Harmonizing Music Theory and Music Law

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ABSTRACT: Those litigating and adjudicating music copyright disputes find themselves at the intersection of two complex fields: U.S. copyright law and music theory. While the attorneys and judges typically have at least some experience with the former, neither they nor the jurors typically have formal training in or experience with the latter. As a result, legal opinions purporting to incorporate musical concepts sometimes fail to do so accurately, resulting in decisions that are inconsistent with copyright law and policy.

This Article seeks to harmonize U.S. copyright law with relevant principles of music theory. It begins with an accessible primer on basic principles of music theory, with a focus on melody and rhythm. It then summarizes music copyright jurisprudence, and it identifies ways in which the latter seeks to incorporate principles of music theory.

This Article demonstrates that U.S. music copyright jurisprudence is plagued with a fundamental misunderstanding of melody and rhythm as those terms are understood within the field of music. Legal precedents generally equate melody with pitch sequence and rhythm with meter and time signature. Moreover, they give primacy in their analyses to melody—as they define it—to the exclusion of rhythm. Yet music theorists define melody as consisting of pitch and rhythm combined, and their research demonstrates that rhythmic design plays a greater role in creating distinct melodies than pitch standing alone. The result is a legal jurisprudence that is both over- and underinclusive in finding instances of copyright protection and infringement. Using both historical and contemporary musical examples, this Article concludes that courts should redefine and re-weight these two musical concepts in order to arrive at just

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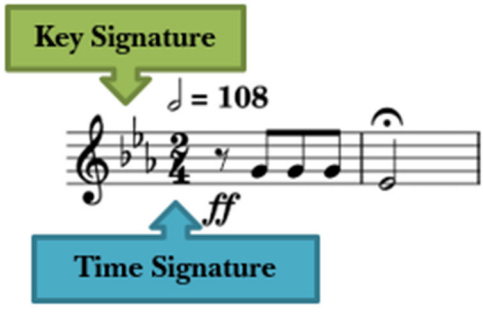
results in music copyright disputes that are consistent with the balancing of policies that form the foundation of U.S. copyright law.

INTRODUCTION



The opening four-note motive[1] of Beethoven's *Fifth Symphony*—"da, da, da, *dum!*"—is so distinctive[2] that it is universally recognized by listeners worldwide.[3] Consisting of three notes identical in pitch[4] and duration[5] repeated in quick succession[6] followed by a sustained note[7] played a major third lower,[8] legal precedents assume that if Beethoven were alive today, that sequence of four notes, standing alone, would be sufficiently original under modern U.S. copyright laws to qualify for legal protection.[9] Moreover, it seems almost certain that if the *Fifth Symphony* were still protected by copyright today, Beethoven and his heirs would likely have become rather wealthy from the royalties generated not only from the entire piece, but also from the licensing fees generated by ringtones and other uses of that opening four-note sequence.[10]

Although the *Fifth Symphony* and its opening motive are now in the public domain[11] and thus are not likely to make their way directly into a modern-day

1. In music, "[a] motive [(or motif) refers to] the smallest identifiable musical idea" that forms the cell or building block of a song, and "can [refer to] a pitch pattern, a rhythmic pattern, or both." STEFAN KOSTKA, DOROTHY PAYNE & BYRON ALMÉN, TONAL HARMONY WITH AN INTRODUCTION TO TWENTIETH-CENTURY MUSIC 150 (7th ed. 2013); KRISTINE FORNEY, ANDREW DELL'ANTONIO & JOSEPH MACHLIS, THE ENJOYMENT OF MUSIC 27–28 (Maribeth Payne & Chris Freitag eds., 12th ed. 2015); *accord* Smith v. Jackson, 84 F.3d 1213, 1216 n.1 (9th Cir. 1996), *overruled by* Skidmore v. Zeppelin, 952 F.3d 1051 (9th Cir. 2020) (en banc).

2. *See* MATTHEW GUERRIERI, THE FIRST FOUR NOTES: BEETHOVEN'S FIFTH AND THE HUMAN IMAGINATION 5 (2012) (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)).

3. *See* JOHN BELL YOUNG, BEETHOVEN'S SYMPHONIES: A GUIDED TOUR 65 (2008).

4. Pitch refers to how "high" or "low" a note sounds, as "determined by its [underlying] frequency ([a measure of the] number of vibrations per second)." FORNEY ET AL., *supra* note 1, at 8; *accord* KOSTKA ET AL., *supra* note 1, at 1; HOWARD A. MURPHY WITH JOHN F. PARK, MUSIC FUNDAMENTALS: A GUIDE TO MUSICAL UNDERSTANDING 6 (1962).

