

Translating the Sound of Music: Forensic Musicology and Visual Evidence in Music Copyright Infringement Cases

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Abstract

In music copyright infringement cases, forensic musicologists are often called to testify as to whether or not two songs are 'substantially similar.' While it is standard practice to rely on experts to dissect the works in question, this is a fairly recent phenomenon. Until the 1950s, it was not the scientific analysis of the pieces, but the impressions they left on the 'untrained ears' of everyday listeners that was used to determine copyright infringement. This paper presents an overview of American music copyright infringement cases to document this shift in how the question of substantial similarity has been approached. We argue that the courts' inability to objectify what listeners hear created the need for experts who could translate music into legal evidence that could be visually witnessed. This practice of judging plagiarism according to how songs look on paper may account for why the courts have viewed musical sampling as copyright violations.

Keywords: music copyright infringement, copyright, forensics, translation, law and the senses

Résumé

Les musicologues sont souvent appelés à donner un témoignage d'expert dans les affaires de plagiat de musique, où on leur demande si, à leur avis, deux chansons différentes sont « substantiellement similaires ». Bien que le recours à des experts pour analyser des œuvres ne soit pas nouveau, il reste que le phénomène est relativement récent. En effet, jusque dans les années 1950, l'on déterminait s'il y avait eu violation ou non de droit d'auteur par l'impression générale que produisait un morceau sur les auditeurs profanes plutôt que par analyse scientifique. Cet article présente un survol des affaires de plagiat musical aux États-Unis pour retracer le virage de la méthode d'évaluation de la similarité substantielle. L'auteur avance que l'incapacité des tribunaux de décrire objectivement l'expérience auditive des auditeurs s'est soldée par un recours à des experts capables de traduire la musique en preuve juridique visuelle. La pratique de juger le plagiat de chansons par leur apparence visuelle expliquerait pourquoi l'échantillonnage musical serait considéré, par les tribunaux, comme une violation de droit d'auteur.

Mots clés : plagiat musical, droit d'auteur, musicologue, traduction, le droit et les sens

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Introduction

In 2008, rock guitarist Joe Satriani filed a music copyright infringement lawsuit against the members of the British pop group, Coldplay (*Satriani v. Martin et al.* [2008]). In his complaint, Satriani claimed that the band had "copied and incorporated substantial, original portions" of his musical composition "If I Could Fly" in their Grammy Award winning song "Viva La Vida." Coldplay publicly denied any wrongdoing, stating Satriani "did not write or have any influence on the song" and that "if there are any similarities between our two pieces of music, they are entirely coincidental and just as surprising to us as to him." In court documents filed, Coldplay also noted that Satriani's song lacked originality and should therefore not receive copyright protection.

After the story broke, fans and casual observers flocked to the Internet to offer their opinions as to whether or not "Viva La Vida" was ripped-off from the old Satriani tune. Most people based their conclusions on what they heard while listening closely to the two songs, back to back. Others spent a great deal of time analyzing the recordings for anyone in cyberspace willing to listen. Andrew Wasson, a guitar teacher from Los Angeles, posted a two-part video on YouTube entitled, "Did Coldplay copy Joe Satriani? Let's Do the Music Theory." In it, Wasson dissects the two songs to point out the parallels in tempo, meter, and chorus melody, and uses visual charts to show the resemblances in the chord progressions. Wasson even transposes the songs into a common key and plays them on his guitar to allow viewers to hear the similarities for themselves.

There was no clear consensus among online users as to who should win this case. Unfortunately, we will never know how a judge or jury would have ruled as Satriani eventually dropped his claim after the parties reached an out-of-court settlement, the terms of which have never been disclosed. However, when these music copyright trials do make their way into the courtroom, they raise a number of interesting questions: First, how do courts determine whether two songs are similar enough to constitute copyright infringement? Second, who makes this determination and with what criteria? Is it based on the lay listening of the average person or a more formal analysis of the songs like the one performed by Wasson? Finally, is it a question of whether the songs *sound* similar when played or *look* alike when transposed onto musical score?

Artists and publishers have long looked towards the courts to get compensation from those whom they believe have profited from plagiarizing one of their original pieces. In most cases, a forensic musicologist is brought in to examine the works and to offer testimony as to their similarities and differences. Through their ability to turn raw auditory materials into legal evidence, forensic musicologists have become the authoritative listeners who determine how triers of fact witness both visually and aurally—the songs offered at trial. Indeed, although much of forensic musicologists' authority is derived from their ability to *hear* the similarities between two songs, a large part of their work is visual in nature. One of their primary tasks is to strip away the various elements of the songs (e.g., tempo, rhythm, harmony, etc.) and reduce them to their melodic 'fingerprints.' The musicologist must then translate the melodies into notes on a scale that can be 'eye witnessed' and visually compared. By doing so, the forensic musicologist not only renders the songs perceptible, but also produces a 'knowledge format' (Ericson, Baranek, and Chan 1991; see also Daston 1988; Valverde 2003) through which they can be understood, experienced, and discussed.

Interestingly, while it now appears to be standard practice, the reliance on forensic musicologists to provide expert testimony is a fairly recent phenomenon. Up until the 1950s, it was not the 'scientific' analysis of the songs, but the general impressions that they left on the untrained ears of the average listener that was used to determine copyright infringement. The main legal question was whether or not an average listener would *hear* the parallels between two works. In this regard, music copyright infringement was approached in much the same way as other copyright lawsuits. For instance, in trademark infringement and deceptive advertising cases involving labels and packaging, the courts have relied on the fictional character of the 'unwary purchaser' as the standard by which the legality of the marketers' actions are assessed (Pettit 2013). The test here is not whether the average consumer was actually duped, but the likelihood that this hypothetical individual would be misled.

Yet, over time, the courts' approach to copying and deception in the worlds of advertising and music would deviate significantly. Although the courts have largely ignored the testimony of psychologists as to how the average consumer might be deceived by misleading advertisements, judges have been more willing to defer to experts in determining substantial similarity between two musical works. Indeed, these lawsuits are rarely, if ever, decided by giving a judge or jury the recordings and asking them if they can hear any major similarities. While the courts have never truly allowed the songs to speak for themselves—the legal counsel would have always made an argument for what the judge and jury should be listening for—forensic musicologists and other experts are now regularly brought in to transform the music into evidence that can be 'objectively' inspected. This move away from hearing to seeing as the primary means for determining copyright infringement appears in keeping with a general bias towards the visual and the 'profound dependence on the written word' found within law and, more generally, Western culture (see Hibbitts 1994, 245).

