

**Chicago-Kent College of Law**

---

**From the Selected Works of Edward Lee**

---

2021

# Does Fair Use Matter? An Empirical Study of Music Cases (forthcoming)

Edward Lee

## Does Fair Use Matter? An Empirical Study of Music Cases [DRAFT 3.26.20]

Edward Lee and Andrew Moshirnia  
94 S. CAL. L. REV. (forthcoming 2020)

### Abstract

Copyright law recognizes fair use as a general limitation. It is assumed that fair use provides breathing room above and beyond the determination of infringement to facilitate the creation of new works of expression. This conventional account presupposes that fair use matters—that is, fair use provides *greater* leeway to a defendant than the test of infringement. Despite its commonsense appeal, this assumption has not been empirically tested. Except for fair uses involving exact copies (for which infringement would otherwise exist), it has not been proven that fair use makes much, if any, difference in results. Indeed, in one sector, the music industry, defendants have avoided pursuing fair use as a defense in nearly all infringement cases (except parodies) decided under the 1976 Copyright Act. This fair use avoidance is surprising given that musicians now face a spate of lawsuits due to a predicament we call copyright clutter, which occurs when copyrights protect many sub-elements of many works in a field of creation, thereby making it difficult for people to create a new work in that field without facing exposure to copyright liability. If fair use provides breathing room, why do musicians avoid it? Despite the extensive literature on fair use, legal scholarship has yet to test if fair use really matters.

This Article provides the first empirical testing of the significance of fair use as a defense. In an experimental study involving approximately 500 subjects, we found that fair use does make a difference: subjects found no liability more frequently under fair use than the test of infringement. And greater knowledge of music or law resulted in higher findings of no liability under fair use. These findings provide a better theoretical understanding of how fair use operates and practical information for litigants that calls into question the predominant strategy of musicians avoiding fair use as a defense. Such a strategy may result in greater findings of liability where fair use would have otherwise been found.

## Does Fair Use Matter? An Empirical Study of Music Cases [DRAFT 3.26.20]

Edward Lee\* and Andrew Moshirnia\*\*

94 S. CAL. L. REV. (forthcoming 2020)

Copyright law recognizes fair use as a general limitation.<sup>1</sup> It is assumed that fair use provides breathing room—a First Amendment safeguard—above and beyond the determination of infringement to facilitate the creation of new works of expression.<sup>2</sup> Copyright cases are litigated treating fair use and infringement as separate issues, with the burden of proof falling on different parties.<sup>3</sup> A court can find that a defendant’s copying of a work would be an infringement under the substantial similarity test, but, ultimately, that the defendant’s copying was a fair use.<sup>4</sup> Indeed, although perhaps rare, the court can even bifurcate the determination of infringement and fair use into separate trials.<sup>5</sup>

This conventional treatment of infringement and fair use presupposes that fair use matters—that is, fair use provides *greater* leeway to a defendant than the test of infringement. As a doctrinal matter, this assumption is beyond cavil. Infringement focuses on a relatively straightforward inquiry of whether the defendant copied too much from a work (i.e., misappropriation) based on the similarity and amount of copying by the defendant,<sup>6</sup> whereas fair use is more complex. It involves the balancing of four factors and serves as an express limitation on infringement that also considers the defendant’s purpose of use and favors uses by the defendant that are transformative, even allowing a reasonable amount of copying by the defendant to serve that purpose.<sup>7</sup> These inquiries are doctrinally different.

---

\* In the interest of full disclosure, I joined an *amicus* brief submitted to the Ninth Circuit in support of the jury verdict against Pharrell Williams in *Williams v. Gaye*, 895 F.3d 1106, 1120-27(9th Cir. 2018). I also joined an *amicus* brief submitted to the Second Circuit in support of the lower court’s finding of fair use by Drake in *Estate of Smith v. Cash Money Records, Inc.*, 253 F. Supp. 3d 737, 742-43 (S.D.N.Y. 2017), *aff’d*, -- Fed. Appx. --, 2020 WL 522013 (2d Cir. Feb. 3, 2020). *See* Brief Amicus Curiae of the Institute for Intellectual Property and Social Justice Musician and Composers and Law, Music, and Business Professors in Supp. of Appellees, *Williams v. Gaye*, 2016 WL 7494673 (Dec. 28, 2016); Brief as Amicus Curiae Intellectual Property Professors in Supp. of Defendants-Appellees, *Estate of Smith v. Cash Money Records, Inc.* (July 19, 2019). In both appeals, the courts sided with the result supported by the *amicus* brief. We are grateful for the comments we received from colleagues during a presentation of the paper at the 2019 Intellectual Property Law Scholars Conference. Many thanks to our research assistants Sarah Anderson, Elizabeth Jedrasek, and Annika Morin. This research was funded by a grant from the [anonymized] Center for Empirical Studies of IP and was approved for human subjects testing by the Institutional Review Board of [anonymized].

\*\*

<sup>1</sup> 17 U.S.C. § 107 (2018).

<sup>2</sup> *See, e.g.*, *Eldred v. Ashcroft*, 537 U.S. 186, 219 (2003) (describing fair use as a “traditional First Amendment safeguard[]” because it “allows the public to use not only facts and ideas contained in a copyrighted work, but also expression itself in certain circumstances”).

<sup>3</sup> *Compare* *Three Boys Music Corp. v. Bolton*, 212 F.3d 477, 481 (9th Cir. 2000) (recognizing that “copyright plaintiff must prove (1) ownership of the copyright; and (2) infringement—that the defendant copied protected elements of the plaintiff’s work”) *with* *Monge v. Maya Magazines, Inc.*, 688 F.3d 1164, 1170 (9th Cir. 2012) (recognizing that defendant has burden of proving fair use as an affirmative defense).

<sup>4</sup> *See, e.g.*, *Campbell v. Acuff-Rose*, 510 U.S. 569, 574, 594 (1994) (noting it was “uncontested” defendant’s work would be infringing, but recognizing the possibility that defendant’s work was a parody fair use).

<sup>5</sup> In *Oracle v. Google*, the district court bifurcated the second trial of fair use (which had resulted in a deadlocked jury in the first trial) from the trial of willful infringement. *See* *Oracle America, Inc. v. Google LLC*, 886 F.3d 1179, 1188-89 (Fed. Cir. 2018), *cert. granted*, —U.S.— (Nov. 15, 2019); *see generally* *Cook v. United Service Auto. Ass’n*, 169 F.R.D. 359 (D. Nev. 1996) (“The decision to bifurcate is committed to the sound discretion of the trial court. Bifurcation is particularly appropriate when resolution of a single claim or issue could be dispositive of the entire case.”) (internal citation omitted).

<sup>6</sup> *See, e.g.*, *Arnstein v. Porter*, 154 F.2d 464, 468-69 (2d Cir. 1946).

<sup>7</sup> *See, e.g.*, *Campbell*, 510 U.S. at 576-89.

Indeed, it would be silly for courts to have two doctrines—*infringement* and *fair use*—if they asked the same question and always resulted in the same answer.

Yet, despite its commonsense appeal, this assumption that *fair use* affords greater leeway has not been empirically tested. Except for *fair uses* involving exact copies of copyrighted works (for which *infringement* would otherwise exist),<sup>8</sup> it has not been proven that *fair use* makes much, if any, difference in results.<sup>9</sup> Even though one might assume that *fair use* should matter giving greater leeway to defendants, two other possibilities exist. Another possibility is *fair use* doesn't matter: juries and judges use the doctrines of *infringement* and *fair use* in a similar fashion to justify (perhaps through post hoc rationalization) their ultimate decision of liability, which would be the same under either doctrine. For example, a jury might think the defendant's copying of portions of a work was basically acceptable—and reach the same conclusion of no liability under *infringement* or *fair use* analysis.<sup>10</sup> A third possibility is that *fair use* matters, but in a negative way: in some cases, juries or judges may be skeptical of the defendant's assertion of *fair use*, which negatively affects the decision maker's determination of *infringement* in favor of liability against the defendant. In some circles, *fair use* “has been scorned as the last, desperate defense from a scoundrel, who only claims *fair use* to avoid wanton liability.”<sup>11</sup> No court or jury would be impressed with a flimsy defense—and the defendant may lose credibility in even raising it. Despite the extensive literature on *fair use*,<sup>12</sup> legal scholarship has yet to test the effect of *fair use* in analyzing copyright *infringement*—or to determine if *fair use* really matters.

This Article undertook that inquiry. It conducted an experiment through an online instrument to test whether there's a difference in deciding a music *infringement* case under (1) the substantial similarity test of *infringement* versus (2) *fair use*. The experiment simulated two music *infringement* cases based on actual cases that resulted in findings of *infringement* and, through jury instructions, asked respondents to determine whether liability exists. The respondents listened to instrumental versions of songs in two sets of simulated copyright lawsuits and, for each lawsuit, determined separately if there was an *infringement* and if there was a *fair use*.

Music *infringement* cases present an ideal—indeed pressing—area for study of *fair use*. A recent empirical study found a surprising avoidance of *fair use* defenses in cases involving a musical

---

<sup>8</sup> See, e.g., *Authors Guild v. Google, Inc.*, 804 F.3d 202, 216-17 (2d Cir. 2015); *A.V. ex rel. Vanderhye v. iParadigms, LLC*, 562 F.3d 630, 639-40 (4th Cir. 2009); *Perfect 10, Inc. v. Amazon.com, Inc.*, 508 F.3d 1146, 1165 (9th Cir. 2007); *Kelly v. Arriba Soft Corp.*, 336 F.3d 811, 819 (9th Cir. 2003).

<sup>9</sup> To be sure, some cases find or suggest that if the defendant had not prevailed on *fair use*, the defendant would have been liable for *infringement* under the test of substantial similarity. See, e.g., *Campbell v. Acuff-Rose Music*, 510 U.S. 569, 575 (1994) (recognizing that it was “uncontested that 2 Live Crew's song would be an *infringement*” but that 2 Live Crew raised a colorable parody *fair use* defense that should be considered on remand); *Arica Institute, Inc., v. Palmer*, 761 F. Supp. 1056 (S.D.N.Y. 1991) (recognizing likelihood of substantial similarity, but also likelihood of *fair use* in denying motion for preliminary injunction). The second trial in *Oracle v. Google* provided one example in which a jury found *infringement*, but also *fair use* in a second trial; however, the decision was reversed by the Federal Circuit, and the Supreme Court is reviewing the Federal Circuit's decision. See *Oracle*, 886 F.3d at 1184-86.

<sup>10</sup> Indeed, as Part I.A explains below, the overlap of some considerations in both *infringement* and *fair use*, as well as the normative judgment each test affords, may allow the court or jury to engage in this kind of parallel analysis. Recognizing the overlap, some scholars have proposed combining and streamlining the inquiry for greater coherence. See, e.g., Amy B. Cohen, *Masking Copyright Decisionmaking: The Meaninglessness of Substantial Similarity*, 20 U.C. DAVIS L. REV. 719, 76-766 (1987).

<sup>11</sup> Kenneth D. Crews, *The Law of Fair Use and the Illusion of Fair-Use Guidelines*, 62 OHIO ST. L.J. 599, 605 (2001).

<sup>12</sup> See Paul Goldstein, *Fair Use in Context*, 31 COLUM. J.L. & ARTS 433, 433-34 (2008) (discussing the high volume of legal scholarship on *fair use* and scholars' attempt to elaborate a theory of *fair use*).

work alleged to infringe the copyright of another musical work.<sup>13</sup> Outside of parody fair use, no decision under the 1976 Copyright Act has recognized, a fair use based on musical elements (excluding lyrics) from a prior musical work that were incorporated into a new musical work in an arguably transformative way.<sup>14</sup> Part of the reason for this surprising finding is that defendants in music cases have rarely even pursued a nonparody fair use defense to resolution—although the precise reason(s) for this fair use avoidance is open to debate.<sup>15</sup> Instead, the majority of defenses in music cases rest simply on the defendant disputing the elements of the test of infringement are satisfied.<sup>16</sup> In the past, defendants overwhelmingly prevailed with this strategy of foregoing fair use as a defense and simply contesting infringement.<sup>17</sup> But recent high-profile judgments against Pharrell Williams, Robin Thicke, Katy Perry, and other musicians suggest that this strategy may no longer be as successful.<sup>18</sup>

Whether fair use matters is a question of profound importance. For the music industry, the answer may provide a possible solution to the growing predicament musicians now face. As *Rolling Stone* recently documented, “[t]he boom in copyright lawsuits is rattling the music industry—to the point where some artists and songwriters are spending tens of thousands of dollars on insurance policies” in the aftermath of the judgment in the “Blurred Lines” case against Pharrell and Thicke.<sup>19</sup> Through a confluence of factors discussed below, musicians now face greater exposure to copyright lawsuits than ever before. Yet, curiously, musicians have failed to seek the breathing room that fair use may provide in defending against infringement lawsuits outside of cases involving parodies and sampling of recordings.<sup>20</sup> Most music cases, like the “Blurred Lines” case, have been litigated as if fair use does not matter.<sup>21</sup>

This Article provides the first empirical testing of the significance of fair use as a defense. In an experimental study involving approximately 500 subjects, we found that fair use does make a difference: subjects found no liability more frequently under fair use than the test of infringement. The effect of fair use was more pronounced in the case involving greater similarity of works—which was expected given the likelihood of a lower finding of infringement in a case of lower similarity. By examining if fair use matters in music infringement cases, this Article provides both a better theoretical understanding of how fair use operates and practical information for litigants that calls into question the predominant strategy of musicians avoiding fair use as a defense. Such a strategy may result in greater findings of liability where fair use would have otherwise been found.

Part I provides background to the central issue examined: does fair use matter? The Part compares the doctrinal differences between fair use and the test of infringement, and summarizes the predominant avoidance strategy of musicians in not pursuing fair use as a defense in cases involving musical works. At least on the surface, this strategy suggests that fair use may not make a difference in music cases—why else would musicians overwhelmingly avoid it? The Part also explains the importance of determining whether fair use matters, especially for music cases, given the increased

---

<sup>13</sup> See Edward Lee, *Fair Use Avoidance in Music Cases*, 59 B.C. L. REV. 1873, 1900-04 (2018) (analyzing possible reasons).

<sup>14</sup> See *id.* at 1900-04.

<sup>15</sup> See *id.* at 1903-04, 1904-21.

<sup>16</sup> See *id.* at 1902-04.

<sup>17</sup> See *id.*

<sup>18</sup> See Amy X. Wang, *How Music Copyright Lawsuits Are Scaring Away New Hits*, ROLLINGSTONE (Jan. 9, 2020, 2:08 PM), <https://www.rollingstone.com/music/music-features/music-copyright-lawsuits-chilling-effect-935310/>.

<sup>19</sup> *Id.*

<sup>20</sup> See Lee, *supra* note [], at 1900-01.

<sup>21</sup> *Id.*

exposure to copyright lawsuits that musicians now face. We introduce the concept of copyright clutter to explain this predicament and the greater exposure to liability that musicians now face. Copyright clutter arises in music through a complex interplay of factors, including the inevitability of similarities in popular music, explained in depth below.

Part II outlines the design and limitations of our experiment testing if there is a difference in outcomes when the defense rests on fair use or the test of infringement. Part III discusses the results. The key findings show that fair use matters: people found less liability under fair use than the test of infringement in two music cases tested. These findings were more pronounced for subjects who had prior training in music or the law. Part IV discusses the implications of our study's findings for copyright law and the litigation strategy of musicians in infringement lawsuits. We conclude that fair use does provide musicians with potentially greater protection than simply contesting the test of infringement—and avoidance of fair use is a mistake.

## **I. Whether Fair Use Matters in Music: Background to and Importance of Question**

Part I discusses the research question explored in this Article: whether fair use matters. After outlining the basic differences between the test of infringement and fair use, the Part summarizes their application in the context of music cases. Curiously, since the inception of the Copyright Act of 1976, musicians have defended against music infringement claims by contesting the proof of infringement but foregoing fair use as a defense. On the surface, this fair use avoidance suggests that fair use does not matter in music infringement cases. But, thus far, this question has not been empirically tested in the context of copyright cases generally. As Part I explains, the need to answer this basic question is more pressing than ever as musicians face greater exposure to copyright lawsuits.

### **A. Comparing the Test of Infringement and Fair Use**

As outlined in Table 1 below, this section compares the test of copyright infringement, often described as the test of substantial similarity and the doctrine of fair use. Substantial similarity and fair use are two of the most analyzed (and often criticized) doctrines in copyright scholarship.<sup>22</sup> While both are designed to determine whether infringement occurred, the focus and formulation of each doctrine are different. Coincidentally, the seminal case explaining each doctrine involved a claim of music infringement.

#### **1. Infringement: The 2-Step Test of Substantial Similarity**

The modern formulation of the test of substantial similarity originated in *Arnstein v. Porter*.<sup>23</sup> The litigious Ira Arnstein, a composer who filed several lawsuits against others he claimed had copied his songs, sued the popular musician Cole Porter for “at least one million dollars” in 1946 (equivalent

---

<sup>22</sup> See, e.g., Goldstein, *supra* note [], at 433-34 (describing extensive fair use scholarship); Shyamkrishna Balganeshe *et al.*, *Judging Similarity*, 100 IOWA L. REV. 267 (2014) (“Fair use is commonly described as copyright law’s ‘most troublesome’ doctrine, in large part due to its open-endedness and uncertainty. In practice, though, the complexities of the fair use doctrine pale in comparison to what is central to almost all cases of copyright infringement: the question of ‘substantial similarity.’”); Mark A. Lemley, *Our Bizarre System for Proving Copyright Infringement*, 57 J. COPYRIGHT SOC’Y U.S.A. 719, 738 (2010) (criticizing circuit tests of substantial similarity as flawed and “backwards” in not allowing expert testimony on the question whether defendant copied protected versus unprotected elements in determining infringement).

<sup>23</sup> *Arnstein v. Porter*, 154 F.2d 464, 468-69 (2d Cir. 1946).

to \$13,178,153.85 in 2020<sup>24</sup>) for alleged infringement of the copyright to several Arnstein songs.<sup>25</sup> The district court granted summary judgment in favor of Porter, on the ground that Arnstein failed to present evidence that Porter had access to Arnstein’s songs.<sup>26</sup> A divided panel of the Second Circuit reversed.<sup>27</sup> Writing for the majority, Judge Jerome Frank ruled that Arnstein had presented sufficient evidence of access to create a triable issue.<sup>28</sup> Specifically, “more than a million copies of one of his compositions were sold; copies of others were sold in smaller quantities or distributed to radio stations or band leaders or publishers, or the pieces were publicly performed.”<sup>29</sup> The Second Circuit ruled that even Arnstein’s “fantastic” account that Porter had obtained from “stooges” Porter had sent to steal a copy of one of Arnstein’s unpublished works should be left for the jury to decide because “sometimes truth is stranger than fiction.”<sup>30</sup> On remand, a jury found no infringement.<sup>31</sup>

The *Arnstein* test of infringement has been widely influential in other circuits. Although the Ninth Circuit has adopted a different formulation of the two elements of proof,<sup>32</sup> all of the circuits examine whether the defendant copied from the plaintiff’s work (step 1 of *Arnstein*) and, in some manner, whether the defendant’s work was substantially similar to the plaintiff’s work based on the copyright-protected aspects that the defendant copied.<sup>33</sup> Understanding the various refinements and differences among the circuits on determining the latter inquiry of substantial similarity is not critical to our experiment. What is important is recognizing substantial similarity’s centrality to the infringement determination. Though we use the *Arnstein* test in our discussion, the general principles of infringement are the same among the circuits.

**Table 1. Comparison of Test of Substantial Similarity and Fair Use**

	<b>Substantial Similarity</b>	<b>Fair use</b>
<b>Source</b>	Common law	Statutory codification of common law
<b>Components</b>	2-step inquiry	Balancing of 4 factors
<b>Burden</b>	Plaintiff	Defendant
<b>Focus</b>		Balancing of 4 factors, (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes; (2) the nature of the copyrighted work;

<sup>24</sup> *CPI Inflation Calculator*, in2013dollars.com, <https://www.in2013dollars.com/us/inflation/1946?amount=1000000> (last visited Feb. 7, 2020).

<sup>25</sup> *Arnstein*, 154 F.2d at 471.

<sup>26</sup> *See id.* at 468.

<sup>27</sup> *See id.* at 469-70.

<sup>28</sup> *See id.*

<sup>29</sup> *Id.* at 469.

<sup>30</sup> *Id.*

<sup>31</sup> *See Arnstein v. Porter*, 158 F.2d 795, 795 (2d Cir. 1946).

<sup>32</sup> The Ninth Circuit test breaks down the inquiry into an intrinsic test and extrinsic test. *See Sid & Marty Krofft Television Prods., Inc. v. McDonald's Corp.*, 562 F.2d 1157, 1164 (9th Cir. 1977).

<sup>33</sup> For a helpful summary of the various circuit approaches, see Eric Rogers, Comment, *Substantially Unfair: An Empirical Examination of Copyright Substantial Similarity Analysis Among the Federal Circuits*, 2013 MICH. ST. L. REV. 893 (2013).

	Amount of copying of protected expression in plaintiff's work by defendant	(3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work.
<b>Answer</b>	What is infringement (liable)	What is not infringement (not liable)
<b>Factual or legal question</b>	Factual	Mixed question of law and fact
<b>Normative judgment</b>	Yes in misappropriation	Yes in balancing

The two-step inquiry of *Arnstein* is simple.<sup>34</sup> It focuses on *copying*: the amount of copying of the plaintiff's work by the defendant, if any. Copying doesn't automatically constitute infringement, however. As the *Arnstein* court explained, "there can be 'permissible copying,' copying which is not illicit."<sup>35</sup> If copying is established, courts must examine substantial similarity from both a quantitative and qualitative view—meaning that copying small but significant portions of a work—its heart, e.g.—can constitute misappropriation just as much as copying quantitatively large amounts of a work.<sup>36</sup> Substantial similarity is judged from the perspective of the lay person (or intended audience), not an expert.<sup>37</sup> The plaintiff has the burden of proving the defendant infringed,<sup>38</sup> which is treated as a factual question.<sup>39</sup>

Of course, the test of substantial similarity has some complexities. The *Arnstein* court recognized some of the key ones. As to proving the defendant copied, the court outlined two different methods of proof: (1) direct evidence such as the defendant's own admission and (2) circumstantial evidence based on proof that the defendant had access to the plaintiff's work and similarities between the works.<sup>40</sup> Even where evidence of the defendant's access is absent, a court can infer that the defendant copied the plaintiff's work based on "striking similarities."<sup>41</sup> The Ninth Circuit recognizes an inverse ratio between access and similarity: "[t]he greater the showing of access, the lesser the showing of substantial similarity is required."<sup>42</sup> Another complexity is the extent to which the proof of copying can be based on a combination of unprotected elements, nonliteral copying of a work (e.g., its structure), or a style or the "look and feel" of a work.<sup>43</sup> Moreover, a host of doctrines (e.g., idea-

<sup>34</sup> See Laura A. Heymann, *Reading Together and Apart: Juries, Courts, and Substantial Similarity in Copyright Law*, 102 IOWA L. REV. ONLINE 248, 254 (describing the "simplicity of these formulations").

<sup>35</sup> *Arnstein*, 154 F.2d at 472.

<sup>36</sup> See *Baxter v. MCA, Inc.*, 812 F.2d 421 (9th Cir. 1987) ("Even if a copied portion be relatively small in proportion to the entire work, if qualitatively important, the finder of fact may properly find substantial similarity.").

<sup>37</sup> See *Arnstein*, 154 F.2d at 473.

<sup>38</sup> See *Three Boys Music Corp. v. Bolton*, 212 F.3d 477, 481 (9th Cir. 2000).

<sup>39</sup> See *Ideal Toy Corp. v. Fab-Lu Ltd.*, 360 F.2d 1021 (2d Cir. 1966) ("This is a factual question and the appropriate test for determining whether substantial similarity is present is whether an average lay observer would recognize the alleged copy as having been appropriated from the copyrighted work.").

<sup>40</sup> See *Arnstein*, 154 F.2d at 468.

<sup>41</sup> See *id.*

<sup>42</sup> See *Three Boys Music Corp. v. Bolton*, 212 F.3d 477, 485 (9th Cir. 2000).

