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AI and the Sound of Music

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ABSTRACT. Today, artificial intelligence (AI) enables people to create music simply by using words—fulfilling the belief that music is a universal language. This Essay analyzes how courts and Congress should respond to AI's seismic disruptions to the music industry by applying three principles that have long facilitated the evolution of U.S. copyright law, particularly in response to new technologies: technology neutrality, expansive authorship, and rebalancing of copyright. Consumers, too, play an instrumental role in shaping the future of music by their choices of artists to support.

When you know the notes to sing, you can sing most anything.

— *The Sound of Music*[1]

[T]he electronic music synthesizer provides a powerful tool for the composer or musician because he can reproduce or create any sound or combination of sounds which have or have not been produced, that may have any musical significance.

— Harry F. Olson & Herbert Belar[2]

They did what? When? How? Are you sure?

— Snoop Dogg[3]

1. RODGERS & HAMMERSTEIN, *DO-RE-MI*, *on* THE SOUND OF MUSIC 1965 FILM SOUNDTRACK - 40TH ANNIVERSARY (Sony Music Can. 2007).

2. Harry F. Olson & Herbert Belar, *Electronic Music Synthesizer*, 27 J. ACOUSTICAL SOC'Y AM. 595, 611 (1955).

3. Snoop Dogg (@snoopdogg), INSTAGRAM (Apr. 20, 2024), https://www.instagram.com/reel/C5-Y4vauj3v [https://perma.cc/P27K-AG2X].

INTRODUCTION

In 2024, Drake released two new songs that caused a stir. Both targeted Kendrick Lamar, in their feud over bragging rights to being the best rapper.[4] "Push Ups,"[5] the first of Drake's "diss" tracks, was so raw—disparaging Lamar's height—that people thought it was an AI deepfake made by someone else.[6] Drake soon left no doubt it was his handiwork.[7] A few days later, Drake doubled down with another diss track, "Taylor Made Freestyle."[8] This time, Drake upped the ante by using AI-generated impersonations of the late Tupac Shakur (also known as "2Pac") and Snoop Dogg, both seeming to mock Lamar.[9] The AI voice clones had fans "shook."[10] After his phone "blew up" with people alerting him to Drake's song, Snoop Dogg posted a video, asking, "They did what? When? *How?* Are you sure?"[11] Then, he resignedly said, "I'm going back to bed. Goodnight."[12]

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4. The feud started when Kendrick Lamar released a song that mocked Drake and J. Cole's song that suggested they and Lamar were the "big three" rappers; Lamar retorted in his own song: "It's just big me." Chris Richards, *Is This Drake-Kendrick Beef Taking Low Blows to New Heights?*, WASH. POST (May 7, 2024, 3:01 PM EDT), https://www.washingtonpost.com/entertainment/music/2024/05/07/kendrick-lamar-drake-beef-analysis [https://perma.cc/62WZ-FTSX].

5. *See* PaperChaserDotCom, *Drake—Push Ups (Drop & Give Me 50) (Kendrick Lamar, Rick Ross, Metro Boomin Diss) (New Audio)*, YOUTUBE (Apr. 13, 2024), https://youtu.be/0-Lef69UP3I [https://perma.cc/TNW3-9E2Q].

6. *See* Althea Legaspi, *Drake's Response Track to Kendrick Lamar Has Officially Dropped*, ROLLING STONE (Apr. 13, 2024), https://www.rollingstone.com/music/music-news/drake-kendrick-lamar-diss-track-1235004188 [https://perma.cc/BGP2-2NW7]. A deepfake is "an image or recording that has been convincingly altered and manipulated to misrepresent someone as doing or saying something that was not actually done or said." *Deepfake*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/deepfake [https://perma.cc/D5T2-6QGD].

7. *See* Legaspi, *supra* note 6.

8. "Taylor Made Freestyle" is no longer available on official platforms because Drake pulled the song. *See infra* note 13. But third-party copies are still online. *See* HipHop Not Dead, *Drake – Taylor Made Freestyle ft. 2Pac (A.I.) & Snoop Dogg (A.I.) Music Video*, YOUTUBE (Apr. 20, 2024), https://www.youtube.com/watch?v=rLoHJc-BxlM [https://perma.cc/5YRT-HEVB].

9. *See* Matthew Strauss, *Drake Taunts Kendrick Lamar Again on Diss Song with AI 2Pac and Snoop Dogg Verses*, PITCHFORK (Apr. 20, 2024), https://pitchfork.com/news/drake-taunts-kendrick-lamar-again-on-diss-song-with-ai-2pac-and-snoop-dogg-verses [https://perma.cc/8BKA-57XQ].

10. *See* @doofinc_, X (formerly TWITTER) (Apr. 19, 2024, 11:37 PM), https://x.com/doofinc_/status/1781527492903280732 [https://perma.cc/TB9Z-RHH8] ("Drake is wild for using AI Tupac, Snoop Dogg, and Kendrick Lamar").

11. Snoop Dogg, *supra* note 3.

12. *Id.*

Snoop Dogg's reaction is one that many probably share. AI is disrupting the music industry in ways that will leave people wondering, *How?* How did AI simulate a real person's voice so convincingly that it is near impossible to tell it isn't real? How can AI create new music—so quickly and effortlessly—simply based on a person's text instructions? And, perhaps most confounding of all, how should we respond to these seismic disruptions?

2Pac's estate sent Drake a cease-and-desist letter asserting the right of publicity and copyright, which prompted Drake to take down the recording.[13] But copies of the AI clones posted by others remained on social media for all to hear.[14] Legal experts debated whether copyright law or the right of publicity would even prohibit the voice clones.[15] The incident increased the calls for Congress to confront deepfakes head-on.[16] By the summer of 2024, a bipartisan group of senators introduced the NO FAKES bill, which would, if enacted, create a "digital replication right," or "a new federal property right to authorize the use of [an individual's] voice or visual likeness."[17] The bill garnered widespread support from movie studios, music labels, and the Screen Actors Guild-American Federation of Television and Radio Artists.[18] According to *Variety*, Senator Chris Coons, the bill's sponsor, hoped to "get the bill out of committee and passed into

13. *See* Jon Blistein, *Drake Removes 'Taylor Made Freestyle' After Lawsuit Threat over AI Tupac*, ROLLING STONE (Apr. 26, 2024), https://www.rollingstone.com/music/music-news/drake-removes-taylor-made-freestyle-tupac-estate-legal-threat-1235011453 [https://perma.cc/5FEV-ZQXD]; Maya Chung, *Why Drake Had to Take Down His Song that Featured AI-Tupac Vocals*, TIME (Apr. 26, 2024, 6:00 PM EDT), https://time.com/6971720/drake-tupac-ai [https://perma.cc/2ZW4-JUUU].

14. *See supra* notes 5, 8.

15. *See* Greg Rosalsky, *It Was a Classic Rap Beef. Then Drake Revived Tupac with AI and Congress Got Involved*, NPR (May 14, 2024, 12:10 PM ET), https://www.npr.org/sections/money/2024/05/14/1250578295/it-was-a-classic-rap-beef-then-drake-revived-tupac-with-ai-and-congress-got-invo [https://perma.cc/6T37-B3JC].

16. *See id*. AI-generated deepfakes pose new risks of fraud, scams, and misinformation. *See* Dan Lohrmann, *Cybersecurity, Deepfakes and the Human Risk of AI Fraud*, GOV'T TECH. (June 12, 2024), https://www.govtech.com/security/cybersecurity-deepfakes-and-the-human-risk-of-ai-fraud [https://perma.cc/36RN-GUBE].

17. *Nurture Originals, Foster Art, and Keep Entertainment Safe (NO FAKES) Act of 2024: Section-by-Section*, OFF. OF SENATOR CHRIS COONS, https://www.coons.senate.gov/imo/media/doc/no_fakes_act_section-by-section.pdf [https://perma.cc/NT2X-T2QF].

18. Gene Maddaus, *Entertainment Industry Backs Bill to Outlaw AI Deepfakes*, VARIETY (July 31, 2024, 11:40 AM), https://variety.com/2024/politics/news/ai-bill-outlaw-no-fakes-sag-aftra-1236091652 [https://perma.cc/8UWH-SCN8].

law this year."[19] It was introduced in the House in September 2024,[20] although its prospects for passage remain uncertain.[21] Even if the bill becomes law, it would by no means address all the challenges that artists, songwriters, producers, and the music industry face with the advent of AI.[22]

Indeed, AI raises profound questions not only for the music industry, but also for the main regulatory framework that governs it: the copyright system. If AI fundamentally changes the ways in which people create music, will the music industry and the copyright system need to adapt? If so, how?

This Essay offers a conceptual framework for Congress and the federal courts to analyze and address these important questions. By drawing from the history of past innovations in music, Part I identifies three core principles that characterize copyright law's past acceptance of music innovations: (1) technology neutrality and the freedom of musicians to choose their instruments, including synthetic and computer-based ones; (2) an expansive and evolving approach to authorship that embraces a creator's use of machines or technology, as when a creator produces sound recordings and makes music using only synthetic instruments and software programs; and (3) the periodic rebalancing of the scope of copyright, with a careful consideration of competing interests, including the public interest. These principles further the goals of the Progress Clause in promoting both creation and innovation in the United States.

Part II analyzes how AI disrupts music creation and production. Applying the three core principles, this Part outlines how we should address several pressing controversies raised by AI, including the question of how to determine authorship when creators use AI and the problem of deepfake voices. Although the principles won't resolve all the challenges AI poses, they provide critical perspective, grounded in lessons drawn from more than two hundred years of the de-

19. *Id.*

20. Press Release, Off. of Rep. Madeleine Dean, Dean, Salazar Introduce Bill to Protect Americans from AI Deepfakes (Sept. 12, 2024), https://dean.house.gov/press-releases?id=997F4262-DA81-4C6A-B5B8-1606F8D9D870 [https://perma.cc/3YC2-GWYD].

21. *See* Craig Clough, *Future of Anti-Deepfake Federal Law Is Murky, Panel Says*, LAW360 (Nov. 12, 2024, 11:35 PM), https://www.law360.com/articles/2259966# [https://perma.cc/WTB7-W78C]. The Copyright Office's differing approach to the proposed scope of protection for and the type of exception to a digital replication right presents a major issue for Congress. *See infra* note 292 and accompanying text.

22. For Drake and Lamar, their feud continues. Upon the announcement that Lamar had been chosen as the headliner to perform at the 2025 Super Bowl Halftime Show, the artist dropped a song, which some interpreted as throwing shade at a supporter of Drake. *See DJ Akademiks Believes Kendrick Lamar Took Shots at Him in New Track 'Watch the Party Die*,' EXPRESS TRIB. (Sept. 12, 2024), https://tribune.com.pk/story/2495584/dj-akademiks-believes-kendrick-lamar-took-shots-at-him-in-new-track-watch-the-party-die [https://perma.cc/7CR7-Z58F].

velopment of copyright law and its treatment of past innovations in music. Ultimately, this Essay proposes that the music industry should embrace the freedom of musicians to choose to utilize (or not to utilize) AI in the creation of music, while the copyright system should valorize human contributions — over AI contributions — in the creation of new music.

I. PRELUDE: MUSIC IS FUELED BY INNOVATION

Before we consider the controversies raised by AI-generated music, it is crucial to understand the important role technological innovation has played in music — especially in spurring new instruments and modes for music creation, production, and dissemination that are now computer-based. This Part explains the history of music innovation and copyright law's general acceptance of it as a prelude to how we should address today's challenges raised by AI.

A. The Past Is Prologue: Innovations and Technologizing Music

The *New York Times* described a meeting of the American Institute of Electrical Engineers in which a demonstration of a new machine "astounded" its members.[23] "Astounding is indeed the only word for this machine," the *Times* raved.[24] This machine "can synthesize musical sounds which a trained ear cannot differentiate from records made by a good pianist."[25] But the aspirations of its creators were far bigger. "Sometime in the future," the *Times* reported, "it may be possible not only to synthesize any musical sound, or any sound which the ear can hear and the mind conceive, but to synthesize human speech with the peculiarities of individual speakers."[26]

The *Times* was not describing AI. Rather, the year was 1955, and the technology astounding Americans was an electronic music synthesizer.[27] The synthesizer was being developed by Dr. Harry F. Olson and Herbert Belar at the Acoustical and Electro-Mechanical Research Laboratory of the Radio Corporation of America (RCA).[28] The two engineers had the brilliant idea to turn music into a

23. Robert K. Plumb, *Electronic Synthesizer Produces Good Music and May Later Imitate Human Speech*, N.Y. TIMES, Feb. 6, 1955, at E9, E9.

24. *Id.*

25. *Id.*

26. *Id.*

27. *Id.*

28. *See id.*; Naomi Mitchell, *Hello Victor: History of the RCA MkII Sound Synthesizer*, PERFECT CIR. (June 16, 2023), https://www.perfectcircuit.com/signal/rca-mkii-synthesizer-history [https://perma.cc/5SPR-LFUJ].

computerized production. They even called one of their projects "the composing machine."[29] They developed a program to produce new hit songs based on a statistical analysis of the notes in existing songs; their program composed a new song by randomly selecting notes according to the statistical probabilities of those notes appearing in past songs.[30] To develop this program, the engineers analyzed the combination of elements in eleven songs written by Stephen Foster, known as the "father of American music," and then programmed their "composing machine" to generate new songs randomly, guided by the statistical probabilities of those elements appearing in Foster's past songs.[31] "The resulting music[,] while new, sounds like Stephen Foster music," the two researchers matter-of-factly concluded.[32]

Olson and Belar's composing machine sounds a lot like today's AI music generators, even down to the technique of generating new songs based on assigning

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29. *See* Harry F. Olson & Herbert Belar, *Aid to Music Composition Employing a Random Probability System*, 33 J. ACOUSTICAL SOC'Y AM. 1163, 1166 (1961).

30. *See* Mitchell, *supra* note 28.

31. Olson & Belar, *supra* note 29, at 1166. Their article does not explicitly say that they performed the statistical analysis, but, from their description of the "[e]lementary statistical analysis" that was "carried out on simple musical selections," I infer that the analysis was performed by humans. *Id.* at 1164. For more on Stephen Foster, see *The Lyrics and Legacy of Stephen Foster*, NPR (Apr. 16, 2010, 12:00 PM), https://www.npr.org/2010/04/16/126035325/the-lyrics-and-legacy-of-stephen-foster [https://perma.cc/67SV-DRAV].

32. Olson & Belar, *supra* note 29, at 1166. Olson and Belar's composing machine did not raise intellectual-property concerns. The copyrights to Stephen Foster's compositions, written between 1844 and 1869, expired by the time Olson and Belar conducted their experiment because the copyrights lasted a maximum of forty-two years. *See* Copyright Act of 1831, ch. 16, §§ 1-2, 4 Stat. 436, 436; *Foster's Complete Songs*, UNIV. PITT, https://library.pitt.edu/foster-songs [https://perma.cc/6JKD-XS8G]. Even states that recognize a postmortem right of publicity protect against *commercial* uses of a person's likeness. *See* David Tan, *Affective Transfer and the Appropriation of Commercial Value: A Cultural Analysis of the Right of Publicity*, 9 VA. SPORTS & ENT. L.J. 272, 273 (2010). It is unclear whether the two researchers were attuned to the potential intellectual-property issues a composing machine raised. In 1975, Olson envisioned that composers could use the composing machine based on their own music. *See Harry F. Olson: An Interview Conducted by Mark Heyer*, IEEE HIST. CTR. (July 14, 1975) [hereinafter *Olson Interview*], https://ethw.org/Oral-History:Harry_F._Olson [https://perma.cc/8J2N-XQ7U]. But the researchers' own experiment with Foster's music showed that third parties could use someone else's music with the composing machine. Whether the researchers chose Foster's music for their experiment due to the expired copyrights is unclear; the reason may also have been the widespread recognition of Foster's songs. *See* Paul Zollo, *Stephen Foster*, PERFORMING SONGWRITER (Jan. 13, 2015), https://performingsongwriter.com/stephen-foster [https://perma.cc/K245-XGYW]. Such recognition enabled them to test audiences to see if they could recognize whose music the machine-generated song sounded like. *See Olson Interview*, *supra*.

statistical weights to musical elements in past songs.[33] Indeed, the two engineers concluded their 1961 academic paper with a prescient comment: their "machine may be considered to be a halting step in the direction of systems for providing 'artificial intelligence.'"[34]

Olson and Belar's insight into how to produce a new song from past hits was clairvoyant. Remarkably, the two engineers recognized a key insight that music producers and the modern field of music psychology and neuroscience would later substantiate: humans respond to repetition of elements in music,[35] and, tapping into this human response, pop hits can be devised by identifying and then repeating some of these patterns or elements from past hits.[36] To borrow a line from Pharrell Williams in the notorious "Blurred Lines" case,[37] past music can be "reverse engineered" to study what worked — and to figure out what might work again.[38] That's why pop music sounds formulaic.[39] (Williams maintained

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33. *See* Kristin Houser, *New AI Music Generator Makes Songs from Text Prompts*, FREETHINK (Apr. 20, 2024), https://www.freethink.com/robots-ai/ai-music-generator-udio [https://perma.cc/6FN2-7DLB]; Olson & Belar, *supra* note 29, at 1163.