This paper presents an overview of American¹ music copyright infringement cases to document this shift in how the question of substantial similarity has been approached. We argue that although music experts have played a role in making these cases about the visual similarities between two songs, the courts have also

¹ We have chosen to focus our analysis on American cases because of the sheer number of music copyright infringement lawsuits that have been filed in that country. However, Canada's laws pertaining to music copyright infringement are quite similar to those of the United States. Canada, like the US, confers protection to original works as an essential condition of protection (Sartorio, Caron, and Abramovitch 2013). Like their American counterparts, the Canadian courts must also determine that the plaintiff's work was copied and that the amount copied was a substantial part of that work (Craig and Laroche 2014, 51). Thus, in order to prove that copyright infringement has taken place, it must be demonstrated that the defendant had access to the original piece and that the two works are substantially similar. Lastly, in both Canada and the US, while tests of recognizability are, in theory, directed at the 'lay listener,' the use of expert testimony is fairly common (ibid.).

never been able to deal with the intangible qualities that one hears when listening to music. The courts' inability to objectify and put into words what the average listener perceives helped to create the need for forensic musicologists to serve as experts who could not only reduce a song to its melodic fingerprint, but also translate this material into a visual format that judges and jurors can understand. We conclude by considering some of the implications these cases have for law, music, and expertise in the courtroom. In particular, we suggest that this practice of judging similarity according to how songs appear on paper may help to explain why the courts have chosen to view all forms of musical sampling as a violation of copyright. We begin by providing a brief overview of music copyright laws.

Music Copyright: Musical Works vs. Sound Recordings

According to the US *Copyright Act* (1976), there are two separate copyrightable components of any musical recording: the musical composition (or "musical work") and the sound recording. The musical composition consists of the music of the song—the melody, the harmonies, the arrangement, and the lyrics (if any)—embodied in the sheet music. The author of a musical composition is generally the composer and the lyricist, if there are lyrics. Separate copyright can be secured for the composition and the lyrics. A musical composition can be in the form of a notated copy (e.g., as sheet music or as a "lead sheet") or in a sound recording such as a master recording or a "phonorecord" (e.g., a vinyl record, cassette tape, CD, or a digital file).

The copyright of the sound recording pertains to the actual recording of the song, which results from the fixation of a series of musical, spoken, or other sounds into a tangible medium that can be played back (e.g., vinyl records, cassette tapes, CDs, MP3s, or other digital files). The author of a sound recording is typically the musician who records the song or the record company that produces the recording. It is fairly common for one party to own the copyright of the musical composition, while another party owns the copyright to the recording.²

Thus, under this system, a music CD will have two copyrights for every song: one for the musical composition and another for the actual recording embodied on the disc. Consequently, anyone who copies a CD and then sells or distributes it to others is infringing two copyrights: the musical work copyright and the sound recording copyright. However, when someone makes an unauthorized cover of a song, they are only violating the musical work copyright.

Those wanting to copy a song can obtain a mechanical license, which would then give them the right to record, manufacture, and distribute another copyright

² Canadian copyright law is strikingly similar. Under the Canadian *Copyright Act* (1985), copyright means the sole right to produce, perform or publish a work or a substantial part of it in any form. A musical work is defined in the *Copyright Act* (1985) as "any work of music or musical composition, with or without words, and includes any compilation thereof." Music copyright recognizes three main rights: 1) the right to produce or copy the musical work (such as sheet music); the right to reproduce the musical work including mechanical rights (such as cassette and digital audio reproductions) and synchronization rights (such as music in films, videos, and multimedia productions); and 3) performing rights, which are the rights to perform a work in public (such as a live concert, a recording or any other type of public performance) and the right to communicate to the public by telecommunication (e.g., a broadcast).

holder's musical work. A mechanical license, however, does not give a third party the rights to "sample" a recording. Sampling is the act of taking an excerpt—or a sample—of pre-recorded material within another work and has become an integral part of many musical genres such as hip-hop and techno. In order to legally sample previously recorded material, an artist must obtain the "master rights" from the owner of the master recording, which in many instances, is the recording company.

Yet, in most copyright infringement cases involving sampling, the actual act of copying a sound recording is typically not at the heart of the dispute (McLeod and DiCola 2011, 129). As McLeod and DiCola (129) explain, modern forensic technologies make it fairly easy to identify when samples have been used, even when the sample has been heavily distorted or altered in the remixing process.³ A much more contentious legal question is whether or not the new artistic work is substantially similar to the previously recorded song from which the sample was taken.

As we describe further below, substantial similarity is often evaluated in terms of whether or not an average listener would consider the "allegedly infringing work" and the "allegedly infringed work" to be similar. With respect to sampling, the key legal question is whether a sample-based work is substantially similar to the source it sampled. The songs are said to be substantially similar if "the portion used is either large enough quantitatively or important enough qualitatively in the plaintiff's work." In some instances, the courts have ruled that the sample is simply too small for the law to grant copyright protection and therefore does not meet the *de minimis* threshold. However, if the sample taken is deemed to be qualitatively important to the original piece, then even a short three-second snippet of a recording is enough to be considered a violation of copyright (McLeod and DiCola 2011, 130).

So, even in cases where it is clear that a portion of a previously recorded material has been copied and incorporated into another recording, the courts must still decide whether this new work is similar to the original source of the sample. This is particularly challenging given that many artists transform and re-contextualize their samples so that they no longer sound like the sampled source material (McLeod and DiCola 2011, 130). In the section that follows, we discuss in more detail how the courts have gone about determining whether two works are substantially similar and therefore constitute copyright infringement. While we focus specifically on cases where the plaintiff accuses the defendant of copying their musical idea and using it to create a brand new work, we argue that the approach taken by the courts in these lawsuits has direct implications for how cases involving musical sampling are handled.

