

AEREO AND THE PROBLEM OF MACHINE VOLITION

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INTRODUCTION

American Broadcasting Cos. v. Aereo, Inc.,¹ last term’s blockbuster Supreme Court copyright case, represents a collision of the old and the new. That’s true obviously of the technologies at issue: Aereo took television programs broadcast over the air via radio waves—the revolutionary technology of the mid-twentieth century—and converted them to an Internet-based video stream—the revolutionary technology of the early twenty-first century.² But more than a simple clash of technologies, or even business models, was at issue. *Aereo* represented the reemergence of an old copyright problem, public performances, and the devilish complexities of a new one, automated content creation and delivery. And neither reached a satisfying result.

The old problem is one that has existed at least since Congress expanded the public performance right in 1909 to encompass musical

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1. 134 S. Ct. 2498 (2014).

2. *See id.* at 2503.

works.³ Prior statutes primarily defined infringement as reproduction in copies.⁴ Copyright thus regulated primarily printing and publishing, activities that in the nineteenth century were hardly subtle or fleeting. But with the addition of public performance rights for musical works, this state of affairs changed. Courts were confronted for the first time with the question of what the minimal human action giving rise to copyright liability might be. Is clicking the on/off switch on a radio enough?⁵ Is someone who turns on a receiver sufficiently interacting with a work that we can say “performing” it?

Almost as soon as answers to those questions began to emerge, another problem arose. Whatever the minimal human interaction necessary to invoke copyright’s protections, humans are increasingly being pushed to the sidelines. With the rise of the networked personal computer, interactions with creative works more and more result from the operation of complex machines or automated services. If a machine is programmed to take certain steps after receiving some sort of command, who is responsible for what it does: the programmer, the owner, the user, or some combination of all of them?

The Aereo service, retransmitting broadcast television over the Internet, sat somewhere betwixt the twentieth and twenty-first centuries, and consequently raised both sorts of questions. That may have made it more difficult for the Court to satisfactorily address either. With respect to the first issue, the minimal acts for direct liability, Aereo argued that even if its actions were performances, they were not *public* performances and thus did not cross the line that Congress had drawn between infringing and noninfringing acts.⁶ With respect to the second issue, Aereo argued that because the programs were transmitted at the behest of users, it was not performing at all, publicly or privately.⁷

3. See Copyright Act of 1909, Pub. L. No. 60-349, ch. 320, § 1(e), 35 Stat. 1075, 1075-76, *repealed by* Act of Oct. 19, 1976, Pub. L. No. 94-553, 90 Stat. 2541 (codified at 17 U.S.C. §§ 101-810 (1976)).

4. See, e.g., Act of July 8, 1870, ch. 230, § 86, 16 Stat. 198, 212 (providing exclusive rights of “printing, reprinting, publishing, completing, copying, executing, finishing, . . . vending,” dramatizing, and translating most works).

5. The addition of the first public performance right in 1856 for dramatic works, Act of Aug. 18, 1856, ch. 169, 11 Stat. 138, 138-39, did not raise this sort of question. A performance of a play is quite literally a production, and not something undertaken on a whim or without forethought. *See id.*

6. *Aereo*, 134 S. Ct. at 2507-08.

7. *Id.*

The answer to the first question in *Aereo* is of considerable interest to copyright lawyers and scholars, but perhaps few others. It ties up a loose thread from the 1976 Act's attempted solution to the old problem, which was a long and convoluted definition of public performance. But the answer to the second question is potentially more far-reaching than that. Machine interactions are increasingly common in everyday life, and the extent to which humans may be held responsible for what they do is unclear. Are humans responsible for civilians killed by automated drones in a conflict zone?⁸ For unreasonable force employed by security robots?⁹ For pedestrians hit by driverless cars?¹⁰ For search engine results or newspaper articles produced by an algorithm?¹¹ The *Aereo* case is significant for what it says, or more precisely does not say, about this emerging issue.

I. THE OLD PROBLEM: PUBLIC PERFORMANCE

Aereo launched its service in 2012.¹² The idea was to provide a remote DVR service for broadcast television that would be accessible over the Internet. For a monthly fee of \$12, subscribers living within one of *Aereo*'s service areas (initially only New York City) would be able to designate any program broadcast over the air in that area for recording and later playback on their computers, tablets, or smartphones, similar in operation to a DVR and a television set. In addition, *Aereo* offered a "Watch" service, which allowed subscribers to immediately play back a recording as it was being made, permitting nearly live viewing of broadcast television

8. See John Markoff, *Fearing Bombs That Can Pick Whom to Kill*, N.Y. TIMES, Nov. 12, 2014, at A1, available at <http://www.nytimes.com/2014/11/12/science/weapons-directed-by-robots-not-humans-raise-ethical-questions.html>.

9. See Rachel Metz, *Rise of the Robot Security Guards: Startup Knightscope Is Preparing to Roll Out Human-Size Robot Patrols*, MIT TECH. REV. (Nov. 13, 2014), www.technologyreview.com/news/532431/rise-of-the-robot-security-guards/.

10. See Claire Cain Miller, *When Driverless Cars Break the Law*, N.Y. TIMES (May 13, 2014), www.nytimes.com/2014/05/14/upshot/when-driverless-cars-break-the-law.html.

11. See *Zhang v. Baidu.com Inc.*, 10 F. Supp. 3d 433, 436, 438-39 (S.D.N.Y. 2014); Stuart Benjamin, *If an Algorithm Generated This Post, Is It First Amendment Speech?*, VOLOKH CONSPIRACY (Mar. 18, 2014), <http://www.washingtonpost.com/news/volokh-conspiracy/wp/2014/03/18/if-an-algorithm-generated-this-post-is-it-first-amendment-speech/>.