5. Duration refers to "the length of time a tone continues to sound." MURPHY, *supra* note 4, at 5. It is typically "notated by using symbols" representing whole, half, quarter, eighth, and sixteenth notes, as well as fractions and combinations of the same. KOSTKA ET AL., *supra* note 1, at 24.

6. GUERRIERI, *supra* note 2, at 23 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)).

7. *See id.*

8. *See* STUART FEDER, CHARLES IVES: "MY FATHER'S SONG" 226 (Yale Univ. Press ed. 1992). As described in more detail below, see *infra* Section I.A.2, the distance of a major third consists of an absolute distance between two notes of three letter names (such as from G to E ♭ in the *Fifth Symphony*), with the total distance measuring four "half steps."

9. *See* Newton v. Diamond, 388 F.3d 1189, 1197 (9th Cir. 2004) (Graber, J., dissenting); Watt v. Butler, 744 F. Supp. 2d 1315, 1325 (N.D. Ga. 2010).

10. *See* Gaby Reucher, *The Truth About Beethoven's 'Symphony of Fate,'* DW (Sept. 13, 2018), https://www.dw.com/en/beethovens-fifth-symphony-the-truth-about-the-symphony-of-fate/a-45472113 [https://perma.cc/RLF9-94GQ] (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)); GUERRIERI, *supra* note 2, at 227–72 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)) (providing a detailed catalogue of *Fifth Symphony* applications in movies, radio ads, etc., since World War II).

11. Once the copyright in a creative "work expires, [it is said to] become[] a part of the public domain and can be copied and" otherwise made use of "without [the] need to obtain

U.S. music copyright dispute, the work's brief yet powerful four-note opening sequence nonetheless serves as a valuable tool for understanding some of the many complex questions with which federal judges and juries adjudicating contemporary music copyright cases grapple.[12] One such question is whether there is a lower limit on how long a tune must be to merit copyright protection. While a four-note sequence such as the opening of the *Fifth Symphony* appears to be accepted—at least under certain circumstances—as sufficiently long to merit copyright protection,[13] and while it is common ground that one cannot copyright a single note,[14] what about two-note or three-note sequences?[15] Second, what, exactly, does it mean to say that the opening four-note motive of the *Fifth Symphony* would be entitled to copyright protection? Does it mean that no other composer, could make use of the pitches G-G-G-E ♭ until after Beethoven's copyright expired? Could others avoid the copyright problem by shifting the first four notes up or down by an equal distance, making use instead of the sequence B-B-B-G or E-E-E-C? Finally, if a copyright would not grant Beethoven exclusive use of that four-pitch sequence (or other composers exclusive use of a two- or three-pitch sequence), standing alone, what is it about Beethoven's use of those four pitches that makes it sufficiently distinctive to warrant copyright protection? In other words, what are the protected musical elements that combine with the pitch sequence to make the opening motive worthy of a temporary monopoly on its use?

The answers to these hypothetical questions connected to the *Fifth Symphony* have real-world consequence in the high-stakes world of modern U.S. music copyright disputes. In such cases, the financial and reputational stakes are high, with well-known artists subject not only to multi-million dollar verdicts,[16] but also to the taint of being viewed as thieves of creative ideas in the eyes of the public (Vanilla Ice's weak attempt to publicly defend himself against a claim that he infringed upon Queen's copyright in *Under Pressure* comes quickly

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[permission or pay a royalty to] the holder of the . . . copyright." *E.g.*, Klinger v. Conan Doyle Est., Ltd., 755 F.3d 496, 497 (7th Cir. 2014).

12. *See Newton*, 388 F.3d at 1197 (Graber, J., dissenting); *Watt*, 744 F. Supp. 2d at 1325.

13. *Newton*, 388 F.3d at 1197 (Graber, J., dissenting); *Watt*, 744 F. Supp. 2d at 1325; Swirsky v. Carey, 376 F.3d 841, 851 (9th Cir. 2004) (citing Elsmere Music, Inc. v. Nat'l Broad. Co., 482 F. Supp. 741, 744 (S.D.N.Y. 1980)).