<sup>43</sup> See, e.g., *Dream Games of Arizona, Inc. v. PC Onsite*, 561 F.3d 983, 988 (9th Cir. 2009) (recognizing that "a claim of copyright infringement can be based on infringement of a combination of unprotected elements"); *Bateman v. Mnemonics, Inc.*, 79 F.3d 1532, 1544 (11th Cir. 1996) (discussing copying of nonliteral elements of computer program);



expression, the merger doctrine, *de minimis* copying, scenes a faire doctrine, copying of public domain elements) limit what is protected under copyright.<sup>44</sup> Finally, expert testimony is permitted to show the probative similarities as circumstantial evidence of copying in the first prong of the test, but not to show the ultimate question of misappropriation in the view of the lay audience in the second prong.<sup>45</sup>

It is important to recognize that the test of substantial similarity contains a normative judgment in deciding whether the defendant's copying was too much or misappropriation.<sup>46</sup> As Shyam Balganesch explains, “[t]he comparison of similarity . . . is largely to determine whether the defendant’s copying, when viewed as a whole, meets the decision maker’s intuitive sense of wrongfulness, calibrated by the appropriate standard of scrutiny.”<sup>47</sup> This normative component affords a level of discretion to the fact-finder to find no infringement, despite similarities between two works and defendant’s copying.<sup>48</sup> Once a discretionary component is introduced, it is possible that the infringement inquiry will overlap with, if not mirror, the fair use determination. As explained below, the discretion afforded under fair use may be even greater.

## 2. The 4-Factor Balancing Test of Fair Use

The fair use doctrine first developed at common law. Congress later codified it in § 107 of the 1976 Copyright Act.<sup>49</sup> Fair use is far more complex than the 2-step test of substantial similarity. Section 107 begins with a 57-word first sentence indicating that fair use “is not an infringement of copyright.”<sup>50</sup> The first sentence includes several illustrative, but non-exhaustive examples of fair use: “such use by reproduction in copies or phonorecords or by any other means specified by that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research.”<sup>51</sup> The second sentence instructs that in determining fair

---

Tufenkian Import/Export Ventures, Inc. v. Einstein Moomjy, Inc., 338 F.3d 127, 133-34 (2d Cir. 2003) (recognizing possible infringement by copying “total concept and feel”).

<sup>44</sup> See *Kregos v. Associated Press*, 937 F.2d 700, 705 (2d Cir. 1991) (idea-expression and merger doctrines); *Newton v. Diamond*, 388 F.3d 1189, 1192-93 (9th Cir. 2004) (*de minimis* copying); *Smith v. Jackson*, 84 F.3d 1213, 1216 n.3 (9th Cir. 1996) (scenes a faire doctrine); *Tufenkian*, 79 F.3d at 136 (copying of public domain elements).

<sup>45</sup> See *Arnstein*, 154 F.2d at 468.

<sup>46</sup> See Shyamkrishna Balganesch, *The Normativity of Copying in Copyright Law*, 62 DUKE L.J. 203, 206 (2012).

<sup>47</sup> *Id.* at 228.

<sup>48</sup> See, e.g., *Rentmeester v. Nike, Inc.*, 883 F.3d 1111, 1122-23 (9th Cir. 2018) (two photographs of Michael Jordan had similarities but court finds not substantially similar as a matter of law).

<sup>49</sup> See 17 U.S.C. §107 (2018). The provision states:

Notwithstanding the provisions of sections 106 and 106A, the fair use of a copyrighted work, including such use by reproduction in copies or phonorecords or by any other means specified by that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright. In determining whether the use made of a work in any particular case is a fair use the factors to be considered shall include—

- (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
- (2) the nature of the copyrighted work;
- (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
- (4) the effect of the use upon the potential market for or value of the copyrighted work.

The fact that a work is unpublished shall not itself bar a finding of fair use if such finding is made upon consideration of all the above factors.

<sup>50</sup> *Id.*

<sup>51</sup> *Id.*

use, the court must consider four factors that are designed to balance the interests of the copyright owner, the defendant, and society.<sup>52</sup> As noted in Table 1, this explicit balancing of interests is absent in the 2-step test of substantial similarity, although the normative judgment entailed in determining misappropriation may allow for such balancing.

The Supreme Court set forth the modern approach to fair use in *Campbell v. Acuff-Rose Music, Inc.*<sup>53</sup> Like *Armstein*, the case involved two musical works, but in *Campbell*, the defendant admitted to copying the plaintiff's song to make a parody of it.<sup>54</sup> 2 Live Crew copied portions (some of the music and one line of the lyrics) of the classic hit "Oh, Pretty Woman" by Roy Orbison and Bill Dees to create a hip-hop song "Pretty Woman" that 2 Live Crew claimed was a parody of the original song.<sup>55</sup> Although the Court did not determine if 2 Live Crew's parody was a fair use, the Court's analysis of factor one favored a finding of fair use, while factor two (the nature of the copyrighted work) was "not much help in this case" because "parodies almost invariably copy publicly known, expressive works."<sup>56</sup> The Court did not decide factors three and four: the Court remanded the case to the lower court to "permit evaluation of the amount [of music] taken, in light of the song's parodic purpose and character, its transformative elements" and the effect 2 Live Crew's parody had on the "market for a [non-parody] rap version of the original, either of the music alone or of the music with its lyrics."<sup>57</sup>

The key part of *Campbell* is the Supreme Court's identification of a transformative use or purpose as a legitimate use of a work by a defendant under the first factor of fair use.<sup>58</sup> Drawing from Judge Leval's theory on fair use, the Court explained:

The central purpose of this investigation is to see, in Justice Story's words, whether the new work merely "supersede[s] the objects" of the original creation, or instead adds something new, with a further purpose or different character, altering the first with new expression, meaning, or message; it asks, in other words, whether and to what extent the new work is "transformative." Although such transformative use is not absolutely necessary for a finding of fair use, the goal of copyright, to promote science and the arts, is generally furthered by the creation of transformative works. Such works thus lie at the heart of the fair use doctrine's guarantee of breathing space within the confines of copyright, and the more transformative the new work, the less will be the significance of other factors, like commercialism, that may weigh against a finding of fair use.<sup>59</sup>

By focusing on the purpose of the defendant's use of the plaintiff's work, the first factor adds a consideration absent in the 2-step test of substantial similarity, where the defendant's copying (irrespective of purpose) is crucial. The test of substantial similarity does not (expressly) consider *why* the defendant copied, the defendant's purpose in copying. As the Court explained, a transformative use of the plaintiff's work—meaning the use "adds something new, with a further purpose or different

---

<sup>52</sup> See *id.*

<sup>53</sup> 510 U.S. 569 (1994).

<sup>54</sup> See *id.* at 572-73.

<sup>55</sup> See *id.* at 582-85.

<sup>56</sup> See *id.* at 586.

<sup>57</sup> See *id.* at 586-94.

<sup>58</sup> See *id.* at 578-79.

<sup>59</sup> See *id.* (internal citations and quotations omitted).

character, altering the first with new expression, meaning, or message”—militates in favor of a finding of fair use.<sup>60</sup>

The other three factors of fair use must also be considered, but a transformative use by the defendant may positively affect the other factors. Once there is a transformative use, courts often give less weight to the second factor, the nature of the plaintiff’s copyrighted work.<sup>61</sup> Although works that are creative, non-functional, and non-factual typically are considered “closer to the core” of copyright protection, courts may discount the second factor to prioritize or accommodate transformative uses, which tend to involve works at the core of copyright protection.<sup>62</sup> The third factor—“the amount and substantiality of the portion used in relation to the copyrighted work as a whole”—has an even stronger relationship to the first factor. Courts must examine if the defendant’s copying was “reasonable in relation to the purpose of the copying.”<sup>63</sup> Thus, the Court suggested that 2 Live Crew’s copying the “heart” of the original” song (embodied in its distinctive bass line and opening lyric) may have been reasonable to serve the parodic purpose in conjuring up the original.<sup>64</sup> Similarly, the fourth factor—“the effect of the use upon the potential market for or value of the copyrighted work”—also may be affected by a transformative use. As the Court explained, if the defendant’s use is “transformative, market substitution is at least less certain, and market harm may not be so readily inferred.”<sup>65</sup>

The *Campbell* Court stressed, however, that fair use “is not to be simplified with bright-line rules,” but must be determined on a case-by-case basis.<sup>66</sup> “All [factors] are to be explored, and the results weighed together, in light of the purposes of copyright.”<sup>67</sup> Unlike infringement, the defendant bears the burden of proving fair use as an affirmative defense.<sup>68</sup>

Although many aspects of the 2-step test of infringement and 4-factor balancing test of fair use are different, there is some overlap. The second factor of fair use overlaps with the infringement test’s consideration of the scope of the plaintiff’s protected expression.<sup>69</sup> Likewise, the third factor of fair use overlaps with the test of infringement’s analysis of the amount of the work the defendant copied.<sup>70</sup> The overlap is not identical, however. As discussed above, courts often discount the second factor of fair use for transformative uses, but, in infringement analysis, the plaintiff’s underlying work will affect its scope of copyright protection, whether broad or thin.<sup>71</sup> Similarly, the third factor of fair use allows the defendant to copy a “reasonable” amount to serve a transformative purpose, whereas the test of infringement simply focuses substantial similarity and lacks an express reasonableness inquiry.<sup>72</sup>

---

<sup>60</sup> *Id.* at 579.

<sup>61</sup> *See id.* at 586.

<sup>62</sup> *See Cariou v. Prince*, 714 F.3d 694, 709-10 (2d Cir. 2013).

<sup>63</sup> *Campbell*, 510 U.S. at 586.

<sup>64</sup> *Id.* at 588.

<sup>65</sup> *Id.* at 591.

<sup>66</sup> *Id.* at 577.

<sup>67</sup> *Id.* at 578.

<sup>68</sup> *See Monge v. Maya Magazines, Inc.*, 688 F.3d 1164, 1170 (9th Cir. 2012).

<sup>69</sup> *See Balganesch*, *supra* note [], at 272-73.

<sup>70</sup> *See id.*

<sup>71</sup> *See id.*

<sup>72</sup> *See also id.* at 273.

The *Campbell* decision provides an even larger overlap between fair use and infringement. In discussing the first, third, and fourth factors, the Court repeatedly referred to a basic distinction between fair uses and merely superseding uses of the original work, uses that supplant or substitute for the original.<sup>73</sup> This key distinction pervades the Court’s discussion of the fair use factors—a use that supersedes or supplants the original is unlikely to be found a transformative use, a reasonable amount of copying, or free of market substitution.<sup>74</sup> Although the test of substantial similarity is not framed in terms of market substitution or superseding uses, the two concepts overlap. Presumably, if the defendant’s use of the plaintiff’s work is a market substitute for the work, substantial similarity would exist.

Even though the doctrines of substantial similarity and fair use are different in design and focus, the presence of discretion in both doctrines provides one way in which the doctrines could result in the same results—thereby potentially rendering fair use of little benefit. Of course, the underlying facts of a case affects this analysis. A defendant that copies the entirety of plaintiff’s work would be liable under the test of infringement, but might have a defense of fair use.<sup>75</sup> However, in cases in which both infringement and fair use are arguably present, the discretion afforded by both doctrines makes it possible that fair use does not matter in some cases.

On the other hand, the differences in focus and framing of the substantial similarity test and fair use arguably should lead to differences in results in some cases in which liability would be found under substantial similarity, but not under fair use. Fair use’s balancing of interests, plus privileging of uses for certain uses, especially transformative uses, should provide greater leeway in allowing copying above and beyond the test of substantial similarity. For example, if the defendant’s use is transformative, then a court might find copying even a significant aspect of the original work was reasonable to serve that transformative purpose, such as in creating a new work. Unless courts or juries are simply using infringement and fair use as post hoc rationalizations of the same “gut” judgment about permissibility of the defendant’s use under either doctrine, then fair use should make a difference in some cases where infringement and fair use are arguable. However, putting aside cases involving exact copies, it is difficult to find cases in which courts found that a defendant’s work was substantially similar to the plaintiff’s, but it nonetheless was a fair use.<sup>76</sup> (Part of the reason may be judicial economy: on a motion for summary judgment, a court can dispose of a case by ruling on just one issue.)

## **B. Reasons to Test Whether Fair Use Matters in Music**

A 2018 study identified a surprising avoidance of fair use in infringement cases involving two musical works.<sup>77</sup> Examining all musical work cases from 1978 to January 15, 2018 that resulted in a decision on the merits, the study found that the vast majority of music cases (91%) did not even consider fair use.<sup>78</sup> Part of the reason may be that in 82.7% of the cases the defendant prevailed—

---

<sup>73</sup> See *Campbell*, 510 U.S. at 579, 588, 591.

<sup>74</sup> See *id.* at 578-79.

<sup>75</sup> See *supra* note [].

<sup>76</sup> See *supra* note [].

<sup>77</sup> See Lee, *supra* note [], at 1900-02.

<sup>78</sup> See *id.*

typically by contesting the plaintiff's proof of the test of infringement.<sup>79</sup> But even in cases where the defendants lost, fair use was not often pursued outside of a parody.<sup>80</sup>

Two exceptions deserve mentioning. In *Estate of Smith v. Cash Money Records*, Drake successfully invoked fair use for his sampling of a monologue by the late jazz artist Jimmy Smith from one of Smith's albums.<sup>81</sup> The fair use decision has limited value for music cases because the Second Circuit affirmed it in a non-precedential decision.<sup>82</sup> Moreover, Jimmy Smith's monologue does not contain any music and therefore may not even constitute a musical work under the Copyright Office's definition.<sup>83</sup> Likewise, in *Bridgeport Music, Inc. v. UMG Recordings, Inc.*, a jury rejected a fair use defense and ultimately found that the rap group Public Announcement infringed the copyright to George Clinton's song "Atomic Dog" by copying "the phrase 'Bow wow wow, yippie yo, yippie yea' . . . , as well as repetition of the word 'dog' in a low tone of voice at regular intervals and the sound of rhythmic panting."<sup>84</sup> The court's opinion is helpful in recognizing that the defendant's use "is certainly transformative (first factor), having a different theme, mood, and tone from 'Atomic Dog.'"<sup>85</sup> At the same, however, the elements copied were not instrumental elements, so the decision tells us little about fair use in music creation outside of words and panting. In short, courts have yet to decide when copying musical elements from one song in creating a new, non-parody song is a fair use.<sup>86</sup>

This fair use avoidance in music cases offers an ideal area for testing. Music infringement cases are a discrete and recurring type of case in which defendants have operated as if fair use does not matter. Thus, by determining if fair use would provide additional protection to musicians, we can obtain both a better theoretical understanding and practical advice for musicians. Fair use avoidance may have not been detrimental to defendants in the past, given the high success rate of defending against music infringement lawsuits. But recent verdicts against Pharrell and Thicke, and Katy Perry, plus the spate of recent lawsuits filed or threatened against Bruno Mars,<sup>87</sup> Justin Bieber,<sup>88</sup> Cardi B,<sup>89</sup>

---

<sup>79</sup> *See id.*

<sup>80</sup> *See id.* at 1901.

<sup>81</sup> *See* Estate of Smith v. Cash Money Records, Inc., 253 F. Supp. 3d 737, 742-43 (S.D.N.Y. 2017), *aff'd*, -- Fed. Appx. --, 2020 WL 522013 (2d Cir. Feb. 3, 2020).

<sup>82</sup> *See id.*

<sup>83</sup> *See* U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE § 802.1 (3d ed. 2017) ("For purposes of copyright registration, musical works (which are also known as musical compositions) are original works of authorship consisting of music and any accompanying words. Music is a succession of pitches or rhythms, or both, usually in some definite pattern.") [hereinafter COMPENDIUM].

<sup>84</sup> *Bridgeport Music, Inc. v. UMG Recordings, Inc.* 585 F.3d 267, 272 (6th Cir. 2009). Although the case was inadvertently excluded from the prior 2018 study, it does not change the findings reached. It represents a negligible (0.7%) instance of an unsuccessful defense of non-parody fair use in a music case. To add this case to the 2018 study would raise the number of decisions to 128. Thus, 1 out of 128 equals 0.7% of the cases decided.

<sup>85</sup> *Bridgeport*, 585 F.3d at 278.

<sup>86</sup> *See* Lee, *supra* note [], at 1876.

<sup>87</sup> *See* Libby Torres, *34 artists whose hits were accused of ripping off other songs*, INSIDER (Jan. 17, 2020, 11:27 AM), <https://www.insider.com/songs-that-allegedly-stole-from-other-songs-2018-3>; Lauren W, *Top High Profile Copyright Infringement Cases in Music*, ARTICLESVALLY (April 4, 2018), <https://www.articlesvally.com/worldwide/high-profile-copyright-cases>.

<sup>88</sup> *See* Lauren W, *supra* note [].

<sup>89</sup> *See* Matthew Trzcinski, *Lil Nas X, Cardi B Sued for Copyright Infringement*, SHOWBIZ CHEATSHEET (Oct. 7, 2019), <https://www.cheatsheet.com/entertainment/lil-nas-x-cardi-b-sued-for-copyright-infringement.html/>.

Miley Cyrus,<sup>90</sup> Lana Del Ray,<sup>91</sup> Lady Gaga,<sup>92</sup> Ariana Grande,<sup>93</sup> Lizzo,<sup>94</sup> Nicki Minaj,<sup>95</sup> Lil Nas X,<sup>96</sup> Ed Sheeran,<sup>97</sup> Taylor Swift,<sup>98</sup> and other prominent musicians of this era have exposed deficiencies in relying on the test of infringement to navigate the blurred lines of copyright infringement in music.<sup>99</sup> As explained next, without a clear fair use precedent for music, the problem will only get worse.

### C. How Musicians Face Copyright Clutter—And Increasing Potential to Be Sued

The lack of a clear precedent recognizing fair use in music composition may be compounding a much bigger problem for musicians. As a *RollingStone* article aptly summarized: “Across genres, artists are putting out new music with the same question in the backs of their minds: Will this song get me sued?”<sup>100</sup> For musicians, “the once-sleepy realm of music copyright law has turned into a minefield”—a copyright minefield.<sup>101</sup> This section explains the various factors that are contributing to this copyright predicament for musicians, including the exponential growth of musical works, courts’ broader interpretation of the copyright scope for musical works, the long duration of copyright protection plus permissive statute of limitations, and the inevitable similarities of songs.

#### 1. Copyright Clutter in Music

In this section, we introduce the concept of “copyright clutter” to explain the copyright predicament musicians now face; the next sections explain, in depth, the main factors that give rise to this problem.<sup>102</sup> Copyright clutter arises when copyrights protect a plethora of works in an area or field of creation in such a way that people have difficulty creating a new work without facing exposure to copyright liability due to the pervasiveness of copyrights protecting many sub-elements of many works. In this situation, the field of creativity becomes overcrowded with increasingly more copyrights—and the potential for liability increases for any new entrant.

To understand this problem, imagine a field of creativity as plot of land and each work of authorship as a sheet of paper. As sheets of paper start piling up covering more and more of the same places on the land, clutter arises. If left unaddressed, clutter will blanket the entire field. Someone trying to enter the field will not know where to step.

---

<sup>90</sup> See Lauren W, *supra* note [].

<sup>91</sup> See Lauren W, *supra* note [].

<sup>92</sup> See Matthew Trzcinski, *Lady Gaga: ‘Shallow’ Accused of Plagiarism*, SHOWBIZ CHEATSHEET (Oct. 6, 2019), <https://www.cheatsheet.com/entertainment/lady-gaga-shallow-accused-of-plagiarism.html/>.

<sup>93</sup> See Libby Torres, *34 artists whose hits were accused of ripping off other songs*, INSIDER (Jan. 17, 2020, 11:27 AM), <https://www.insider.com/songs-that-allegedly-stole-from-other-songs-2018-3>.

<sup>94</sup> See Evan Minsker, *Lizzo Accused of Plagiarism Over ‘Juice,’* PITCHFORK (Oct. 20, 2019), <https://pitchfork.com/news/lizzo-accused-of-plagiarism-over-juice/>; Torres, *supra* note [].

<sup>95</sup> See Charles Holmes, *Tracy Chapman Sues Nicki Minaj for Copyright Infringement*, RollingStone (Oct. 23, 2018, 2:24 PM), <https://www.rollingstone.com/music/music-news/tracy-chapman-sues-nicki-minaj-745934/>.

<sup>96</sup> See Matthew Trzcinski, *Lil Nas X, Cardi B Sued for Copyright Infringement*, SHOWBIZ CHEATSHEET (Oct. 7, 2019), <https://www.cheatsheet.com/entertainment/lil-nas-x-cardi-b-sued-for-copyright-infringement.html/>.

<sup>97</sup> See Torres, *supra* note []; Lauren W, *supra* note [].

<sup>98</sup> See Matthew Trzcinski, *Taylor Swift’s ‘Shake It Off’ Sued for Copyright Infringement*, SHOWBIZ CHEATSHEET (Oct. 29, 2019), <https://www.cheatsheet.com/entertainment/taylor-swifts-shake-it-off-sued-for-copyright-infringement.html/>.

<sup>99</sup> See Wang, *supra* note [].

<sup>100</sup> *Id.*

<sup>101</sup> *Id.*

<sup>102</sup> The groundworks for this concept was first laid out in *Fair Use Avoidance in Music Cases*. See Lee, *supra* note [], at 1929-30; see also Edward Lee, *Can ‘Fair Use’ Clear Up Music’s Blurred Lines on Copyright? (Op-Ed)*, BILLBOARD (July 19, 2018).

How does copyright clutter arise? As explained in the following sections, we identify four main factors that create copyright clutter for music: (1) the sheer number of copyrighted musical works has grown exponentially, all entitled to long terms of copyright; (2) the scope of the copyright for a musical work has expanded or become more ambiguous; (3) a favorable statute of limitations and lack of laches for copyright lawsuits, coupled with the long duration of copyright, operate to keep copyright claims for musical works viable for many decades; and (4) the production of popular music leads to inevitable similarities among songs for a complex set of reasons analyzed in depth below.

## 2. Exponential Growth of Musical Works

Copyright clutter thrives on scale: many copyrights that last for many years and that broadly protect many elements of many works. Our current copyright law fits this mold. Each year, more and more works are protected by copyright automatically, while many older works dating back for decades remain protected by copyright irrespective of their use or disuse.<sup>103</sup> Copyrights arise automatically as soon as an author fixes her original work, and the copyrights lasts until the expiry of their terms.<sup>104</sup> For human authors, the term is the life of the author plus 70 years; for corporate authors, the shorter of 95 years from the work's first publication or 120 years from its creation.<sup>105</sup> For works created before 1978 and still under copyright, the term lasts 95 years from first publication.<sup>106</sup> All lengthy terms. For example, the copyright to Marvin Gaye's 1977 hit "Got To Give It Up" won't expire until 2071. (And Pharrell and Thicke must pay the Gaye estate 50% of their royalties from "Blurred Lines" until then.<sup>107</sup>)

This automatic grant of copyright, coupled with the unconditional enjoyment of the entire copyright term (without any requirement of renewal or maintenance fees), has resulted in copyright clutter in the field of music. This problem is especially worrisome, given the more confined space in which popular music is created, as explained below. Indeed, it is not hard to imagine that, at some point, every beat, hook, and short combination of notes will already be copyrighted in existing works—thus enabling the respective copyright owners to sue any subsequent musician who uses the element.

Just consider that 40,000 new songs are added to Spotify each day, which translates into 280,000 new songs a week and 14.6 million new songs each year.<sup>108</sup> Given automatic copyright protection, these millions of new works are all copyrighted. As of 2019, Spotify has 50 million tracks.<sup>109</sup> Spotify will double that amount—to 100 million tracks—in just 3 years or less at the current rate.

To put these numbers into perspective, the number of new songs added to Spotify in one year is nearly 1.5 times more than the number of U.S. patents granted over 182 years (approximately 10

---

<sup>103</sup> See Lee, *supra* note [], at 1929-30.

<sup>104</sup> See 17 U.S.C. § 102(a) (2018); Christopher J. Sprigman, *Reform(aliz)ing Copyright*, 57 STAN. L. REV. 485, 495 (2004);

<sup>105</sup> See 17 U.S.C. § 302(b), (c).

<sup>106</sup> *Id.* § 304.

<sup>107</sup> See Lee, BILLBOARD, *supra* note [].

<sup>108</sup> Tim Ingham, *Nearly 40,000 Tracks Are Now Being Added to Spotify Every Single Day*, MUSIC BUSINESS WORLDWIDE (April 29, 2019), <https://www.musicbusinessworldwide.com/nearly-40000-tracks-are-now-being-added-to-spotify-every-single-day/>.

<sup>109</sup> See *id.*

million patents from 1836 to 2018).<sup>110</sup> Moreover, the U.S. Patent Office granted 339,992 patents for inventions in 2018.<sup>111</sup> Thus, the total amount of U.S. patents granted in one year will be eclipsed in just *two weeks* on Spotify in terms of the number of new songs added to Spotify. Although the Patent Office does not include the total number of patents still in force in its annual statistics, a rough estimate of live U.S. patents in 2020 is 4 million patents or so.<sup>112</sup> That figure for the universe of all patents represents only 8% of the number of copyrighted works in Spotify's service. Yet, even with these comparatively low figures of patents, the patent system is often criticized for allowing "patent thickets" in which individual elements of complex technologies, such as smartphones, are subject to many different patents, thereby making it exceedingly difficult for anyone to invent a new invention within that area of technology without the risk of facing patent infringement lawsuits.<sup>113</sup>

And bear in mind Spotify isn't the only game in town. Apple Music boasted over 60 million songs in January 2020, which suggests that Apple's service has at least several million more songs than Spotify.<sup>114</sup> And if that were not enough, SoundCloud had 200 million songs in Feb. 2019,<sup>115</sup> although the vast majority were user-generated tracks by musicians based on a 2016 figure.<sup>116</sup> Even with some discounting for cover versions of the same song, the number of different songs in these music services is enormous.