12. See Brian Stelter, *New Service Will Stream Local TV Stations in New York*, N.Y. TIMES (Feb. 14, 2012, 11:40 AM), <http://mediadecoder.blogs.nytimes.com/2012/02/14/new-service-will-stream-local-tv-stations-in-new-york/>.

on digital devices.¹³ Aereo described its service as essentially an antenna, a Slingbox, and a remote DVR.¹⁴

Aereo provided these services without paying for any sort of license from copyright owners.¹⁵ Its system was constructed in order to take advantage of a 2008 Second Circuit decision, *Cartoon Network LP v. CSC Holdings, Inc.*,¹⁶ commonly known as the *Cablevision* case. The case involved a service provided by the cable operator Cablevision known as the ““Remote Storage DVR,”” or RS-DVR.¹⁷ Offered as an optional addition to its normal cable service, the RS-DVR provided subscribers with individually allocated storage space located on servers at Cablevision’s head ends. Subscribers purchasing the RS-DVR service could select programs to save to that storage space, and later play them back, using their cable box remote and an on-screen menu that operated much like an ordinary DVR. The difference was that instead of the remote sending commands to a DVR physically located in the home, the Cablevision remote sent commands to the cable box, which in turn relayed them to the RS-DVR servers at the Cablevision head end. The whole system functioned like a virtual DVR.¹⁸

The Second Circuit held, in fact, that for copyright purposes Cablevision’s RS-DVR service *was* just a virtual DVR. Consequently, the copies of the programs that were made were the result of the *subscribers’* actions, and not Cablevision’s, just as they would on a rented DVR. And the performance that resulted when a subscriber played back that recording, even if it could be attributed to Cablevision,¹⁹ was a *private* performance, not a public one, because only the subscriber could receive it. In particular, the *Cablevision* court concluded that “because the RS-DVR system, as designed, only makes transmissions to one subscriber using a copy made by that subscriber, we believe that the universe of people capable of receiving an RS-DVR transmission is the single

13. *Am. Broad. Cos. v. Aereo, Inc.*, 134 S. Ct. 2498, 2503 (2014).

14. *See WNET, Thirteen v. Aereo, Inc.*, 712 F.3d 676, 691-92 n.13 (2d Cir. 2013).

15. *Aereo*, 134 S. Ct. at 2503.

16. 536 F.3d 121 (2d Cir. 2008).

17. *Id.* at 124.

18. *Id.* at 124-25.

19. The *Cablevision* court did not reach the question, addressed by the Supreme Court in *Aereo*, of who might be responsible for the performance. *See id.* at 134.

subscriber whose self-made copy is used to create that transmission.”²⁰

Aereo similarly designed its system to create unique copies of works, captured with a single, tiny antenna assigned to one subscriber at a time; stored in individually allocated server space at the direction of the subscriber; and retransmitted only to that subscriber upon the subscriber’s request.²¹ And it made available to its subscribers only broadcast channels available over the air at their service address.²² Nevertheless, within a month after its launch, several broadcast television stations sued Aereo and requested a preliminary injunction.²³ The preliminary injunction motion, however, focused only on a single aspect of Aereo’s business: its “Watch” service, under which subscribers could choose to watch broadcast television programs nearly live, streamed from the subscriber’s DVR storage space only a few seconds after the recording had commenced.²⁴ The key issue was whether that nearly live transmission, initiated by the subscriber using a service set up and maintained by Aereo, was a “public performance” under the 1976 Act. The district court and the Second Circuit, citing *Cablevision*, held that it was not.²⁵ But the Supreme Court had yet to rule on the issue and indeed had not ruled on the definition of public performances since before the 1976 Act passed.²⁶ The question

20. *Id.* at 137.

21. *Am. Broad. Cos. v. Aereo, Inc.*, 134 S. Ct. 2498, 2503 (2014).

22. *Id.* Aereo’s decision to limit subscribers to those living within the broadcast service areas of the television stations constrained its revenues, but allowed it to make an argument that it was entitled to a compulsory license under § 111. *See id.* at 2506. Unfortunately for Aereo, a Second Circuit panel and the Copyright Office had previously rejected that argument, *see WPIX, Inc. v. IVI, Inc.*, 691 F.3d 275, 282, 284 (2d Cir. 2012), and by the time Aereo seriously pursued it—after the Supreme Court decision—it was too late. Aereo folded in November 2014. *See Joe Mullin, After a 3-Year Copyright Battle, Aereo Gives Up the Ghost*, ARS TECHNICA (Nov. 21, 2014, 10:37 AM), <http://arstechnica.com/tech-policy/2014/11/after-long-court-fight-aereo-files-for-bankruptcy/>.

23. *See Stelter, supra* note 12; *Am. Broad. Cos. v. Aereo, Inc.*, 874 F. Supp. 2d 373, 375-76 (S.D.N.Y. 2012).

24. *See Aereo*, 874 F. Supp. 2d at 376-77.

25. *See id.* at 375; *WNET, Thirteen v. Aereo, Inc.*, 712 F.3d 676, 680 (2d Cir. 2013).

26. The Court’s last pronouncement on the issue was *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151 (1975), holding that a fast-food restaurant did not “perform” musical works by tuning an ordinary radio connected to four speakers. *Id.* at 162.

before the Court had two components to it: What is a “performance,” and what does it mean for a performance to be “public”?

A. Retransmission as Performance

The traditional copyright question at issue in *Aereo*—what actions constitute a public performance—has a long history that is only partly captured in the opinion. That history dates all the way back to the 1910s, shortly after the public performance right for musical works was adopted.²⁷ A public performance right is a way of measuring the commercial value of a work when that value is not well correlated to the number of copies of the work that are made. Scripts for plays are a good example; the same number of copies may generate either very little revenue, if the play is a flop, or a great deal of revenue if it is a blockbuster, and both playwrights and theater producers are often unable to predict in advance which it will be. A public performance right lets the copyright owner share in the profit to the degree the work is successful. Music began to take on similar characteristics at the turn of the twentieth century, when the playing of music turned from being a pastime for family pianists to part of an emerging mass culture.²⁸ The popularity of a song for playing on pianos in the home could be measured in copies sold, but the popularity of a song that captured the zeitgeist so thoroughly it was played everywhere could not.

Although seemingly an incremental extension of copyright for musical works, the addition of the public performance right unleashed a sea change in copyright practice. Copyright broke free of the domain of publishers, printers, novelists, and theaters, and suddenly became a concern for hotel owners, nightclub owners, dance halls, restaurateurs, and many others who had never had to worry about copyright licenses before.²⁹ Those proprietors found the sudden shift in copyright’s scope difficult to accept, and their resistance set off an arms race of sorts.³⁰ Business owners tried to

27. Copyright Act of 1909, Pub. L. No. 60-349, ch. 320, § 1(e), 35 Stat. 1075, *repealed by* Act of Oct. 19, 1976, Pub. L. No. 94-553, 90 Stat. 2541 (codified at 17 U.S.C. §§ 101-810 (1976)).

28. This transformation is explained in DAVID SUISMAN, *SELLING SOUNDS: THE COMMERCIAL REVOLUTION IN AMERICAN MUSIC* 9-11 (2009).

29. *See, e.g.*, *Herbert v. Shanley Co.*, 242 U.S. 591, 593-94 (1917) (holding that music played for ambience in a restaurant is a performance “publicly for profit”).