14. *Swirsky*, 376 F.3d at 851–52; Skidmore v. Zeppelin, 952 F.3d 1051, 1070–71 (9th Cir. 2020) (en banc); McDonald v. West, 138 F. Supp. 3d 448, 454 (S.D.N.Y. 2015); Poindexter v. EMI Rec. Grp., Inc., No. 11-cv-559, 2012 WL 1027639, at *4 (S.D.N.Y. Mar. 27, 2012).

15. For general discussion of the ability to copyright short melodic sequences, see *Skidmore*, 952 F.3d at 1070–71; Williams v. Gaye, 895 F.3d 1106, 1119 n.6 (9th Cir. 2018); *Williams*, 895 F.3d at 1143–45 (Nguyen, J., dissenting); Newton v. Diamond, 204 F. Supp. 2d 1244, 1253–55 (C.D. Cal. 2002); and U.S. COPYRIGHT OFF., COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 313.4(C) (3d ed. 2021).

16. *See, e.g.*, *Williams*, 895 F.3d at 1128–30 (upholding jury verdict exceeding three million dollars).

to mind).[17] Two recent judicial decisions have opened the floodgates to litigation against the likes of popular artists such as Ed Sheeran,[18] Sam Smith,[19] Macklemore,[20] Katy Perry,[21] and Taylor Swift[22] alleging infringement in short segments of their highly popular and financially lucrative pop hits. The first decision resulted in a successful verdict in favor of the heirs of Marvin Gaye against Robin Thicke and Pharrell Williams for their alleged infringement of Gaye's hit *Got to Give It Up*.[23] The second decision—involving an infringement action brought by the estate of Randy Wolfe against Led Zeppelin, claiming that the latter's *Stairway to Heaven* infringed upon Wolfe's copyright in a lesser known "instrumental song," resulted in a watering down of the laches defense in copyright cases in which infringement is ongoing.[24] The lion's share of the recent cases that have followed these two decisions have settled out of court, due to the financial ruin and reputational damage that often accompany a negative verdict. Therefore, published opinions addressing the nuances of music copyright law are relatively scarce.[25]

Litigating and ultimately resolving these disputes is particularly challenging because the parties, judges, attorneys, and jurors must grapple with the complexities of U.S. copyright law within the context of the field of music, which itself contains complex rules of music theory. Knowledge of the principles of music theory is thus necessary in order to properly apply the law to such disputes.[26] On occasion, individual federal judges have an evident background in music theory (or an aptitude for it) that makes their music copyright decisions cogent from the perspective of those familiar with the nuances of music theory.[27] Moreover, judges on occasion appear to pick up tidbits of music

17. *See, e.g.*, Jordan Runtagh, *Songs on Trial: 12 Landmark Music Copyright Cases*, ROLLING STONE (June 8, 2016), https://www.rollingstone.com/politics/politics-lists/songs-on-trial-12-landmark-music-copyright-cases-166396 [https://perma.cc/R5XB-KXP7].

18. *See generally* Griffin v. Sheeran, 351 F. Supp. 3d 492 (S.D.N.Y. 2019) (adjudicating copyright claim against Ed Sheeran for his song *Thinking Out Loud*).

19. *Sam Smith Explains Why He Settled Copyright Dispute with Tom Petty*, CBC NEWS (Feb. 7, 2015), https://www.cbc.ca/news/canada/british-columbia/sam-smith-explains-why-he-settled-copyright-dispute-with-tom-petty-1.2948473 [https://perma.cc/88FE-SHKM].

20. Batiste v. Lewis, 976 F.3d 493, 499 (5th Cir. 2020).

21. Gray v. Hudson, 28 F.4th 87, 92 (9th Cir. 2022).

22. Hall v. Swift, No. 17-cv-6882, 2020 WL 5358390, at *1 (C.D. Cal. Sept. 2, 2020).

23. Williams v. Gaye, 895 F.3d 1106, 1128–30 (9th Cir. 2018).

24. Skidmore v. Zeppelin, 952 F.3d 1051, 1056–57 (9th Cir. 2020) (en banc).

25. *See, e.g.*, Daron Taylor, *What Does Copyright Infringement Sound Like?*, WASH. POST (Mar. 4, 2019, 10:34 AM), https://www.washingtonpost.com/arts-entertainment/2019/03/04/what-does-copyright-infringement-sound-like [https://perma.cc/D65N-JNS6]; Runtagh, *supra* note 17.

26. *See* RONALD S. ROSEN, MUSIC AND COPYRIGHT 2 (2008).