Of course, patents are different from copyrights, even though they share the same constitutional source and a similar goal of promoting progress by granting an exclusive right for a "limited Time."<sup>117</sup> Unlike copyright law, patent law does not allow independent creation as a defense.<sup>118</sup> However, independent creation under copyright law does not mean a defendant can avoid being sued. To the contrary, it is easy for a copyright owner to allege the defendant copied based on (i) circumstantial evidence of the defendant's reasonable access to the work and some similarities between the works, (ii) striking similarities, or (iii) subconscious copying (that recognizes copying by the defendant even if he is unaware of it).<sup>119</sup> As discussed further below, a copyright owner can create a triable issue of defendant's access based on widespread dissemination online, such as a significant

---

<sup>110</sup> Nilay Patel, *The US Patent Office has issued 10 million patents*, THE VERGE (Jun. 19, 2018, 12:59 PM), <https://www.theverge.com/2018/6/19/17478898/uspto-utility-patents-10-million-issued>.

<sup>111</sup> See *U.S. Patent Statistics Chart Calendar Years 1963 – 2018*, U.S. PATENT OFFICE, [https://www.uspto.gov/web/offices/ac/ido/oeip/taf/us\\_stat.htm](https://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm) (last visited Feb. 10, 2020).

<sup>112</sup> We computed this number by searching patents whose applications were filed from Jan. 1, 2001 to Dec. 31, 2016. Patent terms run from their application filing dates. See 35 U.S.C. § 154 (2018). Thus, the patents that are expiring in 2020 must have been filed in 2001. Given that the PTO's process of examination of patent applications takes an average of 2.79 years, we excluded applications looking back for 3 years from 2020, thus running our search through applications filed on Dec. 31, 2016. See Saurabh Vishnubhakat, 24 TEX. INTELL. PROP. L.J. 333, 334 (2016). That search yielded 4,065,403 patents in the U.S. Patent Office database. See USPTO Patent Full-Text and Image Database, USPTO.gov, <http://patft.uspto.gov/netathtml/PTO/search-adv.htm> (last visited Feb. 10, 2010) (conducting search APD/20010101->20161231 resulted in 4065403 patents). Some patents are not continued through the full term due to the failure for the owner to pay maintenance fees at three different times. See 35 U.S.C. § 41 (2018).

<sup>113</sup> See Mark Lemley, *Software Patents and the Return of Functional Claiming*, 2013 WIS. L. REV. 905, 928-29.

<sup>114</sup> See *Apple Music*, APPLE INSIDER, <https://appleinsider.com/inside/apple-music> (last visited Feb. 10, 2020).

<sup>115</sup> See Dani Deahl, *Over 200 million tracks have been uploaded to SoundCloud*, THE VERGE (Feb. 13, 2019, 3:11 PM), <https://www.theverge.com/2019/2/13/18223596/soundcloud-tracks-uploaded-200-million>.

<sup>116</sup> See Jacob Kastrenakes, *SoundCloud's subscription streaming service is here (and it needs work)*, THE VERGE (March 29, 2016, 9:00 AM), <https://www.theverge.com/2016/3/29/11321978/soundcloud-go-subscription-music-service-announced>.

<sup>117</sup> U.S. CONST. art. I, § 8, cl. 8.

<sup>118</sup> See Mark A. Lemley, *Should Patent Infringement Require Proof of Copying?*, 105 MICH. L. REV. 1525, 1525(2007).

<sup>119</sup> See *Arnstein v. Porter*, 154 F.2d 464, 468-69 (2d Cir. 1946) (discussing circumstantial proof of copying and striking similarities); *Three Boys Music Corp. v. Bolton*, 212 F.3d 477, 482-83 (9th Cir. 2000) (subconscious copying).



number of plays of the song on YouTube. It is now even more difficult to establish independent creation of music than before the Internet.<sup>120</sup>

Given this threat of being sued even if one independently created a work, copyright law produces its own kind of thicket or clutter—and it does so at a magnitude of copyrighted musical works that far exceeds the number of patents in the *entire* U.S. patent system.

### 3. Broader or Ambiguous Scope of “Musical Work” Copyright

Adding to the problem of copyright clutter created by these many millions of copyrighted works is the expansion or lack of clarity in the scope of copyright for musical works. The “Blurred Lines” verdict is identified as the catalyst that led to—or at least exposed—the copyright predicament for musicians.<sup>121</sup> As *New York Times* music critic Jon Caramanica decried, “given how lucrative the ‘Blurred Lines’ judgment proved to be, it has become a de facto blueprint for how claims about originality will be litigated moving forward: If there is a whiff of potential borrowing on a song (and there almost always is), the borrowed might come knocking.”<sup>122</sup> The case resulted in one of the largest damages amounts ever awarded in a music infringement case.<sup>123</sup> The jury awarded \$7.4 million in damages and a 50% royalty for future revenues from “Blurred Lines”; the court reduced the \$7.4 million to \$5.3 million because the original amount was excessive.<sup>124</sup>

A central issue in *Williams v. Gaye* was the scope of the copyright to Gaye’s musical work, meaning what elements of the song was protected by copyright.<sup>125</sup> This issue was more complicated because it involved a work that was copyrighted under the prior 1909 Copyright Act, which the trial court interpreted as limiting the scope of copyright protection to what was contained in the deposit copy submitted by the author as a part of the registration of the copyright to the Copyright Office—an approach that no longer holds true today for works created under the 1976 Act.<sup>126</sup> In a different appeal involving Led Zeppelin’s “Stairway to Heaven,” the Copyright Office agreed that, under the 1909 Act, “copyrighted work consists of the composition reflected in the deposited sheet music.”<sup>127</sup>

On appeal, a fundamental disagreement in the case was whether the jury impermissibly relied on copying of unprotected elements contained in Gaye’s recording (but not sheet music) in reaching

---

<sup>120</sup> See generally Dennis J. Karjala, *Theoretical Foundations for the Protection of Computer Programs in Developing Countries*, 13 UCLA PAC. BASIN L.J. 179, 186 n.17 (1994) (describing how if “someone has legitimate access to [a work], independent creation as opposed to ‘unconscious copying’ can be very difficult to prove”).

<sup>121</sup> See Wang, *supra* []; Jon Caramanica, *It’s Got a Great Beat, and You Can File a Lawsuit to It*, N.Y. TIMES (Jan. 6, 2020), <https://www.nytimes.com/2020/01/06/arts/music/pop-music-songs-lawsuits.html>.

<sup>122</sup> Caramanica, *supra* note [].

<sup>123</sup> See Ben Sisario & Noah Smith, *‘Blurred Lines’ Infringed on Marvin Gaye Copyright, Jury Rules*, N.Y. TIMES (March 10, 2015), <https://www.nytimes.com/2015/03/11/business/media/blurred-lines-infringed-on-marvin-gaye-copyright-jury-rules.html>.

<sup>124</sup> See Andrew Chung, *Judge cuts \$7.4 million ‘Blurred Lines’ copyright award to Gaye family*, REUTERS (July 15, 2015, 10:24 AM), <https://www.reuters.com/article/us-music-blurredlines-copyright-idUSKCN0PP1WC20150715>.

<sup>125</sup> See *Williams v. Gaye*, 895 F.3d 1106, 1120-27 (9th Cir. 2018) (rejecting defendants’ arguments that jury impermissibly considered elements of Gaye song outside of the deposit copy based on jury instruction and Gaye’s experts).

<sup>126</sup> See *id.* at 1121 (“the district court ruled that the 1909 Act protected only the deposit copy of ‘Got To Give It Up,’ and excluded the sound recording from consideration”).

<sup>127</sup> Brief for the United States as Amicus Curiae in Support of Appellees, *Skidmore v. Led Zeppelin*, 2019 WL 3992659, at \*11 (9th Cir. Aug. 15, 2019) [hereinafter Copyright Office Amicus Brief].

its verdict.<sup>128</sup> The commercial sound recording of Gaye’s song itself was not protected because sound recordings were not copyrightable under the 1909 Act.<sup>129</sup> For that reason, the jury never heard the full commercial sound recording at trial.<sup>130</sup> But the trial court had permitted Gaye’s estate to use “sound clips edited to capture elements that the experts testified were in the deposit copy.”<sup>131</sup> Even though Pharrell argued that certain elements used by Gaye’s music expert (“‘Theme X,’ the descending bass line, and keyboard parts”) were not in Gaye’s deposit copy of the song and therefore improper for the jury to consider, the court of appeals held that the issue was a factual issue left for the jury to decide.<sup>132</sup> The court stopped short of delineating what elements were contained in the deposit copy.

Even beyond the deposit copy issue, the Ninth Circuit took a broad approach to the scope of copyright for musical compositions. The court rejected the defendants’ argument that musical compositions are entitled to only a “thin” copyright in “a narrow range of expression.”<sup>133</sup> Instead, the court recognized musical compositions deserve broad copyright protection: “[m]usic ... is not capable of ready classification into only five or six constituent elements,’ but is instead ‘comprised of a large array of elements, some combination of which is protectable by copyright.’”<sup>134</sup>

Joseph Fishman contends that the Ninth Circuit’s approach in “Blurred Lines” represents a shift from the traditional, 19th century understanding of what is protected in a musical work as limited to the melody (and lyrics).<sup>135</sup> The Ninth Circuit’s approach protects something more amorphous and far broader, including other elements such as a song’s “chord progression, key, tempo, rhythm, and genre.”<sup>136</sup> Fishman acknowledges that the 19th century view of a musical work as confined to the melody (and lyrics) is “anomalous” to how modern copyright treats other types of works of authorship, but he argues that the more limited approach for musical works helps to facilitate “downstream composers’ future creativity.”<sup>137</sup> This bright-line approach to a musical work is preferable to the “everything counts” approach: “Music cases have provided subsequent generations with what by copyright’s standards is an uncharacteristically clear boundary to work around: to avoid infringement, avoid the tune.”<sup>138</sup>

In a blistering dissent in the “Blurred Lines” case, Judge Nguyen contended that “[t]he majority [decision] allows the Gayes to accomplish what no one has before: copyright a musical style.”<sup>139</sup> Judge Nguyen chided the majority for failing to identify “what elements are protectable in ‘Got To Give It Up,’” as she believed was required by the test of infringement.<sup>140</sup> This led to the

---

<sup>128</sup> See *Williams*, 895 F.3d at 1121.

<sup>129</sup> See Copyright Office Amicus Brief, *supra* note [], at \*2.

<sup>130</sup> See *Williams*, 895 F.3d at 1117 (“The district court ruled before trial that the Gayes could present sound recordings of “Got To Give It Up” edited to capture only elements reflected in the deposit copy. Consequently, the commercial sound recording of “Got To Give It Up” was not played at trial.”).

<sup>131</sup> *Id.* at 1125.

<sup>132</sup> *Id.* at 1124.

<sup>133</sup> *Id.* at 1120.

<sup>134</sup> *Id.*

<sup>135</sup> See Joseph P. Fishman, *Music as a Matter of Law*, 131 HARV. L. REV. 1861, 1863-64, 1871 (2018). Fishman is careful to point out that the shift didn’t start with “Blurred Lines”; court decisions before and after “Blurred Lines” “have shifted the boundaries of music infringement more than the vagaries of a jury every could.” *Id.* at 1873.

<sup>136</sup> *Id.* at 1869.

<sup>137</sup> *Id.* at 1870.

<sup>138</sup> *Id.* at 1870.

<sup>139</sup> See *Williams*, 895 F.3d at 1138 (Nguyen, J., dissenting).

<sup>140</sup> *Id.* at 1141.

majority affirming a verdict based on similarities in unprotected elements, in her view.<sup>141</sup> Demonstrating her own music knowledge, Judge Nguyen methodically analyzed the alleged similarities, including the sheet music, element by element (the signature phrase, the hook phrase, the Theme X, the keyboard parts, the bass line, word painting, parlando, lyrics, and the entire combination).<sup>142</sup> Judge Nguyen warned that the decision “establishes a dangerous precedent that strikes a devastating blow to future musicians and composers everywhere.”<sup>143</sup> Every musician can “now potentially infringe[] the copyright of any famous song that preceded it.”<sup>144</sup>

The Ninth Circuit is still wrestling with this question—how to define the scope of copyright for a musical work, if at all—in two other high-profile appeals: the lawsuit against Led Zeppelin for its alleged copying of a guitar riff from the band Spirit’s song “Taurus” and the suit against Katy Perry for her alleged copying of a simple, synthesized rhythm from Marcus Gray’s Christian rap song “Joyful Noise” that was allegedly looped in the opening and other parts of Perry’s hit song “Dark Horse.”<sup>145</sup> So it is possible that the court will provide greater clarity to this issue. [N.B. UPDATE forthcoming in light of decisions.] If not, then the forceful critiques offered by Judge Nguyen and Fishman remain. Musicians will have a difficult time avoiding copyright infringement suits if copyright law adopts an expansive view of what is protected in a musical work or simply leaves the scope unspecified (for later determination on a case-by-case basis). Musicians facing the copyright clutter created by potentially 200 million existing songs will have no way of identifying what elements, if any, are unprotected within the clutter.

Compounding this problem in the lack of legal clarity in the scope of a musical work copyright is the blurring of the musical work and the sound recording—both procedurally in the Copyright Office as a part of registration and practically in how music is being made today through digital technologies.<sup>146</sup> First, consider the dramatic change in copyright procedure. Unlike the 1909 Act, registration under the 1976 Act is not required for a work to be copyrighted; many songs are unlikely to be registered.<sup>147</sup> Moreover, as discussed above, under the old 1909 Act, a musical work could only be registered in the Copyright Office with a deposit copy in written form, commonly the sheet music. Today, however, musical works are typically registered in the Copyright Office by a deposit of a phonorecord, or a recording of a performance of the musical work.<sup>148</sup> This marks a dramatic change from past practice in which a musical work was often composed on sheet music and deposited in the Copyright Office in that way.<sup>149</sup> Even further, “49% of all registrations of musical works [in 2012]

---

<sup>141</sup> See *id.* at 1140-42.

<sup>142</sup> See *id.* at 1142-52.

<sup>143</sup> *Id.* at 1138.

<sup>144</sup> *Id.*

<sup>145</sup> See *Skidmore v. Led Zeppelin*, 925 F.3d 999 (9th Cir. 2019) (granting en banc review); *Gray v. Perry*, No. 19-56195 (9th Cir. Oct. 15, 2019).

<sup>146</sup> The Copyright Act defines sound recording. See 17 U.S.C. § 101 (2018) (“‘Sound recordings’ are works that result from the fixation of a series of musical, spoken, or other sounds, but not including the sounds accompanying a motion picture or other audiovisual work, regardless of the nature of the material objects, such as disks, tapes, or other phonorecords, in which they are embodied.”). Although the Copyright Act does not define musical work, the Copyright Office has defined it as an “original work[] of authorship consisting of music and any accompanying words.” See Compendium, *supra* note [].

<sup>147</sup> See Copyright Office Amicus Brief, *supra* note [], at \*2-\*3.

<sup>148</sup> See Robert Brauneis, *Musical Work Copyright for the Era of Digital Sound Technology: Looking Beyond Composition and Performance*, TULANE J. TECH. & INTELL. PROP. 1, 28-29 (2014) (“In 1978, 86% of musical works registered were accompanied by deposits of notation and only 14% by phonorecord deposits. By 2012, 77% of musical work registrations were accompanied by phonorecord deposits and only 17% by deposits of musical notation....”).

<sup>149</sup> See *id.*

[were] filed as combined registrations of musical works and sound recordings, with a single phonorecord deposit.”<sup>150</sup> This blurring between a musical work and a sound recording makes it exceedingly difficult for other musicians to figure out what elements comprise the musical work (versus the sound recording). There is no easy way for others to identify the unprotected elements in a musical work (as embodied in the recording deposited) even if the works are registered.<sup>151</sup> This blurring exacerbates copyright clutter by making the boundaries of what is not protected by copyright uncertain—and practically unascertainable to the public.

Thus, to err on the safe side, a musician must assume that everything captured in a recording (meaning all sounds and words) comprises the musical work. Such an assumption may seem extreme, but it will become necessary as the line between a musical work and a sound recording collapses. Moreover, it’s not even clear that courts or the Copyright Office can stave off this collapse. Indeed, Robert Brauneis argues that it’s impossible to do so in any principled manner and proposes that the copyright law “treat musical works fixed in phonorecords as extending to every aspect of recorded sound, thus discarding the composition/performance distinction, and treating such a musical work as coextensive with the sound recording.”<sup>152</sup> What drives the collapse between musical work and sound recording is the way music is being created today—on computers without any composition on sheet music and often without any instruments (other than what is computer-generated).<sup>153</sup> The rise of synthetic or computer-generated music is discussed later below. Suffice it to say, the ambiguous or expanding scope of a “musical work” is due in large part to a seismic shift in the music industry in the way that music is produced. And once the scope of what is copyrighted in a musical work expands, fueled in part by how music is digitally produced, so too does the problem of copyright clutter.

#### 4. Lengthy Exposure to Copyright Liability

Copyright clutter is exacerbated by the interaction of several other features of copyright law—the lengthy and automatic terms of copyright (discussed above), the way in which the copyright statute of limitations is interpreted, and the lack of a laches defense. Due to Congress’s extensions of copyright terms, copyrights last the life of the author plus 70 years for individuals or, for corporate authors, 95 years from first publication or 120 years from creation, whichever is shorter.<sup>154</sup> Musical works dating back even to 1925 are still under copyright in 2020.<sup>155</sup> Copyright law does not require any maintenance fees (as required under trademark and patent law) or even any use or exploitation of a work for the copyright to continue to the end of its lengthy term.<sup>156</sup> The automatic grant of a long term of copyright for all works, irrespective of their utilization, creates copyright clutter by allowing more and more works to be protected by copyright, even if they have not been exploited for years.

The lengthy term of copyright might be less worrisome if copyright law recognized a statute of limitations that provided some measure of repose for defendants. However, courts have interpreted

---

<sup>150</sup> *Id.* at 30.

<sup>151</sup> See generally Ben DePoorter & Robert Kirk Walker, *False Positives*, 89 NOTRE DAME L. REV. 319, 348-48 (2013) (criticizing cursory review process for copyright registration as not providing enough information of what is protected).

<sup>152</sup> Brauneis, *supra* [], at 43-44. *But see* 1 MELVILLE D. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 2.05[A] (rev. ed. 2017) (“[I]t stretches matters too far to conclude that everything on the recording forms part of the musical composition.”)

<sup>153</sup> See Brauneis, *supra* [], at 27-28.

<sup>154</sup> See 17 U.S.C. § 302(b), (c).

<sup>155</sup> See *id.* § 304.

<sup>156</sup> See Sprigman, *supra* note [], at 519-21.

the 3-year statute of limitations under the so-called separate accrual rule: each act of alleged infringement by the defendant is treated separately under the 3-year statute of limitations.<sup>157</sup> For music, this rule allows a copyright lawsuit to be brought in 2020 for an alleged infringement that first started in 1925, as long as an act of infringement (such as a public performance or distribution of the song) had occurred within the 3-year period, between 2018 and 2020. Granted, this example may sound fanciful. But consider Spirit's ongoing lawsuit against Led Zeppelin for its iconic song "Stairway to Heaven" from 1971, the date in which the first infringement allegedly occurred.<sup>158</sup> Copyright law used to recognize the equitable doctrine of laches, but, in *Petrella v. Metro-Goldwyn-Mayer, Inc.*, the Supreme Court ruled that Congress abrogated the equitable defense in a 1957 amendment to the Copyright Act.<sup>159</sup> Thus, musicians lack any repose from copyright lawsuits, even ones that could have been brought decades ago. This interplay of long copyright terms, separate accrual rule, and lack of laches exacerbates copyright clutter by prolonging copyright clutter for nearly a century or more for every song.

#### 4. Inevitable Similarity in Popular Music

One might wonder if musicians can avoid copyright clutter and the threat of being sued for copyright infringement simply by creating their own songs. After all, infringement requires that the defendant be found to have *copied* from the plaintiff's work. As long as a musician avoids any copying, that musician won't be sued. If only life were so easy.

As discussed above, it is often difficult for a musician to establish independent creation. Copyright law's recognition of proof of copying based on the defendant's access to the work in question, along with some similarities, makes it simple for a copyright owner to state a copyright claim if the musical work is readily available and arguably popular on the Internet, such as Soundcloud, Spotify, or YouTube.<sup>160</sup> Thus, even if a musician independently created her work (without any musical borrowing discussed below), she still would have to contest the plaintiff's claim of copying based on circumstantial evidence of access and similarity or striking similarity.<sup>161</sup> Moreover, the doctrine of subconscious copying further diminishes the chances that a musician will prevail on independent creation without having to contest it at trial if the plaintiff's work was widely disseminated online.<sup>162</sup>

True, even when relying on circumstantial evidence of copying, the plaintiff still needs to show some similarity between the two songs. Yet a variety of factors makes it quite likely that popular songs will contain elements that sound similar in some way.<sup>163</sup> We characterize this phenomenon as *inevitable*

---

<sup>157</sup> See *Petrella v. Metro-Goldwyn-Mayer, Inc.*, 572 U.S. 663, 671 (2014).

<sup>158</sup> See *Skidmore v. Led Zeppelin*, 905 F.3d 1116 (9th Cir. 2018), *rehearing en banc granted*, 925 F.3d 999 (9th Cir. 2019).

<sup>159</sup> See *Petrella*, 572 U.S. at 679.

<sup>160</sup> See *Gray v. Perry*, 2018 WL 3954008, at \*5 (C.D. Cal. Aug. 13, 2018) (finding a triable issue of access based on the plaintiff's song's popularity on YouTube and MySpace as potential widespread dissemination, despite no commercial success).

<sup>161</sup> See *Arnstein v. Porter*, 154 F.2d 464, 468-69 (2d Cir. 1946) (discussing circumstantial proof of copying and striking similarities).

<sup>162</sup> See *Three Boys Music Corp. v. Bolton*, 212 F.3d 477, 482-83 (9th Cir. 2000) (subconscious copying); see also *Gray v. Perry*, 2018 WL 3954008, at \*5.

<sup>163</sup> We use the term "popular music" generically to refer to any style of music that is aimed at widespread commercial success, with high sales or frequency of plays. We use the term "pop music" more narrowly to refer to a particular style of music. For example, the GRAMMY Awards have awards specifically for pop music, but then have general (and more prestigious) categories for record of the year, album of the year, and song of the year. See *2020 Grammy Awards: The Full List of Winners*, NPR (Jan. 26, 2020, 10:16 PM), <https://www.npr.org/2020/01/26/799752326/2020-grammy-awards-the>

*similarity* in popular music. The premise is not that all popular music contains similarities. Instead, it is that, due to a host of factors explained below, similarities in music are common—probably more so than in other types of works. If an author escaped to a cabin in the woods and wrote a novel from scratch, we would not expect the novel to contain sentences that were very similar to a published work, absent copying. However, if a musician escaped to the same cabin and wrote an album from scratch, we should reasonably expect that one or more of the songs might contain elements that sound similar to an existing song, *even absent copying*.<sup>164</sup> Our theory of inevitable similarity explains why.

**a. Aural functionality: harmony, musical genres, and popularity**

Music creation includes functional aspects that constrain the choices of a composer or producer of music, to some degree. We characterize these aspects as serving *aural functionality*, the ordering of notes or musical elements to sound harmonious and within a music style or genre (e.g., country music) or cross-genre, and to produce music that appeals to the target demographic group. This concept is similar in concern to trademark law’s recognition of aesthetic functionality, which limits the scope of a trademark “where protection of the mark significantly undermines competitors’ ability to compete in the relevant market.”<sup>165</sup> Aural functionality refers to constraints on the choices musicians or producers can make in creating music. Three different types are discussed below: the need for sounds that are (1) harmonious, (2) identifiable within a musical genre or cross-genre, and (3) popular to the target audience. A painter has a blank canvas, but a musician does not.

The first type of aural functionality is the need for producing a harmonious sound to the human ear. This need acts at least as a modest constraint on music composition or production. True, a musician could randomly string together a collection of notes or sounds—regardless of whether they sound harmonious together—but that is unlikely to be understood as a song or something an audience would hear as music as opposed to a combination of noises or clanking. To be a song, the combination must sound harmonious. Indeed, a growing body of research by cognitive biologists, neuroscientists, and other researchers suggests that humans may have an innate preference for harmonious sounds and consonance over dissonance, although culture may also play a role.<sup>166</sup> Other features of music, such as pitch and rhythm, may also be innately human.<sup>167</sup> Whether due to nature or nurture, it appears beyond dispute that humans prefer harmonious sounds over disharmony.