30. SUISMAN, *supra* note 28, at 170-75.

find ways of evading the need for a license, such as delegating music selection to independent contractors, and music publishers and courts in turn fortified other doctrines, such as secondary liability, to compensate.³¹ By the late 1930s, business owners prevailed upon several state legislatures to attempt to ban performance license enforcement, with mixed success.³²

The public performance right for music was disruptive in another way, one that did not become apparent until the 1920s. The demarcation line for incurring copyright liability was until then fairly thick. In the nineteenth century, direct infringers were liable only for publishing or printing material that copied from another, or for producing an infringing play.³³ In other words, infringement took substantial time, money, and effort, and it consisted for the most part of acts of production. But the public performance right in music could be infringed by anyone who knew how to play a piano. Infringement could consist simply of acts of communication.³⁴ And by the 1920s, it could be accomplished by anyone who knew how to flip a switch.

The occasion for this debate was the early twentieth century's revolutionary technology: radio. Courts almost immediately held that *broadcasting* musical works was a public performance for profit.³⁵

31. The history is recounted in *Shapiro, Bernstein & Co. v. H.L. Green Co.*, 316 F.2d 304, 307-09 (2d Cir. 1963). The vast majority of the cases cited in *Shapiro, Bernstein* date from the 1920s, 1930s, and 1940s. *Id.* at 305-09.

32. The Supreme Court held in *Watson v. Buck*, 313 U.S. 387, 394-95, 404-05 (1941), that such laws were not preempted, but their impact was muted when federal courts refused to dismiss infringement actions in federal court based upon alleged violations of state laws. *See Interstate Hotel Co. v. Remick Music Corp.*, 157 F.2d 744, 747-49 (8th Cir. 1946); *Leo Feist, Inc. v. Young*, 138 F.2d 972, 975-76 (7th Cir. 1943); *Leo Feist, Inc. v. Demarie*, 16 F. Supp. 827, 828 (W.D. La. 1935). This feud between business owners and music publishers has not yet received a full account in modern scholarship.

33. Act of July 8, 1870, ch. 230, § 86, 16 Stat. 198, 212 (granting copyright owners “the sole liberty of printing, reprinting, publishing, completing, copying, executing, finishing, and vending the same; and in the case of a dramatic composition, of publicly performing or representing it, or causing it to be performed or represented by others; and authors may reserve the right to dramatize or to translate their own works”).

34. Performance by a human player, such as a musician, singer, or actor, also involves acts of interpretation and creation that make precise delineation of the relationship between the work and a performance of the work difficult. *See* Rebecca Tushnet, *Performance Anxiety: Copyright Embodied and Disembodied*, 60 J. COPYRIGHT SOC'Y U.S.A. 209, 210 (2013).

35. *See M. Witmark & Sons v. L. Bamberger & Co.*, 291 F. 776, 780 (D.N.J. 1923).

What about *receiving* music played over the air? Playing a musical instrument, even a player piano, allows some opportunity to control the selection of songs or the choice of whether to play music at all; but tuning a radio does not. But if the public performance right did not apply, then a bar or restaurant owner could easily avoid the result of cases such as *Herbert v. Shanley Co.*³⁶ by tuning in to a licensed radio station.

The Supreme Court resolved this dispute, to some extent, in its 1931 decision in *Buck v. Jewell-LaSalle Realty Co.*³⁷ The unanimous Court, in an opinion written by Justice Brandeis,³⁸ rejected the contention that receiving a radio broadcast is not a performance. The case involved a hotel owner who had wired its building with speakers and connected them to a radio receiver. On at least some occasions it tuned the radio to a station that played certain songs in the ASCAP catalog without a public performance license. The hotel owner argued that, by merely tuning a radio, it had not “performed” under the Act, let alone performed “publicly for profit.” But the Court rejected this argument.³⁹ It was unmoved by the argument that the copyright owner had a sufficient remedy against the broadcaster, because nothing in the statute limited the public performance right to a single contemporaneous performance,⁴⁰ although the Court reserved the question of whether a license might be implied if the broadcast had been authorized. The Court found it immaterial that a radio owner does not get to select the songs, because neither does a dance hall owner who hires a band.

The *Jewel-LaSalle* Court also rejected the analogy that a recipient of a radio broadcast is merely a type of listener to the original performance, rather than itself a performer, for two reasons. First, the Court observed that the hotel was not simply helping listeners to hear a performance they were already receiving, for example by amplifying faint sounds; it was providing them with a performance that was otherwise beyond their abilities to receive.⁴¹

36. 242 U.S. 591, 593-95 (1917).

37. 283 U.S. 191 (1931).

38. *Id.* at 195. Justice Brandeis’s opinion reveals a good grasp of the underlying technology, a technology that was essentially the Internet of its time. *See id.* at 199-201.

39. *Id.* at 198.

40. *Id.* (“[N]othing in the [A]ct circumscribes the meaning to be attributed to the term ‘performance,’ or prevents a single rendition of a copyrighted selection from resulting in more than one public performance for profit.”).

41. *See id.* at 200-01 (analogizing conveying performance by radio to conveying performance by phonograph).

Second, the hotel's acts in piping the broadcast throughout its building revealed that it had its own purpose beyond enabling "better hearing of the original program."⁴² The hotel was not assisting listeners in hearing music that they had chosen to hear; rather, the relevant choices—whether to listen to music at all, and if so what station—were being made by the hotel. "There is no difference in substance," the Court concluded, "between the case where a hotel engages an orchestra to furnish the music and that where, by means of the radio set and loud-speakers here employed, it furnishes the same music for the same purpose. In each the music is produced by instrumentalities under its control."⁴³ The *Jewell-LaSalle* Court thus appeared to embrace a notion of performance as either involving a certain amount of translation in conveying copyrighted works, such as converting from radio waves to sound, or perhaps a certain purpose for the conveyance—the conveyance of radio as a substitute form of providing music. One might call this the "translation test" and the "control test" for what constitutes a performance.

Three decades after *Jewell-LaSalle*, the Court shifted to the opposite view: Mere conveyance, no matter what form it took or for what purpose, was not enough. In *Fortnightly Corp. v. United Artists Television, Inc.*,⁴⁴ the Court was faced with yet another new technology, cable television. The cable system at issue in *Fortnightly* was an early one; it merely used an antenna to pick up broadcast television signals, which it retransmitted to its customers' receiving sets over wires. The Court could therefore have distinguished *Jewell-LaSalle* on the basis of both the "translation test" and the "control test." The hotel owner in *Jewell-LaSalle* did more than simply retransmit the signal; it used its own equipment to choose the particular station, receive its transmissions, and convert them to audible sound as a substitute for live music. *Fortnightly*, by contrast, merely carried signals to its customers and let *them* select the station to be tuned, or whether any station would be tuned at all. It was, in *Jewell-LaSalle*'s terms, merely aiding its subscribers' television sets in "listening" to broadcast signals.