27. For example, the copyright infringement action brought by the copyright owner of the Chiffons' hit *He's So Fine* against George Harrison for his allegedly infringing song *My Sweet Lord*, see Bright Tunes Music Corp. v. Harrisongs Music, Ltd., 420 F. Supp. 177, 178 (S.D.N.Y. 1976), was overseen by Judge Richard Owen, who pursued a dual career as an attorney and musician. *See generally* Christine Perkins, *Courtrooms and Dramas: Richard Owen '50 Has a Noteworthy Career in*

theory insights from the competing testimony of expert musicologists in cases litigated before them.[28] Yet with the rare exception of people like Frederick Edward Weatherly—a musically trained English lawyer who penned thousands of songs during his life (most notably, *Danny Boy*) while commuting between home and court or during downtime at the courthouse[29]—few people connected with the legal system are well-versed in both the fields of music and law.[30] This lack of adequate musical training often leads to poor advocacy by counsel and misinformed rulings by judges and juries.

This imperfect system of adjudicating music copyright cases has created a series of legal rules that are sometimes consonant with and sometimes in tension with basic principles of music theory that guide the underlying creative works at stake. Legal precedent identifies "melody, harmony, and rhythm"—along with lyrics if the work is not solely an instrumental piece—as the key building blocks of musical works,[31] with melody given controlling weight.[32] Melodies must generally exceed a certain minimum length,[33] in addition to demonstrating sufficient originality[34] to warrant copyright protection. Harmony—more specifically, the progression of chords that accompany the melody—is treated by courts as not copyrightable because most progressions are so common as to lack originality, have long since entered the public domain, or lack protection under the *scènes à faire* doctrine because the choices are generally dictated by conventions within the field of music.[35] Rhythm—at least as that term is defined by most courts—is likewise not entitled to copyright

Both, HARV. L. BULL. (July 23, 2006), https://hls.harvard.edu/today/courtrooms-and-dramas-richard-owen-50-has-a-noteworthy-career-in-both [https://perma.cc/FMQ9-QHCF] (discussing Judge Richard Owen's music expertise). Similarly, Judge Nguyen of the U.S. Court of Appeals for the Ninth Circuit seems to understand the nuances of music theory rather well. *See Williams*, 895 F.3d at 1138–52 (Nguyen, J., dissenting); *id.* at 1137 (majority opinion) (noting the dissent's command of music theory concepts).

28. *See, e.g.*, Johnson v. Gordon, 409 F.3d 12, 23 (1st Cir. 2005) (relying on expert testimony regarding the common use of the harmonic chord progression at issue in the case to conclude that there was no infringement); Gray v. Hudson, 28 F.4th 87, 100 (9th Cir. 2022) (relying on expert testimony regarding melodic tendencies in music).

29. *See* MALACHY MCCOURT, DANNY BOY: THE LEGEND OF THE BELOVED IRISH BALLAD 24–38 (New Am. Libr. ed. 2003). Weatherly made good use of his legal training as well in creating *Danny Boy*. *See id.* Although he is the originator of the song's lyrics, he based the melody on a tune in the public domain entitled *Londonderry Air* that others before him had also made use of with lyrics that were not as successful as those penned by Weatherly. *See id.* at 34.

30. *See Williams*, 895 F.3d at 1137.

31. *Id.* at 1142 (Nguyen, J., dissenting); *accord* Swirsky v. Carey, 376 F.3d 841, 845–46 (9th Cir. 2004).

32. *See Swirsky*, 376 F.3d at 846–49.

33. *See* Skidmore v. Zeppelin, 952 F.3d 1051, 1070–71 (9th Cir. 2020) (en banc); *Swirsky*, 376 F.3d at 851–52; U.S. COPYRIGHT OFF., *supra* note 15, §§ 313.4I, 802.5(A).

34. Allen v. Destiny's Child, No. 06-cv-6606, 2009 WL 2178676, at *11–12 (N.D. Ill. July 21, 2009); *see* McDonald v. Multimedia Ent., Inc., No. 90-cv-6356, 1991 WL 311921, at *2–4 (S.D.N.Y. July 19, 1991).