Determining Copyright Infringement

There are three facts that plaintiffs must establish in music copyright infringement cases in the United States. When there is no direct proof of copying, the plaintiff

³ For example, in the discovery stage of a trial, a plaintiff can request to see the original files created by music-editing software to show that a copyrighted sound recording was used (McLeod and DiCola 2011, 129).

must first determine that the defendant had "access" to his or her original piece and a reasonable opportunity to view or hear the allegedly copied work. A copyright owner, however, is not required to establish that the defendant's copying was done intentionally. The courts have ruled that "unconscious copying" can occur and that this is actionable so long as access can be shown (see *Bright Tunes Music v. Harrisongs Music* [1976]).

Secondly, the plaintiff must demonstrate "originality" in the copied work. In *Feist Publications Inc. v. Rural Telephone Service Co.* (1991), the US Supreme Court determined that originality has two main components: first, the plaintiff's work must be his or her own creation; second, it must contain sufficient "creativity" to merit protection under the *Copyright Act*. Thus, only expressions that are deemed creative and original to the author can be protected by copyright. The intent here is to create incentives for authors to produce "original works" by providing safeguards that not only prevent their creations from being copied, but also ensure they are given their due credit.

The logic behind existing copyright laws can be traced back to the longstanding tradition of linking originality with creative genius. This, in turn, is rooted in a Romantic notion of authorship that sees the creation of an original work as an autonomous act performed by an independent author. A clear dichotomy exists between creating, on the one hand, and copying, on the other, in which the latter is viewed as inimical to innovation. However, as scholars have pointed out (see Gordon 1990; Litman 1990; Jaszi 1991), this notion of authorship fails to recognize the highly derivative and collaborative nature of the creation process and the ways in which pre-existing works are often borrowed and used to make something brand new. As Litman (1990, 966–67) explains:

The very act of authorship in any medium is more akin to translation and recombination than it is to creating Aphrodite from the foam of the sea. Composers recombine sound they have heard before; playwrights base their characters on bits and pieces drawn from real human beings and other playwrights' characters... cinematographers, actors, choreographers, architects, and sculptors all engage in the process of adapting, transforming, and recombining what is already "out there" in some form. This is not parasitism: it is the essence of authorship.

Copyright law rarely acknowledges these "serial collaborations" resulting from successive elaborations of an idea or text by a series of artists as original works (Jaszi 1991, 304). Hip-hop is a prime example of a musical genre where elaboration and borrowing—in the form of sampling—are integral to the art form. The courts, however, have chosen not to recognize this practice as a form of "artistic creation" that can generate new and transformative pieces, opting instead to treat most types of sampling—no matter how small or how altered the sounds—as copyright infringement (Arewa 2006, 550).

Although the courts have declined to specifically define what constitutes an "original" work, the originality of a song tends to be found in the melody, first and foremost, and to a lesser extent, in the harmony and rhythm (Arewa 2006). As discussed further below, the melody—particularly in pop music—is what the general public recognizes and is therefore the part of the song that has the biggest

commercial value. Plaintiffs often claim the melody to be their own original invention deserving of protection from unauthorized copying. Conversely, in several music copyright cases (e.g., *Tisi v. Patrick* 2000), the courts have affirmed that certain musical elements such as key, meter, and tempo do not meet the threshold of protectable expression.

Lastly, the courts must deem the two works to be "substantially similar" in order to reach a conclusion that copyright infringement has occurred. Here, similarity is more a matter of quality than quantity. As the courts in *Baxter v. MCA Inc.* (1987) ruled, "[e]ven 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." Of course, where limited copying is involved, a balance must be struck between an inference of copying and the possibility of mere coincidence. We discuss how the courts have approached the question of "substantial similarity" in the section below.

Hearing Substantial Similarities: It's All in the Melody

When deciding whether or not two recorded works are "substantially similar," the courts have placed the greatest attention on melody. From very early on, the courts have taken the position that the melody is what makes a song unique and recognizable, and that penning this "new air" requires "genius" on the part of the author. In *Jollie v. Jaques* (1850), the court reasoned:

The new composition of a new air or melody is entitled to protection. ... If the new air be substantially the same as the old, it is no doubt a piracy; and the adaptation of it, either by changing it to a dance, or by transferring it from one instrument to another, if the ear detects the same air in the new arrangement, will not relieve it from the penalty; and the addition of variations makes no difference. ... The original air requires genius for its construction; but a mere mechanic in music, it is said, can make the adaptation or accompaniment.

A clear distinction is made between the musician with the requisite creativity to produce an original melody and the "mere mechanic in music" who adapts an existing tune and calls it their own. And it is the musician's genius, manifested through the song's melody, that the courts believe is deserving of copyright protection.

The melody was also thought to be so distinctive and recognizable that, despite changes in style, tempo, or instrumentation, an ordinary citizen would know it was plagiarized from simply listening to the works in question. This idea that one can hear melodic resemblances is affirmed in a number of early music copyright infringement cases. More specifically, the courts have adopted a variation of the "reasonable person" test by suggesting that the untrained ear of the average listener be used as the gauge to determine substantial similarity. Two musical works would be considered substantially similar if the average person could not tell the melodies apart or, conversely, if only an expert could spot the differences. In *Hein v. Harris* (1923), the courts awarded judgement to the plaintiff on the grounds that, while the quantity of the notes of the melody was not precisely similar, when "played in succession it would take the ear of a person skilled in music to distinguish them."

Because of this average listener standard, judges took great efforts to prevent experts from offering their opinions as to whether the songs were substantially similar. Judges were not only concerned that experts could hear similarities or differences that the untrained listener could not, but that they would also approach the music in a way that was completely different from the average person. In particular, the courts feared that experts would determine substantial similarity by using their eyes and not their ears. This point is made explicit in *Carew v. R.K.O. Radio Pictures* (1942):

On the question of infringement, I think that the plaintiff's case must fall because of the admission of both her experts that the two melodies, if played on the piano, or the two songs, if sung by any person, would not convey identity to the average listener. The courts have said that, ultimately, it is not the dissection to which a musical composition might be submitted under the microscopic eye of a musician which is the criterion of similarity but the impression which the pirated song or phrase would carry to the average ear. ... Certainly, before we find plagiarism in a song, we should be able to find some substantial part in it, which can be traced to and discerned by the ordinary listener in the composition, which it is claimed to infringe.