But instead, the *Fortnightly* Court essentially overruled *Jewell-LaSalle*.⁴⁵ In the *Fortnightly* Court's view, receiving a broadcast does

42. *Id.* at 201.

43. *Id.*

44. 392 U.S. 390 (1968).

45. Specifically, *Jewell-LaSalle* was "limited to its own facts;" namely, that the radio station in that case did not have a public performance license. *Id.* at 397 n.18. Since broadcasters without performance licenses are rare, and the existence of

not perform it, no matter what the circumstances are. Rather, a performance is a communication between two parties, a speaker and a listener, and only the speaker is a performer. And in order to qualify as a speaker, some degree of choice over the content is necessary: “The broadcaster selects and procures the program to be viewed. . . . He then converts the visible images and audible sounds of the program into electronic signals, and broadcasts the signals at radio frequency for public reception. . . . Broadcasters perform. Viewers do not perform.”⁴⁶

Jewell-LaSalle had rejected the defendant’s argument that some amount of choice over the content is necessary for a performance, because, the Court held, selecting a radio station is equivalent in terms of choice to hiring a band.⁴⁷ *Fortnightly*, however, made the absence of choice over the particular content critical.⁴⁸ This was made clear six years later, in *Teleprompter Corp. v. Columbia Broadcasting System, Inc.*,⁴⁹ when the Supreme Court held that even importing distant television signals—those beyond the range of reception with antennas—would not be held to be a performance.⁵⁰ Once again, the debate centered on the correct functional analogy. The dissent found the importation of remote television station signals to be “[i]n any realistic practical sense . . . performing a broadcast function.”⁵¹ But the majority opinion, again written by Justice Stewart, found “reception and rechanneling of these signals for simultaneous viewing,” no matter what the distance, to be “essentially a viewer function.”⁵² Critical to this determination was the majority’s conclusion that the cable operators did not exercise sufficient choice over the content to turn conveyance into performing: “Even in exercising its limited freedom to choose among

an upstream license is irrelevant to determining whether tuning a radio is performing, this was tantamount to overruling *Jewell-LaSalle*. See *id.* at 406 n.5 (Fortas, J., dissenting).

46. *Id.* at 397-98 (majority opinion) (footnotes omitted).

47. This analogy seems flawed; the *Jewell-LaSalle* Court appeared to conflate direct and secondary liability. In the restaurant or nightclub example, either the band members are employees of the owner, in which case their choices of music are attributable to their employer, or the band members are independent contractors, in which case the owner is not directly liable at all for their performances, but is at most indirectly liable for providing the means or opportunity to infringe.

48. *Id.* at 400-01.

49. 415 U.S. 394 (1974).

50. *Id.* at 408.

51. *Id.* at 417 (Douglas, J., dissenting).

52. *Id.* at 408 (majority opinion).

various broadcasting stations, a CATV operator simply cannot be viewed as ‘selecting,’ ‘procuring,’ or ‘propagating’ broadcast signals as those terms were used in *Fortnightly*.⁵³ In terms of the two tests used in *Jewell-LaSalle*, “translation” was irrelevant, and the type of “control” required was control over the content, not control over the signal.

That was the state of the law when Congress passed the Copyright Act of 1976. Although most of the text of the 1976 Act was finalized in 1964,⁵⁴ debate over several provisions delayed final passage of the revision bills. How copyright should treat cable television retransmission had been a particular sticking point.⁵⁵ The solution Congress finally arrived at was to define “perform” incredibly broadly, define “publicly” somewhat more narrowly, and limit the impact of the public performance right through exceptions⁵⁶ and a compulsory license for cable operators,⁵⁷ subject to whatever the Federal Communications Commission might do to regulate the relationship between cable and broadcast television.⁵⁸

Congress’s definition of “perform” entirely abandoned the distinction drawn in *Fortnightly* between speaking and listening, and indeed even the “control test” from *Jewell-LaSalle*. “To ‘perform’ a work,” according to the 1976 Act, is “to recite, render, play, dance, or act it, either directly or by means of any device or process or, in the case of a motion picture or other audiovisual work, to show its images in any sequence or to make the sounds accompanying it audible.”⁵⁹ Any act of “rendering” or “playing” a work using a device, whether for purposes of viewing or not, is a performance under the Copyright Act. And the definition of “perform . . . ‘publicly’” makes clear that transmissions are themselves performances—if they were not, then there would have been no need to define when such transmissions are *public* performances. And

53. *Id.* at 410.

54. Compare H.R. 11947, 88th Cong. (1964), and S. 3008, 88th Cong. (1964), with Act of Oct. 19, 1976, Pub. L. No. 94-553, 90 Stat. 2541, 2598-600 (codified at 17 U.S.C. §§ 101-810 (1976)).

55. See *Fortnightly Corp. v. United Artists Television, Inc.*, 392 U.S. 390, 402 n.33 (1968); *id.* at 403 (Fortas, J., dissenting).

56. See 17 U.S.C. §§ 110, 114(a), 116, 118(c).

57. See *id.* § 111.

58. The House Judiciary Committee report specifically cautioned the FCC “not to rely upon any action of this Committee as a basis for any significant changes in the delicate balance of regulation in areas where the Congress has not resolved the issue.” H.R. Rep. No. 94-1476, at 89 (1976).

59. 17 U.S.C. § 101 (setting out the definition of “perform”).

there would also have been no need for § 111 of the Copyright Act, which provides a compulsory license for cable operators for the programs they retransmit from over-the-air broadcast stations.⁶⁰ The House Judiciary Committee report, long regarded as the authoritative guide to interpreting the 1976 Act,⁶¹ confirms the breadth of the definition of performance, offering as examples that:

a singer is performing when he or she sings a song; a broadcasting network is performing when it transmits his or her performance . . . ; a cable television system is performing when it retransmits the broadcast to its subscribers; and any individual is performing whenever he or she . . . communicates the performance by turning on a receiving set.⁶²

“Performance” under the 1976 Act thus depends only on the “translation” test from *Jewell-LaSalle*—performance is an activity by which a work is converted from one form to another for contemporaneous conveyance to an audience. There have been very few litigated disputes after the 1976 Act over what constitutes a performance; most of the time when there is a dispute over a public performance, the issue is whether it is sufficiently “public.”⁶³ Indeed, even in *Aereo*, despite Justice Scalia’s professed skepticism that Congress really meant to overrule *Fortnightly* and *Teleprompter*,⁶⁴ there was actually no dispute on the question of performance. The *Aereo* Watch service, Justice Scalia concluded, “undoubtedly results in a performance.”⁶⁵ The question, however, “is *who* does the performing.”⁶⁶ That is the question on which the majority and the dissent actually split, and it represents not a reemergence of the old *Jewell-LaSalle* versus *Fortnightly* debate, but rather an entirely new

60. 17 U.S.C. § 111(d) (2012).

