No. 21-12835

United States Court of Appeals

for the

Eleventh Circuit

APPLE INC.,

Plaintiff-Counter Defendant-Appellant,

– v. –

CORELLIUM, LLC,

Defendant-Counter Claimant-Appellee.

_____

ON APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF FLORIDA
WILLIAM DONALD MATTHEWMAN, U.S. MAGISTRATE JUDGE

AMICI CURIAE **BRIEF OF INTELLECTUAL PROPERTY LAW
PROFESSORS IN SUPPORT OF DEFENDANT-
COUNTER CLAIMANT-APPELLEE CORELLIUM, LLC**

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CERTIFICATE OF INTERESTED PERSONS

The undersigned counsel of record certifies that the following listed persons and entities as described in Eleventh Circuit Rule 26.1-2(a) have an interest in the outcome of this case and were omitted from the Certificates of Interested Persons in briefs that were previously filed pursuant to Rule 26.1-2(b).

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Respectfully submitted,

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IDENTITY OF AMICI CURIAE AND INTEREST IN THIS CASE

Amici are scholars whose research and teaching focus is copyright law.[1] Amici's interest is in the correct development of copyright law.[2]

SUMMARY OF ARGUMENT

The constitutional goal of copyright protection is to "promote the progress of science and useful arts," Art. I, sec. 1, cl. 8, and the first copyright law was "an act for the encouragement of learning," *Cambridge University Press v. Patton*, 769 F.3d 1232, 1256 (11th Cir. 2014). This case provides an opportunity for this Court to affirm that vision.

Apple begins its brief by claiming that "Corellium sells Apple's copyrighted software to its customers for money." Apple Br. at 1. This characterization is puzzling, because Apple invites the public to download its software, including the graphical interface, for free. *Id*. at 7. Corellium and its customers get iOS from Apple's servers. So, what are Corellium's customers buying? Corellium makes specialized software, CORSEC, that enables new and useful interactions with iOS that allow researchers to learn more about how the system behaves, including

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[1] Institutional affiliations are provided solely for purposes of identification.
[2] The parties have consented to the filing of this brief. Neither the parties nor their counsel have authored this brief, and neither they nor any other person or entity other than counsel for amicus curiae contributed money that was intended to fund preparing or submitting this brief.

potential vulnerabilities. It is that functionality, and not the copying, to which Apple truly objects.

But fair use protects precisely this kind of analysis. Opening software to information gathering and vulnerability testing is transformative, just as gathering information about and criticizing other types of works are classic transformative fair uses. To this point, Apple responds that it would rather control the market for security research on its products. But copyright law has correctly refused copyright owners the right to control markets for transformative uses, especially uses that expose them to criticism and thus to potential losses not related to substitution of the demand for the expressive qualities of their works. The risks of security research are not copyright risks. The public benefits when copyright owners do not have a monopoly on information about the potential flaws in their works. The Supreme Court made clear in *Google LLC v. Oracle America, Inc.*, 141 S.Ct. 1183 (2021), that software copyrights should not be used to control subsequent independent creative work by software developers writing independent programs that operate on software platforms, and Apple's argument that it should control the market for developer analysis directly conflicts with that holding.

Separately, Apple's free dissemination of iOS strongly favors fair use here. Importantly, there is no Apple code in CORSEC itself, and there is also no infringement when someone downloads a copy of iOS from Apple's site. Although

Apple lists things one can do with CORSEC as if they were infringing acts under §106, it does not take into account the implications of its own free dissemination, which produced the legally relevant copies here. For example, Apple did not attempt to explain how slowing down the execution of its code using CORSEC created an infringing derivative work or unauthorized copy, any more than slowing down video playback would. Likewise, although Apple refers to CORSEC's ability to allow users to alter the kernel, Apple does not own the kernel, which is open source. Uploading a "custom kernel" to use with a copy of iOS downloaded from Apple does not create a derivative work of iOS any more than adding a spellchecker to a word processing program creates a derivative work. *Lewis Galoob Toys, Inc. v. Nintendo of America, Inc.*, 964 F.2d 965, 969 (9th Cir. 1992). Similarly, Apple refers to CORSEC's ability to change entries in the trust cache in a copy of iOS, but the trust cache is a record of binary codes that are deemed "trusted," represented by a hash value—a number mechanically calculated from the initial input.   Changing hashes in the trust cache of a copy downloaded from Apple for the functional purpose of changing what binary code is "trusted" does not create a derivative work, which requires the addition of copyrightable creativity. See 17 U.S.C. § 101 (derivative works "represent an original work of authorship"); *L. Batlin & Son, Inc. v. Snyder*, 536 F.2d 486, 492 (2d Cir. 1976). Apple freely disseminates copies to Corellium, its customers, and the world, and

Corellium's subsequent acts do not change the relevance of this fact to the fair use analysis.