34. Olson & Belar, *supra* note 29, at 1170.

35. *See* ELIZABETH HELLMUTH MARGULIS, ON REPEAT: HOW MUSIC PLAYS THE MIND 15-16 (2014) (describing how listeners judge repetitive music as more enjoyable and more interesting); Tim Byron & Jadey O'Regan, *What Is It About Musical Hooks that Makes Them So Catchy?*, PSYCHE (May 15, 2023), https://psyche.co/ideas/what-is-it-about-musical-hooks-that-makes-them-so-catchy [https://perma.cc/HL9S-2F3J]; *see also* Olson & Belar, *supra* note 29, at 1166 (describing how "music follows certain general rules and patterns with many possible good answers"). In their 1955 article about the synthesizer, Olson and Belar sounded less certain about how to produce a hit. *See* Olson & Belar, *supra* note 2, at 608, 610 ("The hit-producing attributes are not amenable to analysis in the acoustical laboratory, so this factor must be left out."). But, their 1961 article demonstrated the ability to analyze and pattern a new song in the style of the hit songs of Stephen Foster. Olson & Belar, *supra* note 29, at 1166.

36. *See* Edward Lee & Andrew Moshirnia, *Does Fair Use Matter? An Empirical Study of Music Cases*, 94 S. CAL. L. REV. 471, 517-20 (2021).

37. The case — and song — are notorious on several levels. For an excellent summary, see Jayson Green, *"Blurred Lines," Harbinger of Doom*, PITCHFORK (Mar. 29, 2023), https://pitchfork.com/features/article/robin-thicke-blurred-lines-10-years-later [https://perma.cc/TMK7-RSLQ].

38. *See* Eriq Gardner, *Pharrell Williams Defends GQ Interview in Court*, HOLLYWOOD REP. (Feb. 3, 2020, 7:08 AM), https://www.hollywoodreporter.com/business/business-news/pharrell-williams-defends-gq-interview-court-1275724 [https://perma.cc/T456-R422] (explaining that Pharrell Williams admitted he "reverse engineers" feelings he gets from music and that he "did that in 'Blurred Lines' and got [himself] in trouble").

39. *See* Tom Barnes, *Scientists Just Discovered Why All Pop Music Sounds Exactly the Same*, MIC (Jan. 7, 2015), https://www.mic.com/articles/107896/scientists-finally-prove-why-pop-music-all-sounds-the-same [https://perma.cc/3CUD-L5B9]. Top music producers use the same "track-and-hook" method of trying to produce a hit song. *See* JOHN SEABROOK, THE SONG MACHINE: INSIDE THE HIT FACTORY 200 (2015).

that he simply captured the "feeling" of Marvin Gaye's "Got to Give It Up,"[40] but the jury ultimately found Williams's "Blurred Lines" infringing, despite the lack of any two consecutive notes common to both songs.[41]) Indeed, Max Martin, one of the most successful producers and songwriters, devised a strategy for making hit songs by following certain techniques in how to structure and sequence elements in a song.[42] Dubbed "melodic math," Martin's strategy bears out Olson and Belar's insight: the underlying elements and patterns of hit songs can be studied, isolated, and repeated.[43] What makes a hit is not random. If it were, music would only have one-hit wonders. To riff off Shakespeare, what's past is prologue of what's to come.[44]

Olson and Belar had a related project: the electronic music synthesizer.[45] Their goal was to develop "a new musical tool with no inherent physical limitations."[46] That led to their invention of the Mark II sound synthesizer, a giant, three-ton machine that synthesized music from the machine-readable instructions of humans punched into paper (similar to a piano roll).[47] Although RCA's music synthesizer — called Victor — was primitive by today's standards, it spurred the development of electronic synthesizers, which became commercially successful with Robert Moog's introduction of a user-friendly modular synthesizer in

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40. Gardner, *supra* note 38.

41. *See* Nicholas Booth, *Backing Down: Blurred Lines in the Standards for Analysis of Substantial Similarity in Copyright Infringement for Musical Works*, 24 J. INTELL. PROP. L. 99, 117 (2016).

42. *See* Ethan Clift, *The 'Melodic Math' of Producer Max Martin*, TONIC AUDIO (Jan. 22, 2021), https://blog.tonicaudio.com/the-melodic-math-of-producer-max-martin [https://perma.cc/WZA3-DRAQ] (describing Martin's formulaic songwriting strategy).

43. *See* Murray Stassen, *How Max Martin's Songwriting Techniques Are Used to Write Hit, After Hit, After Hit*, MUSIC BUS. WORLDWIDE (Feb. 2, 2023), https://www.musicbusinessworldwide.com/how-max-martins-songwriting-techniques-are-used-to-write-hit-after-hit-after-hit [https://perma.cc/H27K-XRU6] (explaining how Martin repeats the same successful songwriting techniques).

44. WILLIAM SHAKESPEARE, THE TEMPEST act 2, sc. 1, l. 986. Of course, music evolves; repeating patterns in music does not preclude adding new elements or a fresh spin.

45. Some sources assert that Olson and Belar's composing machine evolved into the electronic music synthesizer. *See* Ozcan Ertek, *Where Does the Synthesizer Come From?*, RAST SOUND, https://rastsound.com/where-does-the-synthesizer-come-from [https://perma.cc/V3BF-Y7B2]; *The 'RCA Synthesiser I & II' Harry Olson & Herbert Belar, USA, 1951*, 120 YEARS ELEC. MUSIC, https://120years.net/the-rca-synthesiser-i-iiharry-olsen-hebert-belarusa1952 [https://perma.cc/XV39-VF2D].

46. Olson & Belar, *supra* note 2, at 595.

47. *See id.*

1964.[48] Olson and Belar intended to develop their synthesizer to include the human voice.[49] Such technology would offer the possible "production of new musical renditions synthesized to simulate the performance of an artist who has ceased to perform."[50] In 1955, Olson and Belar imagined a proto-AI music generator and foresaw its development from music synthesizers.[51] In short, the music synthesizer and the composing machine are two sides of the same coin—or computer program.[52]

Since the development of music synthesizers and Olson and Belar's groundbreaking work, the creation and production of popular music have become only more synthetic and technologically driven.[53] Indeed, the technologizing of music is pervasive.[54] People can create new songs through computers using sophisticated programs called digital audio workstations (DAWs), such as Apple's GarageBand and Logic Pro.[55] DAWs have "revolutionized the recording industry"[56] and are an essential tool for music creation, replacing traditional music composition and production.[57] Anyone with a computer can create music using a DAW,

48. *See Robert A. Moog*, NAT'L INVENTORS HALL FAME, https://www.invent.org/inductees/robert-moog [https://perma.cc/PD4N-HJ6M].

49. *See* Olson & Belar, *supra* note 2, at 610-11.

50. *Id.* at 611.

51. *See* Olson & Belar, *supra* note 29, at 1170. During the 1950s, important research was conducted to develop artificial intelligence. *See* Melanie Lefkowitz, *Professor's Perceptron Paved the Way for AI–60 Years Too Soon*, CORNELL (Sept. 25, 2019), https://news.cornell.edu/stories/2019/09/professors-perceptron-paved-way-ai-60-years-too-soon [https://perma.cc/XM4Z-U7EW].

52. *See* Olson & Belar, *supra* note 29, at 1170 ("If the artist is dead, the style and characteristics of the artist may be analyzed from his records and catalogued for use in simulating the performance of the artist by synthesis.").

53. *See* Robert Brauneis, *Musical Work Copyright for the Era of Digital Sound Technology: Looking Beyond Composition and Performance*, 17 TUL. J. TECH. & INTELL. PROP. 1, 27 (2014).

54. Eyal Brook catalogues the many ways in which digital technologies have dramatically transformed music creation. *See* Eyal Brook, *The Law of the New Musical Author*, 42 CARDOZO ARTS & ENT. L.J. 27, 77-95 (2024).

55. *See* Amy X. Wang, *Inside GarageBand, the Little App Ruling the Sound of Modern Music*, ROLLING STONE (Mar. 16, 2019, 7:00 AM), https://www.rollingstone.com/pro/features/apple-garageband-modern-music-784257 [https://perma.cc/SK4A-T3SK]; Parker Hall, *The Best DAW Software Recommended by WIRED's Resident Musicians*, WIRED (July 21, 2024), https://www.wired.com/story/best-daw-recording-software [https://perma.cc/X9DF-YWC2].

56. Brook, *supra* note 54, at 85.

57. *See* Matthew Roomberg, *Protecting Producers' Copyrights: A Proposal for Group Registration of Non-Sample-Based Musical Beats*, 33 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 873, 884-85 (2023).

which "reduc[es] a [music studio] room full of equipment into a single computer."[58]

Indeed, many of today's most successful producers and musicians, from Kendrick Lamar to Billie Eilish, use these software programs to create and produce their music.[59] As Eilish's rise to superstardom shows, teens today can make hit songs in their bedrooms, composing music on personal computers using DAWs—for Eilish, with her brother-producer Finneas.[60] These computer programs enable anyone to make not just new songs, but also new *sounds*, both synthetic and real.[61] Musicians are no longer confined to the sounds produced by traditional instruments, and they don't even need to know how to read music or how to play traditional instruments. Instead, artists can compose music right on their computers.[62] And, as discussed in Part II, music creation advances along with new computing capabilities.

B. Copyright Law's Acceptance of Music Innovations

Copyright law has generally accepted these music innovations. In this Section, I identify three core principles that characterize how copyright law has accommodated new forms of music creation and production. First is a principle of technology neutrality, which does not restrict the creation of copyrightable works to any particular technology, but instead embraces even future technologies. In the music field, this technology neutrality translates into the freedom of musicians to choose their instruments, including nontraditional, software-based

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58. Tristan Kilgore Diermann, *Realizing the Music: A Statutory Amendment to Improve Access to Copyright for Musicians*, 25 LOY. J. PUB. INT. L. 96, 105-06 (2023).

59. *See* Lee & Moshirnia, *supra* note 36, at 513-14; Esteban Miranda, *Who Uses Logic Pro Daw?*, LOGICXX (Nov. 16, 2021), https://logicxx.com/blogs/news/who-uses-logic-daw [https://perma.cc/3RAX-C2WC].

60. *See* Symbol48, *Bedroom Studio*, MIDNIGHT OIL STUDIOS (Mar. 15, 2021), https://midnightoilstudios.org/2021/03/15/bedroom-studio [https://perma.cc/AE6G-SQXT]. The seeds for digital audio workstations (DAWs) were planted back in the 1980s, when personal computers became pervasive. *See* Kyle Gann, *Electronic Music, Always Current*, N.Y. TIMES (July 9, 2000), https://www.nytimes.com/2000/07/09/arts/music-electronic-music-always-current.html [https://perma.cc/J6C7-ZA5Y] ("By 1986, it was possible for middle-class teenagers to have, in their bedrooms, music-producing equipment that put to shame the great electronic studios of a mere 10 years before.").

61. *See, e.g.*, *Create Alchemy Sounds from Scratch in Logic Pro for Mac*, APPLE, https://support.apple.com/guide/logicpro/create-sounds-from-scratch-lgsiba1e6194/mac [https://perma.cc/5GBP-3ZZJ]; Eddie Fu, *Billie Eilish's Brother Compares Her Invisalign Removal to Lil Wayne's Lighter Flick*, GENIUS (Apr. 10. 2019), https://genius.com/a/billie-eilish-s-brother-compares-her-invisalign-removal-to-lil-wayne-s-lighter-flick [https://perma.cc/W85N-8AUS].

62. *See* Lee & Moshirnia, *supra* note 36, at 510.

ones. Second is an expansive approach to authorship, which evolves and accommodates creations through new technologies, such as sound recording devices and computers. Third is the periodic rebalancing of facets of copyright law to further the goals of the Progress Clause.

1. Technology Neutrality and the Freedom to Choose Instruments

Congress has recognized a principle of technology neutrality in the Copyright Act.[63] Eligibility for copyright does not depend on a particular technology.[64] Nor is it limited to existing technologies. Indeed, the Copyright Act expressly recognizes that a fixation of a work in a copy embodying the work—a requirement to receive a copyright—can be "by any method now known or later developed," and that a machine, device, or process "is one now known or later developed."[65] The House Committee on the Judiciary report on the 1976 Act stated that Congress did "not intend [] to freeze the scope of copyrightable technology."[66] Even for situations the 1976 Act does not cover, the report left it to Congress to decide whether it should be covered by a future amendment.[67]

Technology neutrality marked an important shift from Congress's prior approach to U.S. copyright law.[68] The prior approach focused on the printing press in the first copyright act[69] and then expanded, through piecemeal amendments, to include works created with new technologies, "such as photographs, sound recordings, and motion pictures."[70] Instead of continuing with this piecemeal, technology-specific approach, which required amending copyright law to keep pace with technological change, Congress drafted the 1976 Copyright Act in more general terms so as not "to freeze the scope of copyrightable technology,"

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63. *See* Brad A. Greenberg, *Rethinking Technology Neutrality*, 100 MINN. L. REV. 1495, 1495-96 (2016); Deborah Tussey, *Technology Matters: The Courts, Media Neutrality, and New Technologies*, 12 J. INTELL. PROP. L. 427, 431 (2005).

64. The Statute of Anne, the first copyright act, was limited to copies produced on the printing press. *See* Copyright Act of 1709, 8 Ann. c. 21, § 2.

65. 17 U.S.C. § 101 (2018) (defining "fixed," "copies" and "'device', 'machine', or 'process'").

66. H.R. REP. NO. 94-1476, at 51 (1976) [hereinafter House Report].

67. *Id.* at 44 n.1.

68. *See* Brian D. Johnston, Note, *Rethinking Copyright's Treatment of New Technology: Strategic Obsolescence as a Catalyst for Interest Group Compromise*, 64 N.Y.U. ANN. SURV. AM. L. 165, 173 (2008).

69. *See* Act of May 31, 1790, ch. 15, § 1, 1 Stat. 124, 124 (recognizing "the sole right and liberty of printing, reprinting, publishing and vending" as exclusive under copyright).

70. House Report, *supra* note 66, at 51.

while avoiding "unlimited expansion" of copyright law to areas beyond Congress's intent.[71]

As applied to music, technology neutrality means that musicians have the freedom to choose their instruments. The instruments are not confined to traditional, physical ones, such as the piano, guitar, horns, and drums. Under the 1976 Act, musicians can use software and synthesizers as their computer-based instruments without risking the loss of copyright or being disqualified from receiving copyright protection.[72] Indeed, every aspect of the music creation can be done on a computer, while still receiving a copyright.[73] Relatedly, copyright law has adopted a laissez-faire approach to music styles,[74] allowing the market to determine what music people want to listen to, no matter how controversial. "One [person's] vulgarity is another's lyric," as the saying goes.[75]

Technology neutrality furthers the goal of the Progress Clause in "promot[ing] the Progress of Science and useful Arts."[76] The Supreme Court has interpreted the Progress Clause in a utilitarian way: Congress has the power to grant copyrights as a way "to secure a fair return for an 'author's' creative labor. But the ultimate aim is, by this incentive, to stimulate artistic creativity for the

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71. *Id.*; *see also* Greenberg, *supra* note 63, at 1495-96 ("With the 1976 Copyright Act, a Congress weary of recurring demands to revise copyright law in light of new technologies—e.g., phonographs, film, radio, cable transmission, etc.—thought it had guarded the statute against ossification and obsolescence via technology-neutral defaults.").

72. *See, e.g.*, *GarageBand for Mac: Software Instruments*, APPLE, https://education.apple.com/learning-center/T024638A-en_US [https://perma.cc/7CYS-GHY4]. For copyright registration, the Copyright Office's *Compendium* simply requires applicants to specify authorship in music or lyrics for a musical work and in a sound recording (while avoiding mention of "musical instruments"). U.S. COPYRIGHT OFF., COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 618.8(A)(10) (rev. 3d ed. 2021), https://www.copyright.gov/comp3/docs/compendium.pdf [https://perma.cc/W69J-JB2T]; *see also* Brauneis, *supra* note 53, at 18-20, 30 (describing how "sophisticated digital audio production software" led to a shift in which "the bulk of popular music production are carefully constructed fictional audio experiences" and to an increase in copyright registrations with deposit of a single audio file for combined registration of a musical work and a sound recording).

73. *See GarageBand for Mac: Software Instruments*, *supra* note 72; *see, e.g.*, Dan Weiss, *The Unlikely Rise of FL Studio, the Internet's Favorite Production Software*, VICE (Oct. 12, 2016, 11:55 AM), https://www.vice.com/en/article/fl-studio-soulja-boy-porter-robinson-madeon-feature [https://perma.cc/45LC-LPXS] (noting that Soulja Boy's No. 1 hit "Crank That" was created entirely on FruityLoops software).

74. This approach is consistent with the aesthetic nondiscrimination principle elaborated by the Supreme Court in an opinion by Justice Holmes. *See* Bleistein v. Donaldson Lithographing Co., 188 U.S. 239, 251 (1903) ("It would be a dangerous undertaking for persons trained only to the law to constitute themselves final judges of the worth of pictorial illustrations, outside of the narrowest and most obvious limits.").

75. *See* Cohen v. California, 403 U.S. 15, 25 (1971).

