fair use analysis. *See id.* Upon weighing these factors, we find that the first factor favors Connectix. . . .

4. Effect of the Use upon the Potential Market . . .

. . . Whereas a work that merely supplants or supersedes another is likely to cause a substantially adverse impact on the potential market of the original, a transformative work is less likely to do so.

. . . [B]ecause the Virtual Game Station is transformative, and does not merely supplant the PlayStation console, the Virtual Game Station is a legitimate competitor in the market for platforms on which Sony and Sony-licensed games can be played. *See Sega*, 977 F.2d at 1522-23. For this reason, some economic loss by Sony as a result of this competition does not compel a finding of no fair use. Sony understandably seeks control over the market for devices that play games Sony produces or licenses. The copyright law, however, does not confer such a monopoly. . . .

NOTES AND QUESTIONS

1. Why shouldn't Accolade be required to enter a license agreement with Sega if it wishes to create games that can be played on the Sega consoles? Do you think that customers are likely to buy both Joe Montana Football and Mike Ditka Power Football? Should that decision be left to Sega, or to the market? Recall that in analyzing the fourth statutory fair use factor, the *Campbell* Court drew a "distinction between potentially remediable displacement and unre-mediable disparagement." *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 592. Where on this spectrum do Accolade's products lie? Does either end of the *Campbell* spectrum adequately capture the sort of competition at issue in *Sega*?

2. What is the ultimate holding of *Sega*? What would be an "illegitimate" reason for seeking access to functional elements of computer software? Do you agree with the court's conclusion that §107 may sometimes operate to privilege research by private-sector, commercial entities?

3. Is *Connectix* a necessary extension of the *Sega* holding? In particular, against which of the plaintiffs' products do the defendants in each case compete? Will consumers buy a Sony console if they can run PlayStation games on their PCs? The district court answered the latter question in the negative, ruling "that the Virtual Game Station was not transformative on the rationale that a computer screen and a television screen are interchangeable, and the Connectix product therefore merely 'supplants' the Sony Playstation console." *Connectix*, 203 F.3d at 607. Did the Ninth Circuit adequately answer this argument?

4. As you saw in subsection B.1, *supra*, the second fair use factor doesn't seem to drive the results in certain kinds of cases. In *Harper & Row*, President Ford's manuscript was highly

factual, yet the Court ultimately found *The Nation's* use of that manuscript unfair. In *Campbell*, the parodied song was highly creative, yet the Court indicated that parody warrants considerable leeway. In both *Sega* and *Connectix*, in contrast, the second fair use factor was enormously important. Does it make sense to give special consideration to the nature of computer software, as both courts did? Do you agree with the Ninth Circuit's conclusion that denying fair use would threaten the boundary between copyright law and patent law? Should the second fair use factor have weighed equally strongly in both *Sega* and *Connectix*?

5. Recall Chapter 4.B's discussion addressing the suitability of copyright as the protective regime for software. Does the availability of the fair use doctrine make protecting software under copyright law more or less palatable?

The *Connectix* court stated, "If Sony wishes to obtain a lawful monopoly on the functional concepts in its software, it must satisfy the more stringent standards of the patent law." *Sony*, 203 F.3d at 605. After Sony lost its appeal of the denial of the preliminary injunction in the copyright case, it sued Connectix for patent infringement. (The parties eventually settled the case. *See Sony, Connectix Settle Claims, Plan Joint Software Products*, L.A. Times, Mar. 17, 2001, at C2.) Recall that the exclusive patent rights include the rights to make, use, and sell the patented invention. There is a good chance that if Sony's patents extend to the interfaces between its BIOS and other programs, including game programs, then at some point during Connectix' development process, it infringed those patents. If that is the case, then why do you think Sony chose to sue first for copyright infringement rather than patent infringement?

Should patent law and copyright law arrive at different results in decompilation cases? Would copyright doctrine matter much in this area if patent law protects facets of computer software, including interfaces (*see* Chapter 4, *supra* pages 240-41)? For arguments that patent law, too, should recognize some freedom to reverse engineer software to create interoperable products, see Julie E. Cohen & Mark A. Lemley, *Patent Scope and Innovation in the Software Industry*, 89 Cal. L. Rev. 1, 16-37 (2001); Maureen A. O'Rourke, *Toward a Doctrine of Fair Use in Patent Law*, 100 Colum. L. Rev. 1177 (2000).

6. How should courts address fair use claims by providers of products that help users modify copyrighted works to enhance their enjoyment? Re-read the facts of another pair of Ninth Circuit decisions: *Lewis Galoob Toys, Inc. v. Nintendo of America, Inc.*, 964 F.2d 965 (9th Cir. 1992), *cert. denied*, 507 U.S. 985 (1993), and *Micro Star v. FormGen, Inc.*, 154 F.3d 1107 (9th Cir. 1998), excerpted in Chapter 5.D.2. In *Galoob*, the Ninth Circuit held that the images produced by Galoob's Game Genie were not derivative works, but that even if they were, Galoob's use of Nintendo's copyrighted works was fair:

The district court considered the potential market for derivative works based on Nintendo's game cartridges and found that: (1) "Nintendo has not, to date, issued or considered issuing altered versions of existing games," . . . and (2) Nintendo "has failed to show the reasonable likelihood of such a market." . . . The record supports the court's findings.