Summary judgment for Corellium was appropriate, as in many other cases in which fair use has been found on summary judgment, since the issues here are primarily legal: the overriding transformative nature of the use; Apple's lack of entitlement to control transformative markets; and the relevance of Apple's invitation to the world to download iOS freely. *See Oracle*, 141 S.Ct. at 1199-1200.

ARGUMENT

I. **FACTOR ONE: CORELLIUM'S ENABLEMENT OF EXPERT ANALYSIS IS TRANSFORMATIVE**

Transformativeness is the key element under factor one, because "the more transformative the new work, the less will be the significance of other factors, like commercialism, that may weigh against a finding of fair use." *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 579. Generally speaking, works can be transformative in two ways—by adding additional expression or by using the work for a new purpose. This case is especially compelling because CORSEC does both.

Ignoring what Corellium actually created, Apple claims that CORSEC offers nothing but a "different format," Apple Br. at 23, yet its own objections to what

researchers can do with that "different format" show that Corellium did far more

than that. As *Oracle* emphasized, the question is not about "format" but about the

nature and purpose of the use:

> Google copied portions of the Sun Java API precisely, and it did so in part
> for the same reason that Sun created those portions, namely, to enable
> programmers to call up implementing programs that would accomplish
> particular tasks. But since virtually any unauthorized use of a copyrighted
> computer program (say, for teaching or research) would do the same, to stop
> here would severely limit the scope of fair use in the functional context of
> computer programs. Rather, in determining whether a use is
> "transformative," we must go further and examine the copying's more
> specifically described "purpose[s]" and "character." 17 U.S.C. § 107(1).

141 S. Ct. at 1203. *Oracle* found transformativeness in incorporating an existing

program into a new program with functionality that enabled programmers to do

new and different things with existing code. *Id.* ("Its new product offers

programmers a highly creative and innovative tool …. [I]ts use was consistent with

that creative 'progress' that is the basic constitutional objective of copyright

itself."). In *Oracle*, as here, the creation of a tool that helped programmers do new

things with programs was transformative.

Apple disagrees that security research is a transformative purpose because

"security researchers have long used Apple-licensed versions of iOS to do their

work." Apple Br. at 27. But, as evidenced by researchers' willingness to pay for

Corellium's functions, its product makes different types of learning possible—just

as a parody song offers new insights and new meaning despite the existence of

licensed non-parodic versions. *Campbell*, 510 U.S. at 579, 583. As the district

court recognized, Corellium's product allows users to inspect and pause different

processes and to make other changes useful for security research that are not

available on physical devices. Slip op. at 21; *cf.* CHARLES EDGE & RICH TROUTON,

APPLE DEVICE MANAGEMENT: A UNIFIED THEORY OF MANAGING MACS, iPADS,

IPHONES, AND APPLETVS 532 (2020).

Apple also disagrees with identifying Corellium's purpose as security

research. Apple Br. at 28. The standard for transformativeness is whether a new,

transformative purpose "may reasonably be perceived," *Campbell*, 510 U.S. at 582.

Transformativeness does not require unanimity of purpose, or that the new work be

"entirely" distinct, Apple Br. at 32, because works rarely have one meaning or

purpose. *Oracle* squarely rejects Apple's purported standard; the Court made clear

that Java and Android had some overlapping uses and functions, but because

Android was also generative of new programs and insights, it was transformative.

141 S.Ct. at 1203. Similarly, *A.V. ex rel. Vanderhye v. iParadigms, LLC*, 562 F.3d

630, 639-40 (4th Cir. 2009), held that summary judgment was appropriate despite a

dispute over whether defendant's plagiarism detection software actually worked.

"The question of whether a use is transformative does not rise or fall on whether

the use perfectly achieves its intended purpose." *Id*. at 640.

Like the use in *Oracle*, the use here is generative of new creativity because it (1) enables finding security flaws and (2) helps companies who develop their own apps make sure that their apps don't create vulnerabilities when used on iOS. These benefits to creators—helping them understand what's going on under the hood of Apple's products—are precisely the kind of copyright-relevant public benefits emphasized by *Oracle*. Numerous cases have likewise found transformativeness in copying that creates technical tools that assist third parties with analysis. *E.g., Authors Guild v. Google, Inc.*, 804 F.3d 202, 214, 216-17 (2d Cir. 2015) (enabling text analysis of a corpus of works by users was transformative); *A.V.*, 562 F.3d at 639 (creating plagiarism detection tool for use by schools and teachers was transformative); *Kelly v. Arriba Soft. Corp.*, 336 F.3d 811, 819 (9th Cir. 2003) (creating database of information on internet for use by general public was transformative); *White v West Pub'l. Corp.*, 29 F. Supp. 3d 396, 399 (S.D.N.Y. 2014) (copying entire works and making those works available to the public in an interactive research tool, with additional features to enable better analysis, was transformative); *Field v. Google Inc.*, 412 F.Supp.2d 1106, 1118-19 (D. Nev. 2006) (copying entire works, thus enabling users to detect changes in webpages over time, was transformative because of the potential to reveal "significant differences" with practical ramifications).