61. See *Am. Broad. Cos. v. Aereo, Inc.*, 134 S. Ct. 2498, 2505-06 (2014). Justice Scalia, dissenting in *Aereo*, characterized the House Judiciary Committee report as merely “a single report issued by a committee whose members make up a small fraction of one of the two Houses of Congress.” *Id.* at 2515 (Scalia, J., dissenting). Whatever the merits of Justice Scalia’s views on legislative history for more modern enactments, cf. David Nimmer, *Appreciating Legislative History: The Sweet and Sour Spots of the DMCA’s Commentary*, 23 CARDOZO L. REV. 909, 913-14, 990 (2002), applying that view to the 1976 Act would overturn four decades of judicial practice on how to interpret the Act.

62. H.R. Rep. No. 94-1476, at 63.

63. See, e.g., *Aereo*, 134 S. Ct. at 2507-08 (majority opinion).

64. See *id.* at 2515 (Scalia, J., dissenting) (citing *Teleprompter Corp. v. Columbia Broad. Sys., Inc.*, 415 U.S. 394 (1974); *Fortnightly Corp. v. United Artists Television, Inc.*, 392 U.S. 390 (1968)).

65. *Id.* at 2512.

66. *Id.*

debate that extends well beyond copyright law: When are humans responsible for what a programmed machine does?

B. Retransmission to the Public

Before addressing the volition issue, however, there is a second component of the traditional debate to consider. Having defined “perform” so broadly in the 1976 Act, Congress inserted a definition of “publicly” that would limit the application of the public performance right. That definition has two components: a clause for performances occurring in physical spaces and a clause for performances that are electronically transmitted. Under the first clause, a performance is public if it is made “at a place open to the public or at any place where a substantial number of persons outside of a normal circle of a family and its social acquaintances is gathered.”⁶⁷ While the second half of this clause bases the publicness of the performance in part on the size of the audience, the first does not—a performance is public if it is made at Grant Park with only a handful of strangers present.⁶⁸

The second clause is the one at issue in cases such as *Aereo* and *Cablevision*. Under the second clause, to “publicly perform” means:

to transmit or otherwise communicate a performance . . . of the work to a place specified by clause (1) or to the public, by means of any device or process, whether the members of the public capable of receiving the performance . . . receive it in the same place or in separate places and at the same time or at different times.⁶⁹

This second clause is a bit confusing, to say the least, because it defines a performance as including a transmission of some other performance, and provides that the transmission is a public performance if the underlying performance is “to the public.” This leaves it somewhat unclear what that underlying performance is.

67. 17 U.S.C. § 101 (1976).

68. The close cases under the first clause involve some sort of space that is temporarily rented out to members of the public. *See* *Columbia Pictures Indus., Inc. v. Redd Horne, Inc.*, 749 F.2d 154, 156-57 (3d Cir. 1984). Is that a place open to the public, because anyone can rent it, or a private space, because once it has been rented, no one else may enter? Courts have essentially determined that it depends on the purpose of the rental; if the primary purpose of the rental is to watch a performance, then it is a place open to the public, and if not, then it is private. *Compare* *Redd Horne, Inc.*, 749 F.2d at 159, *and* *Columbia Pictures Indus., Inc. v. Aveco, Inc.*, 800 F.2d 59, 64 (3d Cir. 1986), *with* *Columbia Pictures Indus., Inc. v. Prof'l Real Estate Investors, Inc.*, 866 F.2d 278, 282 (9th Cir. 1989).

69. 17 U.S.C. § 101.

In the *Cablevision* case, the networks argued that the underlying performance was the transmission of the copyrighted program by the networks to Cablevision, and since any of Cablevision's RS-DVR subscribers who recorded it were capable of receiving that performance of the program, the performance those subscribers received was "to the public."⁷⁰ Cablevision, however, argued that the underlying performance was the rendering of a particular *copy* of the program, and that therefore, since only a single subscriber could receive the rendering of that copy, then the performance was not "to the public."⁷¹ The Second Circuit agreed with Cablevision, concluding that the networks' argument led to an absurd result: If a copyright owner simultaneously transmits a program to two different recipients, one of whom retransmits it to its subscribers and the other of whom merely retransmits the program to itself, both are engaged in "public performances," since members of the public were able to receive the original transmission.⁷² This, the Second Circuit concluded, "obviates any possibility of a purely private transmission."⁷³

But the Second Circuit's interpretation has oddities as well. It limits public performances by transmission to broadcasts and sequential playback from a single copy, even though no such limitation is implied by the text of the Act.⁷⁴ If the creation of another copy is all it takes to turn a public performance into a private one, then the public performance right is incredibly simple to evade for subscription services. For example, a cable company or a web-streaming company could simply add an automatic two-second buffer before every stream or on every subscriber's line, and the performance would no longer be public under the Second Circuit's definition. And a copy is no more an obvious source for an underlying "performance" than a prior transmission is.

70. *Cartoon Network LP, LLLP v. CSC Holdings, Inc.*, 536 F.3d 121, 136 (2d Cir. 2008).

71. *Id.* at 135.

72. *Id.* at 136. This criticism can be evaded if the focus is put on the audience for the performance embodied in a particular transmission, namely, the network's transmission to Cablevision. But the problem then becomes one of justifying why that choice of focus is not arbitrary.

73. *Id.*

74. *See* 17 U.S.C. § 101. For example, it would surely be a public performance for a group of cable operators to purchase thousands of copies of a DVD, set up a circulating library, and operate an unlicensed video-on-demand service by showing them one at a time to paying subscribers.

The majority opinion in *Aereo* resolved this debate by abandoning the search for a single, identifiable underlying public performance embodied in transmissions. In ordinary usage, a “performance” can refer to a “set of actions,” not simply a single rendering from a particular copy.⁷⁵ Indeed, interpreting “performance” as meaning a particular occasion on which a copy is played back would be inconsistent with the statute, which clearly envisions a single performance being transmitted “at different times.”⁷⁶ The *Aereo* majority held that transmissions of a single work can be traced to the same “performance,” for purposes of § 101 of the Copyright Act, if those transmissions are associated with a single “device or process.”⁷⁷ According to the Court, “retransmitting a television program using user-specific copies is a ‘process’ of transmitting a performance.”⁷⁸ *Aereo*’s entire setup, then, was a performance because it was a single process for retransmitting the programs it received over the air. Defined that way, the transmission was “to the public” because *Aereo*’s subscribers that had selected the particular program to record were “capable of receiving” it, and that group constituted “a large number of people who are unrelated and unknown to each other”—in other words, members of the public.⁷⁹

As with the question of whether there was a performance, there was no disagreement among the justices on whether the performance was public; Justice Scalia’s dissent did not even reach the issue.⁸⁰ Rather, the Justices split on a much more difficult question; namely, just whose performance was it?⁸¹ And on that question, both opinions failed to grapple fully with the implications of their analysis.