76. U.S. CONST. art. I, § 8, cl. 8.

general public good."[77] Rejecting Madison's proposal for a clause limited to "literary Authors," the Framers adopted the general terms of "Authors" and "Writings" in the Progress Clause.[78] The Framers avoided any mention of the printing press, despite its reference in the Statute of Anne, the first copyright act that greatly influenced the Framers.[79] The Progress Clause is technology-neutral.

By not freezing copyright to the output of the printing press or other technology, the Copyright Act incentivizes creativity of all kinds, and society benefits. Relatedly, the Court has been chary of broad applications of copyright law in ways that might stifle technological innovation.[80] That solicitude comports with the Court's interpretation of the Progress Clause's patent component, "which reflects a balance between the need to encourage innovation and the avoidance of monopolies which stifle competition without any concomitant advance in the 'Progress of Science and useful Arts.'"[81] That same concern applies to copyright law.[82]

Technology neutrality serves the Progress Clause values in two important ways. First, allowing innovation in the technology to create works may expand the creation, production, and widespread availability of works for the public's benefit.[83] Recorded music, the phonograph and record player, and the radio dramatically increased the public's access to music, which no longer was limited to live performances.[84] And according to Recording Industry Association of America statistics, the revenues of labels from recorded music began to increase steadily starting around 1982, several years after Congress recognized copyrights for

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77. Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975).

78. Edward Lee, *Prompting Progress: Authorship in the Age of AI*, 76 FLA. L. REV. 1445, 1482 (2024) [hereinafter Lee, *Prompting Progress*].

79. *See id.*

80. *See* Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 440-41 (1984).

81. Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141, 146 (1989) (quoting U.S. CONST. art. I, § 8, cl. 8).

82. *Sony*, 464 U.S. at 439, 440-41 (recognizing the "historic kinship between patent law and copyright law" and rejecting an overbroad view of secondary liability against a technology maker as "the functional equivalent of holding that the disputed article is within the monopoly granted to the patentee").

83. *See generally* Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975) ("[T]he ultimate aim is, by this incentive [to authors], to stimulate artistic creativity for the general public good.").

84. *See id.* at 157-58 ("With the advent of commercial radio, a broadcast musical composition could be heard instantaneously by an enormous audience of distant and separate persons operating their radio receiving sets to reconvert the broadcast to audible form."); Byron Morgan, *History of the Record Industry, 1920-1950s*, MEDIUM (June 8, 2014), https://medium.com/@Vinylmint/history-of-the-record-industry-1920-1950s-6d491d7cb606 [https://perma.cc/8C8W-P7S5].

sound recordings (until the disruption caused by the shift to the digital format and unauthorized file sharing starting in 2000).[85] The benefit is not just economic. When a new technology expands accessibility and the very notion of who can create, society benefits from the growth of creative works *and* from the expansion of who can create to include people with disabilities and other historically underrepresented groups. Olson and Belar viewed their composing machine as more accessible than musical instruments for people lacking dexterity,[86] while expanding the "possibility of producing entirely new tone complexes and combinations which cannot be achieved in conventional musical instruments."[87] Today, AI offers even greater promise for enabling people with disabilities to engage in creative pursuits.[88] After suffering a stroke, which limited his ability to sing and speak, Randy Travis used AI to record a new song, for the first time in more than a decade, with AI generating his voice from past recordings.[89]

The second way in which technology neutrality serves the Progress Clause is by providing breathing room for technological innovation itself. Developers of new technologies for creative production, along with their investors, know that the works those technologies create are not automatically disqualified from copyright. In this respect, technology neutrality can promote *both* "science" in the form of knowledge and new works of expression *and* the "useful arts" in the form

85. *U.S. Recorded Music Revenues by Format*, RIAA (2024), https://www.riaa.com/u-s-sales-database [https://perma.cc/KBA2-QY7Y]; David Goldman, *Music's Lost Decade: Sales Cut in Half*, CNN MONEY (Feb. 3, 2023, 9:52 AM), https://money.cnn.com/2010/02/02/news/companies/napster_music_industry [https://perma.cc/V4C2-QY35].

86. *See Olson Interview*, *supra* note 32.

87. Olson & Belar, *supra* note 2, at 611.

88. *See* Askat Kuzdeuov, Shakhizat Nurgaliyev & Hüseyin Atakan Varol, *ChatGPT for Visually Impaired and Blind*, TECHRXIV (May, 03 2023), https://www.techrxiv.org/users/682600/articles/680757-chatgpt-for-visually-impaired-and-blind [https://perma.cc/CF9W-7JZP]; Adam Schrader, *An Artist Invited Blind People to Use an A.I. Image Generator. The Unsettling Results Could Help Make Art More Accessible*, ARTNET (Oct. 12, 2023), https://news.artnet.com/art-world/ai-art-experiments-blind-users-2368599 [https://perma.cc/2STN-S4E2].

89. *See* Maria Sherman, *With Help from AI, Randy Travis Got His Voice Back. Here's How His First Song Post-Stroke Came to Be*, AP NEWS (May 6, 2024, 11:38 AM EDT), https://apnews.com/article/randy-travis-artificial-intelligence-song-voice-589a8c142f70ed8ccf53af6d32c662dc [https://perma.cc/FWU2-JPYJ].

of new technologies, including ones that have uses that go well beyond copyright's scope, such as in the development of new drugs.[90] These dual benefits both serve Progress Clause values.[91]

Of course, some new technologies may be capable of both noninfringing and infringing uses, the latter of which may undermine the interests of authors and the goal of the copyright system. But the Supreme Court has fashioned the doctrines of the *Sony* safe harbor and active inducement to navigate this recurring problem — and to help draw the line between activities of technology developers that can be the basis for secondary liability under copyright law and those that cannot.[92] Under the *Sony* safe harbor, an entity's design and distribution of a technology that is capable of substantial noninfringing uses cannot be the basis for secondary liability under copyright law.[93] Yet, if the entity actively and inten-

90. *See* William Douglas Heaven, *AI Is Dreaming Up Drugs that No One Has Ever Seen. Now We've Got to See If They Work*, MIT TECH. REV. (Feb. 15, 2023), https://www.technologyreview.com/2023/02/15/1067904/ai-automation-drug-development [https://perma.cc/LK2C-6K8N]; Golan v. Holder, 565 U.S. 302, 324-25 (2012) (discussing the "progress of science" as the goal of copyright law in "the creation and spread of knowledge and learning, and "useful arts" as the goal of patent law in spurring innovation).

91. As Brad Greenberg identified, technology neutrality has been under-examined. *See* Greenberg, *supra* note 63, at 1512. Greenberg, who is critical of the doctrine, argues for greater use of technology-specific provisions in copyright law. *Id.* at 1549. Yet Greenberg recommends preserving technology neutrality for copyright eligibility: "the [proposed] statute would be technology neutral with regard to the general default control copyright grants authors, but it would be more technology specific as to how those control rights apply to individual copyright-using technologies." *Id.* at 1549. I agree that Congress should consider challenges for copyright law raised by new technologies, but I believe in the virtue of Congress affording breathing room for innovation and in adopting a more cautious approach, especially to new technologies. *See also* Deborah Tussey, *supra* note 63, at 487 (arguing that "[j]udicial deliberations should, insofar as possible, encompass the broad view as well as the narrow definition and distribute copyright protection evenhandedly among similar technologies"). Elsewhere, I show the relationship between the freedom of the press under the First Amendment and copyright law's reluctance to regulate speech technologies. *See* Edward Lee, *Freedom of the Press 2.0*, 42 GA. L. REV. 309, 357 (2008) ("the Framers viewed the Free Press Clause as imposing limits on the Copyright Clause power, specifically with respect to regulations of technology"). Technology neutrality has the added benefit of helping to keep the government from becoming entangled in intrusive regulation of speech technologies.

92. *See* Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd., 545 U.S. 913, 936-37 (2005) ("[O]ne who distributes a device with the object of promoting its use to infringe copyright, as shown by clear expression or other affirmative steps taken to foster infringement, is liable for the resulting acts of infringement by third parties."); Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 442 (1984) ("The staple article of commerce doctrine must strike a balance between a copyright holder's legitimate demand for effective — not merely symbolic — protection of the statutory monopoly, and the rights of others freely to engage in substantially unrelated areas of commerce.").

93. *See Sony*, 464 U.S. at 441-42.

tionally induces users of its technology to engage in infringement, secondary liability can be imposed.[94] These doctrines reflect the Court's attempt to balance the competing interests in "supporting creative pursuits through copyright protection *and* promoting innovation in new communication technologies by limiting the incidence of liability for copyright infringement."[95] Too much copyright protection might stifle the "development of beneficial technologies," while too little copyright protection might harm authors and make copyrights hollow.[96]

2. *Expansive and Evolving Authorship, Including the Use of Machines*

A second way in which copyright law has accepted music innovation is by adopting an expansive approach to the "Writings" of "Authors," the eligible subject matter of copyright under the Progress Clause.[97] As the House Report on the 1976 Act explained: "The history of copyright law has been one of gradual expansion in the types of works accorded protection."[98] The report cites "electronic music" as an example of a "new form[] of creative expression" made possible by "technological developments" that were deemed copyrightable without an amendment by Congress.[99]

Even before electronic synthesizers, Congress addressed the advent of the phonograph and sound recordings of music. Beyond composers of the musical works performed, should the people who created sound recordings be considered authors? Historically, this issue was a major point of disagreement between continental European countries and the United States. Continental European countries do not view performers and producers of sound recordings as authors; instead, performers and producers are protected by a separate regime of neighboring rights.[100] Those who were traditionalists in the French author's right (*droit d'auteur*) did not view performers and producers as true authors, worthy

94. *See Grokster*, 545 U.S. at 936-37.

95. *Id.* at 928 (emphasis added).

96. *See id.* at 928-29.

97. U.S. CONST. art. I, § 8, cl. 8.

98. House Report, *supra* note 66, at 51.

99. *Id.* The Copyright Office's recent report on digital replicas also recognizes the importance of history in understanding new challenges. *See Copyright and Artificial Intelligence, Part 1: Digital Replicas*, U.S. COPYRIGHT OFF. 22-53 (July 2024) [hereinafter USCO Report on Digital Replicas], https://www.copyright.gov/ai/Copyright-and-Artificial-Intelligence-Part-1-Digital-Replicas-Report.pdf [https://perma.cc/AF2X-9G98].

100. *See* Jonathan Farber, *Culture in the Balance: Why Canada's Copyright Amendments Will Backfire on Canadian Culture by Paralyzing the Private Radio Industry*, 8 IND. INT'L & COMP. L. REV. 431, 451-54 (1998).

of the same protection as composers.[101] By contrast, the United States, in 1972, granted copyright to sound recordings and treated their creators as authors (albeit with a more limited copyright).[102] Sound recordings of music were "give[n] . . . full recognition as copyrightable works."[103]

The inclusion of sound recordings as copyrightable works is worth dwelling on.[104] It provides a good example of how an expansive approach to authorship aligns with a technology-neutral approach that affords authors the ability to use new technologies to create new forms of creative works. Sound recordings were made possible by the advent of recording and production technologies. Until 1972, federal copyright law didn't protect sound recordings. The House Report on the 1976 Act recognized, however, that copyright protection was "too long delayed" and that sound recordings "are clearly within the scope of the 'writings of an author' capable of protection under the Constitution."[105] Recording technologies provided a new way for people to express themselves. Artists performed a song, and the producers recorded and edited it for public release. The House Report concluded that both the performer and the producer can be considered authors in this scenario.[106] But, for other recordings, such as "recordings of birdcalls" or "sounds of racing cars," "only the record producer's contribution is copyrightable," assuming originality is satisfied.[107] Originality is a very low standard, requiring "only that the work was independently created by the author (as opposed to copied from other works), and that it possesses at least some minimal degree of creativity," such as in its selection or arrangement of elements.[108] As the Supreme Court explained, "The vast majority of works make the grade quite easily . . . ."[109] By recognizing creators of sound recordings as authors, Congress

101. *See id.* at 454.

102. *See* House Report, *supra* note 66, at 56.

103. *Id.* at 52.

104. Music involves two types of works under copyright law. First, the musical work is composed by the songwriters. Second, the sound recording involves a performance of a musical work by singers and performers recorded by a producer. *See* 17 U.S.C. § 102(a)(2), (7) (2018) (listing musical works and sound recordings as types of works). Copyright law grants a copyright to the authors of each type of work. *Id.* For established artists and songwriters, the copyrights are commonly assigned to music publishers (for the musical work) and to record labels (for the sound recording). *See* Matthew Gorman, *Sound Recording Copyright vs. Musical Work Copyright*, COX & PALMER (Apr. 29, 2022), https://coxandpalmerlaw.com/publication/sound-recording-copyright-vs-musical-work-copyright [https://perma.cc/TSP5-JBH8].

105. *See* House Report, *supra* note 66, at 56.

106. *See id.*

107. *See id.*

108. Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 345 (1991).

109. *Id.*

expanded the pool of authors in the United States and incentivized the creation of a new type of work, the sound recording. This expansion redounds to society's benefit.

Even copyright law's treatment of composers of musical works marks an expansion of the law's recognition of authors. The first U.S. copyright act in 1790 did not protect musical works.[110] Like the Statute of Anne in England, the 1790 Act focused on books and the right to print them on the printing press.[111] In 1831, Congress amended the 1790 Act to add musical compositions as eligible works for copyright, meaning that composers were now treated as authors.[112] These examples show how copyright law expanded in coverage to include as authors musicians and producers who found "new ways of expressing themselves" through music innovation.[113] Had Congress and the courts adopted a traditional view of authorship that was fixed to what the first copyright act recognized in 1790, not even composers would qualify for copyright. Had copyright law excluded composers, performers, and music producers, it is doubtful that the United States would have as robust a music industry as it does today.[114]

An important corollary to copyright law's technology neutrality and expansive approach to "authors" is the recognition and prioritization of *human* contributions in the process of using machines for creative output. Use of a machine to create a work doesn't disqualify one from copyright protections. As long as a human makes an independent and minimally creative selection or arrangement that is embodied in a work, that activity is recognized as a form of authorship.[115] The recognition of authorship in sound recordings—even in the act of selecting and arranging bird calls from nature—is instructive. Sound recordings of bird calls are copyrightable only insofar as the human has made an original selection or arrangement, but the bird calls themselves are uncopyrightable. Although not a music case, the Supreme Court's landmark decision in *Burrow-Giles Lithographic Co. v. Sarony* provides another example of how copyright law recognizes the human creative contribution where the act of authorship involves the use of a machine—there, a camera—and the selection and arrangement of a subject (in that case, a living person).[116] Given the person's selection and arrangement, the

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110. *See* Act of May 31, 1790, ch. 15, § 1, 1 Stat. 124, 124 (identifying copyright protections for "map, chart, book or books").

111. *See id.*

112. Act of Feb. 3, 1831, ch. 16, § 4, 4 Stat. 436.

113. House Report, *supra* note 66, at 51.

114. *See id.* at 43.

115. *See* Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 348 (1991).

116. 111 U.S. 53, 54-55 (1884).

photograph was more than a mere "mechanical reproduction," the Court concluded.[117] Instead, it was an act of authorship. But copyright law attempts to tailor the scope of copyright to the level of human contribution. Where authorship is based solely on the original selection or arrangement of unprotected elements (e.g., birds chirping), the scope of copyright is thin, protecting against only identical copies of the work while allowing substantially similar copies.[118]

3. Periodic Rebalancing of the Scope of Protection

Congress and the courts have periodically rebalanced the scope of copyright protection for music through amendments and precedents. Of course, Congress's authority to rebalance applies to all works and any creative industry. But no other industry has as many sections of the Copyright Act tailored specifically for it as the music industry.[119] Indeed, the Orrin G. Hatch–Bob Goodlatte Music Modernization Act of 2018 (MMA) was a monumental effort to update the Copyright Act, especially for application to the streaming of music.[120] The MMA is complex,[121] establishing a "nonprofit collective" to oversee the collection of royalties and a blanket compulsory license for musical works;[122] extending copyright to pre-1972 sound recordings;[123] and formalizing an industry practice for so-called "letter[s] of direction" to pay royalties "to a producer, mixer, or sound engineer who was part of the creative process that created a sound recording."[124]

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117. *See id.* at 53.

118. *Feist*, 499 U.S. at 359; *see also* Shyamkrishna Balganesh, *The Normativity of Copying in Copyright Law*, 62 DUKE L.J. 203, 223-24 (2012) (discussing "thin copyright" doctrine, which requires proof that the defendant's work involved "virtually identical" copies).

119. Besides the general exception for fair use, the Copyright Act has fifteen exceptions or limitations on copyrights in Section 108 through 122. *See* 17 U.S.C. §§ 108-122 (2018). Of these fifteen exceptions, six regulate aspects related to copyrights for musical works and sound recordings. *See id.* §§ 110(2), 110(3), 110(4), 110(5), 110(6), 110(7), 110(10), 112, 114, 115, 116, 118. The television programming industry follows in second, with four provisions. *See id.* §§ 110(5), 111, 119, 122. The Orin G. Hatch–Bob Goodlatte Music Modernization Act (MMA) itself contains 24,072 words; the original 1976 Copyright Act was 33,759 words. *See* Lydia Pallas Loren, *Copyright Jumps the Shark: The Music Modernization Act*, 99 B.U. L. REV. 2519, 2525 (2019).