One of the features of these types of transformative use is that they are essentially indifferent to the creative aspects of a work. As the district court emphasized, Corellium isn't interested in or relying on the creative elements of iOS in enabling analysis of the code. Such expression-indifferent use is highly transformative of the initial purpose that justified copyright protection initially. *See, e.g., Bond v. Blum*, 317 F.3d 385, 395 (4th Cir. 2003) (full copying for use in judicial proceeding was transformative and fair; copier was "indifferent to Bond's mode of expression"); *American Institute of Physics v. Winstead PC*, 109 U.S.P.Q.2d 1661, 2013 WL 6242843, at *5 (N.D. Tex. Dec. 3, 2013) (copying full articles for purpose of patent analysis was transformative and fair because, in the patent context, an article "is transformed from an item of expressive content to evidence of the facts within it; the expressive content becomes merely incidental"); Wendy J. Gordon, *How Oracle Erred: The "Use/Explanation Distinction" and the Future of Computer Copyright*, in COPYRIGHT IN AN AGE OF LIMITATIONS AND EXCEPTIONS 319, 320 (Ruth Okediji, ed., 2017) ("[A] copyright owner should have no prima facie rights over copying behavior where (1) the goals of the copying are 'use' (behavior in the realm of utility patent) and (2) the copying is done solely for goals unrelated to the expressiveness of the plaintiff's work of authorship.")

Apple accuses CORSEC of being usable for other purposes than security research, but the core utility of being able to observe and interact with running

code is quite clearly distinct from the ordinary purpose of running iOS as intended. Apple believes that bad people may be able to use these features to learn information about iOS, but, even assuming that is true, it simply reinforces that the purpose of CORSEC is not the same as the purpose of iOS (and that Apple wrongly chose to pursue a claim for direct infringement liability).

More generally, the question of public benefit is not a free-floating inquiry into the net utility of a defendant's use. It is rather whether the use serves the public objectives of copyright: the promotion of new creativity. *Oracle*, 141 S. Ct. at 1196, 1203, 1208; *Patton*, 769 F.3d at 1257. Notably, *Oracle* confined its discussion of social benefit to the social benefit of additional creativity; it did not ask whether all of us staring at our increasingly attractive apps is good for society, because that's not copyright's job. In *Authors Guild*, likewise, the court found getting useful information to be a transformative purpose without considering whether, for example, a student using Google Books might plagiarize or misrepresent the facts. *Authors Guild v. Google, Inc.*, 804 F.3d at 216-17 (2d Cir. 2015); *see also Ashley Furniture Industries, Inc. v. American Signature, Inc.*, 2014 WL 11320708, *8 (S.D. Ohio June 25, 2014) (fair use inquiry is independent of whether any other law is violated). Copying that might expose the copyright owner to negative consequences related to the content of—or here, the potential security flaws in—a work is regularly deemed transformative because it is indifferent to the

expression in the work. *See, e.g., Stern v. Does*, 978 F.Supp.2d 1031, 1045 (C.D. Cal. 2011) (copying that by disseminating a statement exposed plaintiff to potential defamation claim was transformative); *Denison v. Larkin*, 64 F.Supp.3d 1127, 1133-34 (N.D. Ill. 2014) (same result where copying exposed copyright owner to potential attorney discipline, because the point of the copying was unrelated to copyright's protection for creative expression).

Apple attempts to distinguish other transformativeness cases by emphasizing the putative extent of Corellium's copying, but this wrongly conflates factor one (nature of the use) with factor three (amount of copying). Apple neglects that many cases have approved copying an entire work where that was appropriate for the transformative purpose—and not just internal copying. *See Patton*, 769 F.3d at 1262 (noting that full, verbatim copying "may be transformative so long as the copy serves a different function than the original work") (citing *Perfect 10, Inc. v. Amazon.com, Inc.*, 508 F.3d 1146, 1165 (9th Cir. 2007) (database open to public); *A.V.*, 562 F.3d at 640 (plagiarism detection software); and *Bill Graham Archives v. Dorling Kindersley Ltd.*, 448 F.3d 605, 609 (2d Cir. 2006) (book disseminated to public)); *see also Swatch Grp. Mgmt. Servs. Ltd. v. Bloomberg L.P.*, 756 F.3d 73, 90 (2d Cir. 2014) (full copy disseminated to public for transformative purpose was fair use); *White*, 29 F. Supp. 3d at 399 (same).