The courts would continue to privilege the "untrained ear" of the average listener over the "microscopic eye" of the musician in many cases that followed.

In *Arnstein v. Porter* (1946), one of the key legal questions explored was whether or not jurors were properly qualified to determine substantial similarity between two compositions. The court ruled that average listeners were capable of hearing melodic similarities and differences and that this type of "lay listening" was central in these cases. For the majority, Judge Frank asserted, "[t]he proper criterion... is not an analytic or other comparison of these respective musical compositions as they appear on paper or in the judgment of trained musicians." This decision rested on the court's understanding of what makes music "popular" and the desire to protect the profits that musicians earn from the songs they compose. The court reasoned:

The plaintiff's legally protected interest is not, as such, his reputation as a musician but his interest in the potential financial returns from his compositions, which derive from the lay public's approbation of his efforts. The question, therefore, is whether the defendant took from plaintiff's works so much of what is pleasing to the ears of lay listeners, which comprise the audience for whom such popular music is composed, the defendant wrongfully appropriated something, which belongs to the plaintiff. Surely, then, we have an issue of fact, which a jury is peculiarly fitted to determine.

The paying audience's experience of pleasure is said to be aural in nature and comes from the impressions that the composition leaves upon them. These listening practices are set in contrast to the very formal and highly visual analyses performed by music experts. As the judge in *Arnstein v. Broadcast Music* (1943) explains, "[t]echnical analysis is not the proper approach to a solution; it must be more ingenuous, more like that of a spectator, who would rely upon the complex of his [*sic.*] impression."

Rather than relying on an expert witness to dissect the musical works to see if similarities exist, this decision was to be left to the ears of the "lay listener" who makes up the primary audience of popular music. Although experts could be called to testify, they could only speak to how a musical work would be received by the general public. The decision to limit the scope of their testimony was grounded in the belief that music experts were anything but neutral and that they would find the similarities or differences that they were paid to look for. Another reason for excluding expert analyses had to do with the courts' rather negative opinion of popular music and its audience. In *Arnstein v. Porter* (1946), the court stated:

The impression made on the refined ears of musical experts or their views as to the musical excellence of plaintiff's works are utterly immaterial on this issue of misappropriation; for the views of such persons are caviar to the general—and plaintiff's and defendant's compositions are not caviar.

The refined ears of music experts allowed them to hear songs in ways that the average listener could not. And since popular music was directed at a common audience, it seemed appropriate that it would be lay listeners—and not trained experts—who determine whether substantial similarities between two works exist.

Not everyone agreed that the professional opinion of the music expert be left out of these cases. In *Arnstein v. Porter* (1946), Judge Clark offered a dissenting view that the courts could not rely solely on one's impressions of the music to make these determinations. He argued:

Of course, sound is important in a case of this kind, but it is not so important as to falsify what the eye reports and mind teaches. Music is a matter of the intellect as well as the emotions; that is why eminent musical scholars insist upon the employment of the intellectual faculties for a just appreciation of music. Consequently, I do not think we should abolish the use of the intellect here even if we could.

Although he accepted the idea that music can be sensorially experienced, the judge did not believe that consumers of popular music were passive dupes who mindlessly attended to songs on a purely physical or emotional level. For Judge Clark, the differences in the way that music experts and lay listeners appreciate music were not as pronounced as the courts made them out to be. He argued that the average citizen was just as likely to systematically evaluate a song and its many components. Yet, despite these objections, the courts continued to hold the view that the proper measure for deciding copyright infringement should be the "average ear" of the "average listener." However, as discussed further below, this average listener standard proved difficult to apply in practice.

Judges and Jurors as Lay Listeners

Within the confines of the courtroom, subjective interpretations of music are discouraged, and this happens not in spite of the reasonable listener model, but because of it. As Keyes (2004) argues, this model is based on the commonly used "reasonable person" test, which is a way of establishing a social norm against which the facts of a case can be tried. In music copyright cases, triers of fact must take into

account how a reasonable listener would aurally perceive the songs in question. So, the individual in the jury box or on the bench is not being called upon to make their own assessments about the music, but asked to consider what they think a "reasonable person" would hear. Fletcher (1991) notes that triers of fact are forced to "suppress their own perception... and to listen as they suppose someone else might." In order to do so, judges and jurors must assume that there is a "common" or "objective" way to listen to music that may be completely outside of their own auditory experience.

However, with no practical way of knowing how the average person listens to music, triers of fact had to come up with their own methodologies for making this determination. Some judges pointed to their own lack of musical knowledge and used this to claim the status of lay listener. This, in turn, allowed them to listen to the songs and rely on their own subjective interpretations to reach a verdict. For example, in *Haas v. Feist* (1916), the presiding judge used his own "ear" and "musical sense" to determine the similarities between two compositions. The judge reasoned:

I rely upon such musical sense as I have... between the two choruses in question there is a parallelism, which seems to my ear to pass the bounds of mere accident. If the choruses be transposed into the same key and played in the same time, their similarities become at once apparent. In certain of the bars, only a trained ear can distinguish them, and their form and rhythm is quite the same.

Although he had to imagine what the chorus would sound like if it was moved into another key or played at a different tempo, the decision rested on the supposed parallels *heard* by the judge. The judge also reaffirmed the average listener test by claiming that certain bars were so similar in form and rhythm that only a trained ear could tell them apart.

However, the ear of the average listener was not always used as the basis for determining substantial similarity. Despite most judges having little to no musical training, it was not uncommon to come across one who did have some understanding of music theory and was not afraid to use it to decide a case. In 1923, for instance, Judge Learned Hand—who happened to be an accomplished songwriter—delivered his verdict as follows:

I have no difficulty in finding that the defendant's song is an infringement of the complainant's. They are written in the same measure, called "common time" and each is in the minor mode... If the melody of the defendant's chorus be transposed into the key of three flats, it exhibits an almost exact reproduction of the complainant's melody. Each consists of 17 bars, of which the first, second, third, fourth, and fifth are alike, almost note for note. (*Hein v. Harris* 1923)

Far from a simple comparison as to whether or not two works sounded alike, Judge Hand undertook a sophisticated and highly visual analysis of the written music that required an above average knowledge of music. Indeed, in many cases that followed, lay listening was being augmented (and, in some instances, replaced) by visual inspection of the songs. The analytical focus shifted away from how people listened to music to the music itself.