120. *See* Orrin G. Hatch–Bob Goodlatte Music Modernization Act, Pub. L. No. 115-264, 132 Stat. 3676 (2018).

121. For an excellent summary of the MMA, see Tanner J. Kramp, Note, *Rage Against the Machine: Why the Music Modernization Act Is but the First Step in Musicians' Battle to Reclaim the Value of Their Works*, 64 B.C. L. REV. 219, 234-37 (2023).

122. *See* 17 U.S.C. § 114(g), 115 (2018).

123. *See* 14 U.S.C. § 1401(a)(1) (2018).

124. *See id.* § 114(g)(5).

The MMA is not a panacea for the challenges that artists and songwriters face in the new era of streaming. Streaming has turned royalties for musicians into "A Business of Pennies (and Fractions of Pennies)."[125] Although the major music labels make billions in revenue from streaming, the growth of streaming has slowed.[126] Concerts and live performances provide an alternative revenue source, but they tend to help big-name musicians, such as Taylor Swift and Beyoncé.[127] Lesser-known musicians face greater challenges,[128] although, with social media, one can become a "niche superstar" with a huge following "to pack arenas."[129] Regardless, the copyright system wasn't ever designed to guarantee profits to authors, much less entire industries. At best, Congress can adjust copyright within the authority and goals of the Progress Clause.

Just as Congress enacted the MMA to address challenges raised by the internet, Congress may consider amending copyright law for new challenges presented by AI. Yet, just as the MMA does not alter the basic technology-neutral approach to copyright eligibility, Congress should adhere to the same approach for AI. It would also behoove Congress to refrain from dramatic changes to copyright law targeting AI, given how rapidly it is developing.[130] Congress didn't

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125. Ben Sisario, *Musicians Say Streaming Doesn't Pay. Can the Industry Change?*, N.Y. TIMES (May 10, 2021), https://www.nytimes.com/2021/05/07/arts/music/streaming-music-payments.html [https://perma.cc/H7C8-7XWT]; *see* EDWARD LEE, CREATORS TAKE CONTROL 128-29 (2023) (discussing the financial hurdles faced by musicians). Some people have tried to run streaming scams, inflating streams through bots and fake accounts. *See infra* note 148.

126. *See* Mauro Orru, *Universal Music Sheds $13 Billion in Market Cap After Streaming Revenue Disappoints*, WALL ST. J. (July 25, 2024, 1:10 PM ET), https://www.wsj.com/business/media/universal-music-sheds-16-billion-in-market-value-after-revenues-disappoint-9b986783 [https://perma.cc/7L92-WZGB].

127. *See* Parija Kavilanz, *Taylor Swift and Beyoncé Concerts Deliver Record-breaking Earnings for Live Nation*, CNN (Nov. 3, 2023, 2:15 PM EDT), https://www.cnn.com/2023/11/03/business/taylor-swift-beyonce-concerts-live-nation-earnings/index.html [https://perma.cc/3U5A-7JJ9].

128. *See* Juliana Kaplan, *It's Not Just Taylor Swift. Musicians Describe the 'Demented Struggle' of Touring in a Shrinking Industry Where One Giant Company Sells the Tickets for Most Major Venues*, BUS. INSIDER (June 8, 2023, 8:52 AM), https://www.businessinsider.com/musicians-make-money-touring-taylor-swift-tickets-ticketmaster-live-nation-2022-12 [https://perma.cc/E4Z7-YMCR].

129. Neil Shah, *50,000 Screaming Fans Is Nothing in the Mega Concert Era*, WALL. ST. J. (Oct. 22, 2024, 9:00 PM ET), https://www.wsj.com/arts-culture/music/mega-concerts-adele-madonna-the-weeknd-chappell-roan-49326f18 [https://perma.cc/Z9QR-4NP9].

130. *See* Yvette Joy Liebesman, *The Wisdom of Legislating for Anticipated Technological Advancements*, 10 J. MARSHALL REV. INTELL. PROP. L. 154, 157 (2010) (arguing in favor of technology neutrality because "we should proceed with caution in allowing the potential effects of either technology in its infancy or future unrealized technology to influence our policy decisions before the science has had a chance to mature and develop, and its effects on society better determined").

pass the MMA until 2018, many years after Pandora launched the first online commercial streaming service.[131]

Courts, too, have played an important role in rebalancing copyright, albeit within the confines of litigation applying the Copyright Act. The "Blurred Lines" jury verdict against Robin Thicke and Pharrell Williams, which resulted in one of the largest damages awards for music infringement in U.S. history ($5.3 million and a fifty percent running royalty on public performances of "Blurred Lines"),[132] sparked a rash of music-infringement lawsuits seeking similar paydays.[133]

But those paydays never happened. One reason is the courts' assertion of a greater gatekeeping role in ensuring that alleged similarities in songs are based on copyrightable elements, starting with the Ninth Circuit's en banc decision in *Skidmore v. Led Zeppelin*, which emphasized the importance of identifying the uncopyrightable elements in songs (in the so-called extrinsic analysis of infringement).[134] Likewise, Ed Sheeran's successful defense in a lawsuit involving another Marvin Gaye song suggested a renewed viability to a defense based on independent creation.[135] The successful de minimis defense by Madonna in 2016 provided another helpful doctrine balancing the scope of copyright to sound recordings.[136] It departed from the categorical approach of the Sixth Circuit in *Bridgeport Music, Inc. v. Dimension Films*, in which the court laid down a new

131. *See* Will Brewster, *The History of the First Music Streaming Service*, MIXDOWN (June 5, 2024), https://mixdownmag.com.au/features/the-history-of-music-streaming [https://perma.cc/RP7L-M59E].

132. *See* Ben Kesslen, *Robin Thicke, Pharrell Williams to Pay $5 Million to Marvin Gaye Estate for 'Blurred Lines,'* NBC NEWS (Dec. 13, 2018, 3:24 PM EST), https://www.nbcnews.com/pop-culture/music/robin-thicke-pharrell-williams-pay-5-million-marvin-gaye-estate-n947666 [https://perma.cc/Z8PL-FSQ8].

133. *See* Amy X. Wang, *How Music Copyright Lawsuits Are Scaring Away New Hits*, ROLLING STONE (Jan. 9, 2020), https://www.rollingstone.com/pro/features/music-copyright-lawsuits-chilling-effect-935310 [https://perma.cc/4BZX-DVAR]; Williams v. Gaye, 885 F.3d 1150, 1162-63 (9th Cir. 2018) (discussing the amount of damages award).

134. 952 F.3d 1052, 1064 (9th Cir. 2020); Edward Lee & Andrew Moshirnia, *Do Experts Matter? A Study of the Effect of Musicologist Testimony in Music Cases*, 2022 U. ILL. L. REV. 707, 723-24.

135. *See* Marlene Lenthang, *Ed Sheeran Not Liable in "Let's Get It On" Copyright Trial, Jury Finds*, NBC NEWS (May 4, 2023, 3:39 PM EST), https://www.nbcnews.com/pop-culture/pop-culture-news/jury-reaches-verdict-ed-sheeran-get-copyright-trial-rcna82885 [https://perma.cc/QP5A-ES29]; *see also* Structured Asset Sales, LLC v. Sheeran, No. 23-905, 2024 WL 4644955, at *11 (2d Cir. 2024) (affirming, in a lawsuit by the co-owner of Marvin Gaye's copyright interest, the grant of summary judgment to Sheeran on the ground that no reasonable jury can find infringement of Gaye's "Let's Get It On" based on alleged similarities in basic, uncopyrightable musical elements in Sheeran's song).

136. *See* VMG Salsoul, LLC v. Ciccone, 824 F.3d 871, 874 (9th Cir. 2016).

law: "Get a license or do not sample."[137] And, by design, fair use provides a First Amendment safeguard within copyright law.[138] As the Supreme Court explained in *Campbell v. Acuff-Rose Music, Inc.*, a case involving 2 Live Crew's song parodying "Oh, Pretty Woman": "The fair use doctrine thus 'permits [and requires] courts to avoid rigid application of the copyright statute when, on occasion, it would stifle the very creativity which that law is designed to foster.'"[139]

And there is the interplay between Congress and the courts. In 1909, Congress overruled the Supreme Court's decision in *White-Smith Music Publishing Co. v. Apollo Co.*, which had held that mechanical reproductions of musical works (in the form of perforated rolls used in piano players) were not copies within the scope of the composer's copyright.[140] In short order, after lobbying by composers, Congress passed the 1909 Act, which included mechanical copies within the scope of copyrights.[141] But, at the same time, the Act granted a compulsory license that granted permission for others to make mechanical copies for use in music-performing machines.[142] As the times and technologies have changed, Congress has amended the compulsory license provision in Section 115 of the 1976 Copyright Act and, more recently, in the MMA.[143]

Providing balancing mechanisms for copyrights related to music is important. In music, there is a pronounced risk that copyright can be used to propertize discrete elements of music that serve as building blocks, especially for a particular style of music. As musicians and music researchers recognize, borrowing musical elements has been an integral feature of music creation dating back to Bach.[144] Given the limited number of notes and chords, and the need for them to sound harmonious when played together—plus the limited number of

137. 410 F.3d 792, 801 (6th Cir. 2005).

138. Eldred v. Ashcroft, 537 U.S. 186, 219-20 (2003).

139. 510 U.S. 569, 577 (1994).

140. 209 U.S. 1, 18 (1908).

141. Copyright Act of 1909, ch. 320, § 1, 35 Stat. 1075; *see* H. COMM. PATENTS & S. COMM. ON PATENTS, 59TH CONG., ARGUMENTS ON H.R. 19853 3-5 (Comm. Print 1906); Nika Aldrich, *Unplugged: The Music Industry's Approach to Rolling Contracts on Music CDs*, 6 CHI.-KENT J. INTELL. PROP. 280, 291 (2007).

142. Copyright Act of 1909 § 25(e). Congress was concerned that one producer would monopolize the production and sale of mechanical copies of music. *See* Michael Erlinger, Jr., *An Analog Solution in a Digital World: Proving Federal Copyright Protection for Pre-1972 Sound Recordings*, 16 UCLA ENT. L. REV. 45, 50 (2009).

143. *See Music Licensing Reform: Hearing Before the S. Subcomm. on Intell. Prop. of the Comm. on the Judiciary*, 109th Cong. 110 (2005) (statement of Marybeth Peters, Register of Copyrights); Kramp, *supra* note 121, at 234-36.

144. *See Musical Borrowing & Reworking*, IND. UNIV., https://chmtl.indiana.edu/borrowing [https://perma.cc/PF52-Q372]; Edward Lee, *Fair Use Avoidance in Music Cases*, 59 B.C. L. REV. 1873, 1890-94 (2018).

sounds distinctive to a particular style of music (e.g., hip-hop or country)—music inevitably produces similarities.[145] Andrew Moshirnia and I have explained the combination of factors, including what we call aural functionality, that contribute to the phenomenon of popular music sounding similar and formulaic.[146] If copyright law did not afford musicians breathing room to create music that sounded similar to past songs—at least enough to identify the style of music or include basic elements—creating music would become a lottery ticket to being sued. Indeed, after the "Blurred Lines" verdict, that appears to have happened, sparking an increase in musicians taking out insurance policies for the risk of copyright lawsuits.[147]

II. HOW AI DISRUPTS THE MUSIC INDUSTRY

AI generators disrupt the music industry in various ways, including some that directly implicate copyright law and others that go beyond it. Although this Essay focuses on the copyright issues, it also analyzes another contentious issue: the use of deepfake voices, a topic that goes well beyond copyright law.[148] This Part focuses on two major ways in which AI has disrupted the music industry. First, text-to-music generators offer a new way to create music simply by using words. And second, the cloning of human voices fuels the proliferation of deepfakes.

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145. *See* Lee, *supra* 144, at 1894-97.

146. *See* Lee & Moshirnia, *supra* note 36, at 502-17; *see id.* at 503 (defining aural functionality as "the ordering of notes or musical elements to (1) sound harmonious; (2) sound consistent with a musical style, genre, or cross-genre; and (3) produce music that appeals to the target demo-graphic group.").

147. *See* Wang, *supra* note 133.

148. One problem that goes beyond the scope of this Essay is the potential abuse that AI-generated songs can be used to divert streaming royalties from human musicians through bots streaming the AI-generated songs in what is called "artificial streaming." *See* Amanda Hoover, *Spotify Has an AI Music Problem—but Bots Love It*, WIRED (May 11, 2023, 11:08 AM), https://www.wired.com/story/spotify-ai-music-robot-listeners [https://perma.cc/UWY5-RDCG]. The United States Attorney for the Southern District of New York charged Michael Smith for wire fraud based on allegations that Smith engaged in "a scheme to create hundreds of thousands of songs with artificial intelligence and use automated programs called 'bots' to stream the AI-generated songs billions of times," yielding Smith "more than $10 million in royalty payments through his scheme." *See* Press Release, U.S. Att'y's Off., S. Dist. of N.Y., North Carolina Musician Charged with Music Streaming Fraud Aided by Artificial Intelligence (Sept. 4, 2024), https://www.justice.gov/usao-sdny/pr/north-carolina-musician-charged-music-streaming-fraud-aided-artificial-intelligence [https://perma.cc/UT4X-Q5R5]. The manipulation of streaming numbers through farms and bots is a problem that existed before AI. *See AI in the Music Industry – Part 6: Fake Streams and Streaming Farms*, MUSIC BUS. RSCH. (Mar. 11, 2024), https://musicbusinessresearch.wordpress.com/2024/03/11/ai-in-the-music-industry-part-6-fake-streams-and-streaming-farms [https://perma.cc/93BR-GBJS].

A. AI-Generated Music

Generative AI is the next major disruption to the music industry.[149] As Section I.A explained, AI—while no doubt a major technological breakthrough—represents a continuation of the ongoing technologizing of music instruments, as well as the process of music creation, that started with the advent of the electronic synthesizer. Olson and Belar's prediction, in 1955, of how the synthesizer would enable AI-generated music has been realized.[150] Similar to their statistical analysis of patterns and elements in Stephen Foster's music,[151] AI music generators rely on a process of training AI models to conduct statistical analysis of discrete elements in existing music recordings, albeit on a far larger scale than Olson and Belar's composing machine, potentially involving tens of thousands of hours of recorded music.[152] Instead of relying on humans to perform the statistical analysis, AI music generators conduct the statistical analysis on their own, in a process called deep learning.[153]

A key innovation of AI music generators is the ability for people to create new music with lyrics, simply based on a person's words, or "text prompts," all within seconds.[154] Words are now the instruments to create music. The results are mindboggling.

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149. *See* Justine Moore & Anish Acharya, *The Future of Music: How Generative AI Is Transforming the Music Industry*, ANDREESSEN HOROWITZ (Nov. 9, 2023), https://a16z.com/the-future-of-music-how-generative-ai-is-transforming-the-music-industry [https://perma.cc/6WHC-4RKB].

150. *See* Olson & Belar, *supra* note 2, at 611; Olson & Belar, *supra* note 29, at 1170.

151. *See* Olson & Belar, *supra* note 29, at 1164-66.

152. *See* Huda Mahmood, *Exploring the 5 Leading AI Music Generation Models*, DATA SCI. DOJO (June 27, 2024), https://datasciencedojo.com/blog/5-ai-music-generation-models [https://perma.cc/XQ77-X5T7]; Alex Bestall, *AI Lets Anyone Generate Music in Seconds. That's Putting Artists on Edge—and Setting the State for 'Dataset Ethics.,'* YAHOO FIN. (Apr. 29, 2024), https://finance.yahoo.com/news/ai-lets-anyone-generate-music-232637008.html [https://perma.cc/8RNQ-GLKX].

153. For a basic summary, see *A How-to Guide: Creating Music with AI Music Generators*, SOUNDFUL, https://soundful.com/en-us/how-to-guide-creating-music-with-ai-music-generators [https://perma.cc/JH68-DRYY]. For more technical analysis, see Jade Copet, Felix Kreuk, Itai Gat, Tal Remez, David Kant, Gabriel Synnaeve, Yossi Adi & Alexandre Défossez, *Simple and Controllable Music Generation*, ARXIV (Jan. 30, 2024), https://arxiv.org/pdf/2306.05284 [https://perma.cc/5A53-BXN4]; Prafulla Dhariwal, Heewoo Jun, Christine Payne, Jong Wook Kim, Alec Radford & Ilya Sutskever, *Jukebox: A Generative Model for Music*, ARXIV (Apr. 30, 2020), https://arxiv.org/pdf/2005.00341 [https://perma.cc/AVC3-VCH3].

154. *See* Mahmood, *supra* note 152.