It is true that copying a work merely to reach a new audience is generally nontransformative—but Corellium isn't copying to reach a new audience. Corellium's product provides links to allow users to download iOS from Apple, but the copy remains separate from CORSEC, much the same way as a brief remains separate from the copy of Word on which it is composed. Thus, assuming it is copying, Corellium is copying to allow the existing audience, which has been freely invited to copy iOS, to do new things with and learn new information about iOS—classically transformative behavior.

II.   FACTOR 2: APPLE'S FREE DISSEMINATION OF SOFTWARE THAT MIXES FUNCTIONALITY WITH EXPRESSION STRONGLY FAVORS FAIR USE

Apple argues that iOS is highly creative. But Roy Orbison's "Pretty Woman" and numerous other works that have been found to be used fairly were highly creative. *See, e.g., Campbell*, 510 U.S. at 586; *A.V.*, 562 F.3d at 641-42 (affirming conclusion that "even if the plaintiffs' works were highly creative in nature, iParadigms' use of the plaintiffs' works was not related to the creative core of the works," so factor two did not disfavor fair use).

The fact that transformativeness is more important than the creativity of the original work explains why this factor is, as the district court correctly found, rarely of much weight against fair use. In particular, this Court has explained that factor two does not weigh against fair use where the works at issue, though

creative, are "neither fictional nor unpublished." *Cambridge University Press v.*

Patton, 769 F.3d 1232, 1270 n.28 (11th Cir. 2014). This is the case here.

Although there may be many ways to write code, where the object is to learn

about iOS, there are no alternatives to examining Apple's code, just as there is no

alternative to parodying a particular song other than to parody it. Apple seeks

greater protection for code than for novels and music, which is at best backwards,

since "computer programs differ from books, films, and many other 'literary

works' in that such programs almost always serve functional purposes." *Oracle*,

141 S.Ct. at 1198 (2021).

Additionally, even though iOS may be copyrightable as a whole, the

functional character of computer programs means that they "hover" near "the

elusive boundary line described in [17 U.S.C.] § 102(b)." *Computer Associates*

International, Inc. v. Altai, Inc., 982 F.2d 693, 704 (2d Cir. 1992). Owing to

software's hybrid role as both "literary expression" and a "highly functional,

utilitarian component in the larger process of computing," copyright provides only

a "weak barrier" of protection; this narrow scope "flows from applying, in

accordance with Congressional intent, long-standing principles of copyright law."

Id. at 712; *see also Sega Enterprises Ltd. v. Accolade*, *Inc.*, 977 F.2d 1510, 1527 (.

This thinner scope of protection naturally leads to a broader scope for fair use.

And, as the district court explained, Corellium's use is based on the functional

aspects of iOS, which are not protectable, slip op. at 27.

Most significant in this case is that Apple has widely published and freely

disseminated iOS. Slip op. at 1; *see also Releases*, APPLE,

https://opensource.apple.com/releases (published source code for the iOS kernel, as

required for open-source software subject to the GPL). Apple has had ample

opportunity to exploit the market for iOS, and such prior exploitation favors the

defendant under factor two. *Swatch Grp. Mgmt. Servs. Ltd.*, 756 F.3d at 89

("[B]ecause Swatch Group publicly disseminated the spoken performance

embodied in the recording before Bloomberg's use, the publication status of the

work favors fair use."); *Blanch v. Koons*, 467 F.3d 244, 256 (2d. Cir. 2006); *Kelly*,

336 F.3d at 820 ("The fact that a work is published or unpublished also is a critical

element of its nature. Published works are more likely to qualify as fair use

because the first appearance of the artist's expression has already occurred.")

(footnote omitted); *Arica Institute, Inc. v. Palmer*, 970 F.2d 1067, 1078 (2d Cir.

1992) (factor two favors fair use where accusing work is "a published work

available to the general public"); *Walsh v. Townsquare Media, Inc.*, 464 F. Supp.

3d 570, 585 (S.D.N.Y. 2020) (use of a previously published work with mixed

creative and factual elements favors fair use); *Lewis Galoob Toys, Inc. v. Nintendo

of America, Inc.*, 780 F. Supp. 1283, 1293 (N.D. Cal. 1991) ("The works'

published nature supports the fairness of the use."), *aff'd*, 964 F.2d 965 (9th Cir. 1992).