II. THE NEW PROBLEM: WHO PERFORMS AN AUTOMATED TRANSMISSION?

The issue on which *Aereo* turned actually had no necessary connection to public performances. Rather, the issue is how copyright law should treat automation. In particular, courts are

75. *Am. Broad. Cos. v. Aereo, Inc.*, 134 S. Ct. 2498, 2509 (2014).

76. *Id.* (quoting 17 U.S.C. § 101).

77. *Id.*; see also 17 U.S.C. § 101 (providing the definition of “transmit”).

78. *Aereo*, 134 S. Ct. at 2509.

79. *Id.* As noted above, however, the size of the potential audience is irrelevant to a determination of whether the performance is “to the public,” since the public can consist of one person unrelated to the performer. See *supra* Section I.B.

80. See *Aereo*, 134 S. Ct. at 2514 n.3 (Scalia, J., dissenting).

81. See *id.* at 2512.

increasingly being asked to rule on the liability of service providers or device manufacturers who program a machine with the capability to respond to user inputs in certain ways. This issue had its origin in the 1970s, when copyright liability for machine-made copies first arose as an issue,⁸² but it has assumed greater urgency beginning in the 1990s with the rise of automated computer servers. The *Aereo* case represents the first time the Supreme Court has addressed, in the copyright context, the extent of a company's *direct* liability for what its machines do.⁸³

A. The *Aereo* Case

Aereo set up a system that connected hundreds of antennas to digital broadcast television tuners, which in turn *Aereo* programmed to automatically send at a subscriber's request broadcast television programs to certain space set aside on its servers.⁸⁴ Subscribers were then given allocated space on *Aereo*'s servers and provided with the ability to send commands to the server to redirect programs to that space, or play them back from that space. Once set up, *Aereo*'s engineers merely maintained the system, but no human employee of *Aereo* had to intervene when subscribers requested programs to be recorded or streamed.⁸⁵

Aereo thus clearly had some involvement in the resulting recordings and playbacks, but then so does every equipment manufacturer or service provider whose equipment is used to make copies or stream content. Dropbox has some involvement in subscriber's ability to store and stream videos from their storage space on its servers. A photocopy shop has some involvement in customers' making of copies. Napster had some involvement in the ability of its users to make and send copies of sound recordings. In general, the question is, when Party *A* sets up and maintains an automated service, and Party *B* uses it, who is "doing" the actions

82. See *Williams & Wilkins Co. v. United States*, 487 F.2d 1345, 1346-47 (Ct. Cl. 1973), *aff'd by an equally divided court*, 420 U.S. 376 (1975) (per curiam); *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 419 (1984).

83. Both *Sony*, 464 U.S. at 419, and *Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd.*, 545 U.S. 913, 929-30 (2005), concerned the defendants' *indirect* liability for their users' actions.

84. See *Am. Broad. Cos. v. Aereo, Inc.*, 874 F. Supp. 2d 373, 378 (S.D.N.Y. 2012).

85. See *id.* at 377-79.

that the service performs? There is a spectrum of possibilities to choose from:

- (1) *A*, the person who set up the machine, is responsible;
- (2) *B*, the person who gave the commands to the machine, is responsible;
- (3) Both *A* and *B* are responsible for what the machine does;
- (4) No one is responsible for what the machine does.⁸⁶

It may be difficult to determine for a particular situation which of these categories applies. But the *criteria* for making that decision should be easier to identify. In *Aereo*, the majority and the dissent evidently used different criteria because they arrived at different outcomes. Justice Breyer's majority opinion placed Aereo under either category 1 or category 3—Aereo is “acting” in the sending of transmissions, and the opinion left open whether the subscribers are also acting, although presumably they are.⁸⁷ The critical question for the majority is what other services—for example, remote storage services—might also satisfy those criteria. Justice Scalia selected category 2—only the subscribers act when the transmissions are sent.⁸⁸ The challenge for the dissenting view is the opposite: whether there is any automated service that *would* satisfy the criteria for categories 1 or 3, or whether automation in effect entails immunity from direct infringement liability.

Justice Breyer's majority opinion states repeatedly that at least one criterion placing a service into category 1 or 3 is the presence of some sort of quality that cable companies have.⁸⁹ Unfortunately, the opinion is less than forthcoming about what that quality might be, only that Aereo has it. The majority opinion repeatedly states that what drives Aereo's liability in this case is its “overwhelming likeness to the cable companies targeted by the 1976 amendments,”⁹⁰ or “the many similarities between Aereo and cable companies.”⁹¹ Whatever the relevant similarities may be, the majority found it did “not make a critical difference here” that Aereo's subscribers, and not Aereo, select the particular content to be performed, because it

86. This spectrum is similar to the one laid out by Pamela Samuelson to answer the somewhat-related question of who authors the output of a computer program. See Pamela Samuelson, *Allocating Ownership Rights in Computer-Generated Works*, 47 U. PITT. L. REV. 1185, 1190 (1986).

87. See *Aereo*, 134 S. Ct. at 2507 (majority opinion).

88. See *id.* at 2514 (Scalia, J., dissenting).

89. See *id.* at 2507 (majority opinion).

90. *Id.*

91. *Id.*

was functionally identical to turning a knob on a television set to tune to a particular channel.⁹² The fact that in the cable context the signal was constantly present in the wire, waiting to be tuned and demodulated, whereas for Aereo's Internet service the transmission did not begin until the subscriber initiated it with a mouse click, was irrelevant. The difference was "invisible to subscriber and broadcaster alike" and consequently did not "transform a system that is for all practical purposes a traditional cable system into" what Justice Scalia colorfully described as "'a copy shop that provides its patrons with a library card.'"⁹³

This argument has been widely characterized, including by Justice Scalia's dissent, as "Aereo looks a lot like a cable system, therefore it performs."⁹⁴ It seems haphazard to categorize a service based solely on its appearance to end users. But this may misunderstand the source of the majority's concern. If Aereo is *not* publicly performing through the operation of its service, then a trivial alteration to cable systems could make cable operators non-performers as well, which would defeat Congress's primary purpose in adding the transmit clause and § 111 of the Copyright Act. That is, given the two-way communications now possible over cable systems, it would be a simple matter to have a signal transmitted based on an automated response to a press of a button on the remote or to have the subscriber's service turned on after installation through an automated telephone menu. It seems precipitous for such minor acts of automation to have the legal consequence of entirely removing the cable operator's agency in transmitting programs.