For example, one user of the music generator Suno[155] created a pop song titled "Runaway," based on the popular prompt: "[Artcore], Synthwave, Experimental, Indie Rock, layered female vocals, melodic, ambient pads, [post-punk], A Major."[156] The vocals, the beat, the hook, and the lyrics are impressive—they can easily pass for a pop song performed by a human artist. As a *Rolling Stone* article described the generative process, "Suno lets anyone create shockingly convincing songs, simply by typing a description."[157]

I used the same prompt and created an introspective ballad titled "Echoes of Neon,"[158] with an emo-like chorus written by the AI:

> Outrageous screams in silence
> Drenched in electric rain
> Ghosts of the past collide with tomorrow
> In this chaos we remain.[159]

But the capabilities don't end there. You can revise the prompts to create songs more to your liking, even adding your own original lyrics.[160] I tweaked my prompt by adding "lyrics about the study of law." The song I produced, "Law in Black and White,"[161] has a catchy, ironic verse that many a law student can appreciate:

> Midnight oil knowledge fight
> Balance scales heavy might
> Shadows flicker in the night
> Law's a riddle nothing's right.[162]

Even this example is just the tip of the iceberg. Suno added a new functionality called Covers that seamlessly changes an existing audio file into a new style

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155. Suno is one of the music generators being sued by music labels for alleged copyright infringement in the training of the AI model. *See infra* note 175 and accompanying text.

156. TongMick, *Runaway*, SUNO (July 30, 2024, 12:01 AM), https://suno.com/song/64d5a307-e875-47cd-bf8c-0a8cb5195e33 [https://perma.cc/Y8BG-5S47].

157. Brian Hiatt, *A ChatGPT for Music Is Here. Inside Suno, the Startup Changing Everything*, ROLLING STONE (Mar. 17, 2024, 9:00 AM), https://www.rollingstone.com/music/music-features/suno-ai-chatgpt-for-music-1234982307 [https://perma.cc/B8HY-VP7D].

158. TransparentOpera774, *Echoes of Neon*, SUNO (July 30, 2024, 1:24 PM), https://suno.com/song/809b2920-cofc-4b4d-a34a-29f19058fbba [https://perma.cc/MDK9-GE38].

159. *Id.*

160. *Custom Mode: How Do I Write Lyrics?*, SUNO, https://www.suno.wiki/faq/getting-started/custom-mode-how-do-i-write-lyrics [https://perma.cc/G6FH-8GFB].

161. TransparentOpera774, *Law in Black and White*, SUNO (July 30, 2024, 1:26 PM), https://suno.com/song/b1230517-a7e4-4ee0-9638-4544fe677419 [https://perma.cc/44GD-EG9B].

162. *Id.*

of one's choice, using the same lyrics in the file.[163] In other words, it makes "cover" versions of a song. One can even start by just recording oneself singing a few lines (the singing doesn't even have to be in tune), uploading it, and then writing a prompt for what type of song it should be. *Presto*. The AI model "transforms your vocals into full songs."[164] The results are impressive. One can easily see how Suno's functionality can help professional musicians and producers brainstorm in creating new songs. Producer Timbaland agreed, calling Suno "next level."[165] Timbaland was so impressed he later agreed to serve as an advisor to Suno.[166]

One can also export the music clips from AI generators and then combine, edit, and refine them even more on DAWs, such as Apple's Logic Pro or AI DAWs that "allow[] you to edit every single note."[167] Thus, the level of human contribution to creating songs with AI music tools spans an incredible range, from a little (e.g., a single text prompt) to a lot (an iterative process that involves DAWs, which professional musicians and producers were already using before

163. *See* Suno (@suno_ai_), X (formerly TWITTER) (Sept. 12, 2024, 4:44 PM), https://x.com/suno_ai_/status/1834332349762359634 [https://perma.cc/VRW8-3A34].

164. Nick St. Pierre (@nickfloats), X (formerly TWITTER) (Sept. 12, 2024, 4:45 PM), https://x.com/nickfloats/status/1834332468662391043 [https://perma.cc/E53T-4AJ5].

165. *See* Timbaland (@timbaland), X (formerly TWITTER) (Sept. 3, 2024), https://x.com/timbaland/status/1831006557720715679 [https://perma.cc/6ZC8-E879].

166. Suno, *Timbaland Becomes Strategic Advisor to Leading AI Music Company*, PR NEWSWIRE (Oct. 22, 2024, 2:47 PM ET), https://www.prnewswire.com/news-releases/timbaland-becomes-strategic-advisor-to-leading-ai-music-company-suno-302283573.html [https://perma.cc/82ZY-GTCQ].

167. AI Automation Labs, *Create and Edit Songs & Music with This Insane AI Tool – RipX DAW*, YOUTUBE (Feb. 27, 2024), https://youtu.be/DWFOuXvuuI8 [https://perma.cc/85JP-3GRY].

AI).[168] AI music generators are a continuation of the technological transformation of music creation.[169] Just as DAWs were once likened to a computer program that could "'word process' with sound,"[170] AI generators now enable one to use words to create entire songs. Music as a universal language has reached a new crescendo.

AI can also be programmed for autonomous generation of songs. Humans aren't even needed beyond the initial programmer. Once trained, AI models can autonomously create music and other works.[171] And, as SoundExchange CEO Michael Huppe wrote, it's possible that "[i]n the not-too-distant future" we will have "virtual artists" whose songs and voices "are solely created by artificial intelligence."[172]

Of course, AI music generators have sparked great controversy. More than two hundred artists and songwriters, including Billie Eilish and Nicki Minaj, recently published an open letter denouncing technology companies' development of AI music generators "to sabotage creativity" — that is, by using their cop-

168. *See* Mike Levine, *The History of the DAW*, YAMAHA (May 1, 2019), https://hub.yamaha.com/proaudio/pa-history/the-history-of-the-daw [https://perma.cc/SJ4X-TFUW].

169. DAWs raise an issue about the scope of copyright for any preexisting sounds (e.g., beats and loops) used or manipulated in recordings. *See* Alvin Benjamin Carter III, *Statutorily Stifling: The Legal Burden Copyright Places on the Hip-Hop Community*, NE. U. L. REV. EXTRA LEGAL 12-13 (Winter 2017) (discussing the plethora of samples and sounds, some in styles of known artists, available for use in DAWs). An author of a song composed on a DAW has a copyright for the original selection and arrangement of sounds. *See supra* note 102 and accompanying text. But, unless a song is subject to litigation, there's not an easy way to tell which discrete sounds in a song, such as a loop or beat, were preexisting and potentially uncopyrightable, and which were original based on sufficient creativity of the author. The latter inquiry of originality becomes thorny, however, as DAWs "blur" the "[d]istinctions between recorded sound, sample, and synthesis." Anders Reuter, *Who Let the DAWs Out? The Digital in a New Generation of the Digital Audio Workstation*, 45 POPULAR MUSIC & SOC'Y 113, 122 (2022). Courts have faced few cases in which the DAW's role in the creation of a song was even discussed. *See, e.g.*, Francescatti v. Germanotta, No. 1:11-CV-5270, 2014 WL 2767231, at *9 (N.D. Ill. June 17, 2014) (quoting an expert musicologist who noted that defendant's song was composed on a DAW, while plaintiff's song was composed with "live musicians playing live instruments in the recording studio").

170. Brook, *supra* note 54, at 86 (quoting Mark B.N. Hansen, *Deforming Rock: Radiohead's Plunge into the Sonic Continuum*, *in* THE MUSIC AND ART OF RADIOHEAD 121 (Joseph Tate ed., 2005)).

171. *See* Anthony Cuthbertson, *Musician Uses Algorithm to Generate Every Possible Melody to Prevent Copyright Lawsuits*, INDEP. (Feb. 28, 2020, 2:18 PM GMT), https://www.independent.co.uk/tech/music-copyright-algorithm-lawsuit-damien-riehl-a9364536.html [https://perma.cc/MEP3-GMBJ].

172. Michael Huppe, *Artificial Intelligence Has Big Implications for Ownership in the Music Industry*, FORBES (Dec. 12, 2022, 7:15 AM EST), https://www.forbes.com/sites/forbesbusinesscouncil/2022/12/12/artificial-intelligence-has-big-implications-for-ownership-in-the-music-industry [https://perma.cc/5JXD-9WTW].

yrighted songs to train the AI models without their permission, and then launching the AI generators "directly aimed at replacing the work of human artists with massive quantities of AI-created 'sounds' and 'images.'"[173] The copyright lawsuits against technology companies focus on their lack of permission to train their AI models on copyrighted sound recordings and musical works. Music publishers have sued Anthropic for alleged copyright infringement based on the unauthorized use of musical works to train Anthropic's AI model, which generates lyrics that are allegedly substantially similar to famous songs.[174] Likewise, the major music labels have sued two companies, Suno and Udio, for allegedly using copyrighted sound recordings to train their AI song generators without permission from the labels, the copyright owners.[175] The AI companies will hinge their defense of the training of their models on fair use, although that issue will be hotly contested in the lawsuits, as discussed below.[176]

B. AI-Generated Voices and Deepfakes

AI can generate realistic, human-sounding voices. AI's ability to create clones of people's voices — called "deepfake voices"[177] — has sparked tremendous backlash.[178] Indeed, given the potential abuses of deepfake voices, the capability may pose some of AI's most concerning problems for society. The capability to clone human voices isn't limited to music; it can be used to generate voices for any

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173. Artist Rights Alliance, *200+ Artists Urge Tech Platforms: Stop Devaluing Music*, ARTIST RTS. NOW (Apr. 1, 2024), https://artistrightsnow.medium.com/200-artists-urge-tech-platforms-stop-devaluing-music-559fb109bbac [https://perma.cc/2FPH-RU3H].

174. Complaint at 21-39, Concord Music Grp., Inc. v. Anthropic PBC, No. 3:23-cv-01092 (M.D. Tenn. Oct. 18, 2023), https://storage.courtlistener.com/recap/gov.uscourts.tnmd.96652/gov.uscourts.tnmd.96652.1.0.pdf [https://perma.cc/9W7H-BAMY].

175. Justin Curto, *All 3 Major Labels Are Suing AI Start-ups for Copyright Infringement*, VULTURE (Aug. 1, 2024), https://www.vulture.com/article/major-labels-music-ai-suno-udio-lawsuit.html [https://perma.cc/QB5S-3WXQ].

176. *See infra* notes 238-254 and accompanying text.

177. Ethan Baker, *Deepfake Voice — Everything You Should Know in 2023*, VERITONE VOICE (Jan. 24, 2023), https://www.veritonevoice.com/blog/everything-you-need-to-know-about-deepfake-voice [https://perma.cc/2KN5-Y796] (discussing the history of voice cloning and deepfake voices).

178. *See, e.g.*, Matt O'Brien & Barbara Ortutay, *Why the Anthony Bourdain Voice Cloning Creeps People Out*, AP NEWS (July 17, 2021, 12:13 AM EST), https://apnews.com/article/anthony-bourdain-documentary-voice-cloning-technology-1dae37f748a22c946e2193fbb00ccc11 [https://perma.cc/9SEB-DDE2].

purpose, including nefarious ones such as spreading misinformation about elections and other topics on social media,[179] executing telephone financial scams,[180] and framing other people for incendiary speech by making them appear to say scandalous remarks.[181] Deepfakes don't stop with voices—they can also be used to create disturbing images and videos, including pornography simulating real people.[182] In short, AI deepfakes pose a complex set of problems that go well beyond the music industry.

AI voices can be crafted to be generic, or unlike a well-known person's voice. Apple's Siri voice, for example, was derived from recordings of the voice actor Susan Bennett, who was paid for her work, but it is unlikely Siri users know Bennett as the source.[183] On the other hand, as Drake's controversial diss track shows, when an AI-generated voice sounds like a well-known individual's voice (even a deceased person), it may spark intense public backlash, especially if the deepfake was created without the person's permission.

When OpenAI previewed its AI personal assistant in May 2024, it drew outrage.[184] The AI voice for OpenAI's personal assistant named "Sky" sounded ee-

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179. *See* Stuart A. Thompson & Sapna Maheshwari, *'A.I. Obama' and Fake Newscasters: How A.I. Audio Is Swarming TikTok*, N.Y. TIMES (Oct. 13, 2023), https://www.nytimes.com/2023/10/12/technology/tiktok-ai-generated-voices-disinformation.html [https://perma.cc/DEM4-98AC].

180. *See* Charles Bethea, *The Terrifying A.I. Scam that Uses Your Loved One's Voice*, NEW YORKER (Mar. 7, 2024), https://www.newyorker.com/science/annals-of-artificial-intelligence/the-terrifying-ai-scam-that-uses-your-loved-ones-voice [https://perma.cc/ME7D-268H]; Emily Flitter & Stacy Cowley, *Voice Deepfakes Are Coming for Your Bank Balance*, N.Y. TIMES (Aug. 30, 2023), https://www.nytimes.com/2023/08/30/business/voice-deepfakes-bank-scams.html [https://perma.cc/3EZQ-ZA2U]; Catherine Stupp, *Fraudsters Used AI to Mimic CEO's Voice in Unusual Cybercrime Case*, WALL ST. J. (Aug. 30, 2019, 12:52 PM ET), https://www.wsj.com/articles/fraudsters-use-ai-to-mimic-ceos-voice-in-unusual-cybercrime-case-11567157402 [https://perma.cc/W4B7-2LCA].

181. *See* Maxwell Zeff, *Baltimore Man Accused of Framing High School Principal with Racist AI Voice Clone*, GIZMODO (Apr. 26, 2024), https://gizmodo.com/baltimore-man-accused-framing-principal-racist-ai-voice-1851438213 [https://perma.cc/2AC2-D4G9].

182. *See* Lexi Lonas Cochran, *From Deepfake Nudes to Incriminating Audio, School Bullying Is Going AI*, HILL (June 6, 2024, 6:00 AM ET), https://thehill.com/homenews/education/4703396-deepfake-nudes-school-bullying-ai-cyberbullying [https://perma.cc/P4WE-V8YU].

183. *See Original Siri Voice Actor Reveals How Much She Was Paid for Iconic Role*, CNN (May 22, 2024), https://www.cnn.com/2024/05/22/business/video/original-siri-voice-susan-bennett-lcl-cprog-digvid [https://perma.cc/HME6-MN6R].

184. *See* Bobby Allyn, *Scarlett Johansson Says She Is 'Shocked, Angered' over New ChatGPT Voice*, NPR (May 20, 2024, 7:16 PM ET), https://www.npr.org/2024/05/20/1252495087/openai-pulls-ai-voice-that-was-compared-to-scarlett-johansson-in-the-movie-her [https://perma.cc/9U3Z-B8DM].

rily similar to the voice of Scarlett Johansson, who played the character of "Samantha," an AI personal assistant, in the 2013 movie *Her*.[185] The similarity seemed hardly coincidental given OpenAI cofounder Sam Altman's fascination with the movie *Her* and his various attempts to hire Johansson to do voice work for the personal-assistant project, including just two days before OpenAI's public demonstration.[186] Although OpenAI claimed that the "Sky" voice was based on a different voice actor and denied imitating Johansson's voice, Altman tweeted the single word "her" during the public demonstration of the Sky personal assistant.[187] Johansson inferred from Altman's tweet that the similarity to her voice in *Her* was intentional.[188]

For singers especially, deepfake voice clones are troubling. If anyone with an AI app can recreate Taylor Swift's voice,[189] the distinctiveness of Swift's real voice erodes. It is akin to the trademark concept of dilution by blurring.[190] Too many deepfake Taylor Swifts make it harder to spot the real singer's voice. The proliferation of AI voice clones could also start to turn fans against Swift and other artists whose voices are cloned, simply through a kind of AI guilt by association. Artists are rightfully concerned.[191]

III. HOW TO RESPOND TO AI

This Part outlines how we can apply the three principles outlined in Part I to begin to tackle the challenges AI poses. Although short of a detailed plan, this Part offers guidance on how we should respond to AI's disruptions to the music industry.

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185. *See id.*

186. *See id.*

187. *See* Sam Altman (@sama), X (formerly TWITTER) (May 13, 2023, 10:45 AM), https://twitter.com/sama/status/1790075827666796666 [https://perma.cc/5K2G-S3L4].

188. *See Scarlett Johansson Issues Statement About Rejecting Sam Altman's Request for Voice Work*, CHATGPT IS EATING THE WORLD (May 20, 2024), https://chatgptiseatingtheworld.com/2024/05/20/scarlett-johansson-issues-statement-about-rejecting-sam-altmans-request-for-voice-work [https://perma.cc/4GC4-RSKN].

189. *See, e.g.*, Jack Gordon, *I Fooled the World with a Fake Taylor Swift Song*, YOUTUBE (July 22, 2023), https://youtu.be/ZYATta5yGtQ [https://perma.cc/T9QY-PFTT]; Daniel, *Online Taylor Swift Voice Generator to Create Taylor Swift AI Voice for Free*, TOP MEDIA AI (Aug. 13, 2024), https://www.topmediai.com/text-speaker/taylor-swift-ai-voice [https://perma.cc/L6Y7-KTJG].

190. *See* 15 U.S.C. § 1125(c)(2)(B) (2018).

191. *See* Andrew R. Chow, *AI's Influence on Music Is Raising Some Difficult Questions*, TIME (Dec. 4, 2023, 1:38 PM EST), https://time.com/6340294/ai-transform-music-2023 [https://perma.cc/XA84-QRYK] ("A Sony Music executive told Congress that the company has issued almost 10,000 takedown requests for unauthorized vocal deepfakes.").

A. Drawing on the Lessons of the Past

First, it is crucial to recognize that the challenges posed by AI do not occur on a blank slate, no matter how novel or transformative AI is. For two hundred years, the copyright system has confronted major innovations in music, from the phonograph to synthesizers and digital technologies. As the Copyright Office recognized in its first report from its AI study, "History has shown that the copyright system is resilient and continues to evolve as needed."[192] AI is no exception.