The fact that a plaintiff has disseminated its work for free is even more favorable to fair use than wide dissemination alone. *E.g., Núñez v. Caribbean Intern. News Corp.*, 235 F.3d 18, 24 (1st Cir. 2000) (fact that photographs had been distributed freely favored fair use); *Super Future Equities, Inc. v. Wells Fargo Bank Minnesota, N.A.*, 553 F.Supp.2d 680, 699 (N.D. Tex. 2008) (availability of work on public website "strongly favors a finding of fair use"; "Whether or not a work has been published is a critical element of its nature, and the fact of publication favors a finding of fair use") (quoting *Harper & Row Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 564 (1985)); *Bell v. Moawad Gp., LLC,* 326 F. Supp. 3d 918, 923, 927 (D. Az. 2018) (wide, free availability prior to defendant's use favors fair use); *Healthcare Advocates, Inc. v. Harding, Earley, Follmer & Frailey*, 497 F. Supp. 2d 627, 637-38 (E.D. Pa. 2007) (fact that copied website was freely available to the public was "[o]ne of the more important" fair use considerations).

III. FACTOR 3: CORELLIUM USED A REASONABLE AMOUNT OF APPLE'S FREELY DISSEMINATED WORK IN LIGHT OF ITS PURPOSE

Apple argues that "Corellium's customers have the entirety of iOS at their fingertips," Apple Br. at 39, but so does everyone else with internet access. The

Supreme Court has explicitly held that, when audiences have been invited to consume an entire work freely, "the fact that the entire work is reproduced does not have its ordinary effect of militating against a finding of fair use." *Sony Corp. v. Universal City Studios, Inc.*, 464 U.S. 417, 449-50 (citations omitted). Under these circumstances, complaining that Corellium took too much is like complaining that the timeshifting in *Sony* was too extensive because ordinary viewers might not have cared about opening or closing credits. The Supreme Court in *Sony* understandably did not require evidence that copying every minute of a free broadcast show was necessary; it found fair use in reproductions of entire freely disseminated works.

Even in the absence of free dissemination by the copyright owner, other courts have routinely found fair use when an entire work is copied for transformative purposes, including where the work is reproduced in the end product. *See, e.g., Dorling Kindersley Ltd.*, 448 F.3d at 613 (copying entire work was reasonable in relation to purpose); *Perfect 10, Inc.*, 508 F.3d at 1167–68 (use of entire image was necessary since using less would diminish usefulness of visual search engine which had transformative purpose) (citing *Kelly v. Arriba Soft Corp.*, 336 F.3d 811, 821 (9th Cir. 2003)).

The core question is not whether, in judicial hindsight, the defendant took more than absolutely necessary, but whether the amount taken was "reasonable in

relation to the purpose of the copying." *Campbell*, 510 U.S. at 586; *see also*

Oracle, 141 S.Ct. at 1205 ("Google copied those lines not because of their

creativity, their beauty, or even (in a sense) because of their purpose. … The

'substantiality' factor will generally weigh in favor of fair use where, as here, the

amount of copying was tethered to a valid, and transformative, purpose.") As the

district court found, the amount Corellium used, including its use of graphics, was

reasonable given Apple's dissemination of iOS in IPSW files and the generative

purpose of the use. Slip op. at 28-29. Security research on a subset of a program

self-evidently risks missing problems in unexpected and unintended places (which

is after all where security vulnerabilities often appear).

In order to get around this precedent, Apple claims that certain graphical

user elements—which are all included in the IPSW files—have to be treated

separately, but its attempt to slice the product it offers to consumers into different

bits is a distortion of the proper scope of copyright. Without careful attention to the

boundaries of works, especially unfamiliar works such as software, plaintiffs can

artificially increase the apparent "amount" of what was taken. Justin Hughes, *Size*

Matters (Or Should) in Copyright Law, 74 FORDHAM L. REV. 575, 579-80 (2005)

(explaining dangers of recognizing "microworks" in software and elsewhere); *id.* at

613 ("If our goal is to create special incentives for the building of houses, we do

not necessarily need special incentives for the making of bricks or the mixing of

mortar.… Without such evidence that our bricks—short phrases, titles, evaluations—are under baked, so to speak, we should prevent the law from moving in that direction ….”); Margot E. Kaminski & Guy A. Rub, *Copyright's Framing Problem*, 64 UCLA L. REV. 1102, 1142-44 (2017) (explaining the interaction between work size and fair use; noting the risks of a plaintiff "gaming" the work's size).