Objectifying Music

Because of the difficulty in trying to establish what an average person would aurally perceive, judges were willing to listen to the testimony offered by expert witnesses. However, rather than testifying as to what the lay listener might hear, these experts highlighted the parts of the song that they believed the judge or juror should focus on in order to determine whether the works were substantially similar. Experts were actively involved in training triers of fact to hear the songs in a particular way and to identify certain peculiarities in the music. As a result, the listening performed by the judge or juror was no longer that of the average person, but one that was highly technical and specialized, requiring a tremendous amount of work, skill, and guidance.

So although they refrain from offering their opinions as to whether one song is a copy of another, the experts still influence these cases by shaping how triers of fact hear the music. One way that experts do this is by removing all of the extraneous musical components from the songs and reducing them to their melodies. The expert may also choose to transpose the melodies so they can be played and compared in the same key or at the same tempo. Consequently, judges and jurors end up hearing a heavily redacted version of the song, stripped of rhythm, harmony, instrumentation, and other sonic qualities that give a song as much—if not more of its unique identity and value.

In addition to reducing a song to its melodic essence, experts typically translate the sounds into a visual text to show the similarities or differences between two works. Despite the early attempts to listen for similarities, a variety of visual aids made their way into the courtroom. In *Allen v. Walt Disney* (1941), lawyers for the plaintiffs brought in musicians to act as witnesses who not only played various extracts of the works on a piano, but also supplemented this demonstration with charts showing the musical conformation between the two compositions. Lawyers in *Jones v. Supreme Music* (1951) took a similar approach and brought in experts to prove—both aurally and visually—that the defendant's song was a copy of the plaintiff's composition. In this case, the plaintiff's witness played the two phonograph disks for the court to hear. The witness then played the portions of the songs in question on a piano and transcribed the melodies into musical scores that were analyzed note for note for similarities and differences.

Unlike in *Allen v. Walt Disney* (1941), however, the plaintiff's experts were unable to convince the judge to hear the alleged resemblances. The judge ruled:

Plaintiff contended at the trial and also contends in her brief that similarity is to be determined by the sound to the average ear, and not by a comparison of the notes in the respective compositions. As a matter of fact, the case was tried along both lines. The songs were played in Court both on the piano and by phonograph disks, and the songs were analyzed bar by bar and comparisons made. ... To my untutored ear the similarity was not so great that I could say that one was a copy of the other or that one was stolen from the other.

The judge ignored the analyses of the expert and, instead, relied on the average listener standard by using his own "untutored ear" to determine infringement.

Although the witness was unable to convince the judge that the plaintiff's work was copied, this case would foreshadow the increasing role that visual exhibits would play in future. Experts continued to capitalize on longstanding cultural assumptions about the deceptive and subjective nature of sound compared with the reliable and objective nature of sight by using visual aids that encouraged judges and jurors to *see* the parallels with their own two eyes.

The idea that we can objectively assess the substantial similarities between two works became more pronounced in the middle of the twentieth century. Around the 1950s, the courts began adopting the language of forensic science to talk about the identity of a song. In particular, we begin seeing melody referred to as the "fingerprints" of the composition. In *Northern Music v. King Record Distribution* (1952), Judge Ryan explained:

Being in the public domain for so long neither rhythm nor harmony can itself be the subject of copyright. It is in the melody of the composition—or the arrangement of notes or tones that originality must be found. It is the arrangement or succession of musical notes, which are the fingerprints of the composition, and establish its identity.

Since creating something new in terms of rhythm and harmony was virtually impossible, the only component of a musical work that could be deemed "original" and give a song its unique identity was the melody. And, in much the same way that our fingerprints leave a trace of ourselves on the things we touch, a song's melody was viewed as an extension of the composer. Yet only those composers who made a mark by creating songs and melodies that left "an impression of newness or novelty" were truly deserving of copyright protection (*Northern Music v. King Record Distribution* [1952]).

Over the years, this metaphor of a "musical fingerprint" has been taken more literally as experts began reinventing their role in music copyright cases. Like fingerprint examiners or DNA analysts, music experts were now engaging in a type of forensic work where identity was largely determined by lining up pieces of evidence for possible matches. In fact, a whole body of experts began identifying themselves as "forensic musicologists." Through this discourse of forensic analysis, songs became objects of scientific investigation, which, like a fingerprint or a DNA band, could be rendered visible and analyzed "objectively." In addition to being viewed as a mark of the composer, the melody was now seen as the fingerprint of the song that distinguished it from others. For example, in *Gaste v. Morris Kaiserman* (1988), the plaintiff's expert not only testified that there were a number of common musical phrases between the works, but also pointed to what he described as a "unique musical fingerprint"—an evaded resolution (or a "deceptive cadence")—that occurred in the same place in the two songs.

The Expert as Translator

Music experts engage in a tremendous amount of work to train the judge or jury to see and hear, for themselves, the similarities or differences that exist between two works. In order to do this, experts must convert the songs into different forms of evidence that are objectively knowable and closed to multiple interpretations.

Yet, to be an effective witness, experts cannot make it appear as though they have somehow changed the essence or identity of the song. Instead, the expert must be seen as a "translator" who simply uses different tools to allow the music to speak for itself. From musical notations to courtroom demonstrations, the testimony provided by the expert can be thought of as a network composed of various objects that have been tactically arranged (Valverde 2003; but see also Cole 1998, 2002) to convince triers of fact that the two songs are the same or different. Through various acts of translation, experts distil a song into its melodic essence, transpose it into a visual form, and turn it into an object of scientific analysis. Although the versions of the song that are offered at trial have undergone numerous transformations and are several iterations removed from the original artefact, the evidence presented in the courtroom must be viewed as different representations of the same musical object. Judges and jurors must be made to see the multiple forms of evidence as different representations of a single, stable musical essence. Whether they see these evidentiary objects as being one in the same is not a natural outcome, but the result of the coordinating efforts of the expert.