1. Technology Neutrality to AI and the Freedom of Musicians to Choose AI

The Copyright Act's recognition of technology neutrality should apply to AI. The range of potential uses of AI in the creation and production of music is broad.[193] Apple's Logic Pro, popular among Ed Sheeran, Billie Eilish, Calvin Harris, and other top artists,[194] already includes AI programs for synthetic performers called "Session Players."[195] As Apple executive Brent Chiu-Wilson explained, "Logic Pro gives creatives everything they need to write, produce, and mix a great song, and our latest features take that creativity to a whole new level."[196] Although Logic Pro doesn't write lyrics, the software enables one to orchestrate all of the instrumentation for a new track or song.[197]

Technology neutrality allows breathing room for the further development of AI, with even more generative features. Musicians should continue to have the freedom to choose their instruments, including AI-generated ones. Perhaps many musicians won't embrace AI, but some will. Using AI in the editing process, Peter Jackson's crew isolated John Lennon's voice on an old demo cassette

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192. *See* Shira Perlmutter, *Foreword* to *Copyright and Artificial Intelligence, Part 1: Digital Replicas*, *supra* note 99.

193. *See* Moore & Acharya, *supra* note 149.

194. *See* Esteban Miranda, *Who Uses Logic Pro Daw?*, LOGICXX (Nov. 16, 2021), https://logicxx.com/blogs/news/who-uses-logic-daw [https://perma.cc/3RAX-C2WC].

195. *See Logic Pro Takes Music-Making to the Next Level with New AI Features*, APPLE (May 7, 2024), https://www.apple.com/newsroom/2024/05/logic-pro-takes-music-making-to-the-next-level-with-new-ai-features [https://perma.cc/6CZ3-NC3M].

196. *Id.*

197. *See* John Scalzi, *A Cover Song and Brief Impressions of Logic Pro II*, WHATEVER (May 14, 2024), https://whatever.scalzi.com/2024/05/14/a-cover-song-and-brief-impressions-of-logic-pro-11 [https://perma.cc/5YE9-SCMR]; Music Tech Help Guy, *LOGIC PRO 11 // What's New in Logic 11? (Stem Splitter, AI Players, Chord Track, ChromaGlow & MORE!)*, YOUTUBE (May 13, 2024), https://www.youtube.com/watch?v=E4doqQwgmkw [https://perma.cc/79EF-6MSQ].

and removed the background noise, so they could add Lennon's prior recording in an updated track with Paul McCartney.[198]

But the uses of AI are far greater. Part II discussed the vast potential that text-to-music AI generators offer in expanding the pool of music creators and the tools for creating music, including lyrics and sounds. These tools can benefit amateurs and professionals alike. Some artists, such as Holly Herndon, see AI as a way to expand the possibilities for music.[199] Music engineer and producer Shawn Everett experimented with AI on an unreleased song of the Killers (with whom he collaborates) and found the results unique and impressive: "What was happening was so different, and was landing in locations that no human being would normally think of, but it still felt rooted in something familiar."[200] Using Suno's Covers feature, Timbaland transformed his song "Love Again" into a "modern, house-inspired, danceable electronic" version.[201] The result was so "unique and different."[202] With AI, one can "reimagine the whole song."[203]

AI technology may also facilitate the development of new revenue streams. The musician Grimes has experimented with allowing the public to create AI-generated music using clones of her voice, with a split in royalties.[204] Music startups, such as Hooky, are launching platforms for musicians to license their voices for AI voice clones that can be used in users' creations, approved by the artists.[205] It's too early to tell whether these ventures will pan out, but the shift

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198. *See* Mark Savage, *Sir Paul McCartney Says Artificial Intelligence Has Enabled a 'Final' Beatles Song*, BBC (June 13, 2023), https://www.bbc.com/news/entertainment-arts-65881813 [https://perma.cc/V8SV-FXNC].

199. *See* Andrew R. Chow, *'There's a Wide-Open Horizon of Possibility.' Musicians Are Using AI to Create Otherwise Impossible New Songs*, TIME (Feb. 5, 2020, 2:02 PM), https://time.com/5774723/ai-music [https://perma.cc/4MDS-83RM].

200. *See* Marc Hogan, *Musicians Are Already Using AI More Often Than We Think*, PITCHFORK (May 11, 2023), https://pitchfork.com/thepitch/musicians-are-already-using-ai-more-often-than-we-think [https://perma.cc/GK9A-RYKF].

201. Suno, *Grammy-Winning Producer Timbaland Transforms His New Single with Suno / MUSE ft. Timbaland*, YOUTUBE (Oct. 22, 2024), https://youtu.be/MWmOhfoVMrg [https://perma.cc/8RNA-CS52] (video at 2:28).

202. *Id.* (video at 3:03).

203. *Id.* (video at 5:22).

204. *See* Antonio Pequeño IV, *Grimes Helps Artists Distribute Songs Using Her AI Voice—If They Split Royalties. Here's How It Works*, FORBES (June 12, 2023, 5:41 PM ET), https://www.forbes.com/sites/antoniopequenoiv/2023/06/12/grimes-helps-artists-distribute-songs-using-her-ai-voice--if-they-pay-royalties-heres-how-it-works [https://perma.cc/2GSG-5UBM].

205. *See* Stuart Dredge, *Hooky Is the Latest Startup Helping Singers License AI Voice-Clones*, MUSIC ALLY (June 6, 2024), https://musically.com/2024/06/06/hooky-is-the-latest-startup-helping-singers-license-ai-voice-clones [https://perma.cc/CUD5-S8BW]; *see also* Mike Isaac & Nicole Sperling, *Meta in Talks to Use Voices of Judi Dench, Awkwafina and Others for A.I.*, N.Y. TIMES (Aug. 2, 2024), https://www.nytimes.com/2024/08/02/technology/meta-ai-celebrity-

to view music as more technology-based lends itself to tech-startup-style business models.

Of course, given the public backlash[206] and potential bias against AI works,[207] many top artists likely will not embrace AI anytime soon. But technology neutrality affords musicians that choice, and it allows consumers the freedom to choose what music to listen to. If people hate AI-generated music or think it's soulless or banal,[208] they have every right to listen to what they like. But so do others who enjoy music created with AI tools.

Granted, one cannot discuss generative AI without mentioning the many copyright lawsuits filed against companies that offer AI generators,[209] including lawsuits brought by music publishers and music labels.[210] Most of these lawsuits allege that the various companies infringed the plaintiffs' copyrights by using their works, without permission, to train the companies' AI models.[211] AI models learn through a process of deep learning by which the model—on its own, with no specified rules written by human programmers—assigns statistical weights to discrete sub-elements (called "tokens") of the data that the model is

voices.html [https://perma.cc/RK8Z-7NEV] (reporting Meta's negotiations to license the voices of Judi Dench and other actors for use in Meta's AI).

206. *See* John Herrman, *Taylor Swift and the Power of the AI Backlash*, N.Y. MAG.: INTELLIGENCER (Sept. 11, 2024), https://nymag.com/intelligencer/article/taylor-swifts-endorsement-is-part-of-the-ai-backlash.html [https://perma.cc/7J89-AT26].

207. Courts should be vigilant in not allowing the juries in these cases to render their verdicts based on a personal bias against AI, a phenomenon Andrew Moshirnia and I identified through a behavioral experiment of mock jurors. *See* Edward Lee & Andrew Moshirnia, *The AI Penalty: Is There a Bias Against AI-Generated Works?*, 2024 MICH. ST. L. REV. (forthcoming 2024) (manuscript at 63-78), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4872651 [https://perma.cc/U4WN-AQWJ].

208. *See* Matteo Wong, *AI Can't Make Music*, ATLANTIC (July 22, 2024), https://www.theatlantic.com/technology/archive/2024/07/generative-ai-music-suno-udio/679114 [https://perma.cc/NF8T-5KHL] ("Anyone who expects that a program can create music and replace human artistry is wrong: I doubt that many people would line up for Lollapalooza to watch SZA type a prompt into a laptop, or to see a robot croon."); Wes Davis, *AI-Generated Blues Misses a Human Touch—and a Metronome*, VERGE (Mar. 23, 2024, 9:00 AM EDT), https://www.theverge.com/24103840/generative-ai-artwork-suno-music-industry-musicians-copyright [https://perma.cc/GZG8-4KDM].

209. *See Master List of Lawsuits v. AI, ChatGPT, OpenAI, Microsoft, Meta, Midjourney & Other AI Cos.*, CHATGPT IS EATING THE WORLD (Aug. 27, 2024), https://chatgptiseatingtheworld.com/2024/08/27/master-list-of-lawsuits-v-ai-chatgpt-openai-microsoft-meta-midjourney-other-ai-cos [https://perma.cc/A8K2-33QP].

210. *See supra* notes 174-175.

211. *See* Pamela Samuelson, *How to Think About Remedies in the Generative AI Copyright Cases*, 67 COMMC'NS ASS'N COMPUTING MACH. 27, 27 (2024).

trained on.[212] Exposing the AI model to more data (potentially on the scale of billions of parameters, or the discrete variables to which the model has assigned weights) to analyze and learn from often leads to better, more responsive results.[213] Whether the companies' use of copies of works to train AI is copyright infringement hinges on whether it is fair use—a contentious issue too complex to dissect in this Essay beyond the brief analysis of fair use below.[214]

But, even if some of the current lawsuits against AI generators find infringement in the training of AI models, the decisions are unlikely to bar categorically the use of all AI in creating and producing music. The decisions are likely to be fact-specific, based on a particular defendant's training of an AI model and the outputs it generates.[215] As explained in a later Section, fair use is a fact-specific inquiry and is decided on a case-by-case basis.[216]

Musicians and executives in the music industry realize that AI isn't going away—and that it can be a positive development for the industry. Even the two hundred musicians who signed the open letter to protest AI acknowledged that "we believe that, when used responsibly, AI has enormous potential to advance human creativity and in a manner that enables the development and growth of new and exciting experiences for music fans everywhere."[217] Huppe, the CEO of SoundExchange, struck a similar note in *Forbes*.[218] While calling for "legal and professional guardrails to ensure music creators are protected," Huppe emphasized the "positive side to AI . . . as a tool for creators with the promise to unleash a new wave of human artistry and creativity, just as music videos did in the

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212. *See* Mary Newshauser, *The Two Models Fueling Generative AI Products: Transformers and Diffusion Models*, GPTECH BLOG (July 13, 2023), https://www.gptechblog.com/generative-ai-models-transformers-diffusion-models [https://perma.cc/D7BA-JT58]; Jay Alammar, *How GPT3 Works – Visualizations and Animations*, GITHUB (July 27, 2020), https://jalammar.github.io/how-gpt3-works-visualizations-animations [https://perma.cc/ZV9Y-YTSP]; Jay Alammar, *The Illustrated Stable Diffusion*, GITHUB (Nov. 2022), https://jalammar.github.io/illustrated-stable-diffusion [https://perma.cc/ZWA3-SYD9].

213. *See Parameters in Notable Artificial Intelligence Systems*, OUR WORLD DATA, https://ourworldindata.org/grapher/artificial-intelligence-parameter-count [https://perma.cc/J98K-H6FN].

214. *See infra* notes 242-253 and accompanying text.

215. *See Must Reads: Timothy Lee, Grimmelmann, Sag on AI Lawsuits; Samuelson on Remedies, Destruction of AI Models*, CHATGPT IS EATING THE WORLD (Feb. 25, 2024), https://chatgptiseatingtheworld.com/2024/02/25/must-reads-timothy-lee-grimmelmann-sag-on-ai-lawsuits-samuelson-on-remedies-destruction-of-ai-models [https://perma.cc/NAY8-AJ5G].

216. *See infra* note 242 and accompanying text.

217. Artist Rights Alliance, *supra* note 173.

218. *See* Michael Huppe, *The Promise of AI: 5 Ways Musicians Are Making the Most of AI Tools*, FORBES (May 13, 2024, 8:45 AM), https://www.forbes.com/sites/forbesbusinesscouncil/2024/05/13/the-promise-of-ai-5-ways-musicians-are-making-the-most-of-ai-tools [https://perma.cc/P58U-85Q9].

1980s."[219] As Paul McCartney remarked, AI is "kind of scary but exciting, *because it's the future*."[220]

2. *Expansive and Evolving Authorship with AI*

One of the most important issues AI raises is whether a creator can use AI programs to create works that qualify for copyright. Because the issue is a constitutional one involving the meaning of the "Writings" of "Authors" in the Progress Clause,[221] I believe it is the single most important issue AI raises for copyright law today. If the answer is too restrictive, it will be constitutionalized and tie Congress's hands forever. Congress has no authority to grant copyrights to anything other than the "Writing" of "Authors." Hence, if the courts hold that creators who make AI-generated works are not "Authors," Congress will have no power under the Progress Clause to take a more expansive view of authorship.[222]

The U.S. Copyright Office has taken a restrictive view of AI-generated works, including ones created by extensive involvement of human contributors (who use text "prompts," or instructions, to an AI generator to produce new works). In denials of copyright registration, the Office ruled that, because AI generators involve a process that uses some random elements when generating

219. *Id.*; *see also* Michael Huppe, *Protecting Artists with AI Guardrails*, FORBES (Apr. 9, 2024, 8:00 AM), https://www.forbes.com/sites/forbesbusinesscouncil/2024/04/09/protecting-artists-with-ai-guardrails [https://perma.cc/7MH9-BTUA] (arguing for consent, credit, and compensation ("3 Cs") as principles to govern uses of music by AI).

220. Savage, *supra* note 198 (emphasis added).

221. U.S. CONST. art. I, § 8, cl. 8.

222. Granted, Congress could enact sui generis protection for AI-generated works under its Commerce Clause power. But that alternative would be a poor substitute for copyright, which is the primary regulatory system for creative works in the United States. Those left out of the copyright system could be viewed as second-class creators.

a work, the human contributor did not produce the so-called "traditional elements of authorship"[223]—a term that no federal court has ever used in a copyright decision.[224] Without providing any notice-and-comment period,[225] the Office formalized its position in a public guidance, which requires creators to disclose any AI-generated materials and to *disclaim* them from copyright.[226] But afterwards, the Office, in conducting further study of AI, solicited comments and received over ten thousand public comments on a series of questions it raised. The Office plans on issuing several reports, including one revisiting the issue of authorship, and conducting a notice-and-comment period for an update to its manual for registration to "include further guidance and examples relating to the registration of works containing AI-generated material."[227] The Office might soften or modify its restrictive approach to traditional elements of authorship. But nothing thus far indicates that it will.

I have written extensively on why I believe the Copyright Office's position, which imposes newfound requirements of "traditional elements of authorship," is wrong as a matter of law.[228] I will not repeat all my analysis here. Even on its face, the notion that authorship is or should be limited to "traditional elements" runs counter to the text of the Progress Clause, as well as the more than two-hundred-year history of U.S. copyright law, which has evolved to include new or *nontraditional* modes of creation. If "Authors" were limited to "traditional ele-

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223. *See* Letter from Robert J. Kasunic, Assoc. Reg. of Copyrights and Dir. of the Off. of Registration Pol'y & Prac., U.S. Copyright Off., to Van Lindberg, Partner, Taylor English Duma, LLP 8 (Feb. 21, 2023), https://www.copyright.gov/docs/zarya-of-the-dawn.pdf [https://perma.cc/2J9D-NA89]; Letter from Suzanne V. Wilson, Gen. Couns. and Assoc. Reg. of Copyrights, U.S. Copyright Off., Maria Strong, Assoc. Reg. of Copyrights and Dir. of Pol'y and Int'l Affs., U.S. Copyright Off., and Jordana Rubel, Assistant Gen. Couns., U.S. Copyright Off., to Tamara Pester, Esq., Att'y and Owner, Tamara S. Pester, LLC 4 (Sept. 5, 2023), https://www.copyright.gov/rulings-filings/review-board/docs/Theatre-Dopera-Spatial.pdf [https://perma.cc/K573-BNWR].

224. *See* Edward Lee, *The Code Red for Copyright Law*, 76 FLA. L. REV. F. 1, 16 (2024) [hereinafter Lee, *Code Red*].

225. This failure of the U.S. Copyright Office likely violated the Administrative Procedure Act. *See id.* at 7-11.

226. *See* Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence, 88 Fed. Reg. 16190, 16193 (Mar. 16, 2023) (to be codified at 37 C.F.R. pt. 202).

227. *See* Nora Scheland, *Looking Forward: The U.S. Copyright Office's AI Initiative in 2024*, LIBR. CONG. BLOGS (Mar. 26, 2024), https://blogs.loc.gov/copyright/2024/03/looking-forward-the-u-s-copyright-offices-ai-initiative-in-2024 [https://perma.cc/79DK-5F5A].

228. *See* Lee, *Code Red*, *supra* note 224, at 16; Lee, *Prompting Progress*, supra note 78; Edward Lee, *Comment of Professor Edward Lee to Artificial Intelligence Study by the United States Copyright Office* (Oct. 30, 2023) [hereinafter Comment to USCO], https://ssrn.com/abstract=4619118 [https://perma.cc/WE8L-7BNX].

ments" from 1789, none of this expansion in new forms of authorship—for instance, photography, sound recordings, and synthesized and computer-generated music—would be allowed under copyright law. History shows otherwise.