The solution to such manipulation is to recognize, as the district court did, that separate copyright registrations do not mean a separate creative or economic existence. Since the software comes from files freely shared by Apple, and since Apple has consciously decided to integrate the icons and other graphics with the rest of the software, their use is not unfair. *NXIVM Corp. v. Ross Institute*, 364 F.3d 471, 480-81 (2d Cir. 2004) (disapproving attempted disaggregation of a unitary work; separate registrations not significant to fair use analysis). As the Second Circuit pointed out, "If plaintiffs' argument were accepted by courts—and, not surprisingly, plaintiffs cite no authority to support it—the third factor could depend ultimately on a plaintiff's cleverness in obtaining copyright protection for the smallest possible unit of what would otherwise be a series of such units intended as a unitary work." *Id*. at 481. Such manipulation is inconsistent with fair use's fundamental grounding in fairness, which this Court has repeatedly emphasized. *Suntrust Bank v. Houghton Mifflin Co.*, 268 F.3d 1257, 1272-73 (11th

Cir. 2001); *Cambridge Univ. Press v. Patton*, 769 F.3d 1232, 1272-73 (11th Cir. 2014). This Court should not create a split with the Second Circuit by evaluating individual components of Apple's integrated software separately.

IV.   FACTOR 4: APPLE CANNOT SHOW COGNIZABLE MARKET HARM

As this Court has held, factor four "asks whether the market harm caused by Defendants' unpaid copying will materially impair Plaintiffs' incentive to publish." *Patton*, 769 F.3d at 1282.

One primary lesson of *Oracle* is that providing tools for third parties to create more knowledge is not within the scope of the copyright owner's legitimate rights. Thus, a copyright owner's willingness to license access to such tools does not mean that it has suffered cognizable harm. *See also Campbell*, 510 U.S. at 592 ("[T]here is no protectible derivative market for criticism."); *Castle Rock Entertainment Inc. v. Carol Publishing Group*, 150 F.3d 132, 146 n.11 (2d Cir. 1998) (holding that a copyright owner cannot control fair use markets merely "by developing or licensing a market for parody, news reporting, educational or other transformative uses of its own creative work"); *cf. Patton*, 769 F.3d at 1278 (11th Cir. 2014) ("Plaintiffs may not head off a defense of fair use by complaining that every potential licensing opportunity represents a potential market for purposes of the fourth fair use factor.").

This principle makes clear that Apple's claimed harms, even if they were to exist, are not cognizable in copyright and thus that summary judgment was properly granted.

A. The General iOS Market

Apple argues that Corellium may cause market harm in the general iOS market. As the district court pointed out, this is simply implausible, given that (1) iOS is already distributed for free, and (2) no one can use Corellium's product to carry out standard iPhone functions such as making calls. Apple attempts to refine the argument by suggesting that security researchers might otherwise buy physical iPhones. It is undisputed that CORSEC offers extra functionality for inspecting the code as it runs that cannot be replaced with physical iPhones. Even ignoring that lack of substitutability, Apple has no cognizable copyright interest in sales of physical iPhone hardware. *Lexmark Int'l*, 387 F.3d at 545 (competing with producer's product is not cognizable copyright harm); *Sony Computer Entertainment, Inc. v. Connectix Corp.* 203 F.3d 596, 607 (9th Cir. 2000) (relevant market is market for copyrighted work); *DSC Communications Corp. v. DGI Technologies, Inc.*, 81 F.3d 597, 601 (5th Cir. 1996) (legitimate copyright market is market for copyrighted work, not market for associated hardware); *Ashley*, 2014 WL11320708 at *11 (market for associated products is not relevant); *cf. Omega S.A. v. Costco Wholesale Corporation*, 776 F.3d 692, 693-94 (9th Cir. 2015) (using

copyright in small image to control uncopyrightable watches was copyright misuse); *Alcatel USA, Inc. v. DGI Technologies, Inc.*, 166 F.3d 772, 793-94 (5th Cir. 1999) (using copyright to control uncopyrightable microprocessors was misuse).

Instead, Apple's provision of free access to iOS weighs strongly against any finding of market harm. *Sony*, 464 U.S. at 449-50; *Authors Guild, Inc. v. HathiTrust*, 755 F.3d 87, 103 (2d Cir. 2014) (unauthorized copying for print-disabled; fourth factor favored fair use because evidence showed that publishers typically did not charge for authorizing creation of accessible copies).

Apple also argues that the icons and wallpaper art it provides in a package with the rest of iOS should be analyzed separately for market effect. Not only does its own behavior of bundling them together refute this claim, it ignores that the market harm inquiry must assess the marginal effect of such uses. Because no one buys Corellium's product to substitute for a working iPhone, there is no marginal effect on the market for the creative elements of the iPhone, as Apple itself admits. Apple Br. at 45 ("[N]o Corellium user is interested in how the iOS [platform] looks."). Instead, the icons serve primarily a functional purpose that CORSEC users need: to watch the programs behave in their native environment.

B. The Market for Security Research

Apple claims that inspecting iOS running code, and the related tasks that CORSEC enables, ought to require a license.