Even if that was the majority's concern, however, it was vague about where the necessary agency for Aereo and cable systems alike comes from.⁹⁵ Nevertheless, toward the end of the opinion, the majority offered a few hints. The majority attempted to limit the scope of its opinion by declaring that its analysis did not extend to "[q]uestions involving cloud computing, [remote storage] DVRs, and other novel issues,"⁹⁶ although Justice Scalia is correct that at this

92. *Id.*

93. *Id.*

94. *Id.* at 2515 (Scalia, J., dissenting).

95. Justice Scalia's dissent is not only biting on this point, but on-target. See *id.* at 2516 ("Making matters worse, the Court provides no criteria for determining when its cable-TV-lookalike rule applies.").

96. *Id.* at 2511 (majority opinion) (quoting Brief for United States as Amicus Curiae Supporting Petitioners at 34, *Aereo*, 134 S. Ct. 2498 (No. 13-461)).

point we mainly have only the majority's word on that.⁹⁷ But it also tried to suggest a possible basis for distinguishing such other services, noting that a service might not be *performing* if the service is "primarily for something other than the transmission of copyrighted works, such as the remote storage of content," and would not be performing *publicly* if all the subscriber retrieved was content he or she had uploaded to the service him- or herself.⁹⁸ Together these caveats suggest that the operator's intent or the structure of the service might be relevant to determining if it, rather than just the subscriber, acted in transmitting content, but the *Aereo* majority did not explain itself further.

Justice Scalia's dissent was based on the volitional act requirement from *Religious Technology Center v. Netcom On-Line Communication Services, Inc.*⁹⁹ *Aereo* is not liable, Justice Scalia argued, because "when its subscribers log in, select a channel, and push the 'watch' button," it is not the one that sends the transmissions at issue; its users are.¹⁰⁰ But just as with the majority's argument, the difficulty for Justice Scalia is in identifying the reasons why that categorization of the situation is correct. Justice Scalia does not rely on an argument that it is simply the last person to press a button that determines whose volitional act caused the performance. Rather, he states repeatedly that what determines whether someone setting up a system to record and retransmit content has the necessary "volition" is whether that person "selects the copyrighted content."¹⁰¹ And *Aereo* does not exercise the requisite amount of choice over content to be liable for performing it, Justice Scalia concluded. Although *Aereo* decides what channels it will carry, it does not decide the programming on those channels, or whether any given subscriber will receive those programs. "The key point is that subscribers call all the shots: *Aereo*'s automated system does not relay any program, copyrighted or not, until a subscriber

97. See *id.* at 2517 (Scalia, J., dissenting).

98. *Id.* at 2511 (majority opinion).

99. 907 F. Supp. 1361, 1370 (N.D. Cal. 1995). Interestingly, Justice Scalia does not cite *Netcom*, which might indicate the novelty of the doctrine, but does cite a treatise. *Aereo*, 134 S. Ct. at 2512 (Scalia, J., dissenting) (citing 3 WILLIAM F. PATRY, PATRY ON COPYRIGHT § 9:5.50 (2013)).

100. *Aereo*, 134 S. Ct. at 2512.

101. *Id.* at 2513; see also *id.* (noting there is no liability for a copy shop where "the shop plays no role in selecting the content"); *id.* at 2514 ("In sum, *Aereo* does not 'perform' for the sole and simple reason that it does not make the choice of content."); *id.* at 2517 ("Because *Aereo* does not select the programs viewed by its users, it does not perform.").

selects the program and tells Aereo to relay it.”¹⁰² Justice Scalia analogized Aereo to a copy shop that also gives its customers a library card; that is, a service that provides the facilities to copy or perform and also provides access to a large array of content selected by someone else but does not itself choose what will be copied or performed.¹⁰³

There are two difficulties with this argument, however. One is that Aereo does make *some* choices about what content is available on its system and what its users will do with it, and that choice is greater than Justice Scalia lets on. The copy shop proprietor can hardly expect, even if its customers are given library cards, that a substantial number of them will choose to undertake the laborious task of photocopying even sections of books, let alone entire books. And even if they do, there is no telling what they might photocopy from the thousands of volumes a library holds. The selection of a single library is not much of a selection at all. But Aereo’s choices are far more limiting. Not only are there only fifteen broadcast television stations in New York City, broadcasting a total of approximately fifty programs at any one time, but the entire purpose of Aereo’s service is to record and retransmit those programs to subscribers.

That leads to the second difficulty, which is that Justice Scalia’s “selection” rule is simply a resurrection of *Fortnightly* and *Teleprompter*, the decisions Congress specifically set out to overrule in the 1976 Act.¹⁰⁴ Neither *Fortnightly* nor *Teleprompter*, nor any other traditional cable system, selected the over-the-air broadcast programs it retransmitted; at most, it selected the channels it carried, but then, so does Aereo. Justice Scalia, in a footnote, attempted to distinguish *Fortnightly* and *Teleprompter* on the basis of the fact that cable systems are constantly sending the signal carrying television programs, whereas a web-based server requires a request, which Justice Scalia concluded meant that the cable operator takes “affirmative volitional steps” in selecting the programming that Aereo does not.¹⁰⁵ But the basis for this distinction is opaque. *Fortnightly* and *Teleprompter* made exactly the same sort of choices that Aereo made in selecting the content available on their systems. All three set up a system that would allow users to select and watch

102. *Id.* at 2514.

103. *See id.*

104. *See id.* at 2505 (majority opinion).

105. *Id.* at 2515 n.5 (Scalia, J., dissenting).

programs of their choosing from a set of broadcast television channels chosen by the service provider, without any further input from the provider. The fact that cable systems work by propagating a signal to the subscriber's television set, which is received when the subscriber tunes to it, and Internet Protocol systems work by having the user's computer send a short "request" to the server before the packets are sent is utterly irrelevant to the sort of choices that each system operator makes in choosing the content available.

If a modern version of Fortnightly and Teleprompter existed, then under the dissent's theory in *Aereo*, it would not be performing and thus would not need any sort of license. But that would make § 111 of the Copyright Act pointless, as § 111 provides cable operators with a compulsory license for retransmitting broadcast television—a license they only would need if retransmission was infringing.¹⁰⁶ Justice Scalia's resolution of the dispute in *Aereo* is flatly inconsistent with the Act.

As a result, neither opinion in *Aereo* satisfactorily explains when the provider of an automated service is directly liable for what it does. Justice Breyer and Justice Scalia seem agreed that the service provider's choices matter; for Justice Breyer, it is the choices about what sort of service to offer, and for Justice Scalia, it is the choices about what content to transmit. But neither opinion gives sufficient guidance on when those choices will push someone over the threshold from not performing to performing.