I agree with the Copyright Office's position that autonomously generated works—that is, works generated without the involvement of a human—should not be copyrightable.[229] There is no human contribution at all in creating such works, other than the contribution of the initial human programmer who enabled the AI to create on its own and who then, in effect, let the machine run.[230] Authorship under the Copyright Act can reasonably be interpreted to require either a human author[231] or a human contributor, such as an employee of a corporation.[232]

I disagree, though, with the Copyright Office's broad exclusion of AI-generated works that *do* involve human contributions in the process of creation. The Copyright Office has rejected the copyrightability of such works because they supposedly lack the "traditional elements of authorship."[233] My approach is more faithful to the text and history of the Progress Clause, and the Supreme Court's broad interpretation of the Writings of Authors.[234] Copyright law recognizes and rewards human creations that have at least a modicum of creativity, "no matter how crude, humble or obvious."[235] Authors should be allowed to use new technologies, trial and error, random elements, and spontaneity in their creative process.[236] Tradition is the antithesis of creativity—and progress.

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229. *See* Lee, *Prompting Progress*, *supra* note 78, at 1512-13, 1578-79. By purely autonomously generated, I mean when no human is involved at any stage of the creation of the work, other than the initial construction of the program. But I would not include in this category a situation in which a human creator is involved in the process, instructing or changing the program to render a selection or arrangement of elements in the final work.

230. *See* Pamela Samuelson, *Allocating Ownership Rights in Computer-Generated Works*, 47 U. PITT. L. REV. 1185, 1209 (1986) ("The programmer creates the *potentiality* for the creation of the output, but not its *actuality*.").

231. *See* Naruto v. Slater, 888 F.3d 418, 426 (9th Cir. 2018) (holding that standing under the Copyright Act applies to humans, not animals); Thaler v. Perlmutter, 687 F. Supp. 3d 140, 147 (D.D.C. 2023) ("The 1976 Act's 'authorship' requirement as presumptively being *human* rests on centuries of settled understanding."), *appeal filed*, No. 23-5233 (D.C. Cir. Oct. 18, 2023).

232. *See* 17 U.S.C. § 101 (2018) (defining a "work made for hire"). *But see* Ryan Abbott & Elizabeth Rothman, *Disrupting Creativity: Copyright Law in the Age of Generative Artificial Intelligence*, 75 FLA. L. REV. 1141, 1183-84 (2023) (arguing against any human-authorship requirement and in favor of allowing copyright for AI-generated works).

233. *See* Lee, *Prompting Progress*, *supra* note 78, at 1466-67, 1471.

234. *See id.* at 1480-89.

235. *See* Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 345 (1991) (quoting 1 M. NIMMER & D. NIMMER, COPYRIGHT § 1.08[C][1] (1990)).

236. *See* Lee, *Prompting Progress*, *supra* note 78, at 1548-57.

Instead of the Office's traditional elements of authorship, the proper focus should be on whether a human creator has made an *original* selection or arrangement of elements. Courts have long recognized that a person's selection and arrangement of uncopyrightable elements can qualify as a work of authorship.[237] Under this test, when creators engage in prompt engineering, refining their compositions through a series of prompts, they may satisfy authorship through their original selection and arrangement of elements, such as in creating a visual work.[238] Likewise, musicians can use prompt engineering through a series of prompts that manifest their selection and arrangement of AI-generated elements in a new song. Had I tweaked the elements in the song "Echoes of Neon" with a series of additional prompts, I could have demonstrated enough of my own selection and arrangement of elements in the final song. And had I exported the file and edited it further using a DAW, I could have increased my level of human contribution to have easily satisfied the legal test for originality. Even if the individual AI-generated elements are uncopyrightable, my selection and arrangement of elements should be eligible for copyright. Just as a producer who selects and arranges natural bird calls for a sound recording can qualify as an author, so too should musicians who make an original selection and arrangement of elements using AI.[239]

But if the only originality lies in the selection or arrangement, the scope of copyright is thin, meaning it protects against only identical copies. Recognizing authorship in a person's selection and arrangement through AI prompt engineering provides an important incentive for human creators by affording copyrights to AI-generated works that contain sufficient human selection or arrangement. Musicians don't have to forgo AI or risk forfeiting copyright. Instead, they can use AI and secure a copyright if they contribute to the work's creation through their selection or arrangement.

For example, to determine the copyrightability of a prompt-engineered song, courts can examine and compare (1) the first version of the song generated by the musician's prompt and (2) the final version, to identify what selections, arrangements, and contributions to a song the musician made.[240] If the final

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237. *See Feist*, 499 U.S. at 345.

238. *See* Lee, *Prompting Progress*, *supra* note 78, at 1508-12; Comment to USCO, *supra* note 228, at 12-13.

239. Timabaland's use of Suno to produce a different version of his song "Love Always" provides an even broader claim of authorship, given his creation of the original song, some of which elements are presumably contained in the remix version, a derivative work. *See supra* note 201.

240. This type of approach was employed by a court in China in recognizing authorship in a prompt-engineered image. *See* Li v. Liu, Jing 0491 Min Chu No. 11279, at 12 (Beijing Internet Ct. 2023), https://english.bjinternetcourt.gov.cn/pdf/BeijingInternetCourtCivilJudgment112792023.pdf [https://perma.cc/CU2E-5NEX].

work embodies a minimal level of creative selection or arrangement of the musician, then it qualifies for a copyright. And the more the musician contributes (e.g., revising or remixing extensively using a DAW or composing the lyrics), the broader the potential scope of copyright the musician will receive. This approach valorizes and rewards human contributions—and it helps to reduce the risk that AI will cause human creators to become demotivated due to AI's powerful capabilities.[241] Humans can secure copyrights, while AI creating alone cannot.

3. Rebuilding Copyright Law for AI Disruptions

a. Fair Use

No doubt the copyright issue that has drawn the greatest attention is whether the training of AI models based on unlicensed copyrighted works constitutes infringement. The pending copyright lawsuits against AI generators will determine if the training of AI models using copyrighted works is fair use. Although the copyright lawsuits involving AI evoke strong reactions—and even raw emotions—on both sides of the debate, I believe our current copyright system is equipped to handle the novel issue.

First, with close to thirty lawsuits likely raising the issue of fair use, we will soon have the collective decisions of the various juries and courts that must decide the question of fair use. Given that fair use is a case-by-case determination and that different AI models are involved in the various lawsuits,[242] it is possible, if not likely, that the verdicts of the respective juries in the cases will be different. Some courts may find the issue amenable to a decision as a matter of law based on the juries' factual findings or perhaps even on summary judgment. Ultimately, the Supreme Court may weigh in, given the sheer importance of the legal issue. And whatever the courts and the juries decide, Congress can always take its own look at the issue and amend the Copyright Act if it believes it is warranted.

Second, fair use is a doctrine that involves a balancing of competing interests, including not just the copyright owners' important interests, but also—perhaps

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241. *See* Edward Lee, *Copyright Re-Alignment: The Growth of New Works Outside the Copyright System*, CHI.-KENT L. REV. (forthcoming 2025) (manuscript at 22), https://ssrn.com/abstract=4904725 [https://perma.cc/J25E-WUB7].

242. *See* Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 577 (1994) ("The task is not to be simplified with bright-line rules, for the statute, like the doctrine it recognizes, calls for case-by-case analysis.").

even more importantly—the public interest.[243] As the Supreme Court recognized in the Sony Betamax case and the Google Android phone case, fair use is often used to address new technological uses of copyrighted works without an amendment by Congress.[244] Indeed, in codifying the fair-use doctrine in the 1976 Copyright Act, Congress endorsed its application to address "technological change."[245] As the Federal Circuit explained, "The legislative history of section 107 suggests that courts should adapt the fair use exception to accommodate new technological innovations."[246] Fair use operates as a First Amendment safeguard within copyright law,[247] accommodating both speech technologies and speech itself.[248] The Court has recognized the need for copyright law to provide breathing room for technological innovation while affording authors sufficient protection.[249]

Third, courts are not writing on a blank slate. They have the benefit of a developed body of case law carefully analyzing the four factors of fair use for various technological uses of works. For example, courts have recognized fair uses in reverse engineering an operating system to create "intermediate copies" of it, in order to identify the uncopyrightable specification needed to create a new program or device that is interoperable.[250] Courts have recognized that using copies of works to enable new functionalities, such as within-text search, image search, and plagiarism detection, qualifies as a fair use.[251] The Supreme Court

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243. *See* Google LLC v. Oracle Am., Inc., 593 U.S. 1, 35-36 (2021) ("[W]e must take into account the public benefits the copying will likely produce. Are those benefits, for example, related to copyright's concern for the creative production of new expression? Are they comparatively important, or unimportant, when compared with dollar amounts likely lost (taking into account as well the nature of the source of the loss)?").

244. *See id.* at 19 ("In a word, we have understood the provision to set forth general principles, the application of which requires judicial balancing, depending upon relevant circumstances, including 'significant changes in technology.'" (quoting Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 430 (1984))).

245. House Report, *supra* note 66, at 66; S. REP. NO. 94-473, at 62 (1975).

246. Atari Games Corp. v. Nintendo of Am., Inc., 975 F.2d 832, 843 (Fed. Cir. 1992).

247. Eldred v. Ashcroft, 537 U.S. 186, 219-20 (2003).

248. *See* Edward Lee, *Technological Fair Use*, 83 S. CAL. L. REV. 797, 816-17 (2010).

249. *See* Google LLC v. Oracle Am., Inc., 593 U.S. 1, 30 (2021) ("[T]o create a new platform . . . was consistent with that creative 'progress' that is the basic constitutional objective of copyright itself." (quoting Feist Publ'ns, Inc., v. Rural Tel. Serv. Co., 499 U.S. 340, 349-50 (1991))); Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd., 545 U.S. 913, 928 (2005) ("[T]he administration of copyright law is an exercise in managing the tradeoff" between "artistic protection" and "technological innovation.").

250. *See* Sony Comput. Ent., Inc. v. Connectix Corp., 203 F.3d 596, 600 (9th Cir. 2000); Sega Enters. Ltd. v. Accolade, Inc., 977 F.2d 1510, 1527-28 (9th Cir. 1992).

251. *See* Authors Guild, Inc. v. HathiTrust, 755 F.3d 87, 101 (2d Cir. 2014) (HathiTrust Digital Library); Authors Guild v. Google, Inc., 804 F.3d 202, 225 (2d Cir. 2015) (Google Book Search);

recognized that Google's copying and use of Java declaring code (i.e., prewritten code that identifies the name and location of a task to be performed by the program) in Android's operating system was a fair use to create a new computing platform that can tap into the knowledge of Java programmers, who can, in turn, create new apps for the Android platform.[252] At the very least, these precedents establish that a technological use of copyrighted works can have a legitimate fair-use purpose.[253] Courts have plenty of technological fair-use cases from which to draw principles and analogies in the pending cases involving the training of AI models.[254]

Of course, AI presents its own complexities and novel questions for copyright law. The juries and courts must evaluate the evidence presented and determine whether, on balance, the factors favor fair use or not. But that is precisely how fair use's case-by-case analysis works.

b. Prior Art and Other Doctrines

In other areas of copyright law, I recommend that courts adopt flexible approaches that incorporate a similar balancing of competing interests, including the public interest, as well as a sensitivity to the need for breathing room for technological innovation. Fair use doesn't have to be the only doctrine in copyright law that serves this important role in navigating the disruptions wrought by AI. Other judge-made doctrines can—and should—be used in this way.

For example, one obscure doctrine for music infringement cases is the consideration of "prior art" in past songs to determine if an element of music is unprotectable.[255] Typically, copyright law does not require novelty, or a new work; instead, it requires merely an original work that was independently created.[256] Courts have taken a different approach for music, however, treating the lack of novelty of a discrete musical element, or its existence in the prior art before the

Perfect 10, Inc. v. Amazon.com, Inc., 508 F.3d 1146, 1168 (9th Cir. 2007) (Google image search); Kelly v. Arriba Soft Corp., 336 F.3d 811, 822 (9th Cir. 2003) (Arriba Soft image search); A.V. ex rel. Vanderhye v. iParadigms, LLC, 562 F.3d 630, 644-45 (4th Cir. 2009); Field v. Google, Inc., 412 F. Supp. 2d 1106, 1123 (D. Nev. 2006) (Google search of websites).

252. *See Google*, 593 U.S. at 40.

253. *See* Edward Lee, *Use by Use: How* Warhol *and* Google *Apply to AI* 3-4 (Oct. 23, 2024) (unpublished manuscript) (on file with author).

254. *See* Lee, *supra* note 248, at 806-07. *See generally* Pamela Samuelson, *Fair Use Defenses in Disruptive Technology Cases*, 71 UCLA L. REV. (forthcoming 2024), https://ssrn.com/abstract=4631726 [https://perma.cc/7P9K-CCR3] (discussing cases).

255. *See* Joseph P. Fishman & Kristelia García, *Authoring Prior Art*, 75 VAND. L. REV. 1159, 1169-84 (2022).

256. *See* Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 345-46 (1991).

plaintiff's work was created, as a basis for denying it copyright protection.[257] Although this doctrine of prior art in music has a venerable pedigree dating back to 1929,[258] it is idiosyncratic to music cases and diverges from the general principle that novelty is not required for works of authorship.[259] The doctrine is necessary, however, to ensure that copyright is not used to propertize the building blocks of music.

AI generators can unleash massive amounts of music prior art. Indeed, even before the explosion of AI music generators, Damien Riehl and Noah Rubin created a program that algorithmically generated "every possible 8-note, 12-beat melody combo," at "a rate of 300,000 melodies per second."[260] They abandoned copyrights to the sixty-eight billion melodies and donated them all to the public domain, for the ostensible purpose of negating any other musician's potential copyright infringement claim in any of the same melodies.[261]

Now, with autonomous AI programs, AI can produce an infinite number of melodies and songs. If all these AI musical works constitute prior art, it will be increasingly difficult for human musicians to come up with any melody or song that is copyrightable (or, at least one that isn't riddled with unprotectable elements). Why? Because every element will already be in the prior art of music produced and inundated by AI.

Courts don't have to accept this dispiriting situation. Because courts created the doctrine of prior art in music, courts have the power to adjust its contours. Courts can hold that AI-generated music does not count as prior art, meaning AI-generated music doesn't disqualify a human-created musical element from copyright. If a human creator independently created the musical element that is original, such original expression qualifies for copyright, irrespective of AI's prior creation of the same element. In other words, just as purely AI-generated elements don't qualify for copyright (putting aside a human creator's potential selection or arrangement of them), AI-generated elements don't *disqualify* human creations from copyright, either. The unifying principle in both contexts is

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257. *See* Fishman & García, *supra* note 255, at 1178-82.

258. *See id.* at 1172-74.

259. *See Feist*, 499 U.S. at 345-46.

260. Samantha Cole, *Musicians Algorithmically Generate Every Possible Melody, Release Them to Public Domain*, VICE (Feb. 25, 2020, 9:00 AM), https://www.vice.com/en/article/wxepzw/musicians-algorithmically-generate-every-possible-melody-release-them-to-public-domain [https://perma.cc/G3FH-FKKV].

261. *Id.*; *see* Peter Cramer, *68 Billion Melodies*, JLA BEAT (Apr. 2, 2020), https://journals.library.columbia.edu/index.php/lawandarts/announcement/view/297 [https://perma.cc/Z8QR-49TY]; *Just Make Music*, ALL THE MUSIC LLC, http://allthemusic.info [https://perma.cc/2LY2-7DWM]. To my knowledge, no court has faced a copyright suit in which these melodies were asserted as prior art.

that copyright law can favor human creations over AI ones, whether in qualifying them for or disqualifying them from copyright protection. Ultimately, this approach promotes progress by preserving copyright's constitutional role as an incentive for human creators to create new works.[262]

B. Addressing New Challenges: Deepfakes and AI Voice Clones

Many of the challenges posed by AI are ones that the copyright system won't solve.[263] Potential job displacement and the larger macroeconomic concerns about AI in the creative industries are worrisome and deserving of close attention. However, these challenges are not endemic to the creative industries, but instead raise profound questions for countries that may require measures directly tailored to address job displacement (e.g., universal basic income).[264]

Another issue that likely requires a federal response outside of copyright law is the problem discussed in the Introduction: AI voice clones. Can people do what Drake did to 2Pac and Snoop Dogg and create clones of others' voices without their permission? This is not an issue copyright law is designed to address. Copyright law protects specific works,[265] not a person's voice generally. Copyright protection for sound recordings is limited to reproducing the actual sounds in a recording and does not extend to simulations of the sounds.[266] Traditionally, Congress has left protection for voice to the right of publicity under state law.[267]

One of the most compelling rationales for protecting voice was offered by Judge Noonan in a case involving the use of a "sound alike" of the singer Bette Midler in an ad for Ford Motor Company.[268] In recognizing that Midler had a claim under the common law of right of publicity, Judge Noonan explained:

> A voice is as distinctive and personal as a face. The human voice is one of the most palpable ways identity is manifested. . . . [T]hese observations

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262. *See* Mazer v. Stein, 347 U.S. 201, 219 (1954).