Galoob, 964 F.2d at 971.

In contrast, the *Micro Star* court rejected Micro Star's argument that its distribution of user-created "levels" for FormGen's Duke Nukem games was fair:

Our examination of the section 107 factors yields straightforward results. Micro Star's use of FormGen's protected expression was made purely for financial gain. . . . The Supreme Court has explained that the second factor . . . is particularly significant because "some works are closer to the core of intended copyright protection than others, with the consequence that fair use is more difficult to establish when the former works are copied." *Campbell [v. Acuff-Rose Music, Inc.]*,

510 U.S. [569,] 586. The fair use defense will be much less likely to succeed when it is applied to fiction or fantasy creations, as opposed to factual works such as telephone listings. Duke-Nukem's world is made up of aliens, radioactive slime and freezer weapons — clearly fantasies, even by Los Angeles standards. N/I MAP files “expressly use [] the [D/N-3D] story's unique setting, characters, [and] plot,” . . . Only FormGen has the right to enter that market; whether it chooses to do so is entirely its business. . . . [Micro Star] is not protected by fair use.

Micro Star, 154 F.3d at 1113.

Are these decisions reconcilable? Do the facts of the two cases dictate opposite results?

7. In a portion of the opinion not excerpted above, the *Sega* court rejected three arguments that Accolade made to support the proposition that disassembly of object code is not copyright infringement. Specifically, Accolade argued that (1) infringement only occurred if the eventual end product resulting from disassembly violated one of the copyright owner's §106 rights; (2) §102(b) authorizes disassembly; and (3) §117 authorizes disassembly. Address each of these arguments and consider why the court ruled as it did.

Note on the Interoperability Provisions of the EU Software Directive

In Chapter 4.B, pages 244-45, *supra*, we briefly discussed the EU Software Directive. Directive 2009/24, Legal Protection of Computer Programs, 2009 O.J. (L 111) 16 (EC). Here we consider in more detail the steps that the directive takes to foster competition through interoperability.

According to Article 6 of the directive, entitled “Decompilation,”

1. The authorization of the rightholder shall not be required where reproduction of the code and translation of its form . . . are indispensable to obtain the information necessary to achieve the interoperability of an independently created computer program with other programs, provided that the following conditions are met:

- (a) those acts are performed by the licensee or by another person having a right to use a copy of a program . . .
- (b) the information necessary to achieve interoperability has not previously been readily available to the persons referred to in point (a); and
- (c) those acts are confined to the parts of the original program which are necessary in order to achieve interoperability.

Id., art. 6(1).

The recitals that serve as preface (and quasi-legislative history) to the EU Software Directive discuss what interoperability means. They define “interfaces” as “[t]he parts of the program which provide for . . . interconnection and interaction between elements of software and hardware. . . .” *Id.*, recital 10. “[I]nteroperability can be defined as the ability to exchange information and mutually to use the information which has been exchanged.”

As discussed in Chapter 4, U.S. software companies have responded to the reverse engineering of their products by employing license agreements, including mass-market “shrink-wrap” or “clickwrap” agreements, that prohibit reverse engineering. The validity of these provisions is an unresolved question, as we discuss in Chapter 10. The EU Software Directive, in contrast, provides that “[a]ny contractual provisions contrary to Article 6 . . . shall be null and void.” *Id.*, art. 8.

NOTES AND QUESTIONS

1. Does the EU Software Directive adopt *Sega's* rule or is it different? What is the intent of Article 6? Would the directive shelter both a software vendor that decompiles an operating system to write an application that runs on the operating system and one that decompiles to write a competing operating system that implements the same interfaces? For a comparative discussion of U.S. and European law after the enactment of the first EU Software Directive in 1991 (which is substantially similar to the 2009 directive), see Pamela Samuelson, *Comparing the U.S. and E.C. Copyright Protection for Computer Programs: Are They More Different than They Seem?*, 13 J.L. & Com. 279 (1994).

2. Why should it make any difference whether means alternative to decompilation exist to allow the secondcomer to obtain the information it seeks? Both the cases and the EU Software Directive seem intended, at least in part, to induce software providers to disclose information sufficient to allow interoperability. Does that decision represent good policy? Professors Pamela Samuelson and Suzanne Scotchmer note that the expense of reverse engineering can be a factor influencing a company's decision whether to take a license instead. They argue that encouraging licensing can be beneficial because it enables innovators to recoup their research and development costs, and that reducing a secondcomer's costs of entry too far may harm innovation. Pamela Samuelson & Suzanne Scotchmer, *The Law and Economics of Reverse Engineering*, 111 Yale L.J. 1575 (2002). Is forcing secondcomers to engage in costly and laborious reverse engineering wasteful or efficient?

3. Does the EU's decision to invalidate license provisions contrary to the reverse engineering right make sense? Should the U.S. take a similar route? We return to this question in Chapters 8 and 10.