B. The Path Forward

There may be a solution that avoids the slippery slope of finding storage sites to be publicly performing, but still gives effect to the Copyright Act's treatment of cable companies. That solution looks to both what Justice Breyer believed to be the criteria for finding a public performance—the ineffable "qualities" of a cable company—as well as Justice Scalia's preferred criterion, the exercise of choice over the content. What separates cable companies from other service providers, such as cyberlockers or ISPs, is that they select, as the sole source of content for redistribution, audiovisual works, and not just any audiovisual works, but works broadcast over the air by local television stations, most of which are copyrighted. What gives a cable company direct responsibility over even the automated responses of its system are the design choices it made in

106. *Id.* at 2506 (majority opinion).

selecting not only the particular type of content, but also a particular *source* for that content, and in putting it on a system where the expected use for that content is viewing by subscribers.

Those choices are minimal choices, to be sure, but copyright draws the line at a lot of minimal choices. The test for originality, for example, requires only “some creative spark, ‘no matter how crude, humble, or obvious’ it might be.”¹⁰⁷ While a selection of all broadcast programming in a given geographical area probably would not be copyrightable, the combination of that choice and the limited capabilities of the system the programming is placed on is enough to deem the sending of that content Aereo’s action. In any event, this appears to be the only interpretation of the Act that explains why cable companies are publicly performing, but not every company that streams a file will be.

And it is surprisingly similar to at least one of the tests Justice Louis Brandeis used in 1931 to determine if the defendant hotel in that case was performing: the “control” test. The control test from *Jewell-LaSalle* took account of the purpose of the hotel in both receiving the radio broadcast and in redistributing it throughout the hotel. The hotel was exercising sufficient control over the radio broadcast to make the music contained in that broadcast serve its distinct purpose, namely, to provide entertainment. Both the nature of the content it received from the radio station and the operation of the system it had set up were predictable enough to allow the hotel to use the act of tuning to the station to substitute for the conveyance of music, just as if it had “engage[d] an orchestra to furnish the music.”¹⁰⁸ Aereo similarly exercised control over both the source of the content and what could be done with it in order to offer what was essentially a cable television service—again, a form of entertainment. But storage sites such as Dropbox do not restrict their services to content produced by a particular source in a certain format,¹⁰⁹ and as a result, the content on their servers is not one that could reliably be used by Dropbox for the purpose of entertaining or informing its users. Even web hosts, which do provide services that are used to entertain or inform, do not meet the control test because they are not channeling content of a particular type from a particular

107. Feist Publ’ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 345 (1991) (quoting 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 1.08[C][1] (1990)).

108. *Id.* at 201.

109. Obviously, the source of any uploads is Dropbox’s subscribers, but that fact tells Dropbox little about what sort of content the uploads are.

source onto a system with limited and predictable functionality. It is that quality, and that series of choices, that distinguishes Aereo from other Internet services and brought it to more closely resemble a cable system.

There is an intriguing parallel between the dispute over Aereo and another emerging issue in copyright law: The issue of who *authors* a work that is in part generated by software. Is it the software developer, the user, neither, or both?¹¹⁰ It is an issue that extends well beyond copyright law and includes, for example, whether such computer-generated content is protected under the First Amendment, and if so, who can claim that protection.¹¹¹

As with the answer to the question of who is performing, the answer to the question of who is *speaking* or *authoring* seems to depend on the extent of the influence wielded by a putative author over the contents. Specifically, it depends on the extent to which the program constrains the user's options. If the software imposes very few constraints, then it is just a toolbox, and the user is clearly the source of any protected expression that results.¹¹² For example, when a user of a word-processing program creates a document using that program, the program developer is not an author of that document.¹¹³ But if the software provides only a limited set of options, put in the software by the software developer, then the source of the expression that results is more likely to be the software developer. For a non-electronic example, consider a Choose-Your-Own-Adventure story. Suppose such a story provides eighty-three different paths through the narrative. Even though that makes a Choose-Your-Own-Adventure story more complex than most narratives, each path was

110. See Samuelson, *supra* note 86, at 1187-91. This issue, dormant for a number of years, has recently begun receiving scholarly attention again. See Annemarie Bridy, *Coding Creativity: Copyright and the Artificially Intelligent Author*, 2012 STAN. TECH. L. REV. 5; Edward Lee, *Digital Originality*, 14 VAND. J. ENT. & TECH. L. 919, 920-21 (2012).

111. Interest in the First Amendment issue has also surged in the last two years. For recent entries to this debate, compare James Grimmelmann, *Speech Engines*, 98 MINN. L. REV. 868 (2014), with Andrew Tutt, *The New Speech*, 41 HASTINGS CONST. L.Q. 235 (2014).

112. I have developed this analysis further in a pair of blog posts. See Bruce E. Boyden, *Do Video Games Dream of Electric Speech?*, MARQ. U. L. SCH. FAC. BLOG (June 22, 2012), <http://law.marquette.edu/facultyblog/2012/06/22/do-video-games-dream-of-electric-speech/>; Bruce E. Boyden, *Speech by Proxy*, MARQ. U. L. SCH. FAC. BLOG (June 25, 2012), <http://law.marquette.edu/facultyblog/2012/06/26/speech-by-proxy/>.

113. Boyden, *Do Video Games Dream of Electric Speech?*, *supra* note 112.

conceived of and deliberately mapped out by the writer of the books in advance. The user's selection among them is not a significant enough amount of choice to turn the user into an author.

The public performance right under the 1976 Act works similarly. Where the user of a service is able to exercise relatively unconstrained choice over the content or how it is used, as the user of a storage site or a web hosting service does, then any acts of reproduction or performance are the user's, rather than the service's. But where the service operator has significantly constrained those choices, by limiting them to a particular type of content from a limited number of channels and confining their use to a limited number of functions, then the service provider has exercised enough agency to make the resulting reproductions or performances its own.

CONCLUSION

The Supreme Court in *Aereo* did not adopt the framework suggested above and thus did not develop any guidance for courts to apply to situations other than retransmission of broadcast television. But the issue of owner responsibility for the actions of automated services is certain to arise again, not only in copyright law but in other contexts as well, as Internet services become more sophisticated and ubiquitous. As frustrating as it may be for copyright lawyers, it is perhaps for the best that the Court, lacking the grasp of contemporary technology that Justice Brandeis possessed, provided only the result for this fact pattern, rather than principles to resolve the issue generally. In the meantime, in deciding whether the operator of an automated service is directly liable for acts undertaken by the service, lower courts would do well to focus on the extent of control wielded by the operator in selecting its inputs and directing its outputs.