35. *See infra* Section I.B.2.

protection because there are only a few possibilities, all of which have already been used in earlier works, leading courts to conclude that, like harmony, most rhythms either lack basic originality or lack protection under the *scènes à faire* doctrine.[36] Legal precedent acknowledges, however, that an author can combine otherwise unprotected elements such as harmonies, rhythms, tempo, dynamics, key, instrumentation, and the like—including very short or unoriginal melodies[37]—in an original way that entitles the work to copyright protection despite the inability to copyright its individual components.[38]

Having in my own modest way tried to follow in Weatherly's footsteps by obtaining dual expertise in the fields of law and music,[39] I seek to harmonize the legal theory embodied in music copyright precedents with basic as well as more nuanced principles of music theory. Cognizant of the fact that the audience for this Article is a mixed one consisting of those trained alternatively in the fields of music and law, Part I of this Article provides basic background on rudimentary principles of music theory and demonstrates how those principles of Western music theory have been incorporated into music copyright jurisprudence.[40]

With that background established, the remainder of this Article identifies three key insights from music theory that should inform how judges interpret copyright law as applied to musical works. Part II of this Article uses the opening motive of the *Fifth Symphony* to illustrate a key flaw in copyright

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36. *See infra* Section I.B.2.

37. *See Skidmore*, 952 F.3d at 1064; Williams v. Gaye, 895 F.3d 1106, 1119 (9th Cir. 2018); Copeland v. Bieber, 789 F.3d 484, 489 (4th Cir. 2015); Lil' Joe Wein Music, Inc. v. Jackson, 245 F. App'x 873, 877 (11th Cir. 2007); *Swirsky*, 376 F.3d at 845; Three Boys Music Corp. v. Bolton, 212 F.3d 477, 485 (9th Cir. 2000), *overruled by Skidmore*, 952 F.3d; Herzog v. Castle Rock Ent., 193 F.3d 1241, 1257 (11th Cir. 1999); Moore v. Columbia Pictures Indus., Inc., 972 F.2d 939, 945 (8th Cir. 1992); Dawson v. Hinshaw Music, Inc., 905 F.2d 731, 732–33 (4th Cir. 1990); Griffin v. Sheeran, 351 F. Supp. 3d 492, 496 (S.D.N.Y. 2019).

38. N. Music Corp. v. King Rec. Distrib. Co., 105 F. Supp. 393, 400 (S.D.N.Y. 1952); 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 2.05 (Matthew Bender ed., LexisNexis Grp. 2022); Joseph P. Fishman, *Music as a Matter of Law*, 131 HARV. L. REV. 1861, 1873–83 (2018).

39. J.D., Harvard Law School (1999); A.A.A.S. (Music Performance), Shoreline Community College (2021); B.A. (Music), University of Washington (expected 2023).

40. *See infra* Part I. I acknowledge that a focus on Western music theory is incomplete and reinforces a cultural bias within U.S. copyright law that systematically undervalues indigenous and other non-Western forms of music. *See* Olufunmilayo B. Arewa, *Copyright and Cognition: Musical Practice and Music Perception*, 90 SAINT JOHN'S L. REV. 565, 576–77 (2016) (discussing the need to reassess approaches to music copyright while acknowledging existing cultural biases); Sherylle Mills, *Indigenous Music and the Law: An Analysis of National and International Legislation*, 28 YEARBOOK TRADITIONAL MUSIC 57, 57–86 (1996); Matthew D. Morrison, *Race, Blacksound, and the (Re)Making of Musicological Discourse*, 72 J. AM. MUSICOLOGICAL SOC'Y 781, 781–823 (2019). In this Article, I rely on Western music theory largely because that is the theoretical basis assumed by U.S. copyright precedents. *See, e.g.*, *Skidmore*, 952 F.3d at 1070 (describing principles of Western music). I view this Article as a starting point in an ongoing discussion of the need to harmonize music theory and music law, cognizant of the need to expand beyond Western theoretical principles in order to fully realize the potential for music theory to improve music copyright decisions.

jurisprudence: a misunderstanding of the terms "melody" and "rhythm" as those terms are used by music theorists.[41] Part II demonstrates that legal precedents conflate the term "melody" with mere "pitch sequence" and conflate rhythm with the static elements of meter and time signature.[42] In doing so, precedent gives undue weight to pitch patterns and too little weight to rhythmic patterns in assessing copyright infringement claims. Part II concludes that rhythm and melody should not be viewed as distinct for purposes of copyright and that in fact, the definition of melody encompasses not only a song's sequence of pitches, but also the rhythmic design of those pitches.[43]