---

full-list-of-winners. Our use of “pop music” aligns with the GRAMMY’s category for pop music, while our use of “popular music” is intended to be more generic and encompass what would fall in the general categories of GRAMMY awards.

<sup>164</sup> See 1 MELVILLE D. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 2.05[B] (rev. ed. 2017) (“In the field of popular songs, many, if not most, compositions bear some similarity to prior songs.”)

<sup>165</sup> Christian Louboutin S.A. v. Yves Saint Laurent Am. Holdings, Inc., 696 F.3d 206, 222 (2d Cir. 2012); see Qualitex Co. v. Jacobson Prods. Co., Inc., 514 U.S. 159, 165 (1995). It goes beyond the scope of this Article to examine whether courts should recognize a specific doctrine of aural functionality. We use the term here for descriptive purposes to understand better how music is produced.

<sup>166</sup> See, e.g., Daniel L. Bowling & Dale Purves, *A biological rationale for musical consonance*, PNAS (July 24, 2015), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4568680/> (“In light of present evidence, the most plausible explanation for consonance and related tonal phenomenology is an evolved attraction to the harmonic series that characterize conspecific vocalizations, based on the biological importance of social sound signals.”); but see, e.g., Josh H. McDermott, *Individual Differences Reveal the Basis of Consonance*, CURR. BIOL. (June 8, 2010), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2885564/> (finding that “the aesthetic response to harmonic frequency relations is at least partially learned from musical experience”).

<sup>167</sup> See, e.g., Sam V. Norman-Haignere *et al.*, *Divergence in the functional organization of human and macaque auditory cortex revealed by MRI responses to harmonic tones*, 22 NATURE NEUROSCIENCE (2019), <https://doi.org/10.1038/s41593-019-0410-7>; Patrick E. Savage *et al.*, *Statistical universals reveal the structures and functions of human music*, 112 PNAS 8987, 8898-99 (2015), <https://doi.org/10.1073/pnas.1414495112> (“Rhythm: Music tends to use an isochronous beat (6) organized

This type of aural functionality is akin to the need for a writer to compose expression consistent with a language's grammatical rules.<sup>168</sup> A writer could ignore grammar in attempting to write a novel, but the result would be gibberish. Because of the rules of grammar, some elements in writings of different authors will be similar, if not identical—e.g., the use of the same transitions in or between paragraphs, the use of prepositional phrases, and even just the simple use of the repeated articles “a,” “an,” and “the” before nouns.<sup>169</sup> The need for music to sound harmonious operates in a similar way for music, dictating to some extent the ways in which notes or sounds are ordered together. This need increases the chances some elements in different songs—such as a combination of a few notes, chords, or chord progression—will sound similar.<sup>170</sup>

A second form of aural functionality arises when a musician chooses to produce a new song within a certain music style or genre (intra-genre), or combination of genres (cross-genre). At least some elements of the song must be recognizable to the audience as a part of the common thread or sound that distinguishes that style or genre. For example, a musician could not pass off a heavy metal song as country music, or vice versa, at least not to an audience of country or metal music lovers. Although a divided panel of the Ninth Circuit upheld the jury verdict against Pharrell and Thicke in the “Blurred Lines” case, the dissent contended that the decision applied a copyright to a musical style.<sup>171</sup> Pharrell’s attorney pursued this line of defense at trial: “We’re going to show you what you already know: that no-one owns a genre or a style or a groove. To be inspired by Marvin Gaye is an honourable thing.”<sup>172</sup> But Pharrell, who had shifting explanations for how he created “Blurred Lines” over time, failed to persuade the jury or court.<sup>173</sup> Nonetheless, even the Ninth Circuit panel that upheld the jury verdict recognized that copyright does not extend to a musical style or genre.<sup>174</sup> The “Blurred Lines” case presented a more complex scenario in which the defendants’ song is cross-genre. “Blurred Lines,” released in 2013, is not a 1970s song, but its creators say they attempted to evoke sounds reminiscent of the funk/dance music of that era.<sup>175</sup> The parts of the two commercial recordings that arguably sound the most like 1970s/funk music were the cowbells and party noises; the trial court excluded these elements from consideration because they were not a part of Gaye’s deposit copy of

---

according to metrical hierarchies (7) based on multiples of two or three beats (8)—especially multiples of two beats (9). This beat tends to be used to construct motivic patterns (10) based on fewer than five durational values (11).”)

<sup>168</sup> An extensive body of research examines the relationship between language and music. See, e.g., Lutz Jancke, 3 FRONT PSYCHOLOGY (2012), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3338120/>.

<sup>169</sup> See *Arnstein v. Porter*, 154 F.2d 464, 477 (2d Cir. 1946) (Clark, J., dissenting) (“It is as though we found Shakespeare a plagiarist on the basis of his use of articles, pronouns, prepositions, and adjectives also used by others.”).

<sup>170</sup> For one humorous example, a band known as the Axis of Awesome identified 73 songs that all rely on the same four chords. See Alan White, *73 Songs You Can Play with the Same Four Chords*, BUZZFEED (April 29, 2014, 8:56 AM), <https://www.buzzfeed.com/alanwhite/73-songs-you-can-play-with-the-same-four-chords>.

<sup>171</sup> See *Williams*, 895 F.3d at 1138 (Nguyen, J., dissenting).

<sup>172</sup> See Lewis Corner, *‘Blurred Lines’ vs Marvin Gaye: Listen to both songs and vote on their similarity*, DIGITAL SPY (Nov. 3, 2015), <https://www.digitalspy.com/music/a634681/blurred-lines-vs-marvin-gaye-listen-to-both-songs-and-vote-on-their-similarity/>.

<sup>173</sup> See, e.g., Jess Denham, *Blurred Lines trial: Pharrell Williams claims Miley Cyrus influenced song, not Marvin Gaye*, INDEPENDENT (March 5, 2015, 4:35 PM), <https://www.independent.co.uk/arts-entertainment/music/news/blurred-lines-trial-pharrell-williams-claims-miley-cyrus-influenced-song-not-marvin-gaye-10088391.html>; Eriq Gardner, *Pharrell Williams Defends GQ Interview in Court*, HOLLYWOOD REPORTER (Feb. 3, 2020, 7:08 AM), <https://www.hollywoodreporter.com/thr-esq/pharrell-williams-defends-gq-interview-court-1275724>.

<sup>174</sup> See *Williams*, 895 F.3d at 1138.

<sup>175</sup> See Adam Pasick, *Summer song lawsuit exposes the “Blurred Lines” of the US copyright system*, QUARTZ (Aug. 16, 2013), <https://qz.com/115994/summer-song-lawsuit-exposes-the-blurred-lines-of-the-us-copyright-system/>.

sheet music.<sup>176</sup> Bruno Mars is another successful musician who faced copyright lawsuits for creating songs that evoke 1970s funk music in a way that musicians from that era claimed was copyright infringement.<sup>177</sup> Cross-genre similarities arise when musicians attempt to evoke more than one genre or style across time or during the same time period. Whether the music is cross-genre or intra-genre, we can expect aural functionality producing some similarities in song elements sufficient for an audience to identify the genre or style of music.

A third form of aural functionality is the attempt to create music that is popular to a certain audience. The need for popularity further limits the choices of the music producer. To the music industry, the most coveted target audience typically is teenagers.<sup>178</sup> Producers of contemporary music are all trying to appeal roughly to the same demographic audience. If a certain style or pattern of music (e.g., hip hop, pop, R&B, K-pop, dance, disco, grunge, alternative, rock, or some combination) is popular to younger consumers, musicians aiming for commercial success will likely gravitate to today's popular style, genre, sounds, or vibes. Today, a classic rock 'n' roll album will have less commercial appeal to young consumers than a hip-hop album, no question. This third type of aural functionality overlaps with the first (in terms of music styles), but the focus is different. The focus here is on commercial success—what sells—and it is not limited to a music style. Trying to create music that is commercially successful to younger consumers further constrains the choices music producers make. Producers may recognize a popular pattern or formula that sells. For example, a 2014 study analyzing instrumentation of more than 500,000 albums from 1955 to 2011 showed that album sales within a music style “typically increase with *decreasing* complexity” in instrumentation.<sup>179</sup> Simplicity sells. Not surprisingly, hip hop and electronic music showed low variety in instrumentation and high uniformity.<sup>180</sup> The study suggests that “music becom[es] increasingly formulaic in terms of instrumentation under increasing sales numbers due to a tendency to popularize music styles with low variety and musicians with similar skills.”<sup>181</sup> Indeed, as explained in detail below, music producers have become formulaic, methodical, and far more industrial in organization—which inevitably leads to some similarities in the music produced.

These three constraints of aural functionality—based on the needs for harmony, fitting within a style or genre of music, and popularity—limit the range of sounds contained in contemporary songs produced to a far narrower universe. Courts have long recognized these constraints on music composition, although without using the terminology or formal typology we employ in this Article. Consider, for example, the Second Circuit's acerbic summary of the inevitability of similarity in music recognized in 1940:

---

<sup>176</sup> See *Williams v. Gaye*, 895 F.3d 1106, 1125 (9th Cir. 2018).

<sup>177</sup> See Hugh McIntyre, *Since It Keeps Going So Well, Bruno Mars Will Continue to Borrow from the Past*, FORBES (Oct. 15, 2016, 10:15 AM), <https://www.forbes.com/sites/hughmcintyre/2016/10/15/since-it-keeps-going-so-well-bruno-mars-will-continue-to-borrow-from-the-past/#73db7aa94fdb>.

<sup>178</sup> See *Universal Music Group targets teens online*, L.A. TIMES (Oct. 9, 2008, 1:05 PM), <https://latimesblogs.latimes.com/entertainmentnewsbuzz/2008/10/universal-music.html>.

<sup>179</sup> See Gamaliel Percino *et al.*, *Instrumentational Complexity of Music Genres and Why Simplicity Sells*, PLOS ONE (Dec. 31, 2014), <https://doi.org/10.1371/journal.pone.0115255>.

<sup>180</sup> *Id.*

<sup>181</sup> *Id.*



It must be remembered that, while there are an enormous number of possible permutations of the musical notes of the scale, only a few are pleasing; and much fewer still suit the infantile demands of the popular ear. Recurrence is not therefore an inevitable badge of plagiarism.<sup>182</sup>

Another court noted: “Similarity of tone succession, which is, to a certain degree, inevitable in all musical compositions, because of the limits of the chromatic scale, is more likely to appear within this narrow pattern [for popular songs].”<sup>183</sup> Moreover, “[a]nyone can take apart a piece of music, and, as with a microscope, discern certain similarity in compositions of a popular nature, where the limit of originality is very narrow.”<sup>184</sup> Or, as one early, influential treatise on music copyright wrote:

The combinations and permutations of thirteen tones gives the amazing total of 6,227,020,800 combinations, of which only a small fraction may be used ordinarily. Popular songs, particularly, lie within a very small radius. In a confined space, similarity of tone construction is inevitable. Practically every original idea the composer can think of has appeared somewhere before; it is a matter of probabilities, and every day the number of new possibilities grows less.<sup>185</sup>

Therefore, in analyzing infringement, it is important to remember “the limited number of notes and chords available to composers and the resulting fact that common themes frequently reappear in various compositions, especially in popular music.”<sup>186</sup> Accordingly, courts have excluded from copyright protection “common themes” that recur in musical works as lacking in originality or on other grounds, such as the *scène à faire* doctrine.<sup>187</sup>

Social scientists have made considerable strides in documenting how popular music becomes more basic, formulaic, and homogeneous over time. In a 2012 study published in *Scientific Reports*, a group of researchers at the Artificial Intelligence Research Institute at the Spanish National Research Council (SNRC) used techniques from statistical physics and complex networks to analyze the million song dataset, which “includes the year annotations and audio descriptions of 464,411 distinct music recordings (from 1955 to 2010)” from “a variety of popular genres, including rock, pop, hip hop, metal, or electronic.”<sup>188</sup> The dataset analyzed and described the loudness, the pitch, and the timbre of the recordings.<sup>189</sup> The SNRC researchers coded these three descriptions of the recordings in the dataset as codewords that were statistically examined for frequency based on a sampling of “one

---

<sup>182</sup> *Darrell v. Joe Morris Music Co.*, 113 F.2d 80 (2d Cir. 1940).

<sup>183</sup> *Hirsch v. Paramount Pictures*, 17 F. Supp. 816, 817 (S.D. Cal. 1937).

<sup>184</sup> *Carew v. R.K.O. Radio Pictures*, 43 F. Supp. 199, 202 (S.D. Cal. 1942).

<sup>185</sup> ALFRED M. SHAFER, *MUSICAL COPYRIGHT* 155 (1932).

<sup>186</sup> *Gaste v. Kaiserman*, 863 F.2d 1061, 1068 (2d Cir. 1988) (citing *Arnstein v. Edward B. Marks Music Corp.*, 82 F.2d 275, 277 (2d Cir. 1936)).

<sup>187</sup> *See id.* at 1068-69 (“Substantial similarity ‘must extend beyond themes that could have been derived from a common source or themes that are so trite as to be likely to reappear in many compositions.’”) (citing *Selle v. Gibb*, 741 F.2d 896, 905 (7th Cir. 1984)).

<sup>188</sup> *See Joan Serrà et al., Measuring the Evolution of Contemporary Western Popular Music*, 521 *SCIENTIFIC REPORTS* (2012), <https://doi.org/10.1038/srep00521>.

<sup>189</sup> *See id.* (“Loudness basically correlates with our perception of sound amplitude or volume (notice that we refer to the intrinsic loudness of a recording, not the loudness a listener could manipulate). Pitch roughly corresponds to the harmonic content of the piece, including its chords, melody and tonal arrangements. Timbre accounts for the sound color, texture, or tone quality and can be essentially associated with instrument types, recording techniques and some expressive performance resources.”).

million beat-consecutive codewords, considering entire tracks and using a window length of 5 years.”<sup>190</sup>

Using these techniques, the SNRC researchers identified “a great degree of conventionalism in the creation and production of this type of music” over the 50-year period.<sup>191</sup> Specifically, the study found: “[1] the restriction of pitch sequences (with metrics showing less variety in pitch progressions), [2] the homogenization of the timbral palette (with frequent timbres becoming more frequent) and [3] growing average loudness levels (threatening a dynamic richness that has been conserved until today).”<sup>192</sup>

For our purposes, the SNRC’s analysis of pitch (“the harmonic content of the piece, including its chords, melody and tonal arrangements”) is most relevant and instructive for understanding similarities in musical works.<sup>193</sup> The study found that the “most used pitch codewords generally correspond to well-known harmonic items,” and that “a few codewords are very frequent [among the recordings analyzed] while the majority are highly infrequent,” thus following a power-law behavior.<sup>194</sup> This pattern was true across the entire 50-year period.<sup>195</sup> But the researchers also found a reduction during this period in the transitions between codewords, which indicates “a progressive restriction of pitch transitions, with less transition options and more defined paths between codewords.”<sup>196</sup> In other words, more recent music displayed a more limited and formulaic approach to pitch transitions.<sup>197</sup> Also, the timbre or instrument sounds in the recordings showed “a growing homogenization.”<sup>198</sup>

Of course, this is not to say that musicians cannot be original in creating popular music, much less that all pop or contemporary music sounds the same. It would be insulting to musicians to sweep with such a broad brush. If music lacked originality or the opportunity for a fresh, creative sound, the most popular music would not change over different decades as it has. Everyone would still be performing classic rock ’n’ roll. Our theory of inevitable similarity should not be mistaken for inevitable sameness. As the SNRC researchers identify, the recordings analyzed did reveal one way songs can be different: the majority of pitch codewords from the database of songs analyzed were highly infrequent, suggesting “the small musical nuances necessary to make a discourse attractive to listeners.”<sup>199</sup> The important point to recognize is that popular music will have similarities among songs just as much they will have differences. But it is foolish to think songs will contain no similarities.

Another way to understand the confined space within which musicians operate is through mathematics. Courts and commentators have long recognized this limited space by computing the finite possible combination of notes for popular music.<sup>200</sup> Damien Riehl and Noah Rubin have recently

---

<sup>190</sup> *Id.*

<sup>191</sup> *Id.*

<sup>192</sup> *Id.*

<sup>193</sup> *Id.*

<sup>194</sup> *Id.*

<sup>195</sup> *Id.*

<sup>196</sup> *Id.*

<sup>197</sup> *Id.* See also Cindy Danielson, *Science Agrees: Pop Music Really Does Sound the Same*, HELIX (Aug. 8, 2012), <https://helix.northwestern.edu/blog/2012/08/science-agrees-pop-music-really-does-sound-same>.

<sup>198</sup> See Serrà, *supra* note [].

<sup>199</sup> *Id.*

<sup>200</sup> See, e.g., *Marks v. Leo Feist, Inc.*, 290 F. 959, 960 (2d Cir. 1923) (“Musical signs available for combinations are about 13 in number. They are tones produced by striking in succession the white and black keys as they are found on the keyboard

taken this one step further by using “brute force” technology to identify every possible combination of 12 notes in one octave (middle C), resulting in 68.7 billion melodies that they have computer-generated on MIDI and fixed on a hard drive.<sup>201</sup> In a TEDx talk to describe their project, Riehl says they have abandoned copyrights in the melodies and put them into the public domain so other musicians can freely use them in creating new music.<sup>202</sup> Whether their project succeeds from a legal standpoint has yet to be resolved, but their point demonstrates how making music operates within an increasingly confined field.

## b. The Rise of Mega Producers and Track-and-Hook Method

Another major reason for the inevitable similarity in music is the rise of a relatively small group of mega producers who are incredibly skilled in creating the top hits. Mega producers are most concerned about creating music that is popular or resonates among a target demographic group (especially teens) described above. The modern approach to music hit production is not as scientific as the rise of analytics in professional sports, but is similar in aspiration. Successful producers often have a formula and an industrial approach they follow in writing and producing songs, which increases the likelihood of similarities in songs.

John Seabrook documents this growing phenomenon in his aptly titled book *The Song Machine* and related articles.<sup>203</sup> The way popular music is composed has shifted from the old approach of a person writing the lyrics and another composing the music to the “track-and hook” approach: “[1] a track maker/producer, who is responsible for the beats, the chord progression, and the instrumentation, collaborates with [2] a hook writer/topliner, who writes the melodies.”<sup>204</sup> Often several people work on both fronts, such as a hook writer who works with a top-liner singer, who provides the vocals, or a team of people assigned to write various aspects of the music or lyrics in a more industrial style of production.<sup>205</sup> And, in creating the music, the producers often rely on “‘synths,’ or computer-made instrumental sounds,” a practice that is discussed in greater depth in a section below.<sup>206</sup> Session musicians (meaning humans who play the music for a recording) are no longer needed.<sup>207</sup>

Another important aspect of hit music production today is the concentration of the industry in relatively few mega producers who are responsible for most of the popular songs. As Seabrook wrote in 2012: “A relatively small number of producers and top-liners create a disproportionately large share of contemporary hits, which may explain why so many of them sound similar. The producers are almost always male: Max Martin, Dr. Luke, David Guetta, Tricky Stewart, the Matrix, Timbaland,

---

of the piano...Necessarily, within these limits, there will be found some similarity of tone succession.”); SHAFER, *supra* note, at 155.

<sup>201</sup> See Bobby Owsinski, *Every Melody Possible Is Copyrighted And On This Hard Drive*, MUSIC 3.0 (Feb. 14, 2020), <https://music3point0.com/2020/02/14/every-melody-copyrighted/>.

<sup>202</sup> See Damien Riehl, *Copyrighting all the melodies to avoid accidental infringement*, YOUTUBE (Jan. 30, 2020); see also All the Music, LLC, SONGWRITERS: JUST MAKE MUSIC, <http://allthemusic.info/> (last visited Feb. 17, 2020).

<sup>203</sup> See JOHN SEABROOK, *THE SONG MACHINE* (2016).

<sup>204</sup> See SEABROOK, *supra* note [], at 200.

<sup>205</sup> *Id.* at 200-04.

<sup>206</sup> John Seabrook, *The Song Machine*, NEW YORKER (March 19, 2012), <https://www.newyorker.com/magazine/2012/03/26/the-song-machine>.

<sup>207</sup> See SEABROOK, *supra* note [], at 201.

the Neptunes, Stargate.”<sup>208</sup> The same holds true of the top-liners who develop the hooks and melodies. A few are responsible for most of the hits, although one big difference is that most of the top-liners are women: Esther Dean, Makeba Riddick, Bonnie McKee, and Skylar Grey.<sup>209</sup> Swedish writer and producer Max Martin is the epitome of the mega producer, being responsible for 22 number one hits, third all-time only to John Lennon and Paul McCartney.<sup>210</sup> Martin is one of several Swedish producers, including others at the famed Cheiron Studios, who were responsible for many popular songs in the United States starting in the 1990s.<sup>211</sup>

This track-and-hook method of music creation used by an elite group of mega producers leads to inevitable similarities in music. As Seabrook explains:

As a working method, track-and-hook tends to make songs sound similar. Dance music producers have always borrowed liberally from others’ grooves. There’s no reason not to: beats and chord progressions can’t be protected under existing copyright laws, which recognize only the melody and lyrics. As dance beats have become the backing tracks to a growing number of pop songs, similar sounding records have proliferated. The melodies themselves are still supposed to be unique, but because of the way producers work with multiple toplineers, tracks and melodies tend to blur together.<sup>212</sup>

Seabrook recounts one embarrassing example in which the track to Beyonce’s “Halo” and Kelly Clarkson’s “Already Gone” were practically the same—both songs were produced by Ryan Tedder.<sup>213</sup> While this is an extreme example of similarity, the top producers do get “known for their signature sounds.”<sup>214</sup> And even different producers may end up creating very similar sounding songs, such as in the case of a couple of pop songs by Meghan Trainor and Taylor Swift.<sup>215</sup>

One might fault mega producers for being lazy in recycling similar tracks or sounds. But laziness is not what drives this phenomenon: success does. Mega producers identify what formula created a music hit—and repeat it.<sup>216</sup> This business strategy is logical and unsurprising. For example, the movie industry follows an analogous strategy in attempting to produce blockbusters based on past successes, sequels, and now comic book series.<sup>217</sup> The smartphone industry operates in an analogous way, favoring the designs popular among consumers (a similarity that had precipitated, in the past,

---

<sup>208</sup> John Seabrook, *The Song Machine*, NEW YORKER (March 19, 2012), <https://www.newyorker.com/magazine/2012/03/26/the-song-machine>.

<sup>209</sup> *Id.*

<sup>210</sup> See Nick Levine, *Max Martin: The secrets of the world’s best pop songwriter*, BBC (Nov. 19, 2019), <http://www.bbc.com/culture/story/20191119-max-martin-the-secrets-of-the-worlds-best-pop-songwriter>.

<sup>211</sup> See John Seabrook, *Blank Space: What Kind of Genius Is Max Martin?*, NEW YORKER (Sept. 30, 2018), <https://www.newyorker.com/culture/cultural-comment/blank-space-what-kind-of-genius-is-max-martin>.

<sup>212</sup> See SEABROOK, *supra* note [], at 201.

<sup>213</sup> *Id.*

<sup>214</sup> *Id.*

<sup>215</sup> 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>.

<sup>216</sup> See SEABROOK, *supra* note [], at 201; Hannah Evans, *Why does today’s pop music sound the same? Because the same people make it*, Independent (Nov. 29, 2012, 4:54 PM), <https://www.independent.co.uk/voices/comment/why-does-todays-pop-music-sound-the-same-because-the-same-people-make-it-8368714.html>.

<sup>217</sup> See Derek Thompson, *The Reason Why Hollywood Makes So Many Boring Superhero Movies*, ATLANTIC (May 13, 2014), <https://www.theatlantic.com/entertainment/archive/2014/05/hollywoods-real-superhero-problem/370785/>; Spencer Harrison *et al.*, *Marvel’s Blockbuster Machine*, HARV. BUS. REV. (July-Aug. 2019), <https://hbr.org/2019/07/marvels-blockbuster-machine>.

patent litigation worldwide).<sup>218</sup> Of course, in all these industries, producers still must strive for some element of creativity or innovation—or risk being washed up.