Apple then makes various claims about what it intends to do for security researchers. But Apple very carefully does not say that its supposedly competing alternatives will have the same functionality as CORSEC and identifies no record evidence that they will. Apple Br. 48. This coyness is exactly why licensing is not a substitute for transformative markets—copyright owners routinely refuse to license uses that risk exposing them to criticism. *See* Rebecca Tushnet, *All of This Has Happened Before and All of This Will Happen Again*, 29 BERKELEY TECH. L.J. 1447, 1483 (2014).

It is well established that copyright owners cannot preempt transformative uses by being willing to license (some of) them. Transformative markets are not within the scope of copyright owners' rights, and so there is no cognizable harm when they are deprived of exclusivity over those markets. *See, e.g., Dorling Kindersley*, 448 F.3d at 614-15 ("a copyright holder cannot prevent others from entering fair use markets"); *Castle Rock Ent., Inc.*, 150 F.3d at 146 ("copyright owners may not preempt exploitation of transformative markets, which they would not 'in general develop or license others to develop' by actually developing or licensing others to develop those markets"); *see also Patton*, 769 F.3d at 1276 ("The goal of copyright is to stimulate the creation of new works, not to furnish

copyright holders with control over all markets. Accordingly, the ability to license does not demand a finding against fair use.").

Here, the reason that Apple shouldn't control the market for security testing Apple products is the same reason that other copyright owners have no right to control other transformative markets even by expressing a willingness to license within them: Apple's incentives to suppress truly harsh criticism or delay public disclosure of problems to further its own interests are too great. Copyright owners' conditional licensing cannot substitute for the decisional freedom afforded by fair use; the fox cannot be set to guard the henhouse. Apple's incentives to protect itself mark a key difference from the *Patton* case, where the available licenses were true blanket licenses, available to every academic comer—the publishers were indifferent to whether the use was to praise or criticize the author. As repeated instances of software providers suppressing important information about security flaws have shown, there is an inherent risk that they will be self-protective in precisely the way that disentitles them to a monopoly on the market for security research. *See, e.g. Online Policy Group v. Diebold, Inc.*, 337 F. Supp. 2d 1195 (N.D. Cal. 2004) (attempt to suppress discussion of security flaws failed because of fair use); *cf. Oracle*, 141 S.Ct. at 1207 (license offered by copyright owner was no substitute for fair use where it was broader than Google's copying and would have afforded the copyright owner control over "branding and cooperation" between the

firms); *Ty, Inc. v. Publications Int'l Ltd.*, 292 F.3d 512, 520-21 (7th Cir. 2002) (copyright owners have no right to suppress collectors' guide that copies owners' entire line of works for purposes of criticism and evaluation).

The principle that copyright owners may not control markets for uses that may reflect badly on them is one way to implement *Oracle*'s mandate to consider the public benefit of unauthorized use as part of the factor four analysis. *Oracle*, 141 S.Ct. at 1206 (fourth factor must "take into account the public benefits the copying will likely produce," particularly those "related to copyright's concern for the creative production of new expression").

Further, *Oracle* cautions against giving copyright owners control over beneficial innovations by third parties—such as the app developers and security researchers who may find CORSEC useful—where the value derives from their own investments into a popular platform like Java (or iOS). *Id.* at 1208 ("We have no reason to believe that the Copyright Act seeks to protect third parties' investment in learning how to operate a created work.")

The lack of cognizable market harm is additionally demonstrated by the fact that the distinctive feature of CORSEC is that it provides access to the functional behavior of the code—the operations performed by the instructions in the various software modules and files that comprise iOS— so that researchers can observe its behavior and tinker with it. The demand for these insights derives from the

functional aspects of the software, not the creative aspects, and thus is not within a traditional, reasonable, or likely to be developed market for the rights conferred by copyright. *See, e.g., Authors Guild v. Google, Inc.*, 804 F.3d at 224 (cognizable market effect must be based on copyrightable aspects of what was copied, not on uncopyrightable aspects); *NXIVM Corp.*, 364 F.3d at 482 ("[T]he relevant market effect with which we are concerned is the market for plaintiffs' 'expression,' and thus it is the effect of defendants' use of that expression on plaintiffs' market that matters, not the effect of defendants' work as a whole.")

> As Matthew Sag has explained:

> [A]lthough the fourth factor risks collapsing into circularity because everything is a potential market effect, courts have in fact avoided this nadir by applying certain limiting principles that emphasize that the copyright market is limited to expressive substitution. The logical implication of the exclusion of economic consequences that do not arise from expressive substitution is that to the extent that a use is nonexpressive, it typically has no cognizable market effect under the fourth factor.… [F]air use cases often turn on the simple question of whether the particular market claimed by the plaintiff is one that is cognizable under copyright. … This principle is reflected in the seemingly unrelated cases involving parody and the reverse engineering of computer software. In both scenarios, courts exclude consideration of market effects that do not arise from expressive substitution.