Part III of this Article enters the debate over the minimum number of notes necessary to have a valid copyright claim.[44] Relying on traditional music theory principles, contemporary studies, and a recent copyright dispute brought against Ed Sheeran by the heirs to the copyright in Marvin Gaye's 1973 hit *Let's Get It On*,[45] Part III demonstrates that—to the extent "notes" refers merely to pitches stripped of their rhythmic context—there is rarely a basis for affording copyright protection to most sequences of notes because much melodic movement, like harmonic movement (as recognized in legal precedents), is largely preordained by descriptive "rules" of music theory that in turn are based on expectations of the Western ear.[46] On the other hand, it demonstrates that even relatively short sequences of notes should garner copyright protection when the particular combination of pitches *and* rhythmic values are original.[47]

Part IV of this Article uses both the opening motive of the *Fifth Symphony*, as well as a recent copyright dispute between Tom Petty and Sam Smith, to demonstrate the significance of musical silence (in the form of rests) in music copyright analysis—a concept overlooked by legal precedents that can result both in a failure to grant copyright protection in the first instance to short melodic sequences on the ground that they are too short as well as a failure to identify rather stark instances of copyright infringement.[48]

This Article concludes that a proper defining and weighing of the concepts of "rhythm" and "melody" in music copyright jurisprudence—including giving appropriate weight to intentional musical silence—will result in outcomes that are consistent with the balancing of policies that underlie U.S. copyright law. The Article recommends that judges invoke their powers under Rule 706 of the Federal Rules of Evidence to appoint independent experts

41. *See infra* Part II.
42. *See infra* Part II.
43. *See infra* Part II.
44. *See infra* Part III.
45. Griffin v. Sheeran, 351 F. Supp. 3d 492, 494 (S.D.N.Y. 2019).
46. *See infra* Part III.
47. *See infra* Part III.
48. *See infra* Part IV.

not aligned with any party who can help the judge and jury to understand relevant aspects of music theory underlying music copyright disputes.[49] The Article ends with a call for greater cross-pollination between the fields of music and law to help ensure that all aspects of music copyright jurisprudence are informed by a rigorous understanding of principles of music theory and music history that underlie the works at the heart of music copyright disputes.

I. BACKGROUND MUSIC THEORY AND MUSIC COPYRIGHT PRINCIPLES

Law and music are complex fields, with each requiring years of formal training to master their respective nuances. In music copyright cases, attorneys and judges well-versed in the former mix with expert witnesses trained in the latter along with lay jurors having little familiarity with either field to resolve disputes that necessarily require some degree of understanding of both fields.[50] While I cannot, in the space of a dozen journal pages, fill that knowledge gap, what follows is a summary of basic principles of music theory and music copyright law sufficient to help readers understand and critically evaluate the outcomes of modern music copyright disputes.

A. OVERVIEW OF MUSIC THEORY PRINCIPLES

1. The Micro-Level: Musical Sounds and Silences

When examined at the micro-level, what we refer to as music consists of a series of individual symbols representing musical sound and musical silence.[51] Silence not only bounds every musical composition, but also interrupts the sequence of musical sounds contained therein in the form of brief pauses for dramatic or other effect.[52] Silence within music is represented by the rest; it consists of a single element—duration.[53] Sound contained within music is

49. FED. R. EVID. 706.

50. *See supra* note 28 and accompanying text.

51. MURPHY, *supra* note 4, at 5 ("Sound and silence are the basic raw materials of music."); WILLIAM FLEMING & ABRAHAM VEINUS, UNDERSTANDING MUSIC: STYLE, STRUCTURE, AND HISTORY 3 (1958) ("The basic raw materials of music are sound and silence."); William O. Beeman, *Silence in Music*, *in* SILENCE: THE CURRENCY OF POWER 21, 23–34 (Maria-Luisa Achino-Loeb ed., 2006); BRIAN BOONE & MARC SCHONBRUN, MUSIC THEORY 101, at 25 (2017) ("Music isn't always about sound–rests are as common as pitches."). At its most extreme, a musical composition can be composed *entirely* of silence. *See* FORNEY ET AL., *supra* note 1, at 538 (describing John Cage's composition entitled *4'33"* which "consists of four minutes and thirty-three seconds of 'silence'"). Of course, "silence" is a bit of a misnomer since the ambient noises of the room remain; indeed, hearing those ambient room sounds was the point of John Cage's "silent" composition. *See* Beeman, *supra*, at 24, 30–31; FORNEY ET AL., *supra* note 1, at 538.