As discussed in the context of aural functionality above, it is important not to confuse the likelihood of similar sounding songs produced by an elite group of mega producers as a situation that forecloses originality in music or that leads to “all music being the same.” The music industry is not monolithic. After all, teenagers grow up, and new group of listeners assumes the role of the target audience, potentially shifting in tastes. Moreover, with the spread of music software through Apple and other computers, the tools of music production are now available to the average consumer, who can become disruptors to the formulaic approach to music of the established producers.<sup>219</sup> In what is becoming living lore, the breakout artist Billie Eilish created her smash hit album in her bedroom with her brother Finneas as the producer, using an iMac (with Apple’s more sophisticated Logic Pro X music software).<sup>220</sup> The sibling duo swept the Grammy Awards and the most prestigious awards: she won best new artist, record of the year, song of the year, and album of the year, while her brother won producer of the year and best engineered, non-classical album.<sup>221</sup> Eilish’s music was critically acclaimed and often noted for its unique style.<sup>222</sup> But, even with Eilish, there’s reliance on past music for inspiration, if not more. As Finneas explained:

We’re listening to everything — all genres, new music, old music, and it all just gets sort of synthesized and boiled down into a broth that we make.... If you are inspired by something, and you try to do a little bit of it, and it sounds like a mistake, and you double down on your mistake and do something different, that stuff’s really exciting.<sup>223</sup>

The bottom line is that way in which music is being created, heavily driven by producers using similar strategies and technology, targeting the same audience, is bound to produce similarities among songs.<sup>224</sup> Indeed, it would be very surprising if no similarities arose.

### c. Popularity of GarageBand, Loops, Virtual Instruments, and Computer-Generated Music

The rise of computer production of music, including synthesized programs in place of instruments (so-called virtual instruments) and extensive reliance on premade loops, further increases the likelihood that today’s music will sound similar. As producer Ross Golan explained, “Music is

---

<sup>218</sup> See Leo Kelion, *Mobile World Congress: Why do smartphones look so alike?*, BBC (Feb. 24, 2018), <https://www.bbc.com/news/technology-43045682>; Jack Nicas, *Apple and Samsung End Smartphone Patent Wars*, N.Y. TIMES (Jun. 27, 2018), <https://www.nytimes.com/2018/06/27/technology/apple-samsung-smartphone-patent.html>.

<sup>219</sup> See Art Tavana, *Democracy of Sound: Is GarageBand Good for Music?*, PITCHFORK (Sept. 30, 2015), <https://pitchfork.com/features/article/9728-democracy-of-sound-is-GarageBand-good-for-music/>.

<sup>220</sup> See Steve Harvey, *Finneas on Producing Billie Eilish’s Hit Album in His Bedroom*, PROSOUNDNETWORK (Jan. 28, 2020), <https://www.prosoundnetwork.com/recording/finneas-on-producing-billie-eilishs-number-one-album-in-his-bedroom>.

<sup>221</sup> See Lisa Respers France, *Billie Eilish sales up after Grammys sweep*, CNN (Jan. 28, 2020, 10:39 AM), <https://www.cnn.com/2020/01/28/entertainment/billie-eilish-grammys-sales-trnd/index.html>.

<sup>222</sup> See Charlie Harding, *Billie Eilish, the neo-goth, chart-topping teenage pop star, explained*, VOX (Aug. 19, 2019, 6:34 PM), <https://www.vox.com/culture/2019/4/18/18412282/who-is-billie-eilish-explained-coachella-2019>.

<sup>223</sup> *Id.*

<sup>224</sup> See Caramanica, *supra* note [] (“Every song benefits from what preceded it, whether it’s a melodic idea, a lyrical motif, a sung rhythm, a drum texture. A forensic analysis of any song would find all sorts of pre-existing DNA.”).

now more similar than it is different, for the first time.... People are using the same sample packs, the same plug-ins, because it's efficient."<sup>225</sup>

Apple's GarageBand software program, which comes standard on any Mac computer and is now free for downloading, offers one prominent example.<sup>226</sup> The user-friendly program is popular among not just amateurs, but also top producers and musicians including Kendrick Lamar, Oak Felder (who produced works for Ariana Grande, Usher, and Alicia Keys), Radiohead, Rihanna, Stump, and T-Pain.<sup>227</sup> And, as mentioned above, Billie Eilish and Finneas created and produced her hit album using an iMac. In his acceptance speech for winning a Grammy, Finneas remarked: "This is to all the kids who are making music in the bedroom today—you're going to get one of these."<sup>228</sup>

One does not need any real instruments to create music anymore. That's what a computer is for.<sup>229</sup> GarageBand has computerized sounds for bass, piano, guitars, strings, and drums, programmed into different music styles.<sup>230</sup> The program comes with a huge library of audio loops that are commonly repeated in a song as the main beat or other sound effect.<sup>231</sup> Online, one can find even more loops created by other vendors for use in GarageBand, either upon payment of royalties or royalty-free.<sup>232</sup> In one notable example, Lil Nas X purchased the use of the beat for his smash hit "Old Town Road" from the online music market BeatStars, which licenses beats for cheap (but more for an exclusive license).<sup>233</sup> However, one danger in using premade loops is that they may be already copyrighted. Young Kio, a Dutch teenager, had created the beat Lil Nas purchased, but Kio allegedly copied parts of a banjo loop from Nine Inch Nails' "Ghosts IV-34." Even though Nine Inch Nails granted a Creative Commons license for others to use their song, the CC license was limited to noncommercial uses, so Lil Nas X's song might infringe Nine Inch Nails' copyright.<sup>234</sup> Reznor of Nine Inch Nails already has reportedly been given credit as a co-author as a result.<sup>235</sup>

Since everyone has access to the same library of premade loops and beats online, it's no surprise that similarities in today's music arise. The copyright issues are complicated because, according to the Copyright Office, a beat or a loop itself can be copyrightable if it satisfies the test of

---

<sup>225</sup> See Wang, *supra* note [].

<sup>226</sup> See *Apple Makes iMovie, GarageBand, and iWork Apps for Mac and iOS Free for All Users*, MACRUMORS (April 18, 2017, 11:55 AM), <https://www.macrumors.com/2017/04/18/apple-imovie-garageband-iwork-free-for-all-users/>.

<sup>227</sup> Amy X. Wang, *Inside GarageBand, the Little App Ruling the Sound of Modern Music*, ROLLINGSTONE (March 16, 2019, 7:00 AM), <https://www.rollingstone.com/music/music-features/apple-garageband-modern-music-784257/>.

<sup>228</sup> See Mesfin Fekadu, *Family affair: Billie Eilish, Finneas win big at Grammys*, AP (Jan. 26, 2020), <https://apnews.com/9aceafe2574d6ee0dc7aae308ae6926a>.

<sup>229</sup> See Dani Deahl, *No Studio Needed: How Anyone Can Make a Hit Record with a Laptop*, THE VERGE (Sep. 28, 2018, 9:00 AM), <https://www.theverge.com/2018/9/28/17874576/music-production-laptop-studio-producer>. Billie Eilish's hit album was produced using virtual instruments. See Fekadu, *supra* note [].

<sup>230</sup> See Craig Grannell, *How to master ... GarageBand*, STUFF (Dec. 28, 2017, 8:39 AM), <https://www.stuff.tv/features/how-master-garageband>.

<sup>231</sup> See *GarageBand for Mac*, APPLE, <https://www.apple.com/mac/garageband/> ("You can even create astonishingly human-sounding drum tracks and become inspired by thousands of loops from popular genres like EDM, Hip Hop, Indie, and more.") (last visited Feb. 10, 2020).

<sup>232</sup> See Ben Dandridge-Lemco, *How an uncredited German producer's free loops are powering platinum rap hits*, FADER (Sep. 20, 2019), <https://www.thefader.com/2019/09/20/minor2go-looperman-interview-polo-g-lil-tjay-loops>.

<sup>233</sup> Paul Resnikoff, *Lil Nas X Found Infringing the Sample on 'Old Town Road'—Is a Multi-Million Dollar Lawsuit Next?*, DIGITAL MUSIC NEWS (May 29, 2019), <https://www.digitalmusicnews.com/2019/05/29/lil-nas-x-sample-old-town-road-infringing/>.

<sup>234</sup> *Id.*

<sup>235</sup> *Id.*

originality.<sup>236</sup> Thus, if a music producer uses a premade loop from Apple or elsewhere, the producer would have to ensure that it has a license to use the loop, but the producer would not be able to claim a copyright in the loop (unless the producer added original expression to the loop, such as by altering it, and had copyright permission from the loop's creator to do so).<sup>237</sup> And if the license for the loop is only non-exclusive, then others can use the same loop in their music.

Corresponding with the rise of synthetic, computer-generated music is the growth of online platforms that attempt to identify similarities in songs. Similarities in music are much easier to find. For example, the website Who Sampled tracks sound recordings that contain samples from or similarities with other songs, with a database of over 646,000 songs.<sup>238</sup> The website allows side-by-side comparison of audio clips of the two songs, with a suggested classification of the similarity (such as direct sample, sample, interpolation, or remix) that can be voted on by users as correct or not.<sup>239</sup> Similarly, Same That Tune is a site driven by crowd-sourcing that enables users to compare songs and identify ones that sound similar; in January 2020, the site had roughly 1,020 pairs of two songs that sound similar to one another.<sup>240</sup>

We should not overstate technology's effect, however. Technology is both a limiting factor in music production, resulting in similarity in sounds, but it is also a liberating factor. One should not necessarily view synthetic music production as a negative force that only leads to homogenization in the music industry. The computerization of music production also opens up incredible opportunities for creativity and uniqueness, including by disruptors outside of the circle of mega producers. To return to the phenom Billie Eilish, part of her uniqueness stems from inclusion of unusual "sound effects such as an Easy-Bake oven, dentist drill and audience reaction."<sup>241</sup> In an interview with *Rolling Stone*, she and her brother explained how they created her hit "Bad Guy" by including the sound of her taking her Invisalign out of her mouth, her laughing and humming, and their manipulated, layered sound of a bass loop.<sup>242</sup> With GarageBand, musicians can now make their own loops.<sup>243</sup> Yet, even with these opportunities for original loop creation, one cannot ignore the vast amount of pre-made music loops and beats available online.

#### d. Musical borrowing

Another reason for copyright clutter in music is the extensive practice of borrowing from past songs among musicians. Musical borrowing—copying of elements from prior works to create new

---

<sup>236</sup> See COMPENDIUM, *supra* note [], at §§ 802.9(E)(4), (E)(5).

<sup>237</sup> See Ari Good, *Royalty Free Samples: A Peculiar Problem of Producing Music*, GOOD ATTORNEYS AT LAW (May 9, 2013), <https://goodattorneysatlaw.com/royalty-free-music/>.

<sup>238</sup> See *About*, WHO SAMPLED, <https://www.whosampled.com/about/> (last visited Feb. 10, 2020).

<sup>239</sup> See, e.g., *Ariana Grande 7 Rings Mary Martin Patricia Neway My Favorite Things*, WHO SAMPLED, <https://www.whosampled.com/sample/622493/Ariana-Grande-7-Rings-Mary-Martin-Patricia-Neway-My-Favorite-Things/> (last visited Feb. 10, 2020); *Björk Innocence Tim-Haywood Playrooms*, WHO SAMPLED, <https://www.whosampled.com/sample/590014/Bj%C3%B6rk-Innocence-Tim-Haywood-Playrooms/> (last visited Feb. 10, 2020).

<sup>240</sup> See *What Is Same That Tune?*, SAME THAT TUNE, <https://samethattune.com/about> (last visited Feb. 10, 2020). We estimated the number from the 170 webpages, each with 6 comparisons.

<sup>241</sup> See Harvey, *supra* note [].

<sup>242</sup> See *Billie Eilish and Finneas Break Down Her Hit Song 'Bad Guy'*, YOUTUBE (Dec. 16, 2019), <https://www.youtube.com/watch?v=kpx2-EMfdbg&t=188s>.

<sup>243</sup> See Andrew Siemon, *How to Make Your Own Loops in GarageBand*, PRODUCER SOCIETY (Jan. 4, 2019), <https://producersociety.com/loops-GarageBand/>.

works—is another reason why music contains similarities. As musicians and producers create songs, they may borrow some musical element from a past song. This practice of musical borrowing predates both the track-and-hook method and advent of digital technologies. Indeed, musicologists have well documented the pervasiveness of musical borrowing starting with classical music and continuing through today’s music.<sup>244</sup> As music critic Caramanica explains: “In studios around the world, performers, producers and songwriters are all trying to innovate just one step beyond where music currently is, working from the same component parts. It shouldn’t be a surprise when some of what they come up with sounds similar—and also like what came before.”<sup>245</sup> Or, as Seabrook noted above: “Dance music producers have always borrowed liberally from others’ grooves.”<sup>246</sup> Likewise, top musicians have openly admitted to borrowing from other musicians’ songs, although such public candor may diminish as the threat of copyright lawsuits increases.<sup>247</sup>

**e. Human Preference for Familiar Music and Repeated Exposure and Recognition of Universals in Music**

What else is driving similarities in music? A more tantalizing possibility is that humans possess innate traits that favor similarities in music. Researchers are exploring a wide variety of areas, too numerous to summarize, related to this question. A few are noted below.

One large body of research, drawing from the influential theory of Leonard Meyer, examines the ways in which music evokes emotions in people.<sup>248</sup> Meyer posited that people experience emotional responses to music by anticipating or expecting what comes next in a song.<sup>249</sup> Researchers have explored Meyer’s theory in numerous studies focused on emotional responses to music. As summarized below, recent studies suggest that humans respond with stronger emotion to (i) music that they are familiar with (a familiarity effect) or (ii) music after greater exposure to it (a repeated exposure effect).

The familiarity effect was investigated in a 2011 study by Carlos Silva Pereira and a group of researchers.<sup>250</sup> They used functional magnetic resonance imaging (fMRI) of the brains of 27 subjects who listened to 15 second clips of 110 pop/rock songs from different decades.<sup>251</sup> Through the fMRI, the study identified which parts of the brain were activated in listening to the music.<sup>252</sup> The study found “familiarity with the music was the key factor to trigger increased blood oxygen level dependence (BOLD) response in these emotion-related regions, namely in the putamen, amygdala, nucleus accumbens, anterior cingulate cortex and thalamus.”<sup>253</sup> The subjects’ own musical preferences or taste had only “a marginal effect” compared to their familiarity with the music in stimulating the emotion-related parts of the brain.<sup>254</sup> In sum, “familiarity with a particular piece of music is an

---

<sup>244</sup> See Lee, *supra* note [], at 1890-91 & nn.110-11.

<sup>245</sup> Caramanica, *supra* note [].

<sup>246</sup> SEABROOK, *supra* note [], at 201.

<sup>247</sup> See Lee, *supra* note [], at 1893-94.

<sup>248</sup> See LEONARD B. MEYER, EMOTIONS AND MEANING IN MUSIC (1956).

<sup>249</sup> See *id.*

<sup>250</sup> See Carlos Silva Pereira *et al.*, *Music and Emotions in the Brain: Familiarity Matters*, 6 PLOS ONE 1, 3 (2011), <https://doi.org/10.1371/journal.pone.0027241>

<sup>251</sup> See *id.*

<sup>252</sup> See *id.*

<sup>253</sup> *Id.* at 5.

<sup>254</sup> *Id.*



extremely important factor for emotional engagement, and thus furnishes ‘direct access’ to these emotional centres of the brain.”<sup>255</sup>

The exposure effect was studied in a 2013 study by Iris van den Bosch *et al.* who found greater emotional arousal when subjects were tested with repeated exposure to the same novel (or new) music.<sup>256</sup> This repeated exposure effect was present even when familiarity was not.<sup>257</sup> The study tested 60 subjects listening to 30-second clips of novel music.<sup>258</sup> The subjects were asked to report their pleasure on an 11-point scale after listening to a clip and also monitored for electrodermal activity (EDA), which is “a reliable indicator of emotional arousal,” such as when a person experiences chills.<sup>259</sup> Part of the EDA (the SCL) was significantly higher when the subjects heard the same novel music the second time 30 minutes after hearing it for the first time, even though the subjects did not recognize, for the most part, that they had already heard the music.<sup>260</sup> Curiously, the subjects did not report greater pleasure the second time around in listening to music that remained unfamiliar to them as prior studies on repeated exposure would suggest.<sup>261</sup> But when the subjects of the study reported familiarity with the music, it “correlate[d] positively with subjective ratings of experienced pleasure and arousal,” as expected.<sup>262</sup>

Another body of research is analyzing the possibility of universals in music.<sup>263</sup> Given the ubiquity of music across cultures and generations, it should not be surprising if some aspects of music are universally adopted or recognized by humans. In a 2015 study, Patrick Savage *et al.* identified 18 statistical universals in music—meaning elements that were widely shared, but with some exceptions in a sample of 304 music recordings from the Garland Encyclopedia of World Music: “These recordings represent the most authoritative and diverse global music collection available, emphasizing on-site field recordings of traditional, indigenous genres (both vocal and instrumental), but also including a variety of examples of contemporary, nonindigenous, and/or studio recordings, chosen with the aim of emphasizing the diversity of the world’s music.”<sup>264</sup> Among other areas, the study found statistical universals in pitch,<sup>265</sup> rhythm,<sup>266</sup> form,<sup>267</sup> and instrumentation across the diverse geographical regions and musical genres.<sup>268</sup>

---

<sup>255</sup> *Id.* at 8.

<sup>256</sup> See Iris van den Bosch *et al.*, *Familiarity mediates the relationship between emotional arousal and pleasure during music listening*, 7 FRONTIERS IN HUMAN NEUROSCIENCE 1, 2-3 (Sep. 2013), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3763198/>.

<sup>257</sup> See *id.* at 7.

<sup>258</sup> See *id.* at 3.

<sup>259</sup> *Id.* at 2.

<sup>260</sup> See *id.* at 7.

<sup>261</sup> See *id.*

<sup>262</sup> *Id.*

<sup>263</sup> See Steven Brown & Joseph Jordania, *Universals in the world’s musics*, 41 PSYCHOLOGY OF MUSIC 229 (2011). [http://neuroarts.org/pdf/Brown\\_Jordania\\_2013.pdf](http://neuroarts.org/pdf/Brown_Jordania_2013.pdf).

<sup>264</sup> Savage, *supra* note [], at 8988; see *id.* at 8989.

<sup>265</sup> See *id.* at 8988 (“Pitch: Music tends to use discrete pitches to form nonequidistant scales containing seven or fewer scale degrees per octave. Music also tends to use descending or arched melodic contours composed of small intervals of less than 750 cents (i.e., a perfect fifth or smaller).”) (internal citations omitted).

<sup>266</sup> See *id.* at 8988-89 (“Rhythm: Music tends to use an isochronous beat organized according to metrical hierarchies based on multiples of two or three beats—especially multiples of two beats. This beat tends to be used to construct motivic patterns based on fewer than five durational values.”) (internal citations omitted).

<sup>267</sup> See *id.* at 8989 (“Form: Music tends to consist of short phrases less than 9 s long.”) (internal citations omitted).

<sup>268</sup> See *id.* at 8989 (“Instrumentation: Music tends to use both the voice and (nonvocal) instruments, often together in the form of accompanied vocal song.”) (internal citations omitted).

Other studies have shown the pervasiveness of repetition of elements within a song; such repetition indicates a formulaic approach to music in which the use of repetition itself is common among songs.<sup>269</sup> These research findings comport with the practices of top music producers.<sup>270</sup> Similarly, researchers “have demonstrated that music is comprised of numerous stock patterns, riffs and schemata.”<sup>271</sup> Another study found that subjects gravitated to a certain pattern in a drumming sequence when asked to repeat a randomly generated sequence that was different.<sup>272</sup>

This diverse and growing body of music research is incredibly exciting and provocative. It is probably too early to reach definitive conclusions about how the results of the research should bear on our understanding of similarity in music under copyright law or beyond. However, the research suggests that commercial success of music depends in part on including familiar elements from prior songs in new songs, in addition to trying to get repeated rotation or streams of the music, given the strong emotional responses of human brains to familiar music and repeated exposure to music. Indeed, the top producers probably are already doing so.<sup>273</sup> Likewise, the possibility that some elements or patterns of music are universal or stock provides an additional reason that similarities among songs will inevitably arise, even absent intentional borrowing or copying.<sup>274</sup> Humans may, by their nature, just gravitate toward a beat, rhythm, or combination of notes.

## 5. Summary

Given the many reasons why similarities are likely to occur and recur in music, the problem of copyright clutter in music is pronounced. Millions of songs are copyrighted, yet similarities in popular music are inevitable—thus making it exceedingly difficult for musicians to create new songs without risking some exposure to potential copyright lawsuits. That is why many top artists are taking out insurance policies.<sup>275</sup> The spate of recent lawsuits against prominent musicians may be just the tip of the iceberg. Given this copyright predicament, it remains a mystery why musicians do not typically invoke fair use in response to copyright infringement lawsuits brought against them. If the only defense raised by musicians is contesting the test of substantial similarity, it is not clear that strategy provides adequate protection for musicians. In this Article, we attempt to determine whether fair use would provide musicians with greater help in navigating music’s copyright clutter.

## II. Study Design

### A. Research Questions and Hypotheses

The experiment sought to assess the relative effectiveness of the fair use defense in a variety of contexts. Accordingly, three main sets of questions were examined:

---

<sup>269</sup> See ELIZABETH HELLMUTH MARGULIES, ON REPEAT: HOW MUSIC PLAYS THE MIND 5 (2014) (“Repetition is not an arbitrary characteristic that has arisen in a particular style of music; rather, it is a fundamental characteristic of what we experience as music.”)

<sup>270</sup> See SEABROOK, *supra* note [], at 202 (“Because it is repetitive, the vamp requires more hooks: intro, verse, pre-chorus, chorus, and onto hooks.”).

<sup>271</sup> MARGULIES (2014), *supra* note [], at 6.

<sup>272</sup> See Andrea Ravignani *et al.*, *Musical Evolution in the Lab Exhibits Rhythmic Universals*, 1 NATURE HUM. BEHAV. 1 (2016), <https://doi.org/10.1038/s41562-016-0007>.

<sup>273</sup> See Ashley Hamer, *Sorry—Pop Music Sounds the Same Because You Want It That Way*, CURIOSITY (July 7, 2017), <https://curiosity.com/topics/sorry-pop-music-sounds-the-same-because-you-want-it-that-way-curiosity/>.

<sup>274</sup> See *supra* notes [] and accompanying text.

<sup>275</sup> See Wang, *supra* note [].

1. *Effect of the legal rule on outcome and subject confidence:* Will subjects find no liability at higher rates under a fair use rule rather than substantial similarity rule? Further, will subjects express similar levels of confidence under both legal rules?<sup>276</sup>
2. *Effect of work similarity on outcome and subject confidence:* Will subjects find no liability at higher rates for a musical work with low similarity rather than high similarity to the other musical work? Likewise, will subjects find no liability at higher rates for a high similarity pair of musical works under a fair use rule rather than a substantial similarity rule? In other words, will a fair use defense be of greater help when substantial similarity is more likely to be found?
3. *Effect of prior knowledge (musical or legal) on outcome and subject confidence:* Will subjects with prior experience in musical study or musical performance be more likely to find no liability under a fair use rule rather than a substantial similarity rule? Will subjects with prior legal training be more sensitive to the change in legal rules?

Our hypotheses presumed, first, that subjects would return higher rates of no liability under a fair use analysis given its balancing of interests, including the defendant's, and its purpose as a limitation on copyright. However, the difficulty of applying a four-factor balancing test might undermine subject confidence in their fair use determinations. Second, we hypothesized that subjects would find infringement at higher rates for works with higher levels of similarity under either legal rule, given that the amount of copying of a work is considered under both the infringement test and fair use. Conversely, we hypothesized that subjects would find infringement at lower rates for works with lower level of similarity under either legal rule. We also presumed that the fair use defense would be of greater help in cases of high similarity, as fair use would be unnecessary if a factfinder found the underlying works were not similar. Third, we hypothesized that subjects with musical knowledge would be less likely to find infringement under a fair use rule, as they would have a better understanding of musical elements and how music is created. We presumed that subjects with legal knowledge would be less likely to find infringement under a fair use rule, as they would have a better understanding of fair use application or the jury instruction.

## **B. Experimental Design**

### **1. Demographics of the Subjects**

Subjects were recruited through Amazon Mechanical Turk, although we were sensitive to limitations of using the platform. As previously documented, recent user behavior on Mechanical Turk has degraded response quality, with bots or survey mills returning random or nonsensical responses.<sup>277</sup> These responses were detected through various means: the subject's failure of audio check, failure of attention check, and formulaic non-responsive text in recognition fields. Rapidity of completion (i.e.,

---

<sup>276</sup> Determining a subject's confidence provides greater information about how sure or confident the subjects were in their answers. See, e.g., Danielle E. Chojnacki *et al.*, *An Empirical Basis for the Admission of Expert Testimony on False Confession*, 40 ARIZ. ST. L.J. 1, 29 (2008).

<sup>277</sup> Hui Bai, *Evidence that A Large Amount of Low Quality Responses on MTurk Can Be Detected with Repeated GPS Coordinates* MAX HUI BAI (Aug. 8, 2018) <https://www.maxhuibai.com/blog/evidence-that-responses-from-repeating-gps-are-random>; Emily Dreyfuss, *A Bot Panic Hits Amazon's Mechanical Turk*, WIRED (Aug. 17, 2018, 11:38 AM), <https://www.wired.com/story/amazon-mechanical-turk-bot-panic/>.

completion in fewer than 100 seconds) was also used to screen out subjects who completed the experiment without listening to the music files. These screens resulted in the removal of 203 subjects, with the great majority originating from the same GPS coordinates, confirming a likely survey mill at that location.