263. *See* Micaela Mantegna, *ARTificial: Why Copyright Is Not the Right Policy Tool to Deal with Generative AI*, 133 YALE L.J.F. 1126, 1127-28 (2024); Carys J. Craig, *The AI-Copyright Trap*, 100 CHI-KENT L. REV. (forthcoming 2025) (manuscript at 2) https://ssrn.com/abstract=4905118 [https://perma.cc/PC69-KA2N].

264. *See* Beatrice Nolan, *The Tech Industry Wants to Create an AI Utopia. Its Leaders Think Universal Basic Income Is the Answer.*, BUS. INSIDER (July 30, 2024, 7:45 AM EDT), https://www.businessinsider.com/ubi-universal-basic-income-ai-risks-destroying-jobs-solutions-2024-7 [https://perma.cc/2QQL-U7PF].

265. 17 U.S.C. § 102(a) (2018).

266. *See id.* § 114(b).

267. *See, e.g.*, Midler v. Ford Motor Co., 849 F.2d 460 (9th Cir. 1988).

268. *Id.* at 461.

> hold true of singing, especially singing by a singer of renown. The singer manifests herself in the song. To impersonate her voice is to pirate her identity.[269]

Yet even the right of publicity may be ineffective to address the problem of AI voice clones. The right of publicity varies by state—"the details are often messy and the legal standards are inconsistent."[270] The right of publicity is limited by certain unauthorized commercial uses of a person's identity,[271] and uses that result in monetary harm.[272]

Tennessee was the first state to enact a law specifically to address AI deepfakes under the right of publicity. The law, cleverly titled the Ensuring Likeness Voice and Image Security Act of 2024 (ELVIS Act), amended the state's right of publicity statute to include "voice" within the scope of protection.[273] The ELVIS Act creates a new civil action for distributing, transmitting, or otherwise making available "an algorithm, software, tool, or other technology, service, or device, the primary purpose or function of which is the production of an individual's photograph, voice, or likeness without authorization from the individual."[274] The ELVIS Act retains the existing criminal liability for unauthorized uses as a Class A misdemeanor.[275]

Although the ELVIS Act's purpose in tailoring the right of publicity to protect voice is laudable, the statute is written too broadly and could apply even to "tribute bands, interpolations, or even just sharing a photo that a celebrity didn't

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269. *Id.* at 463.

270. *See AI and the Right of Publicity: A Patchwork of State Laws the Only Guidance, for Now*, CROWELL (Dec. 12, 2023), https://www.crowell.com/en/insights/client-alerts/ai-and-the-right-of-publicity-a-patchwork-of-state-laws-the-only-guidance-for-now [https://perma.cc/VR2B-L8DX].

271. 1 J. THOMAS MCCARTHY & ROGER E. SCHECTER, THE RIGHTS OF PUBLICITY AND PRIVACY § 1:3 (2d ed. 2022).

272. *See* Marc Edelman, *Closing the "Free Speech" Loophole: The Case for Protecting College Athletes' Publicity Rights in Commercial Video Games*, 65 FLA. L. REV. 553, 560 (2013).

273. Ensuring Likeness Voice and Image Security (ELVIS) Act of 2024, Tenn. Pub. Acts, ch. 588, §§ 3-4, 6, (West 2024); *see* Kristin Robinson, *Tennessee Adopts ELVIS Act, Protecting Artists' Voices from Impersonation*, BILLBOARD (Mar. 21, 2024), https://www.billboard.com/business/legal/tennessee-elvis-act-protecting-artists-voices-ai-impersonation-1235637934 [https://perma.cc/6R82-U2GE].

274. ELVIS Act §§ 3-4, 6.

275. *See* Pamela M. Deese, Matthew Berlin, Matthew L. Finkelstien, Emily B. Lewis, Helenka B. Mietka & Yusef Abutouq, *ELVIS Is Alive as Tennessee Is First to Implement Rights of Publicity Protections Against AI Clones, Deepfakes, and Impersonations*, ARENTFOX SCHIFF (June 28, 2024), https://www.afslaw.com/perspectives/alerts/elvis-alive-tennessee-first-implement-rights-publicity-protections-against-ai [https://perma.cc/KE8K-M5Y6].

authorize," according to Joseph Fishman.[276] The ELVIS Act added language to the right-of-publicity law's fair-use exception[277]—"[t]o the extent such use is protected by the First Amendment to the United States Constitution"—which, according to some legal experts, might increase the defendant's burden of proving fair use.[278] Perhaps most worrisome of all, the technology-liability provision of the ELVIS Act is overbroad and potentially violates the First Amendment.[279]

Instead of allowing states to address the problem of AI voice clones in a patchwork manner, with potentially inconsistent and overbroad approaches, Congress should enact sui generis federal legislation that provides a uniform approach and, crucially, a narrowly tailored scope of protection that balances competing interests, including for innovation and permissible uses consistent with the freedom of speech. The Copyright Office published a report on "digital replicas" that endorses such legislation with specific recommendations on its contours.[280] On the same day the Copyright Office published its report, a bipartisan group of senators introduced a bill titled the Nurture Originals, Foster Art, and

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276. Bill Donahue & Kristin Robinson, *Will Tennessee's New AI Voice Law Have Unintended Consequences?*, BILLBOARD (Apr. 15, 2024), https://www.billboard.com/pro/elvis-act-legal-experts-opinion-tennessee-ai-law-conseqences [https://perma.cc/653W-AQC3]; *see* ELVIS Act, § 6(a)(1) (recognizing liability for "[a]ny person who knowingly uses or infringes upon the use of an individual's name, photograph, voice, or likeness *in any medium, in any manner directed to any person other than such individual*, for purposes of advertising products, merchandise, goods, or services, or *for purposes* of fundraising, solicitation of donations, purchases of products, merchandise, goods, or *services*, without such individual's prior consent" (emphasis added)).

277. TENN. CODE ANN. § 47-25-1107(a) (2023).

278. *See The ELVIS Act: Tennessee Shakes Up Its Right of Publicity Law and Takes on Generative AI*, LATHAM & WATKINS 3 (Apr. 8, 2024), https://www.lw.com/en/admin/upload/SiteAttachments/The-ELVIS-Act-Tennessee-Shakes-Up-Its-Right-of-Publicity-Law-and-Takes-On-Generative-AI.pdf [https://perma.cc/W5L4-5KMT].

279. It goes beyond the scope of this Essay to analyze this technology-liability provision, but I hope to address it in future scholarship. The ELVIS Act's "making available" provision might prohibit disseminating AI generators that have substantial noninfringing uses. For example, the ELVIS Act could be read to prohibit Elon Musk's dissemination of the Grok AI generator, which has produced borderline salacious images of Donald Trump, Kamala Harris, and Taylor Swift. *See* Emily Dreibelbis, *Grok's New AI Image Generator Readily Creates Wild Images of Famous Figures*, PC MAG. (Aug. 14, 2024), https://www.pcmag.com/news/groks-new-ai-image-generator-readily-creates-wild-images-of-famous-figures [https://perma.cc/TU7V-6YBS]; Emily Dreibelbis, *AI-Generated 'Swifties for Trump' Photos Prompt Taylor Swift to Endorse Harris*, PC MAG. (Sept. 11, 2024), https://www.pcmag.com/news/ai-generated-swifties-for-trump-photos-prompt-taylor-swift-to-endorse-harris [https://perma.cc/ZY5N-3T8V].

280. *See* USCO Report on Digital Replicas, *supra* note 99. It goes beyond the scope of this Essay to summarize the Office's comprehensive report. *See id.* at iv-v (summarizing key elements); *id.* at 28-52; *infra* note 282 and accompanying text.

Keep Entertainment Safe Act of 2024 (NO FAKES Act).[281] Elsewhere, I compare the two proposals.[282]

If enacted, the NO FAKES Act would create a new, nonassignable but licensable federal right called a "digital replication right" for human individuals to protect their visual likenesses and voices from unauthorized uses in digital replicas, which "means a newly-created, computer-generated, highly realistic electronic representation that is readily identifiable as the voice or visual likeness of an individual that is embodied in a sound recording, image, audiovisual work . . . or transmission."[283] Liability for unauthorized creations of digital replicas requires proof that the defendant had actual knowledge or was willfully blind to the unauthorized use of a digital replica.[284] In addition to individuals and their licensees, music labels are given standing to enforce the digital-replication right of a sound-recording artist if the label has entered into an exclusive contract with the sound-recording artist.[285] Damages for a violation is the greater amount between actual damages and the statutory amount designated for a defendant who is an individual ($5,000 per work involving an unauthorized digital replica), online-service entity ($5,000 per violation), or entity that is not an online service ($25,000 per work).[286]

The NO FAKES bill is a step in the right direction. Importantly, it includes exclusions from liability, with a detailed list of five categories of permissible uses that are not subject to liability.[287] Just as important, it includes safe harbors for manufacturers and distributors of technologies that enable the creation of digital replicas, as well as for online services that allow hosting, referring, or linking to unauthorized digital replicas (provided the online services comply with a regime of notice-and-takedown similar to the one for copyright infringement under the Digital Millennium Copyright Act safe harbors).[288]

The NO FAKES bill is too broad, however. Unlike the ELVIS Act, the NO FAKES bill is not limited to the right of publicity. Instead, it tries to tackle many different types of deepfake problems beyond the right-of-publicity context—

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281. *See* Nurture Originals, Foster Art, and Keep Entertainment Safe Act of 2024, S. 4875, 118th Cong. (as introduced July 31, 2024).

282. *Comparison of NO FAKES Bill & U.S. Copyright Office Recommendation to Protect Digital Replica*, CHATGPT IS EATING THE WORLD (Aug. 14, 2024), https://chatgptiseatingtheworld.com/2024/08/14/comparison-of-no-fakes-bill-u-s-copyright-office-recommendation-to-protect-digital-replica [https://perma.cc/Z328-XKTC].

283. S. 4875, § 2(a)(1)(A).

284. *See id.* § 2(c)(3).

285. *See id.* § 2(e)(1).

286. *See id.* § 2(e)(4)(A)(i).

287. *See id.* § 2(c)(4).

288. *See id.* § 2(d).

such as AI depictions of sexually explicit content—through a broad new federal right of digital replication. Given how broad this federal right is, the statutory exceptions are unlikely to anticipate all the various contexts in which free-speech interests are legitimately raised. For sexually explicit content, the NO FAKES bill provides no statutory exceptions at all.[289] The latter exclusion raises, at least, a First Amendment question under *Ashcroft v. Free Speech Coalition*, which held that a federal prohibition of virtual or simulated child pornography (that did not involve actual children) violated the First Amendment.[290]

I have two main recommendations. First, Congress should follow the vertical approach of the ELVIS Act in addressing one discrete problem (e.g., the right of publicity) posed by deepfakes, instead of the horizontal approach of the draft NO FAKES bill in addressing numerous problems of deepfakes.[291] It is far easier to narrowly tailor a vertical law than a horizontal law that sweeps broadly. Second, Congress should review the Copyright Office's report and follow at least two of the Copyright Office's recommendations: (1) liability should *not* apply to the mere creation of a deepfake, and (2) Congress should add a general, all-purpose exception to protect First Amendment rights.[292] Such a First Amendment

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289. *See id.* § 2(c)(4)(B).

290. 535 U.S. 234, 258 (2002) (holding that the Child Pornography Prevention Act of 1996 was overbroad and violated the First Amendment in proscribing simulated child pornography that did not involve real children but appeared to involve a minor engaging in sexually explicit conduct).

291. *See Comparison of NO FAKES Bill & U.S. Copyright Office Recommendation to Protect Digital Replica*, *supra* note 282, (discussing the horizontal versus the vertical approach to addressing deepfakes). A good example of a more narrowly tailored vertical approach to digital replicas is Representative Darrell Issa's bill titled "Preventing Abuse of Digital Replicas Act." *See* Press Release, Off. of Rep. Darrell Issa, Congressman Issa Introduces Draft Legislation to Stop the Misuse of AI-Generated Digital Replicas (Aug. 9, 2024), https://issa.house.gov/media/press-releases/congressman-issa-introduces-draft-legislation-stop-misuse-ai-generated-digital [https://perma.cc/W3N5-RH4A]; 118TH CONG. DISCUSSION DRAFT OF THE PREVENTING ABUSE OF DIGITAL REPLICAS ACT, at 2 (2024), https://issa.house.gov/sites/evo-subsites/issa.house.gov/files/evo-media-document/PADRA%20Discussion%20Draft%20%288.9.2024%29.pdf [https://perma.cc/S87L-AW5Z] (proposing an amendment to the Lanham Act to recognize trademark protection for digital replicas of individuals' likenesses and voices, including "a rebuttable presumption that such use [of a digital replica] is likely to cause confusion").

292. USCO Report on Digital Replicas, *supra* note 99, at 33 ("In contrast, the creation of a digital replica in itself could be part of an artist's experimental process or for a consumer's personal entertainment. Such purely personal use would ordinarily be innocuous and can foster further creativity."); *id.* at 46 ("In our view, a balancing framework permits greater flexibility to assess whether a particular unauthorized use is protected by the First Amendment. Rather than checking a box marked 'news' or 'musical work,' courts can assess the full range of factors relevant to the First Amendment analysis."). The NO FAKES bill references the First Amendment, but in a roundabout way in the exception for use of digital replicas in a documentary or in a historical or biographical manner, which otherwise does not exempt such use in sound

safeguard can help to avoid overbroad applications of the new law that violate the freedom of speech. However, unlike the Copyright Office's report, I recommend including both specific exceptions and a general First Amendment exception, similar to how the Copyright Act includes exceptions of both kinds.

C. Coda: Consumers Still Have a Say

AI raises profound challenges for musicians and the copyright system at a time when the music industry is still reeling from the major disruptions wrought by the streaming of music.[293] Will we face a day when AI will displace, en masse, the jobs of artists, musicians, songwriters, and producers, making it even harder for many individuals to make a living in music? No one knows yet, but it should be our concern.

Unfortunately, copyright law is ill-equipped to address this macroeconomic issue. But that doesn't mean we are powerless to determine the fate of music. On the contrary, consumers of music wield tremendous power in how the future of music plays out, based on the music they stream, the concerts they attend, and artists they support. Just as consumers saved vinyl,[294] a vestige of the 1900s, consumers can save the essential human element in music.

That doesn't mean banning musicians from using AI. To riff off the words of the *New York Times* music critic Howard Taubman in reviewing Olson and Belar's music synthesizer, AI "is an extraordinary machine" and "should be able to produce astonishing results."[295] But "nothing can shake the conviction that man, not machine, must prevail."[296] Taubman's point was less description than exhortation. He believed that people must recognize that a recording can never

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recordings synchronized in a motion picture unless it is protected by the First Amendment. *See* Nurture Originals, Foster Art, and Keep Entertainment Safe Act of 2024, S. 4875, 118th Cong.§ 2(c)4)(A)(ii)(II) (as introduced July 31, 2024) ("the digital replica is embodied in a musical sound recording that is synchronized to accompany a motion picture or other audiovisual work, *except to the extent that the use of that digital replica is protected by the First Amendment to the Constitution of the United States*." (emphasis added)).

293. *See* Seth Archer, *Apple, Taylor Swift Were Fighting over Fractions of Pennies*, ST. (June 23, 2015, 11:03 AM EDT), https://www.thestreet.com/technology/apple-taylor-swift-were-fighting-over-fractions-of-pennies-13194853 [https://perma.cc/JR7T-SE8Z].

294. Wes Davis, *Vinyl Records Outsell CDs for the Second Year Running*, VERGE (Mar. 26, 2024, 11:34 AM EDT), https://www.theverge.com/2024/3/26/24112369/riaa-2023-music-revenue-streaming-vinyl-cds-physical-media [https://perma.cc/N7SJ-UBNC]; Daniel Tencer, *50% of Vinyl Buyers in the US Don't Own a Record Player, Data Shows*, MUSIC BUS. WORLDWIDE (Apr. 25, 2023), https://www.musicbusinessworldwide.com/50-of-vinyl-buyers-dont-own-a-record-player-data-shows [https://perma.cc/W5GY-T5KE].

295. Howard Taubman, *Machines and Men*, N.Y. TIMES, Feb. 6, 1955, at X9, X9.

296. *Id.*

substitute for a live performance of music, which "make[s] for excitement and enchantment"[297] and "speaks to the heart."[298] If consumers buy into Taubman's view with their music selection and pocketbooks, the humanity of music will prevail.

CONCLUSION

AI is rapidly changing the way music is created. This transformation is part of the long evolution of music creation, which has become increasingly technologized. This Essay sets forth three principles, drawn from the history of copyright law's treatment of music innovations, to guide Congress and the federal courts in analyzing new challenges and legal questions raised by AI's use in the creation of music. First, copyright law should continue to adhere to a principle of technology neutrality and respect the freedom of musicians to choose their instruments, including synthetic and computer-based ones. Second, copyright law should continue to follow its expansive and evolving approach to authorship, facilitating the use of machines in the creation of sound recordings and in software-generated music. Third, Congress and the courts both have important roles to play in periodically rebalancing the scope of copyright, and in considering the need for measures beyond copyright to address problems posed by AI. Consumers have an instrumental role to play as well, in their choices of which artists to support.

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297. *Id.*

298. *Id.*