Expert testimony played a key role in *Bright Tunes Music v. Harrisongs Music* (1976). In this famous case, the former Beatle, George Harrison, was found liable for copyright infringement after the experts called by the plaintiffs were able to show the similarities between his song, "My Sweet Lord," and The Chiffons' classic, "He's so Fine." These melodic similarities were visually presented to the court as notes on a scale and were even included in a footnote in the written judgment. More importantly, in addition to highlighting the uncanny resemblances between several bars, the court pointed to a distinctive grace note⁴ that appeared in the same place in both songs. The court asserted that the placement of the grace notes in exactly the same location was more than sheer coincidence. In the same way that teachers suspect students of cheating when they get the same questions right and wrong on an exam, the court reasoned that the presence of the grace note in Harrison's song was akin to copying a mistake.

The grace note figured prominently in this case and was the musical fingerprint that the courts used to argue that one song had to have been lifted from the other.⁵ In his decision, Judge Owen attributed the slight variations between the two works to the different lyrics and number of syllables that were used, which "necessitated modest alterations in the repetitions or the places of beginning of a phrase" (*Bright Tunes Music v. Harrisongs Music* 1976). Yet, in order to get him to reach this conclusion, the plaintiff's experts had to first convince the judge that none of these differences had any impact on the "essential musical kernel" of the song. The experts had to persuade the judge that, despite these various alterations,

⁴ A grace note is a type of musical ornamentation in which a note is played in short duration before the sounding of a relatively longer-lasting note that immediately follows it (often a tone or semitone above or below the grace note).

⁵ Interestingly, however, this grace note was only found in the first recording of "My Sweet Lord" put out by George Harrison's friend and band mate, Billy Preston. The grace note was not actually included in the Harrison recording or in its musical score, which, coincidentally, was transcribed by a professional score writer since Harrison was musically illiterate.

a song could be reduced down to a recognizable essence, which, in this case, was "unconsciously" copied by Harrison.

By allowing musical experts to testify in this way, the courts drastically limited how they could approach the issue of copyright infringement. Indeed, by turning this into a battle of expert melodic analyses, the courts effectively ignored other elements of a song that make it unique and influence its commercial appeal. More specifically, this approach discounts the role that the performer plays in popular music. Although Judge Owen makes note of the fact that Harrison "regards his song as that which he sings at the particular moment he is signing it and not something that is written on a piece of paper" (*Bright Tunes Music v. Harrisongs Music* 1976), this observation is given very little weight. The judge also ignored the fact that Harrison was musically illiterate and therefore did not write, read, or play music using musical scores.

Falling on Deaf Ears

Although the courts continue to maintain "average listening" as the standard for assessing substantial similarity, musicologists and other music experts have played a tremendous role in determining the outcome of these cases by shaping how judges and jurors hear the works in question. The fact that the courts have sought expert guidance may not be all that surprising given the difficulty in trying to operationalize this notion of "average listening." Although, in theory, it would seem ideal to employ a reasonable listener test, the subjectivity inherent in the act of listening makes this largely unworkable in practice. The courts are simply unable to deal with things that cannot be rendered visible or translated into text.

North American law has both reflected and actively contributed to our cultural bias towards the visual (Hibbitts 1994). While the courtroom is a noisy place filled with the voices of judges and lawyers, seeing has been given priority over the other senses. Eyewitnesses testifying as to what they saw are considered more credible than "ear-witnesses" who testify as to what they have heard. Triers of fact generally give greater weight to visual evidence than to auditory exhibits. Lawyers spend a great deal of energy making testimony and arguments visible in writing. Visible injuries have been historically been more compensable than "invisible" emotional distress in negligence cases, while, in civil rights law, visible minorities have received more attention and protection than other groups (such as the deaf) whose identities are less visually defined (Hibbitts 1994). Likewise, visible claims like written wills and contracts have been more readily enforced than unwritten declarations and agreements. This ocular-centrism can also be found in our heavy reliance on visual metaphors to understand law: Arguments are evaluated "in the eye of the law"; high courts "review" the decisions made by lower courts; and judges and lawyers are expected to adhere to "black letter" rules (Hibbitts 1994).

Law's preference for the visual is very much in keeping with our broader cultural fascination with images and the value attached to the power of sight. Since the Age of Enlightenment, we have placed vision at the top of the hierarchy of the senses. According to Aristotle, sight is the most developed, clearest, and discerning sense, the one most able to bring to light many differences between things. Seeing is also associated with scientific objectivity. Indeed, by looking, we are able to "objectify" and turn what is looked at into a "thing" (Hibbitts 1994, 257). And, unlike hearing or touching, seeing can be done from a distance without the burden of emotions or attitudes that might be encouraged by physical proximity. As Hibbitts (293) notes, the seer readily assumes an "uninvolved, uncommitted, indifferent and literally voyeuristic stance" and, as such, is unaffected by what is perceived.

Having emerged within this highly visualist culture, it is no surprise that North American law shares many of the same values of abstraction, disengagement, and objectivity traditionally associated with the act of seeing. Like scientists operating in a laboratory, judges are expected to reach their verdicts by carefully inspecting the evidence before them in a detached and unemotional manner. Beyond the broader cultural bias towards the visual, law's ocularcentrism may also be due, in part, to our society's dependence on the written word. As Hibbitts explains:

The written word is verbal, but in critical respects it is a visual medium as well. To appreciate it or to manipulate it (braille aside), we need to see it. As a society puts more of its essential information in written form, its members become more focused on the visual sense, which enables them to retrieve that information by reading. Even for those who cannot read, the visual surface becomes a primary source of meaning as writers recognize that pictures are the most convenient permanent substitutes for written words. For readers and non-readers alike, seeing becomes knowing. Because the visual understanding of texts or images does not necessarily require a viewer to hear, touch, smell or taste, those senses may moreover become secondary to seeing as cultural and individual resources. When a society becomes sufficiently saturated with writings and other visual materials, its members may even feel that they can afford to deprecate or condemn the other senses as culturally superfluous capacities. (245)

North American legal thought has been primarily set down and spread through writing, which, in turn, has encouraged law's conformity to visual values. Hibbitts further suggests that "American legal thinkers who have historically depended on writing for so much of their professional inspiration, information, and communication may have been incidentally led by writing to endorse abstraction, disengagement, and other such visual norms" (299).