A total of 706 subjects participated in the experiment. 503 subjects completed the experiment and passed the attention-check questions (N=503); they were each paid \$1. Collected demographic information for subjects included: age, level of education, gender, frequency of listening to music, legal background, and musical background. As for the latter two categories, legal knowledge could inform the application of legal rules, and greater musical knowledge could inform a comparison of two musical works.

The majority (59.8%) of subjects were male: 301 identified as male, 200 subjects (39.8%) identified as female, and 2 identified as non-binary/third gender. Subject age was split into sextants, with the greatest number in the age group of 25- to 34-year-old: 18-24 (n=46), 25-34 (n=245), 35-44 (n=132), 45-54 (n=49), 55-64 (n=22), and older than 64 (n=9). Subjects' education varied. A majority had a bachelor's degree or higher: high school no diploma (n=2), high school graduate (n=47), some college no degree (n=84), associate degree (n=51), bachelor's degree (n=240), master's degree (n=70), professional degree/doctorate (n=9).

Subjects reported daily musical listening in a range with a majority (50.7%) of respondents who listened to music 1 to 2 hours a day: less than 1 hour (n=76), 1-2 hours (n=255), 3-4 hours (n=122), and 5 hours or more (n=50). A fairly high number, 217 subjects (43.1%), reported musical experience (playing a musical instrument, training for same, or public performance of same). Only 47 subjects (9.3%) reported legal experience (a lawyer or having attended law school).

## 2. Four Scenarios Tested and the Survey Instrument

### a. 2 x 2 Repeated Measures Design

The study involved four observation opportunities after the presentation of four scenarios (that is, two main fact patterns with two variant legal rules per fact pattern). Multiple variables were reviewed in each period. The study followed a 2 x 2 repeated measures design, meaning that two sets of variables were tested, each with two levels across the same subjects.<sup>278</sup> The between-subjects variables were the Legal Rule (Substantial Similarity/Fair Use) and the Musical Work Similarity (High/Low), with Order of Exposure held as a possible covariate. These variables are discussed below.

The two scenarios concerned the possible infringement of a musical work by a subsequent musical work. Each scenario laid out a brief description of the facts of the dispute and provided an audio file for a synthesized piano instrumental performance of each work in the musical pair (A v. B / C v. D). The subject was given a legal rule (substantial similarity or fair use) to use in resolving the case. Subjects were then asked to determine if the subsequent work (i) infringed the prior work or (ii) made a fair use of the work, depending on the legal rule at issue, and were asked to report their

---

<sup>278</sup> Because the order of exposure is a potential third variable that may be considered a covariate, this design is typically written as a 2 x 2 (x 2) factorial. See, e.g., Brian Sheppard & Andrew Moshirnia, *For the Sake of Argument: A Behavioral Analysis of Whether and How Legal Argument Matters in Decisionmaking*, 40 FLA. ST. U. L. REV. 537, 562 (2013); William M.K. Trochim, Factorial Designs, <https://socialresearchmethods.net/kb/factorial-designs/>.

confidence in this outcome. Subjects then reassessed the outcome and confidence for the same music pair under the different legal rule. After analyzing this music pair twice (once for each legal rule), subjects were asked to resolve a similar dispute with a different music pair. A table of the experimental design is provided below.

**Table 2. Diagram of 2 x 2 Repeated Measures Design, Testing Legal Rule and Work Similarity**

Group number	Case-Work Similarity	Legal Rule	Legal Rule	Case	Legal Rule	Legal Rule
6	A v. B	SS	FU	C v. D	SS	FU
2	A v. B	SS	FU	C v. D	FU	SS
1	A v. B	FU	SS	C v. D	SS	FU
7	A v. B	FU	SS	C v. D	FU	SS
5	C v. D	SS	FU	A v. B	SS	FU
4	C v. D	SS	FU	A v. B	FU	SS
8	C v. D	FU	SS	A v. B	SS	FU
3	C v. D	FU	SS	A v. B	FU	SS

The two main fact patterns are largely identical, with the only salient difference being the music files under review. In each, the later song (designated B and D) may have infringed on the earlier song (designated A or C). These music pairs have different levels of similarity: musical pair A v. B has lower work similarity while musical pair C v. D has higher work similarity. The specific songs and the reason for their inclusion are discussed below.

The instrument consisted of four scenarios:

- Case 1 – A v. B analyzed under Substantial Similarity;
- Case 2 – A v. B analyzed under Fair Use;
- Case 3 – C v. D analyzed under Substantial Similarity; and
- Case 4 – C v. D analyzed under Fair Use.

For each scenario, subjects were asked to rule on infringement or fair use, depending on the legal rule asked, and to state their confidence in their determination on a 10-item Likert scale.<sup>279</sup> After rendering a verdict, subjects were asked if they recognized any of the songs and to write out the name of the song. If a subject reported recognizing a song, they were queried if they harbored any ill feelings towards the song's author. These questions served as a means of addressing potential bias, but more importantly, served as an attention check for suspicious bot behavior. Additionally, subjects were asked an audio fidelity question, testing whether the subject could hear audio files. Lastly, the final question before the debrief was an attention check. The songs for A v. B and C v. D, and reasons for

<sup>279</sup> A Likert scale is a psychometric scale often used in questionnaires, presenting examinees with ordinal choices (for example, a 1-10 scale paired with a statement, 1 meaning total disagreement and 10 meaning total agreement). See ROBERT M. LAWLESS, JENNIFER K. ROBBENHOLT & THOMAS S. ULEN, EMPIRICAL STUDIES IN LAW 172 (2010); see, e.g., Brian Sheppard & Andrew Moshirnia, *For the Sake of Argument: A Behavioral Analysis of Whether and How Legal Argument Matters in Decisionmaking*, 40 FLA. ST. U. L. REV. 537, 566 (2013).

their inclusion in this experiment are discussed below. The testing instrument is appended to this Article as Appendix A.

**b. Case 1 and Case 2: A v. B – Low Similarity**

The musical pair containing songs A and B was meant to provide subjects with a potentially infringing song pairing with relatively low similarity, in our estimation. Rather than creating new songs that might not be sufficiently similar to trigger any finding of liability, we took songs that were featured in successful copyright infringement actions. Song A is a synthetic piano instrumental of the song “Got To Give It Up” by Marvin Gaye. Song B is a synthetic piano instrumental of the song “Blurred Lines” by Robin Thicke, Pharrell Williams and Clifford Harris Jr. (T.I.). We chose instrumental versions because, in the actual case, the copyright of Gaye’s song was limited to the deposit copy of the sheet music, which lacked a number of the components in the recording of the song commercially sold.<sup>280</sup> The Gaye estate prevailed in a copyright infringement action with respect to Thicke and Pharrell, and this judgment was upheld by a 2-1 panel on appeal, with a forceful dissent.<sup>281</sup> A full exploration of the case is beyond the scope of this Article: for our purposes, what is important is that a subject could potentially conclude that song B infringed the copyright of song A under the test of substantial similarity.

**c. Case 3 and Case 4: C v. D – High Similarity**

The musical pair containing songs C and D was meant to provide subjects with a potentially infringing song pairing with relatively high similarity, in our estimation, compared to the similarity between songs in pair A v. B. Song C is the synthetic piano instrumental of the song “He’s So Fine” by Ronald Mack. Song D is the synthetic piano instrumental of the song “My Sweet Lord” by George Harrison. The owners of the copyright in “He’s So Fine” prevailed in a copyright infringement action against Harrison, and this judgment was upheld on appeal.<sup>282</sup> The decision was well covered in the media and is commonly taught in copyright textbooks as a means to discuss “subconscious[]” infringement.<sup>283</sup> Accordingly, a subject could consider song D to be infringing of the copyright to song C under the test of substantial similarity.

It is important to underscore that our experiment is not a retrial of the two cases that provided the basis for our identification of music pairs used in the experiment. Music litigation typically involves expert testimony from musicologists analyzing the similarities or differences in the songs, as well as direct testimony from the defendants about how they created their songs.<sup>284</sup> Moreover, counsel for both sides frame each side’s understanding of the facts and law in a way that is meant to be understandable to laypeople in a jury trial that may last days, if not weeks.<sup>285</sup> Moreover, in jury trials,

---

<sup>280</sup> Williams v. Gaye, 895 F. 3d 1106, 1125 (9th Cir. 2018).

<sup>281</sup> *Id.* at 1138-39.

<sup>282</sup> ABKCO Music, Inc. v. Harrisongs Music, Ltd., 722 F. 2d 988 (2d Cir. 1983).

<sup>283</sup> See, e.g., *George Harrison Guilty of Plagiarizing, Subconsciously, a '62 Tune for a '70 Hit*, N.Y. TIMES (Sept. 8, 1976), <https://www.nytimes.com/1976/09/08/archives/george-harrison-guilty-of-plagiarizing-subconsciously-a-62-tune-for.html>; CRAIG JOYCE ET AL., COPYRIGHT LAW 657-61 (11th ed. 2020).

<sup>284</sup> See, e.g., Williams v. Bridgeport Music, Inc., No. LA CV13–06004 JAK (AGRx), 2005 WL 4479500, at \*1, 5-15 (C.D. Cal. July 14, 2015), *aff'd in part and rev'd in part* by Williams v. Gaye, 895 F.3d 1106 (9th Cir. 2018).

<sup>285</sup> See, e.g., Austin Siegemund-Broka, *‘Blurred Lines’ Trial Opens as Juror Hear Dueling Arguments About What’s at Stake*, HOLLYWOOD REPORTER (Feb. 24, 2015, 2:16 PM), <https://www.hollywoodreporter.com/thr-esq/blurred-lines-trial-jury->

the members of the jury discuss the case with each other and deliberate potentially for days before reaching their unanimous verdict.<sup>286</sup> Our experiment did not attempt to reproduce all of these elements of a typical music infringement trial but instead relied on audio clips of the music and a brief, stylized description of the legal dispute.

#### **d. Readability of Scenarios**

We tried to ensure that the scenarios had accessible, equivalent readability, given that subjects with a variety of educational backgrounds would be reviewing the survey instrument. The fair use scenarios had a Flesch-Kincaid Grade Level<sup>287</sup> of 10.2 and Gunning Fog Score of 11.8,<sup>288</sup> meaning they should be easily understood by 18-year-old high-school graduates. The substantial similarity scenarios had a Flesch-Kincaid Grade Level of 9.7 and Gunning Fog Score of 11.7, meaning they too should be easily understood by 18-year-old high-school graduates. These readability scores were sufficient, given that all of our subjects (save two) were high school graduates or above.

### **4. The Jury Instructions**

#### **a. Substantial Similarity Instruction**

For the infringement test, we used a simplified jury instruction focused on substantial similarity between the two musical works:

Under the law, to prove Musician B has infringed the copyright to Musician A's song, Musician A must prove the songs are substantially similar to the ordinary, reasonable listener. This is not the same as "identical." Musician A does not have to show that each of the individual elements of the songs is substantially similar. Musician A must show that there is enough similarity between original elements of Musician A's song and Musician B's song to constitute a substantial amount to the ordinary, reasonable listener. In light of the legal rule, does Musician B's song infringe Musician A's copyright?

This jury instruction is a simplified, composite instruction of substantial similarity. Some elements were drawn from Instruction No. 43 given in the "Blurred Lines" trial and upheld by the Ninth Circuit on appeal.<sup>289</sup> Although Instruction No. 43 pertains to what it calls "extrinsic similarity," we decided against delineating separate inquiries into "extrinsic" and "intrinsic similarity" as potentially confusing

---

selection-777503; *Blurred Lines Trial: Jury Hears Closing Arguments in Case*, NBC NEWS (March 6, 2015, 2:30 PM), <https://www.nbcnews.com/pop-culture/music/blurred-lines-trial-jury-hears-closing-arguments-case-n318451>.

<sup>286</sup> See, e.g., Jess Collen, *Damages and 'Blurred Lines' Copyright – Court Says 'You Got To Give It Up'*, FORBES (Mar. 21, 2018, 4:00 PM), <https://www.forbes.com/sites/jesscollen/2018/03/21/damages-in-blurred-lines-court-says-you-got-to-give-it-up/#7fe1220043b4> (jury deliberated for two days in "Blurred Lines" case); FED. R. CIV. P. 48 (requiring unanimous jury verdict).

<sup>287</sup> While scholars have questioned the use of readability indices for determining overall survey question difficulty, the use of a readability tool can inform rapidity of reading. Timo Lenzner, *Are Readability Formulas Valid Tools for Assessing Survey Question Difficulty?*, 43 SOCIOLOGICAL METHODS & RESEARCH 677-698 (2013), <https://journals.sagepub.com/doi/abs/10.1177/0049124113513436>. It should be noted that the readability of a scenario does not necessarily comport with the cognitive difficulty of applying multi-factor tests or challenging concepts of substantial similarity.

<sup>288</sup> These are both fairly common readability calculations included in most readability testing tools. See, e.g., <https://www.webfx.com/tools/read-able/>.

<sup>289</sup> See *Williams v. Gaye*, 895 F.3d 1106, 1124 (9th Cir. 2018).

to subjects and overly complex for an experiment of this kind.<sup>290</sup> We also included the standard of the “ordinary, reasonable listener” from a combination of the Ninth and Eleventh Circuit pattern instructions, which are consistent with the approach adopted in *Arnstein v. Porter*.<sup>291</sup> We chose not to offer an instruction on proving defendant’s copying based on circumstantial evidence of access and similarities (the first step of the *Arnstein* test) because our examination focused on substantial similarity (the second step of the *Arnstein* test) and the facts in our survey instrument indicated that the defendant was familiar with the plaintiff’s work.

We compared our simplified jury instruction to the one for substantial similarity given in a prior experiment on substantial similarity for music infringement; that instruction was modeled on the Fifth Circuit’s jury instruction and other circuits.<sup>292</sup> We also compared our instruction to another instruction given in an experiment for substantial similarity outside of music cases.<sup>293</sup> Our instruction was similar in substance and length. Of course, many other jury instructions related to a copyright claim could be given, but, for an experiment of this kind, adding more instructions would likely increase the complexity, possible confusion, and risk of subjects dropping out of the experiment due to time.

#### **b. Fair Use Instruction**

For fair use, we used a jury instruction drawn from Section 107 of the Copyright Act, with consideration of pattern jury instructions for fair use from Seventh, Ninth, and Eleventh Circuits.<sup>294</sup>

In determining whether Musician B’s use of Musician A’s song is a fair use, you should consider the following factors:

(1) The purpose and character of Musician B’s use of Musician A’s song, including whether such use is of a commercial nature or is for nonprofit educational purposes, and whether such use is transformative by adding something new, with a further purpose or different character, altering Musician A’s song with new expression, meaning, or message.

(2) The nature of Musician A’s copyrighted song.

---

<sup>290</sup> Ninth Circuit 17.19 Substantial Similarity–Extrinsic Test; Intrinsic Test, <http://www3.ce9.uscourts.gov/jury-instructions/node/276>.

<sup>291</sup> See *Arnstein v. Porter*, 154 F.2d 464 (2d Cir. 1946).

<sup>292</sup> See Jamie Lund, *An Empirical Examination of the Law Listener Test in Music Composition Copyright Infringement*, 11 VA. SPORTS & ENT. L.J. 137, 158 (2011) (“To find music copyright infringement between plaintiff’s and defendant’s songs, you must find that the songs are substantially similar. Two works are substantially similar if the original expression of ideas in the plaintiff’s (Song #1) copyrighted work and the expression of ideas in the defendant’s work (Song #2) that are shared are substantially similar. Original expression are those unique aspects of the plaintiff’s song that are not common or ordinary to the genre or to music generally. The amount of similarity must be both quantitatively and qualitatively significant, that is the defendant’s song copied either a substantial portion of the original expression of the plaintiff’s song, or copied a smaller but qualitatively important portion of the plaintiff’s song.”).

<sup>293</sup> See Balganesch *et al.*, *supra* note [], at 282-83.

<sup>294</sup> Ninth Circuit Manual of Model Jury Instructions, Copyright – Affirmative Defense – Fair Use (17 U.S.C. Sec. 107), 387(2007)<https://www.rid.uscourts.gov/sites/rid/files/documents/juryinstructions/otherPJI/9th%20Circuit%20Model%20Civil%20Jury%20Instructions.pdf>; Federal Civil Jury Instructions of the Seventh Circuit, Defenses – Fair Use, 345 (2017), [http://www.ca7.uscourts.gov/pattern-jury-instructions/7th\\_cir\\_civil\\_instructions.pdf](http://www.ca7.uscourts.gov/pattern-jury-instructions/7th_cir_civil_instructions.pdf); Eleventh Circuit Pattern Jury Instructions (Civil Cases), Defenses – Affirmative Defense – Fair Use (2019), <http://www.ca11.uscourts.gov/sites/default/files/courtdocs/clk/FormCivilPatternJuryInstructionsCurrentComplete.pdf?revDate=20190124>.



(3) The amount and substantiality of the portion from Musician A’s song that Musician B used in relation to Musician A’s song as a whole.

(4) The effect of Musician B’s use upon the potential market for or value of Musician A’s song.

You should weigh all the factors in making your decision. In light of the legal rule, is Musician B’s use of Musician A’s song a fair use?

The description of “transformative” in factor one is a quotation from the Supreme Court’s decision in *Campbell*.<sup>295</sup> We favored the Seventh Circuit’s short description of transformative<sup>296</sup> within factor one over the Eleventh Circuit’s separate discussion of each factor after the initial listing.<sup>297</sup>

## 5. The Tests Run

Data was analyzed in IBM SPSS Statistics v.26. A Chi-Square comparison was used to examine between-subjects binary liability determination rates, and McNemar’s test (a within-subjects Chi-squared test) was used to examine within-subjects changes to liability rates.<sup>298</sup> Paired t-tests were also used to examine within-subjects changes in liability determinations.<sup>299</sup> MANOVA repeated measures analysis was used to examine multiple variables and interactions.<sup>300</sup> A Sidak correction factor was used when multiple levels of a single variable were compared.<sup>301</sup>

---

<sup>295</sup> *Campbell*, 510 U.S. at 579.

<sup>296</sup> Federal Civil Jury Instructions of the Seventh Circuit, Defenses – Fair Use, 345 (2017), [http://www.ca7.uscourts.gov/pattern-jury-instructions/7th\\_cir\\_civil\\_instructions.pdf](http://www.ca7.uscourts.gov/pattern-jury-instructions/7th_cir_civil_instructions.pdf);

<sup>297</sup> Eleventh Circuit Pattern Jury Instructions (Civil Cases), Defenses – Affirmative Defense – Fair Use (2019), <http://www.ca11.uscourts.gov/sites/default/files/courtdocs/clk/FormCivilPatternJuryInstructionsCurrentComplete.pdf?revDate=20190124>.

<sup>298</sup> A Chi-squared test can be used to determine if a difference between two variables with binary outcomes is likely to reflect a real difference between the two variables in the population. For an example of a chi-squared test and SPSS results applying the test, see University of the West of England, Chi-squared test for nominal data, <http://learntech.uwe.ac.uk/da/Default.aspx?pageid=1435>. McNemar’s Test is a chi-square test that can be used in 2x2 tables to test for consistency in responses (for example, when some subjects change from “yes” to “no” in repeated observations, McNemar’s test can indicate if these changes random). For a primer on McNemar’s test and its use in SPSS, see Omolola A Adedokun and Wilella D Burgess, “*Analysis of paired dichotomous data: A gentle introduction to the mcnemar test in spss*,” *Journal of MultiDisciplinary Evaluation*, vol. 8, no. 17, pp. 125–31, 2011.

<sup>299</sup> A paired t-test compares the means of two related samples (that is, the two measurements are taken from the same subjects) and tests if the difference in means is large enough to be attributable to the hypothesis rather than sampling variation. For an example of a paired t-test and SPSS results applying the test, see University of the West of England, Paired t-tests, <http://learntech.uwe.ac.uk/da/Default.aspx?pageid=1439>.

<sup>300</sup> MANOVA is a multivariate analysis of variance test, in which differences among multiple group means are studied in relation to two or more response variables. An ANOVA is similar, but only examines one response variable. For an example of a MANOVA and SPSS results applying the test, see UCLA, One-way MANOVA: SPSS Data Analysis Examples, <https://stats.idre.ucla.edu/spss/dae/one-way-manova/>. An interaction occurs when the impact of one causal variable on the observed outcome depends on the presence or absence of a second causal variable (that is, the impact of variable A and/or variable B differ when both A and B are present). For an example of tests designed to determine an interaction effect in SPSS, see SPSS Tutorials, <https://www.spss-tutorials.com/spss-two-way-anova-interaction-significant/>.

<sup>301</sup> Once a test comparing multiple means (such as MANOVA or ANOVA) determines that a difference exists among the means (e.g., a difference exists between means A, B, C, and D), follow up tests (post-hoc tests) employ pairwise comparisons to examine the difference between each pair of means (e.g., A v B, A v C, A v D, etc.). Due to the fact that multiple comparisons are conducted (with an attendant increase in error rate), a correction factor is used to determine if the resulting differences are significant. Sangseok Lee and Dong Kyu Lee, *What is the proper way to apply the multiple comparison*

### III. Results

#### A. Summary of Key Findings

The results were largely consistent with our hypotheses. First, the legal rule (fair use v. substantial similarity) had a significant impact on findings of no liability and subject confidence in those findings. Subjects in both cases involving low work similarity and high work similarity returned higher no liability rates under a fair use analysis than a substantial similarity analysis. Relatedly, subjects expressed higher confidence when finding no liability under fair use than when finding fair use did not apply. Moreover, subjects expressed lower confidence when finding fair use did not apply than when finding liability under substantial similarity.

Second, as we predicted, the legal rule had a larger impact on cases involving high work similarity (meaning the musical pair involving C v. D, or the comparison between “He’s So Fine” and “My Sweet Lord”). Fair use was more significant or provided greater help to the defendant in this case of high work similarity.

Third, the legal rule had a larger impact when subjects had a background in law or music. Subjects with a musical or legal background demonstrated a much greater sensitivity to the legal rule: they were less likely to find no liability under substantial similarity but more likely to find no liability under fair use when compared to subjects with no musical or legal background. By comparison, the legal rule did not have a significant impact on liability determinations for subjects without a law or music background in the context of low similarity works but did have a significant impact in the context of high similarity works.

A few other findings are worth noting. The order of exposure to songs had a significant but slight impact on findings of liability. However, a significant interaction existed between order of exposure of songs and legal rules: subjects who had fair use as their very first exposure were more likely to find no liability on the very first case they saw, but by the time the second case was considered, that inclination dissipated.

These results support the conclusion that fair use does provide potentially greater help to defendants in a music infringement case than contesting substantial similarity, and the potential help is greater in a case of high work similarity. Moreover, greater knowledge in music or the law—potentially signaling greater sensitivity to the jury instructions—corresponded with higher findings of liability under substantial similarity, but also higher findings of no liability under fair use when compared to subjects without such knowledge. In short, fair use does matter.

In this study, we treat as “no liability” a response of no infringement due to lack of substantial similarity or based on a finding of fair use. We treat as “liability” a response of infringement due to substantial similarity. We treat as “potential liability” an answer that found no fair use. The qualification of “potential” was warranted because the question of fair use in the study did not require a specific finding on substantial similarity or infringement. This framing was necessary to test the

---

*test?*, Korean J Anesthesiol 71: 353–60, 2018. doi:10.4097/kja.d.18. 00242. The Sidak correction is one such correction factor. See IBM Knowledge Center, Post Hoc Tests, [https://www.ibm.com/support/knowledgecenter/SSLVMB\\_sub/statistics\\_mainhelp\\_ddita/spss/base/idh\\_oweb\\_post.html](https://www.ibm.com/support/knowledgecenter/SSLVMB_sub/statistics_mainhelp_ddita/spss/base/idh_oweb_post.html).

variables in a 2 x 2 repeated measures design. Requiring subjects to determine both fair use and substantial similarity in the same question would not work within that design.

A summary of the rates at which subjects found no liability<sup>302</sup> (either by determining the works were not substantially similar or that the subsequent work was a fair use) is presented below, as well as agreement rates across legal conditions. Of particular interest is the rate at which subjects found liability under a substantial similarity instruction but no liability when considering fair use. A more detailed analysis is provided below.