Copyright and Copy-Reliant Technology, 103 N.W.U. L. REV. 1607, 1653-54 (2009); *cf. Patton*, 769 F.3d at 1277-78 (risk of circularity is particularly high when the claimed market is "a market for licenses to use Plaintiffs' works in a particular way").

Separately, Apple's attempt to hive off a portion of the market and call it the security research market conflicts with this Court's careful attention to whether a market effect is material to overall incentives to publish:

> The central question under the fourth factor is not whether Defendants' use of Plaintiffs' works caused Plaintiffs to lose some potential revenue. Rather, it is whether Defendants' use—taking into account the damage that might occur if "everybody did it"—would cause substantial economic harm such that allowing it would frustrate the purposes of copyright by materially impairing Defendants' incentive to publish the work.

Patton, 769 F.3d at 1276. Given the cost of CORSEC and the free distribution of iOS, it is clear that even if "everybody" offered an expensive opportunity to inspect iOS code, the marginal effect on the overall incentive to publish iOS would be negligible.

If the analysis did not attend to the overall effect on incentives, then plaintiffs could create a market effect in any fair use situation by defining a submarket and then claiming a loss within that submarket. This Court's precedent forecloses such gamesmanship.

V. APPLE'S CONTRIBUTORY LIABILITY THEORY HAS THE SAME FATAL FLAWS

In its briefing below, Apple did not identify whether it was asserting a claim for contributory liability or vicarious liability, two theories with substantially different elements. Apple SJ Br. 8 n.3 (footnote reference to "secondary" liability); *see, e.g., Patton*, 769 F.3d 1232, 1241-42 nn. 6-7 (listing different sets of elements

for the theories); David Haskel, *A Good Value Chain Gone Bad: Indirect Copyright Liability in Perfect 10 v. Visa*, 23 BERKELEY TECH. L.J. 405, 409 (2008) ("Over the course of more than a century, secondary copyright liability evolved into two distinct species: contributory and vicarious") (footnote omitted).

On appeal, Apple now argues that customers are making infringing copies. But these copies are necessary for purposes of analysis, as in *Connectix*, 203 F.3d at 603-04, and therefore fair. More generally, every fair use argument above applies *a fortiori* to Corellium's customers. They are the ones engaged in research, and no one has reason to buy iOS from anyone else when Apple gives it away for free. It is thus unsurprising that the record reference to users' "distribut[ion]" is in fact not about distribution "to the public," the right specified by 17 U.S.C. §106, but to Corellium's explanation that "Virtual devices are easier to distribute among team members …. Access to virtual devices can be easily controlled and revoked, which is much harder to enforce with physical devices." *Compare* Doc. 470-23, pg. Corellium-009105.000005, *with* Apple Br. at 54.

In open defiance of the *Sony* standard that Corellium will not be liable if its product is "merely [] capable of substantial noninfringing uses," *Sony*, 464 U.S. at 442, Apple asserts that "Corellium had to show that there is no dispute about what every single one of its customers (and trial account users) do with the product." Apple Br. at 56. Apple claims that *Metro-Goldwyn-Mayer Studios Inc. v. Grokster*,

Ltd., 545 U.S. 913 (2005), somehow overturned *Sony*, but *Grokster* nowhere imposes an "every single one" standard. Directly to the contrary, *Grokster* explicitly distinguished *Sony* by explaining that Sony encouraged acts that were not necessarily infringing. *Grokster*, 545 U.S. at 931 ("Although Sony's advertisements urged consumers to buy the VCR to 'record favorite shows' or 'build a library' of recorded programs, neither of these uses was necessarily infringing") (cleaned up). Even assuming that Apple preserved a contributory infringement argument, it did not provide evidence that Corellium encouraged acts that were necessarily infringing. As the record clearly established, finding vulnerabilities and identifying how they can be exploited is necessary for legitimate security research.

CONCLUSION

The Supreme Court has instructed courts not merely to balance the fair use factors, but to balance them in light of the purposes of copyright. The district court here did so. Its grant of summary judgment should be affirmed.

Dated: February 16, 2022

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This document complies with the word limit of Federal Rules of Appellate Procedure 29(a)(5) and 32(a)(7)—which set the limitation for an amicus brief at one half of the maximum length authorized for a party's principal brief (i.e., 6,500 words)—because excluding the parts of the brief exempted by Federal Rule 32(f), the brief contains 6,336 words on the basis of a count made by the word processing system used to prepare the brief.

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I hereby certify that on February 16, 2022, a copy of the foregoing is being filed electronically. Notice of this filing will be sent by operation of the Court's electronic filing system to all parties indicated on the electronic filing receipt. I certify that all participants in the case are registered CM/ECF users and that service will be accomplished by the appellate CM/ECF system.

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