With the advent of printing technologies and rising literacy rates, the oral and aural traditions found within law have slowly given way to the primacy of the written word. Law's privileging of text is quite evident in music copyright laws, which place greater value on the written composition than the musical performance. For a long time, only those who translated their music into score were able to obtain copyright protection for their work. As Théberge (2004, 140) writes:

[t]he origins of musical copyright law are rooted in a particular, restrictive notion of the musical work (defined as a combination of melody and harmony) and its fixation in graphic form (the musical score). Thus, from the outset, copyright law valorized composition (and by extension, the composer) over performance as a form of musical practice... and, as a result, many forms of music not based in notation—including various types of folk music, jazz, and indigenous people's music—have not been well served by copyright.

Throughout the early history of jazz and blues music, it was not always the original composer of a song who secured the copyrights, but the person who transcribed and published the piece as a musical score. Indeed, prior to the advent of sound recordings, composers had to submit a written "lead sheet" containing the song's melody in order to register and deposit their work with the Copyright Office. So, from the very outset, the system of copyright imposed a framework in which a visual analysis of melody was almost inevitable.

By privileging the musical text, existing copyright laws continue to encourage the courts to engage in a visual analysis of melody when determining substantial similarities between two works. In addition to being the most recognizable and commercially valuable component of a musical work, the melody is also the part of a song that is most easily visualized. With minimal instruction, it is fairly easy for judges and jurors to visually compare the placement of notes on two separate musical scales. Although the degree of similarity needed to constitute copyright infringement is still open for debate, the process of visual inspection as a means to determine whether or not two songs are similar is straightforward and intuitive for those who live within a highly visualist culture. While all of the senses can make distinctions between different types of stimuli, vision is thought to be the most effective at identifying fine and precise peculiarities (Hibbitts 1994, 295). More importantly, we assume this method of assessment is verifiable: we can all look at the musical scores and point to the places where the melodies appear to be the same. Like the process of comparing fingerprints, it is presumed that we can simply see that the two musical scores are a "match."

However, by focusing on the melody and visually analyzing the similarities between two musical scores, we lose sight of the other components of a song that cannot easily be translated into words or text. More specifically, we ignore the various sonic qualities of a musical performance (e.g., style, timbre, instrumentation, etc.) that set two works apart, but which cannot easily be made visible. This approach decontextualizes the melody from the larger song. As Arewa (2006, 591) explains:

The typical focus on melody or specific notes in a melodic line obscures the relational aspects of music harmonically. Notes and pitches do not necessarily have a fixed meaning or significance, but are highly context dependent. The limited musical elements considered by courts prevent musical forms such as hip-hop from being viewed in their entirety. Rather, specific features of such music, typically relating largely to melody, are extracted and used to determine infringement. Even within existing standards, this represents a distorted lens through which to evaluate hip-hop music.

A close visual inspection of melody prevents the courts from appreciating music in its totality and the multiple ways in which a song can be experienced.

Getting With the Times

Several scholars (see Arewa 2006; Théberge 2004) have argued that existing copyright laws are horribly out-dated and fail to take into account the changing nature of music. Théberge (2004) claims that current copyright laws are rooted in highly antiquated notions of originality, creativity, and ownership, which largely ignore the ways in which artists borrow musical ideas to produce brand new works. One solution that is often raised is for the courts to adopt a legal framework that does away with the borrowing versus creating dichotomy, and better accommodates varying aesthetics of artistic production that includes those that base their creations on existing materials (Arewa 2006).

Another alternative is for artists to employ the "fair use" defence to shield themselves against copyright liability. Under existing US copyright laws, parties are permitted to use copyrighted content so long as it is done in a way that is "transformative" and does not cause harm to the market of the original work. In order to determine whether the use is transformative, the courts must consider "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" (Campbell v. Acuff-Rose Music, Inc. 1994).⁶ Parodies are one form of expression that has been recognized as a fair use. In Campbell v. Acuff-Rose Music, Inc. (1994), the court defined parody as "[w]hen one artist, for comic effect or social commentary, closely imitates the style of another artist and in so doing creates a new artwork that makes ridiculous the style and expression of the original." However, for a parody to be deemed a "fair use," the work must be seen as transformative. The more transformative the new work, the less weight that is given to other factors used to assess fair use such as the commercial nature of the defendant's piece.

Although artists have been successful at using this fair use defence, the court's ocularcentrism has greatly limited how it understands parody and the notion of transformation more generally. In *Campbell v. Acuff-Rose Music, Inc.* (1994), the US Supreme Court held that the rap group 2 Live Crew's commercial parody of Roy Orbison's rock ballad "Oh Pretty Woman" was a fair use within the meaning of paragraph 107 of the *Copyright Act of 1976*. The majority found that the "amount and substantiality" of the portion used by 2 Live Crew was reasonable in relation to the band's purpose in creating a parody of the Orbison song. More importantly, the Supreme Court claimed that 2 Live Crew's lyrics departed markedly from Orbison's lyrics, producing a new and completely distinctive work.

That the Supreme Court was able to see 2 Live Crew's song as a new work may be due, in part, to law's privileging of text and its literary understanding of parody. While acknowledging some musical parallels, it was the Court's focus on lyrics that led them to conclude that the two works were different. By pointing to the lyrics and reading it as a narrative, the Court was able to claim that 2 Live Crew's song was a satirical spoof of the Orbison classic. Justice Souter even attached the lyrics of both songs as appendices to his majority opinion for the Court. Thus, much like the musical transcriptions included as footnotes in the judge's decision in the George Harrison case described earlier, these lyrics provide the Court with "objective proof" that helps to explain and justify the verdict.

⁶ In Canada, the exception to copyright infringement is covered under the "fair dealing" provision, which is more limited in its categories of exceptions—research, private study, education, parody or satire—compared with the more open-ended concept of "fair use" in the United States (Sartorio, Caron and Abramovitch 2013).

In this case, the purpose of the text was not to show the similarities between two works, but their differences.