**Table 2a. Outcome Rates of All Subjects (N=503), Deciding Both Cases**

<b>Case</b>	<b>No Liability under Substantial Similarity</b>	<b>No Liability Under Fair Use</b>	<b>Liability Under Substantial Similarity But No Liability Under Fair Use</b>	<b>No Liability Under Both Rules</b>
<b>A v. B</b>	60.8%	66.8%	22.9%	43.9%
<b>C v. D</b>	40.6%	53.7%	29.0%	34.7%

**B. Question 1: The Effect of the Legal Rule on Liability and Confidence**

The following sections describe in detail the results to the three sets of research questions we examined, along with additional findings related to our inquiry. As summarized above, the results demonstrate that fair use and substantial similarity are not redundant—fair use provides potentially greater breathing room for the defendant in a music infringement dispute.

**1. Liability Outcome: Fair Use Lowered Liability Finding**

Our hypothesis was that fair use would result in a lower rate of liability compared to the test of infringement. Because fair use is presumed to provide greater protection from liability than substantial similarity, subjects will be more likely to find no liability when considering a fair use defense rather than substantial similarity.

The results supported our hypothesis, indicating that subjects found the fair use defense to provide greater protection from liability than a substantial similarity rule. As shown in Table 3 below, subjects found no liability in 50.7% of all cases involving the instruction on substantial similarity.

---

<sup>302</sup> We framed results in terms of “no liability” rather than liability for two reasons. First, the focus of this Article is on the efficacy of a defense, i.e., whether fair use would make a difference by resulting in greater findings of no liability. It is more natural to understand fair use in terms of no liability. Second, framing the results in terms of “liability” would have introduced possible uncertainty in the understanding of the results. A subject who decided that fair use does not apply in a case probably meant that the defendant should be liable, but some subjects may have understood “no fair use” as not, in itself, establishing infringement. Thus, the binary fair use findings (yes/no) in the study can be accurately described as finding no liability and potential liability.

Subjects found no liability in 60.2% of all cases involving the instruction on fair use. These results were significantly different in a Chi Square,<sup>303</sup> at  $p < .001$ .

**Table 3. No Liability Rate by Legal Rule, All Cases**

<b>Legal Rule in All cases</b>	<b>N</b>	<b>Finding No Liability / Percent</b>	<b>Significance</b>
<b>Substantial Similarity</b>	1006	510/50.7%	<.001
<b>Fair Use</b>	1006	606/60.2%	

As summarized in Table 4 below, in the context of A v. B, subjects found liability in 60.8% of the cases involving the test of substantial similarity, and found liability in 66.8% of the cases involving the test of Fair Use. These results were significantly different in a Chi Square, at  $p = .049$ . The results supported our hypothesis for low work similarity: the leniency of a fair use rule, while significant when compared to a substantial similarity rule, was somewhat muted in a context of low work similarity when compared to C v. D, a case of high work similarity.

**Table 4. No Liability Rate by Legal Rule, Low Work Similarity (A v. B)**

<b>Legal Rule in A v. B</b>	<b>N</b>	<b>Finding No Liability / Percent</b>	<b>Significance</b>
<b>Substantial Similarity</b>	503	306/60.8%	.049
<b>Fair Use</b>	503	336/66.8%	
<b>Difference</b>		30/6.0%	

By contrast, as summarized in Table 5 below, in the context of C v. D, subjects found no liability in 40.6% of the cases involving the test of substantial similarity, and found no liability in 53.7% of the cases involving the test of fair use. These results were significantly different in a Chi Square, at  $p < .001$ . The results supported our hypothesis, indicating that the leniency of a fair use rule is significant when compared to a substantial similarity rule, especially in the context of high work similarity. The differences in outcome due to a rule change in the context of A v. B (6.00%) and C v. D (13.1%) were significant at  $p = .033$ .

---

<sup>303</sup> Results are also significant under Fisher's Exact test ( $p < .001$ ). Relatedly, subjects are not randomly switching from liability to non-liability across conditions, as confirmed by McNemar's test using a binomial distribution ( $p = .04$ ).

**Table 5. No Liability Rate by Legal Rule, High Work Similarity (C v. D)**

<b>Legal Rule in C v. D</b>	<b>N</b>	<b>Finding No Liability / Percent</b>	<b>Significance</b>
<b>Substantial Similarity</b>	503	204/40.6%	<.001
<b>Fair Use</b>	503	270/53.7%	
<b>Difference</b>		66/13.1%	

We ruled out the possibility that the responses were just randomly entered by subjects. As shown in Tables 6a-c below, a breakdown of the decision-making shows that in both cases the introduction of legal rules altered outcomes and that subjects were not randomly switching liability determinations. For A v. B, 221 (43.9%) subjects found no liability under either rule, 82 (16.3%) subjects found liability under substantial similarity and no fair use, 85 (16.9%) subjects found no liability under substantial similarity and no fair use, and 115 (22.9%) found liability under substantial similarity but also a fair use. McNemar’s test returned a significant value ( $p=.04$ ), indicating subjects were significantly more likely to return liability under a substantial similarity rule and did not change their answers randomly. Likewise, for C v. D, 146 (29.0%) subjects found no liability under either rule, 175 (34.8%) subjects found liability under substantial similarity and no fair use, 58 (11.5%) subjects no liability under substantial similarity and no fair use, and 124 (24.7%) found liability under substantial similarity but also a fair use. McNemar’s test returned a significant value ( $p<.001$ ), indicating subjects were significantly more likely to return liability under a substantial similarity rule and did not change their answers randomly.

**Table 6a. Outcome Agreement Rates Across Legal Rules, A v. B Outcomes**

(N=503)	<b>Potentially Liable Fair Use</b>	<b>Not Liable Fair Use</b>
<b>Liable Substantial Similarity</b>	82/16.3%	115/22.9%
<b>Not Liable Substantial Similarity</b>	85/16.9%	221/43.9%

\* McNemar’s Test,  $p<.05$

**Table 6b. Outcome Agreement Rates Across Legal Rules, C v. D Outcomes**

(N=503)	<b>Potentially Liable Fair Use</b>	<b>Not Liable Fair Use</b>
<b>Liable under Substantial Similarity</b>	175/34.8%	124/24.7%
<b>Not Liable under Substantial Similarity</b>	58/11.5%	146/29.0%

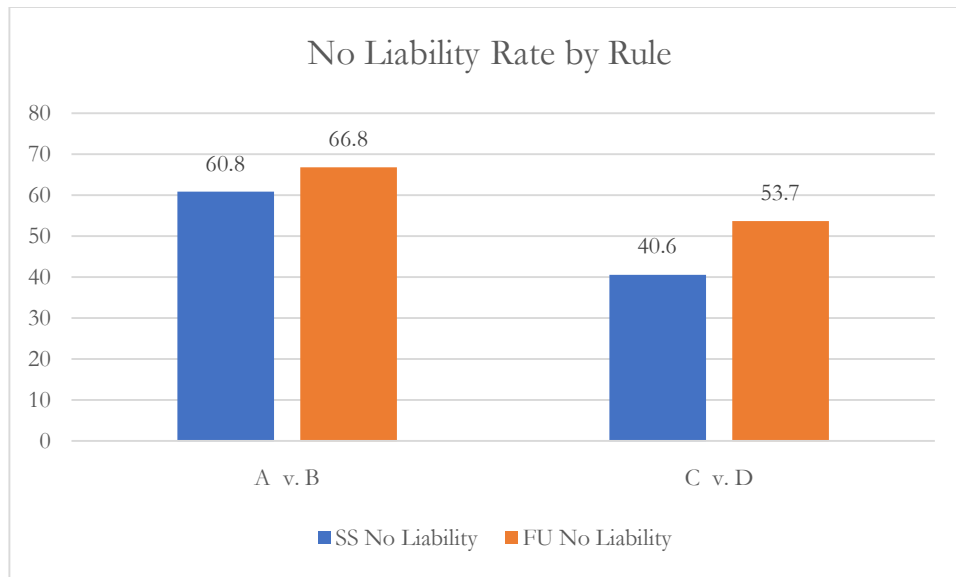
\*\* McNemar's Test,  $p < .01$

**Table 6c. Outcome Agreement Rates Across Legal Rules, Both Cases**

Case	N	Substantial Similarity & No Fair Use	No Liability Both Rules	No Substantial Similarity & No Fair Use	Substantial Similarity But Fair Use
<b>A v. B</b>	503	82/16.3%	221/43.9%	85/16.9%	115/22.9%
<b>C v. D</b>	503	175/34.8%	146/29.0%	58/11.5%	124/24.7%

These numbers can be plotted on a graph to highlight the non-random nature of the responses. As shown in Figure 1 below, in each case and overall, subjects found no liability less frequently under substantial similarity than under fair use.

**Figure 1. Outcome Rates by Legal Rule, Both Cases**



## 2. Confidence Outcome: Subjects Considering Fair Use Had Lower Confidence, but Only When Finding Liability

Our hypothesis was that subjects will express less confidence when arriving at a conclusion considering a fair use defense rather than substantial similarity, given that fair use involves a more complex balancing of 4 factors when compared to the test of infringement. We found some support for our hypothesis in the C v. D case. A review of the mean confidence across all cases showed that subjects considering a substantial similarity instruction were more confident (7.32, SD=1.84) in the outcome than subjects considering a fair use instruction (7.15, SD=1.92), as seen in Table 7. A multivariate test indicated a significant difference ( $p < .009$ ) so individual pairwise comparisons were examined.

**Table 7. Outcome Confidence by Legal Rule, All Cases**

Legal Rule	N	Mean Confidence (Standard Deviation)
Substantial Similarity	1006	7.32 (1.84)
Fair Use	1006	7.15 (1.92)

An examination of confidence by case provides further insight to this preliminary result. There is no significant difference between the reported confidence in A v. B liability, regardless of legal rule. However, as shown in Table 8, subjects reported a significantly ( $p < .011$ ) higher confidence when considering C v. D in light of substantial similarity (mean=7.32, SD=1.90) than when considering C v. D in light of Fair Use (mean=7.08, SD=1.95). This difference could indicate that, although the fair use rule could be more helpful to a defendant in a scenario with high similarity, the process of applying the rule decreased user confidence in the outcome.

**Table 8. Outcome Confidence by Legal Rule and Case**

Case	Legal Rule	N	Mean Confidence (Standard Deviation)	Significance
A v. B	Substantial Similarity	503	7.30 (1.78)	
A v. B	Fair Use	503	7.21 (1.89)	
C v. D	Substantial Similarity	503	7.32 (1.90)	
C v. D	Fair Use	503	7.08 (1.95)	.011 (after Sidak correction)

To determine the source of reduced confidence in the fair use context, we examined confidence scores across liability determinations. Subjects considering fair use who found no liability were significantly more confident in their outcome than subjects that found no fair use, as summarized in Table 9 below. In A v. B when considering fair use, mean confidence of no liability finders (n=336, mean=7.39, SD=1.84) is significantly higher (p=.003) than potential liability finders (n=167, mean=6.85, SD=1.91). Similarly, in C v. D when considering fair use, mean confidence of no liability finders (n=270, mean=7.30, SD=1.84) is significantly higher (p=.006) than potential liability finders (n=233, mean=6.83, SD=1.84).

No such difference was detected in the context of substantial similarity for either musical pair. Put another way, subjects were similarly confident when arriving at a finding of no liability under either rule. However, subjects were significantly less confident with a finding of potential liability under fair use as compared to liability under substantial similarity. The table below summarizes these findings, showing the stark contrast between confidence scores of subjects finding potential liability under a fair use rule and confidence scores of all other subjects.

**Table 9. Outcome Confidence by Legal Rule and Liability Finding, Both Cases**

Case	Legal Rule	N	N Finding No Liability / Potential Liability	Mean Confidence Liability or Potential Liability (Standard Deviation)	Mean Confidence No Liability (Standard Deviation)	Significance
A v. B	Substantial Similarity	503	197/306	7.18 (1.64)	7.38 (1.86)	
A v. B	Fair Use	503	167/336	6.85* (1.91)	7.39 (1.84)	.003
C v. D	Substantial Similarity	503	299/204	7.29 (1.75)	7.32 (1.83)	
C v. D	Fair Use	503	233/270	6.83** (2.05)	7.30 (1.84)	.006

\* significantly different from substantial similarity finding at p<.05, \*\* at p<.01

It is important to determine if this reduction in confidence is due to subject unease with arriving at different outcomes under different rules or if the reduction is tied to the rule itself. Prior experiments involving the use of rules and standards in immigration decisions have indeed indicated that subjects may express lower confidence in disparate outcomes.<sup>304</sup> However, the diminished confidence in the fair use context is not due to subjects changing their liability determinations across legal rules. As Table 10 below indicates, subjects did not return significantly different confidence scores if they reached different conclusions in the context of substantial similarity and fair use. In the context of both A v. B and C v. D, subjects who found that fair use applied expressed the same level of confidence regardless if they found liability under substantial similarity. This confidence level was remarkably constant, as subjects who found fair use reported similar confidence levels across all cases

<sup>304</sup> See, e.g., Brian Sheppard & Andrew Moshirnia, *For the Sake of Argument: A Behavioral Analysis of Whether and How Legal Argument Matters in Decisionmaking*, 40 FLA. ST. U. L. REV. 537, 567 (2013).



regardless of findings under substantial similarity (7.36, 7.40, 7.33, 7.28). Likewise, they exhibited significantly lower confidence scores when arriving at a finding that fair use did not apply (6.80, 6.91, 6.79, 6.93). This result indicates subjects are less confident only when rejecting fair use, but not in deciding in favor of fair use.

**Table 10. Fair Use Outcome Confidence by Liability Agreement, Both Cases**

Case	Found Liability under Substantial Similarity	Number and Mean Confidence Finding of Potential Liability under Fair use (Standard Deviation)	Number and Mean Confidence Finding of No Liability under Fair Use (Standard Deviation)
<b>A v. B</b>	Yes (N=197)	N=82 6.80 (2.00)	N=115 7.36 (1.82)
<b>A v. B</b>	No (N=306)	N=85 6.91 (1.83)	N=221 7.40 (1.87)
<b>C v. D</b>	Yes (N=299)	N=175 6.79 (2.06)	N=124 7.33 (1.85)
<b>C v. D</b>	No (N=204)	N=58 6.93 (2.01)	N=146 7.28 (1.82)

**C. Question 2: The Effect of Similarity Between Two Works Tested**

**1. Liability Outcome: Subjects found no liability at a lower rate for higher similarity pair of works regardless of legal condition**

Our hypothesis was that subjects will be more likely to find infringement for case C v. D than A v. B, given that the songs in C v. D share more similarities than those in A v. B. The results support our hypothesis: subjects can discern relative similarity of works and are more likely to find potential liability in the case of high similarity of works.

In all contexts, subjects were significantly less likely to find potential liability in A v. B than in C v. D, as we predicted. As shown in Table 11a-c below, in the context of substantial similarity, subjects found A v. B not liable in 60.8% of cases, but C v. D not liable in just 40.6% of cases. This 20.2% difference was significant at  $p < .001$ . In the context of Fair Use, subjects found A v. B not liable in 66.8% of cases, but C v. D not liable in just 53.7% of cases. This 13.1% difference was significant at  $p < .001$ .

**Table 11a-c. No Liability Rates by Work Similarity, All, Substantial Similarity Only, and Fair Use only**

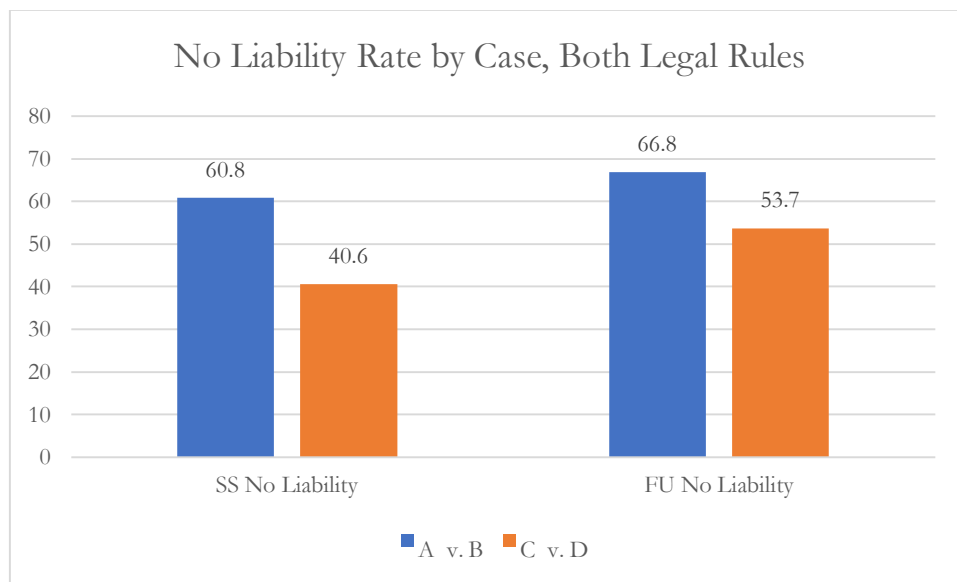
Case	N	No Liability / Percent	Significance
<b>A v. B</b>	1006	642/63.8%	<.001
<b>C v. D</b>	1006	474/47.1%	

Case Applying Substantial Similarity	N	No Liability	Significance
A v. B	503	60.8%	<.001
C v. D	503	40.6%	

Case Applying Fair Use	N	No Liability	Significance
A v. B	503	66.8%	<.001
C v. D	503	53.7%	

This significant difference in findings of no liability in C v. D versus A v. B can be seen in Figure 2 below. Not surprisingly, subjects found no liability at a higher rate under both rules in A v. B.

**Figure 2. Liability Rates by Case and Legal Rule**



As noted in the section above, similarity of works did not have a significant impact on subject confidence scores, though there was an interaction between similarity of works and legal rules.

#### **D. Question 3: The Effect of Subject Background Knowledge**

- Liability Outcome: Musical Background Increased Sensitivity to Legal Rule, Increasing Substantial Similarity Liability and Findings of Fair Use**

The results supported our hypothesis that subjects with greater musical knowledge will be more likely to find no liability when considering fair use than subjects with no musical knowledge,

given that subjects with a musical background have a better understanding of musical elements of a song.

Two questions measured musical knowledge: whether the subject had a background in playing a musical instrument or singing, and the number of daily hours the subject spent listening to music. 217 subjects reported a background in playing a musical instrument or singing. 286 subjects reported no such background.

Subjects with a background in music were significantly less likely to find no liability in A v. B when considering substantial similarity (51.61%) than subjects without such experience (67.83%). This approximately 16% difference was significant at  $p < .001$ . Subjects with a background in music were significantly more likely to find no liability in C v. D when considering fair use (60.83%) than subjects without such experience (48.25%). This approximately 12% difference was significant at  $p = .005$ .

Subjects with a musical background demonstrated a much greater sensitivity to the legal rule than subjects without a musical background. For the musical background group, the change of legal rule from substantial similarity to fair use led to a 18.89% increase in the finding no liability for A v. B, and a 21.20% increase in finding no liability for C v. D. Both decreases were significant at  $p < .001$ , as summarized in Table 12 below. By contrast, for the non-musical background group, the change of legal rule perplexingly led to a 3.85% decrease in findings of no liability for A v. B, and just a 6.99% increase in findings of no liability for C v. D. Of these, only the C v. D change was significant at  $p < .05$ .

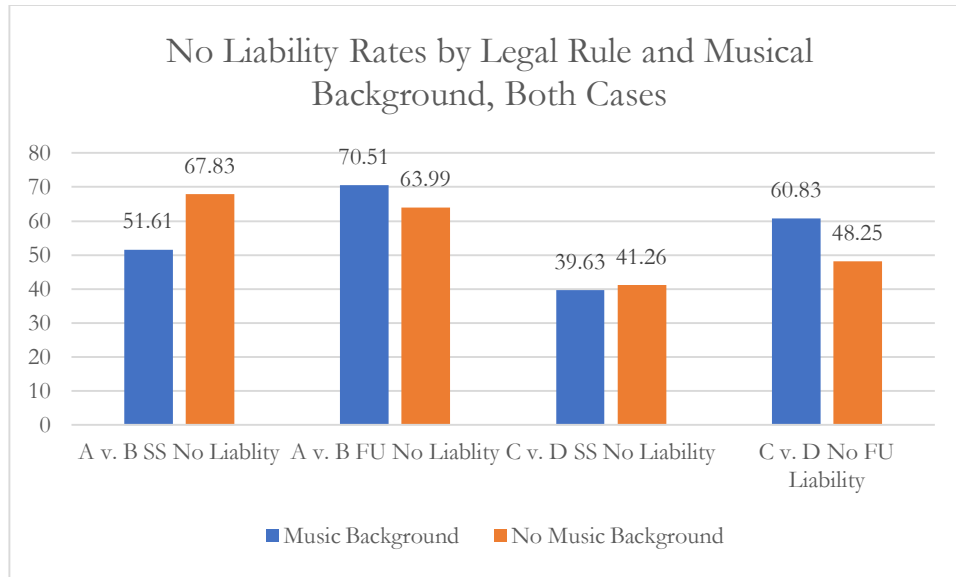
**Table 12. No Liability Rates by Legal Rule and Musical Background, Both Cases**

Case	Legal Rule	No Liability rate for Subjects with Music Background (N=217)	No Liability rate for Subjects with No Music Background (N=286)	Significance
<b>A v. B</b>	Substantial Similarity	51.61%	67.83%	<.001
<b>A v. B</b>	Fair Use	70.51%	63.99%	
	<b>Difference</b>	18.89%**	-3.85%	<.001
<b>C v. D</b>	Substantial Similarity	39.63%	41.26%	
<b>C v. D</b>	Fair Use	60.83%	48.25%	.005
	<b>Difference</b>	21.20%**	6.99%*	.007

\*, difference is significant at  $p < .05$ , \*\*, difference is significant at  $p < .01$

The significant effect a subject's musical knowledge had on the liability rates can be seen in the dramatic change in positions of the blue bars in the graph in Figure 3 below.

**Figure 3. No Liability Rates by Legal Rule and Musical Background, Both Cases**



To better understand the latter finding, we examined the impact of the fair use rule on liability findings for individual subjects. For subjects that returned the same verdict regardless of legal rule, the introduction of different legal rules did little work.

Of greater interest are those subjects who differed in their finding of liability across conditions. The notion that fair use provided extra protection when subjects had a musical background is further indicated in the rates at which subjects found liability only in the context of substantial similarity.<sup>305</sup> Subjects with a music background were significantly more likely ( $p < .001$ ) than subjects without a music background to find liability in substantial similarity but no liability under fair use in both the A v. B (34.6%, 14%) and C v. D (33.2%, 18.2%) contexts, as shown in Table 13 below.

<sup>305</sup> Because fair use offers greater protection from liability, it is noteworthy that some subjects found liability in the Fair Use context only. This may indicate a difficulty in understanding the legal rule (an interpretation that is supported by the relative lack of this liability pattern in subjects with legal knowledge). The music and non-music groups returned fair use only liability in comparable rates.

**Table 13. Liability Agreement Rates for Both Legal Rules by Musical Background**

Case	Music Background	No Liability under Substantial Similarity	No Liability Under Fair Use	Liability Under Substantial Similarity But No Liability Under Fair Use	No Liability Under Both Rules
<b>A v. B</b>	All subjects (n=503)	60.8%	66.8%	22.9%	43.9%
	Musical (n=217)	51.6%	70.5%	34.6%**	35.9%
	Non-Musical (n=286)	67.8%	64.0%	14.0%**	50%
<b>C v. D</b>	All subjects (n=503)	40.6%	53.7%	29.0%	34.7%
	Musical (n=217)	41.2%	60.8%	33.2%++	27.6%
	Non-Musical (n=286)	39.6%	48.3%	18.2%++	30.1%

\*\* significantly different at  $p < .01$ , , ++ at  $p < .01$

The pattern is muddled somewhat by the fact that nearly all subjects that identified as lawyers (n=47) also identified as having a background in playing an instrument (lawyer instrument n=45). While we would normally test for an interaction between musical knowledge and legal knowledge, the small number (n=2) of non-musical subjects with a legal background renders the results suspect. For completeness, we note that a significant interaction ( $p < .008$ ) of music knowledge and legal knowledge was detected with respect to A v. B in the context of fair use, with non-musical legal background subjects finding a no liability rate of 0% compared with musical legal background subjects finding a liability rate of 91.1%. A similar pattern (though barely failing to meet the significance threshold,  $p = .052$ ) was shown with respect to C v. D in the context of fair use, with non-musical legal background subjects finding a no liability rate of 0% compared with musical legal background subjects finding a liability rate of 77.7%.