52. *See* Beeman, *supra* note 51, at 23–31; GUERRIERI, *supra* note 2, at 5 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)); FLEMING & VEINUS, *supra* note 51, at 8; EDWARD T. CONE, MUSICAL FORM AND MUSICAL PERFORMANCE 16–17 (1968). *See generally* Elizabeth Hellmuth Margulis, *Moved by Nothing: Listening to Musical Silence*, 51 J. MUSIC THEORY 245 (2007) (describing silence's function as music).

53. *See* BOONE & SCHONBRUN, *supra* note 51, at 24–25.

represented by the musical note, or tone.[54] Each musical note or tone, like musical silence, has a duration, along with three additional elements: pitch; intensity (or loudness); and timbre (or quality).[55]

Duration—the element common to musical sound and silence—refers to the length of time that a musical tone continues to sound (or, in the case of musical silence, the length of time that there is no sound).[56] This is notated using symbols representing whole, half, quarter, eighth, and sixteenth notes or rests—as well as fractions and combinations of the same.[57] Note duration is a relative concept: A half note, for example, is twice the duration of a quarter note.[58] In the excerpt from the *Fifth Symphony* that begins this Article, the duration of the opening rest is an eighth rest, followed by three eighth notes and then a half note.

The second element of musical sound, pitch, refers to how relatively "high" or "low" a note sounds, as determined by its underlying frequency (a measure in hertz of the number of vibrations per second).[59] In Western music, musical pitches are organized into "octave[s]" that are "divided into twelve equal semitones, or half steps," which form the bases of musical scales.[60] On a piano keyboard, "a half step" would represent the move from one piano key "to the very next [piano] key," whether that subsequent key is black or white in color; a whole step consists of "two half steps."[61]

Two important features of Western music are important to understand pitch generally as well as pitch sequences. First, most Western music is tonal in nature, meaning that it is organized around a central note, the tonic, which serves as "the home base" around which other notes revolve and "to which [they] [ultimately] gravitate[]."[62] And second, most Western music tends to

54. *See* MARTIN BERNSTEIN, AN INTRODUCTION TO MUSIC 1 (1937) (describing music as "successions and combinations of atmospheric disturbances which we designate as *musical tones*"); JOHN POWELL, HOW MUSIC WORKS: THE SCIENCE AND PSYCHOLOGY OF BEAUTIFUL SOUNDS, FROM BEETHOVEN TO THE BEATLES AND BEYOND 6 (2010) (describing the "musical note" as "the most basic [building] block of all"); FLEMING & VEINUS, *supra* note 51, at 5; MURPHY, *supra* note 4, at 5 ("[M]usical . . . tones are to a musician [as] bricks are to a builder . . . .").

55. *See* BERNSTEIN, *supra* note 54, at 1; POWELL, *supra* note 54, at 6; FLEMING & VEINUS, *supra* note 51, at 5; MURPHY, *supra* note 4, at 5; FORNEY ET AL., *supra* note 1, at 8.

56. *See* BERNSTEIN, *supra* note 54, at 1; MURPHY, *supra* note 4, at 5; POWELL, *supra* note 54, at 6.

57. *See* KOSTKA ET AL., *supra* note 1, at 24; BOONE & SCHONBRUN, *supra* note 51, at 18–20.

58. KOSTKA ET AL., *supra* note 1, at 24; BOONE & SCHONBRUN, *supra* note 51, at 18.

59. *See* FORNEY ET AL., *supra* note 1, at 8; KOSTKA ET AL., *supra* note 1, at 1; POWELL, *supra* note 54, at 6–7; BERNSTEIN, *supra* note 54, at 1–2; MURPHY, *supra* note 4, at 6; FRANCES M. DICKEY & EILENE FRENCH (RISEGARI), PRACTICAL MUSIC THEORY 3 (1936); DAN HOSKEN, AN INTRODUCTION TO MUSIC TECHNOLOGY 19–22 (2011) (explaining the metrics for music measurement); Gray v. Hudson, 28 F.4th 87, 92 (9th Cir. 2022).

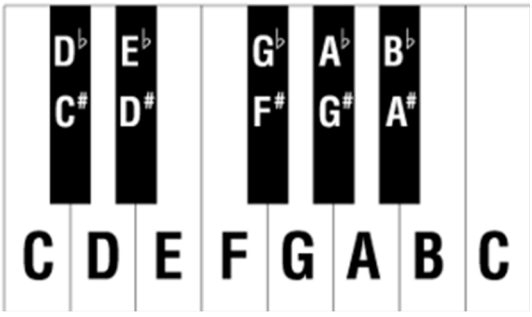
60. FORNEY ET AL., *supra* note 1, at 17; *accord* POWELL, *supra* note 54, at 119–20.