However, while the courts are capable of looking at the lyrics of a song to conclude that a new work has been produced, they seem unable to recognize that sonic variations can transform a pre-existing work into something new. Although they acknowledge that much of their work relies on musical sampling, many hip-hop artists, remixers, and turntablists argue that their songs, remixes, and mash-ups are original creations. Even when a sample is relatively unaltered and still recognizable as an earlier work, the various musical qualities that these artists bring to the table—the "soul" or "spirit" that comes through their performance, the beats and rhythms that they lay underneath the original track to generate a particular groove, the different emotions or feelings they are able to evoke in the listener through changes in instrumentation or tempo, etc.—all contribute to producing something original and transformative. Yet, instead of looking for these differences, the courts have been preoccupied with finding the substantial similarities between two songs.

Scholars such as Théberge (2004) and Arewa (2006) have argued that copyright laws need to be applied in a manner that protects original works from being copied without stifling the creation of new works. One way this can be achieved is by having the courts move away from a Romantic understanding of creativity and acknowledge that musical borrowing is a common practice in the production of new music. As Arewa (2006, 547) argues,

[the] pervasive nature of borrowing in music suggests that more careful consideration needs to be given to the extent to which copying and borrowing have been, and can be, a source of innovation within music. Existing copyright frameworks need to recognize and incorporate musical borrowing by developing commercial practices and liability rule-based legal structures for music that uses existing works in its creation.

Although we agree with this position, we argue that law's ocularcentrism and its privileging of text prevents the courts from acknowledging that something original can be made from an already existing musical work. Even if law does recognize borrowing and sampling as a legitimate means of creative production, it is ill equipped to sense the auditory variations found in music. Judges seem adept at seeing the melodic similarities as they appear on paper; yet, they are unable to experience music in any other way. Law's preference to visualize melody precludes this more phenomenological appreciation. To fully appreciate a song requires careful consideration of context (Arewa 2006). From the broader social or political milieu in which it is written and played to the rhythmic and harmonic structures that surround the lyrics and melody, all of these elements shape a song's meaning to the listener. However, instead of examining a song in its entirety, the courts have tended to decontextualize the melody from these broader factors.

The written tradition of law also demands that the courts justify and rationalize their decisions through text. A judge would have great difficulty putting into words why two songs that *look* similar on paper could *sound* very different or how a mash-up that uses samples from pre-existing works can still create a brand new *feel* for the audience. These highly subjective decisions about the nature of a song cannot easily be translated into something that can be seen and objectively verified. Law simply lacks the capacity to demonstrate that two songs are the same, yet different, simultaneously. As such, any attempt made by an artist to use the "fair use" defence on the grounds that their new work is "transformative" is doomed to fail unless these transformations can be rendered visible.

Not surprisingly, many judges have tried to avoid making decisions about whether a song that sounds similar to a pre-existing work is transformative or derivative in nature. Some courts have simply adopted a hardline position that any artist who uses a sample without permission is in violation of copyright laws. In *Bridgeport Music, Inc. v. Dimension Films* (2004), the defendants sampled a single chord from George Clinton's tune "Get off your ass and jam," changed the pitch, and looped this sound in the background. In its decision, the Sixth Circuit created a "bright-line" rule that any sampling, no matter how minimal or undetectable, is a copyright infringement (McLeod and DiCola 2011, 141). As a warning to other artists, the Court stated: "Get a license or do not sample. We do not see this as stifling creativity in any significant way."

The kinds of experts called on to testify in these cases have also played a crucial role in steering the courts in this direction. While musicologists have entered the courtroom to challenge Romantic notions of creativity and to raise doubts about the "originality" of a supposedly copied melody, most are asked to provide an expert analysis of the songs in question. Musicologists are particularly well suited for this task and have been able to gain a virtual monopoly as experts in these cases. In addition to their knowledge of music, musicologists are able to speak the language of music and translate this knowledge into a format that law can understand. The testimony provided by musicologists gives the courts a way to objectively listen to and talk about music. In this way, law and experts work to co-constitute a particular understanding of music that is compatible with the existing system of rules pertaining to the enforcement of copyright.

Conclusions

Over the past century, we have witnessed dramatic changes in the way that US courts have approached the question of substantial similarity in music copyright lawsuits. Instead of asking whether or not an average listener would ingenuously recognize two songs as sounding the same, the courts now rely on a more formal and highly visual analysis of musical score to reach a verdict. This has meant a much greater role for musicologists and the type of evidence they provide. These experts have been reluctant to testify as to what an average person would hear and have chosen, instead, to offer a forensic examination of the musical works. This preference is likely due to their training. The field of musicology has a long tradition of studying the content of a musical score. In contrast, research on public perceptions of music has been, and continues to be, an especially marginalized area of study within this discipline. It is understandable, then, that musicologists would approach the question of substantial similarity in this formalistic way.

Although individuals with musical training seem like the obvious choice to serve as expert witnesses, these cases might have been decided differently had lawyers turned to psychologists or neuroscientists, who may be more inclined to

speak about the way that listeners perceive and respond to music. Rather, the heavy involvement of musicologists has helped to affirm a dominant framework within law that privileges the written melody as the defining feature of a song and the product of a musician's creative genius that deserves copyright protection. The value of a musical work is reduced to its melody as other aspects of a song that may also make it valuable, original, or unique (e.g., the sonic, improvisational, technical, or emotive qualities of the performance, etc.) are ignored. In the case of artists like George Harrison, who are musically illiterate, the emphasis placed on musical notation translates the music into a textual form with which many do not necessarily engage. Harrison could not read music and had to hire a professional musician to transcribe his songs into scores. More importantly, by only looking at what can be translated into a visual text, it becomes difficult to recognize the many intangible and unquantifiable elements that artists bring to a recording that make it their own.

Although musicologists have played a key role in making these cases about the visual similarities between two songs, the courts are unable to truly "hear" music. Ironically, the court's ocularcentrism demands that auditory evidence be made visible in order for it to be heard. This text-fetishism (Taruskin 1992) means that those who can speak the language of music and translate it into a textual format have tremendous currency in copyright infringement cases. Conversely, any legal arguments that are based on the phenomenological qualities of the nature of music are likely to fall on deaf ears. Thus, while many scholars have criticized copyright laws for reaffirming a Romantic notion of authorship that ignores the collaborative labour of artists, a much larger concern is law's inability to recognize all of the other elements that artists bring to a song that make it original or innovative but which cannot easily be put into words or written on paper.

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