**Table 13a. No Liability Rate for Low Similarity (A v. B), Fair Use by Music Background and Legal Background**

(N=503)	Musical Background	No Musical Background
<b>Legal Background</b>	N=45 91.1%	N=2 0%
<b>No Legal Background</b>	N=172 65.1%	N=284 64.4%

**Table 13b. No Liability Rate for High Similarity (C v. D), Fair Use by Music Background and Legal Background**

(N=503)	<b>Musical Background</b>	<b>No Musical Background</b>
<b>Legal Background</b>	N=45 77.7%	N=2 0%
<b>No Legal Background</b>	N=172 56.4%	N=284 48.3%

Due to this imbalance, we next removed all subjects with a legal background. While the temporary removal of these subjects decreased power, it revealed trends supporting the notion that musical subjects were more likely to change their liability determination in the face of changing legal rules. As shown in Table 14a below, the remaining subjects with musical knowledge returned comparable rates of potential liability only in the context of fair use to subjects without musical knowledge. However, musical non-legal subjects were significantly more likely to find liability for only substantial similarity in the context of A v. B ( $p = .008$ ) than non-musical, non-legal subjects. This difference is likely attributable to the fact that the legal rule did not significantly impact findings of no liability for non-musical/non-legal subjects in the context of low similarity works, but did so for high similarity works, as shown in Table 14b and graphed in Figure 4.

**Table 14a. Liability Agreement Rates for Both Legal Rules by Musical Background with No Legal Background (N = 456)**

<b>Musical Background W/ No Legal Background</b>	<b>N subjects</b>	<b>Case</b>	<b>No Liability Under Substantial Similarity But Potential Liability Under Fair Use</b>	<b>Identical Liability in Both Rules</b>	<b>Liability Under Substantial Similarity But No Liability Under Fair Use</b>
<b>Musical</b>	172	A v. B	19.2%	57.0%	23.8%**
<b>Non-Musical</b>	284	A v. B	17.6%	68.3%	14.1%**
<b>Musical</b>	172	C v. D	13.4%	64.0%	22.7%
<b>Non-Musical</b>	284	C v. D	11.3%	70.4%	18.3%

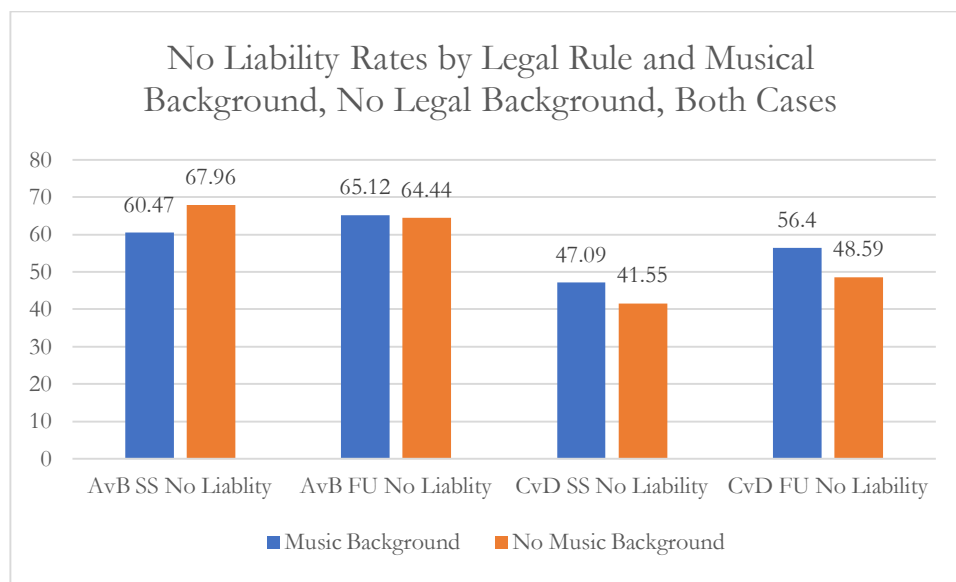
\*\* significantly different from each other at  $p < .01$

**Table 14b. No Liability Rates by Legal Rule and Musical Background, No Legal background (N=456)**

Case	Legal Rule	No Liability rate for Subjects with Music Background (N=172)	No Liability rate for Subjects with No Music Background (N=284)
<b>A v. B</b>	Substantial Similarity	60.47%	67.96%
<b>A v. B</b>	Fair Use	65.12%	64.44%
	<b>Difference</b>	4.65%	-3.52%
<b>C v. D</b>	Substantial Similarity	47.09%	41.55%
<b>C v. D</b>	Fair Use	56.40%	48.59%
	<b>Difference</b>	9.30%*	7.04%*

\* significant at  $p < .05$

**Figure 4. Liability Rates by Legal Rule and Musical Background, No Legal Background, Both Cases**



Subjects with a musical background did not have a significantly higher confidence in their findings, however.

Finally, the amount of time a subject listened to music had an effect in one question. A multivariate test returned a significant result ( $p < .004$ ), so pairwise comparisons were examined. Subjects of varying daily music listening did not significantly differ by liability rate for A v. B in any context. However, subjects who reported listening to less than one hour of daily music listening (i.e., the less avid listeners) were significantly less likely to find no liability when considering Fair Use in C v. D ( $n=76$ , 35.53%) than subjects reporting more frequent music listening in the 1-2 hour daily range

(n=255, 55.29%) and the 3-4 daily range (n=122, 61.48%), as shown in Table 15 below. Thus, even without formal music training or experience, a subject's exposure to music affected the finding of liability in the high work similarity case.

**Table 15. Fair Use Liability Rates by Hours of Daily Music, High Work Similarity**

Daily Music	N subjects	Case	No Liability in Fair Use	Significance After Sidak correction factor
Less than 1	76	C v. D	35.53%	
1-2	255	C v. D	55.29%	.014
3-4	122	C v. D	61.48%	.002
5 or more	50	C v. D	54.00%	

In sum, a subject's music knowledge had a significant effect in the outcome of cases. Individuals with music knowledge were significantly more likely to change their liability determination in light of different legal instructions and more likely to find no liability under the test of Fair Use.

**2. Liability Outcome: Legal Background Increased Sensitivity to Legal Rule, Increasing Substantial Similarity Liability and Increasing Findings of Fair Use**

The results confirmed our hypothesis that subjects with a legal background will be more likely to find no liability when considering a fair use rule than substantial similarity. 47 subjects reported a background in law, either practicing as a lawyer or attending law school. 456 subjects reported no such background.

As shown in Table 16 below, subjects with a background in law were significantly more likely ( $p < .001$ ) than subjects without such experience to find infringement in all cases when considering substantial similarity. In the context of A v. B in light of substantial similarity, law subjects found no liability 19.15% of the time, as compared to non-law subjects no liability rate of 65.13%. In the context of C v. D in light of substantial similarity, law subjects found no liability 10.64% of the time, as compared to non-law subjects no liability rate of 43.64%.

In addition, subjects with a background in law were significantly more likely ( $p < .01$ ) than subjects without such experience to find no liability in all cases when considering fair use. In the context of A v. B in light of fair use, law subjects found no liability 87.23% of the time, as compared to non-law subjects' liability rate of 64.69%. In the context of C v. D under the test of fair use, law subjects found liability 74.47% of the time, as compared to the liability rate of 51.54% by subjects without legal background, as graphed in Figure 5 below.

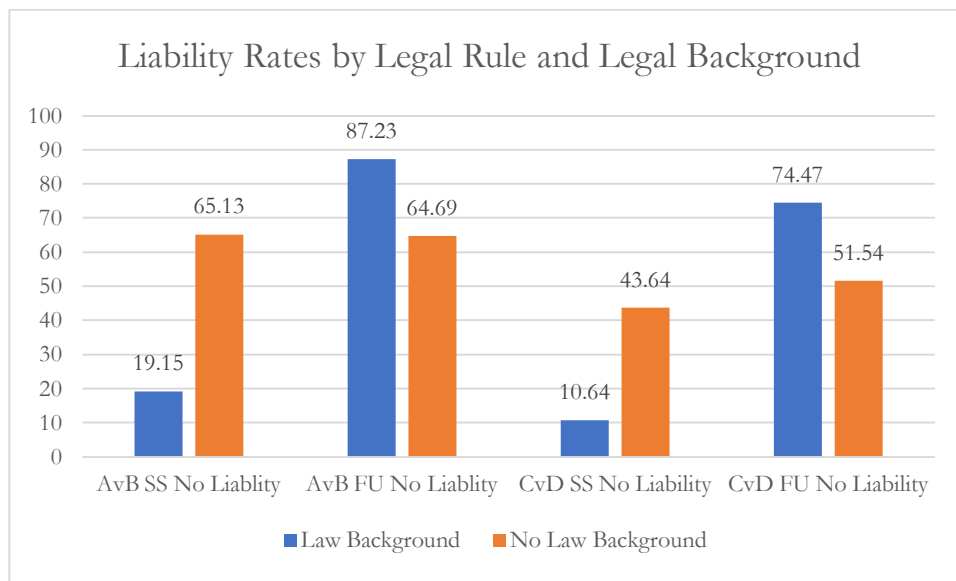


**Table 16. Liability Rates by Legal Rule and Legal Background, Both Cases**

Case	Legal Rule	No Liability rate for Subjects with Law Background (N=47)	No Liability rate for Subjects with No Law Background (N=456)	Significance
<b>A v. B</b>	Substantial Similarity	19.15%	65.13%	<.001
<b>A v. B</b>	Fair Use	87.23%	64.69%	.002
	<b>Difference</b>	68.1%**	-0.44%	<.001
<b>C v. D</b>	Substantial Similarity	10.64%	43.64%	<.001
<b>C v. D</b>	Fair Use	74.47%	51.54%	.003
	<b>Difference</b>	63.8%**	7.9%*	<.001

\* significant at  $p < .05$ , \*\* at  $p < .01$ .

**Figure 5. Liability Rates by Legal Rule and Legal Background, Both Cases**



Just as with music knowledge, subjects with law background demonstrated a much greater sensitivity to the legal rule than subjects without a law background. For the legal background group, the change of legal rule from substantial similarity to fair use led to a 68.1% increase in the finding of no liability for A v. B, and a 63.8% increase in no liability for C v. D. Both decreases were significant at  $p < .001$ . In contrast, for the non-legal background group, the change of legal rule led to a 0.44% decrease in no liability for A v. B, and a 7.9% increase in no liability for C v. D. Of these, only the C v. D change was significant, at  $p = .003$ , as shown in Table 16.

Subjects with a law background were significantly more likely ( $p = .015$ ) to find potential liability in A v. B in the fair use context only. Subjects with a law background returned potential liability in A v. B in the fair use context only at a 4.3% rate, as compared to a rate of 18.2% for subjects without

a law background. This further indicates that a finding of potential liability in the fair use only context may represent a misunderstanding of the legal rule. Unsurprisingly, subjects with a law background were far more likely to change their liability outcome in light of changing legal rules, and the great majority found liability under substantial similarity but no liability under fair use, as seen in Table 17 below.

In sum, a subject's legal knowledge had a significant effect in the outcome of cases. Individuals with legal knowledge were significantly more likely to change their liability determination in light of different legal rules and more likely to find no liability under the test of fair use.

**Table 17. Liability Agreement Rates for Both Legal Rules by Legal Background**

<b>Legal Background</b>	<b>N subjects</b>	<b>Case</b>	<b>No Liability Under Substantial Similarity But Potential Liability Under Fair Use</b>	<b>Identical Liability in Both Rules</b>	<b>Liability Under Substantial Similarity But No Liability Under Fair Use</b>
<b>Legal</b>	47	A v. B	4.3*	23.4	72.3**
<b>Non-Legal</b>	456	A v. B	18.2*	64.0	17.8**
<b>Legal</b>	47	C v. D	6.4	23.4	70.2++
<b>Non-Legal</b>	456	C v. D	12.1	68.0	20.0++

\* significantly different from each other at  $p < .05$ , \*\* at  $p < .001$ , ++ at  $p < .001$

There was no significant difference in reported confidence of subjects with law backgrounds.

#### **D. Findings Regarding Potential Intervening Variables and Validity of the Instrument**

##### **1. Subjects Who Recognized Songs Used**

Given that this experiment used pre-existing works, there was the potential intervening variable that subjects would recognize those songs and base a liability determination on that recognition. A comparatively small number of subjects reported recognizing the songs, with an even smaller number correctly identifying at least one song in the song pair. Further, given that the subjects received the songs and legal rules in a random order, it was important to determine if the order of exposure had a significant impact on results. Our hypothesis was that subjects would be less likely to find no liability if they recognize the songs under review. The results confirmed our hypothesis, but only in the case of high work similarity (C v. D).<sup>306</sup>

<sup>306</sup> It is worth noting that reported recognition of the songs did not correlate with a musical background.

For A v. B, 67 subjects reported that they recognized at least one song (of these subjects, 58 recorded a written answer correctly identifying at least one of the songs or artist). 436 subjects reported no such recognition. No significant differences were detected in these groups, as summarized in Table 18 below.

**Table 18. Liability Rates by Legal Rules and Song Recognition, Low Work Similarity**

Case	Legal Rule	Liability rate for Subjects with Reported Recognition (N=67)	Liability rate for Subjects with No Recognition (N=436)
A v. B	Substantial Similarity	61.19%	60.78%
A v. B	Fair Use	71.64%	66.06%

For C v. D, 92 subjects reported that they recognized at least one song from the C v. D case (of these subjects, 63 recorded a written answer correctly identifying at least one of the songs or artists). 411 subjects reported no such recognition. Subjects who reported recognizing at least one song were significantly less likely to find no infringement, regardless of legal rule, as shown by Table 19 below. Temporary removal of these subjects did not disrupt any significant finding related to C v. D in the fair use context, in part due to the comparatively small number of recognizing subjects and because song recognition did not correlate with musical knowledge or legal knowledge.

**Table 19. Liability Rates by Legal Rules and Song Recognition, High Work Similarity**

Case	Legal Rule	No Liability rate for Subjects with Recognition (N=92)	No Liability rate for Subjects with No Recognition (N=411)	Significance
C v. D	Substantial Similarity	22.83%	44.53%	<.001
C v. D	Fair Use	32.61%	58.39%	<.001

Unsurprisingly, the age of subjects correlated with the likelihood that a song would be recognized. While the recognition rate of C v D songs was 18.3 percent overall, older subjects in the last three sextants were far more likely to recognize the songs from 1963 and 1970 (38.8%, 72.7%, and 55.6%). Although C v. D is commonly taught in law school copyright courses, only 6 subjects with a law background reported recognizing a song from C v. D, and there was no significant interaction between legal background and song recognition.

## 2. Any Negative Opinion of Recognized Artist

If subjects reported that they recognized any of the songs under review, they were asked if they had negative feelings about those songs or artists. 23 subjects reported that they had negative feelings about artists. Of these subjects, 10 subjects wrote that they had negative feelings towards Robin Thicke or Song B, 1 had negative feelings towards Song A, 1 had negative feelings towards

Song C, and 4 had negative feelings towards Song D. No significant difference was detected in liability determinations between subjects reporting a negative view of A v B.

### 3. Any Effect From Order of Exposure: Songs and Legal Rules

The order of songs (that is, the sequence in which subjects reviewed A v. B or C v. D) varied between groups, with  $n=251$  receiving A v. B first and  $n=252$  receiving C v. D first. However, it was important to determine if the order had an outsized impact in light of the fact that subjects might anchor their outcome decisions based on the relative similarity of the two pairs. Order of songs did return a significant result, but only for the fair use determination for A v. B ( $p=.022$ ). Put another way, subjects who considered A v. B first found no liability 70.92% of the time in the context of Fair Use, whereas subjects that considered A v. B second found no liability 62.7% of the time in the context of Fair Use. The effect size of this phenomenon was small (.01) and distributed across subjects, lessening its importance.

Order of songs had no significant impact for all cases involving C v. D, and for A v. B in the context of substantial similarity. Likewise, the order of rules (that is, which legal rule the subject reviewed first or second) did not return a significant result for all cases and legal rules.

However, a significant interaction exists between the order of songs and the order of rules. Subjects were significantly more likely to find no infringement on the first song pair considered (regardless of pair), but only if the first rule presented was Fair Use. Subjects who had A v. B first and had Fair Use first were significantly more likely to find no liability (80.91%) than subjects who considered the pair under substantial similarity first (63.1%) or subjects who received A v. B second (62.7%). This was significant at  $p = .005$ . Similarly, subjects who had C v. D first and had Fair Use first were significantly more likely to find no liability (62.2%) than subjects who considered the pair under substantial similarity first (51.8%) or subjects who received C v. D second (51.0%). This was significant at  $p=.038$ . Again, the effect size of both of these findings was small (.016, .009).

In sum, subjects who had fair use as their first legal rule were more likely to find no liability in the first case, but by the time the second case was considered, that leniency dissipated. Though interesting, the muted nature of this interaction poses no threat to the validity of results.<sup>307</sup>

## IV. Implications of Results and Future Research

This Part discusses the implications of the results of our study. Most importantly, fair use matters: fair use resulted in greater findings of no liability than a defense simply disputing whether two works are substantially similar. In other words, fair use provides greater breathing room to creators than the test of infringement. This finding supports the consideration of fair use as a way to address the problem of copyright clutter by providing creators with additional breathing room in a field crowded by exposure to copyright liability. Our study also calls into question the predominant strategy of musicians in avoiding fair use as a defense—such fair use avoidance is unsound.

---

<sup>307</sup> As a precaution, tests were rerun with rule and song order held as covariates, and no significant results were vitiated.

## A. Implications

### 1. Fair Use Matters

The results of our study indicate that fair use can provide additional protection or breathing room beyond the test of infringement. Subjects had a higher rate in finding no liability under fair use than under the substantial similarity test in both cases tested. The difference was more pronounced in the case featuring the work with higher similarity (*C v. D*), which was consistent with our hypothesis. In both cases, fair use provided more help—or breathing room—to defendants than simply disputing infringement.<sup>308</sup>

These findings suggest that fair use provides one viable way to address the problem of copyright clutter, where a field of creation is beset with numerous copyrights protecting many sub-elements of millions of works from which it is hard for creators to avoid similarities. As explained above, the problem of copyright clutter in the music field is manifold. Fair use won't eliminate copyright clutter, but it can provide greater leeway to defendants—and provide a possible defense to broad assertions of infringement and aggressive demands for song-writing credits and payment of royalties for any similarity between songs. However, fair use can be only a palliative to copyright clutter, not a panacea. Fair use does not address the root causes of copyright clutter discussed above, including the exponential growth of musical works, expanding or vague scope of copyright, and lengthy terms of copyright coupled with lack of repose under the statute of limitations.<sup>309</sup>

Our study's findings call into question the predominant strategy of musicians avoiding fair use as a defense in cases in which they have been accused of copyright infringement based on alleged similarities of their songs with a prior song. Given the availability of alternative defenses by a party in litigation, foregoing fair use may be sacrificing the defense with the greatest chance of success—or, at the very least, a better chance than simply disputing substantial similarity where some similarities in the songs arguably exist.

Some musicians may perhaps avoid fair use because they think fair use may be interpreted as a concession that they copied from the plaintiff's song or are taking a position in tension with a theory of defense that rests on the defendant-musician arguing that "I never heard the plaintiff's song," thereby denying any copying.<sup>310</sup> For several reasons, we believe this fear is misguided. First, U.S. courts have long accepted alternative arguments and pleadings by parties, especially when the underlying facts are uncertain.<sup>311</sup> Denying copying but asserting fair use would fall within this accepted practice. Given the pervasiveness of music, musicians might not be sure of hearing a song in the past or be aware they are copying an element from it. Based on this uncertainty, musicians can assert—without inconsistency—that they don't believe they ever heard the plaintiff's song, much less copied from it, assuming that is the case. Musicians can argue in the alternative that, if the court finds that they did copy, the copying was a fair use. The subconscious copying doctrine would potentially expose them

---

<sup>308</sup> See generally Pamela Samuelson, *Possible Futures of Fair Use*, 90 WASH. L. REV. 815, 831, 858 (2015).

<sup>309</sup> See *supra* notes [] and accompanying text.

<sup>310</sup> See generally Edward Lee, *How Katy Perry could have won the 'Dark Horse' lawsuit*, WASH. POST (Aug. 2, 2019, 2:39 PM), <https://www.washingtonpost.com/opinions/2019/08/02/how-katy-perry-could-have-won-dark-horse-lawsuit/> (discussing Katy Perry's defense that she did not hear the plaintiff's song before).

<sup>311</sup> See Roy W. McDonald, *Alternative Pleading in the United States*; I, 52 COLUM. L. REV. 443, 459-62 (1952).

to liability even if they were unaware of copying the plaintiff's work.<sup>312</sup> Even then, fair use is still arguable as a defense. Importantly, factor one of fair use, the defendant's purpose of use of the copyrighted work, is judged from an objective viewpoint, from how a reasonable person would understand the defendant's use.<sup>313</sup> The subjective intent of the defendant is not crucial.<sup>314</sup>

A defendant can easily raise these alternative arguments in a motion for summary judgment to the court. Notably, some music cases have been resolved on summary judgment and motions to dismiss.<sup>315</sup> A court can even assume the defendant copied for the purposes of the summary judgment motion without making a final determination, and then rule on fair use. In federal cases, alternative arguments are routinely permitted under Federal Rule of Civil Procedure 8(d)(3).<sup>316</sup> Of course, ideally, a litigant would not present inconsistent defenses out of fear of undermining the litigant's credibility before a jury.<sup>317</sup> But, as explained above, there is no inherent inconsistency between fair use and a defense to infringement based on lack of copying. And, even if there were, copyright law's recognition of proof of copying based on similarities and access to plaintiff's work, striking similarities, or subconscious copying may make the defense of independent creation difficult to win, particularly as online music services make it easy for widespread distribution of songs.<sup>318</sup>

Although we did not test the issue of defendant's access and copying in our study, no subject group found liability in the fair-use context at a significantly higher rate than in the substantial similarity context. This result suggests that there appears to be very little, if any, downside to introducing a fair use defense. Moreover, the only significant effect we found in the ordering of defenses was that subjects were more likely to find no liability when they considered the fair use defense first. And we found no indication that subjects penalized defendants who asserted fair use in the subsequent cases tested. Based on these results, we believe attorneys defending musicians from copyright infringement claims should consider pursuing a fair use defense. Indeed, it may be malpractice not to.

## 2. Knowledge Matters

Another important finding of our study is that knowledge matters. Subjects with a legal background were far more sensitive to the legal rule, and far less likely to find potential liability in the fair-use context only. Subjects with a musical background behaved similarly, albeit in a more muted fashion. Subjects with both a musical and legal background appear to be most receptive to a fair use defense, though this finding requires additional study in light of the strong correlation between legal and musical study for subjects in this experiment. These findings point to the importance of voir dire in shaping a jury with salient knowledge, as well as the necessity of educating the fact-finder (judge or jury) of relevant music principles. Additionally, this highlights the value of a summary judgment motion raising the defense, especially in front of a judge who evinces a musical background.

---

<sup>312</sup> See *Fred Fisher, Inc. v. Dillingham*, 298 F. 145, 148 (S.D.N.Y. 1924) ("It is no excuse that in so doing his memory has played him a trick.").

<sup>313</sup> See *Cariou v. Prince* 714 F.3d 694, 707 (2d Cir. 2013).

<sup>314</sup> See *id.*

<sup>315</sup> See, e.g., *Peters v. West*, 692 F.3d 629, 636 (7th Cir. 2012) (motion to dismiss); *VMG Salsoul, LLC v. Ciccone*, 824 F.3d 871 (9th Cir. 2016) (summary judgment). *But see* *Hall v. Swift*, 786 Fed. Appx. 711 (9th Cir. 2019) (reversing dismissal of copyright claim based on alleged copying of "a six-word phrase and a four-part lyrical sequence" because allegation in complaint stated a claim of infringement of original expression).

<sup>316</sup> See Fed. R. Civ. P. 8(d)(3) ("A party may state as many separate claims or defenses as it has, regardless of consistency.").

<sup>317</sup> See generally H. Mitchell Caldwell *et al.*, *The Art and Architecture of Closing Argument*, 76 TUL. L. REV. 961, 982 (2002).

<sup>318</sup> See *supra* notes [] and accompanying text.

## **B. Future Research**

These findings point to several areas of future research. Specifically, if musical or legal knowledge can potentially impact the finding of fair use, how may litigants convey that knowledge to fact finders, especially to a jury that consists of members with no musical or legal knowledge? Our future research will attempt to assess the efficacy of musicologists in imparting musical principles to a jury. Although a battle of experts between each side's musicologist(s) may complicate the issue, our findings support the inclusion of testimony intended to educate jurors on basic music concepts, so they may reach a more informed decision. Moreover, the results suggest an advantage of a bench trial to gain the benefit of a factfinder trained in the law. Further investigation should explore whether judges are better deciders of music cases.

## **Conclusion**

This Article provides the first empirical study that shows that the fair use defense provides greater leeway to creators under copyright law than a defense simply contesting the test of infringement. Our experimental study of approximately 500 subjects indicated that subjects found no copyright liability more under fair use than the test of infringement. And greater knowledge of music or law resulted in higher findings of no liability under fair use. Amid the growing exposure to copyright liability that musicians now face—due to a predicament we characterize as copyright clutter—the results of our study call into question the predominant litigation strategy of musicians avoiding fair use as a defense.