61. KOSTKA ET AL., *supra* note 1, at 4; *accord* FORNEY ET AL., *supra* note 1, at 17–18.

62. FORNEY ET AL., *supra* note 1, at 17–18; AARON COPLAND, WHAT TO LISTEN FOR IN MUSIC 53–54 (1939).

be diatonic rather than chromatic in nature, meaning that instead of using all twelve notes contained within each octave, it uses only seven of those notes, with the specific notes used depending upon both the tonic note of the piece and the type of key (major or minor, for example) that it is written in.[63] Those seven notes are labeled using the first seven letters of the alphabet (A through G), sometimes raised a half step using the sharp (#) symbol and sometimes lowered a half step using the flat (♭) symbol.[64] In the *Fifth Symphony*, the pitches of the opening four notes are G-G-G-E♭.

The most frequently used modes or scales in Western music are major and minor.[65] Major and minor scales follow different patterns of whole (W) and half (H) steps, with the former following the pattern W-W-H-W-W-W-H and the latter following the pattern W-H-W-W-H-W-W.[66] Thus, for example, the key of C major uses the notes C, D, E, F, G, A, and B, before returning to C.[67] In contrast, the key of C minor uses the notes C, D, E♭, F, G, A♭, and B♭ before returning to C.[68]



If we look at a piece of written music, we can typically decipher what key it is in by using its "key signature,"[69] which appears as a set of sharp and flat

63. *See* FORNEY ET AL., *supra* note 1, at 17–21 (explaining a few common scales in Western music); KOSTKA ET AL., *supra* note 1, at 4–14; COPLAND, *supra* note 62, at 52–60; *see also Gray*, 28 F.4th at 93 ("In practice, many songs are based on scales that use only a smaller subset of the twelve notes in the chromatic scale.").

64. FORNEY ET AL., *supra* note 1, at 17–21; KOSTKA ET AL., *supra* note 1, at 1–14; POWELL, *supra* note 54, at 7–8.

65. BOONE & SCHONBRUN, *supra* note 51, at 49.

66. POWELL, *supra* note 54, at 7–8; FORNEY ET AL., *supra* note 1, at 17–19; *see* KOSTKA ET AL., *supra* note 1, at 4–6, 9–11. The pattern listed is for the "natural" minor scale. KOSTKA ET AL., *supra* note 1, at 10. There are variations, including the harmonic and melodic minor scales, that use slightly different patterns. *Id.*; BOONE & SCHONBRUN, *supra* note 51, at 64–65; *Gray*, 28 F.4th at 93 n.2.

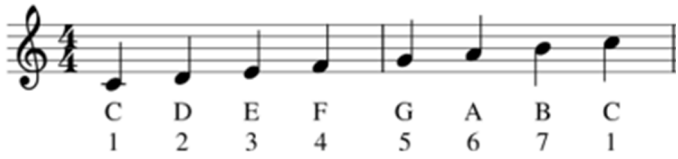
67. KOSTKA ET AL., *supra* note 1, at 10.

68. *Id.*

69. In some instances, the key signature does not help, as some composers opt instead to use "accidentals," whereby they instead notate each individual sharp and flat note. BORIS BERLIN, MOLLY SCLATER & KATHRYN SINCLAIR, KEYS TO MUSIC RUDIMENTS: TEXTBOOK 59 (1969).

symbols at the far left of any given musical composition.[70] In the case of the *Fifth Symphony*, the key signature consists of the three flat symbols on the staff lines[71] for the notes B, E, and A, telling us that each of those three notes are flat.[72] Accordingly, the notes in the scale that this piece is written in are C, D, E♭, F, G, A♭, and B♭. Any given key signature and the seven notes contained therein represent both a major scale and a corresponding relative minor scale.[73] This particular set of seven notes corresponds to the E♭ major scale as well as that scale's relative minor, the C minor scale.[74] The ultimate determination whether the song is in the key of E♭ major or C minor turns on whether the piece is "centered" around the note of E♭ or C, which is not always immediately apparent and requires a careful analysis of the piece as a whole.[75]

Each of the seven pitches in a scale is assigned a scale degree number. The first note in the scale, the tonic, is assigned scale degree 1, while the six notes that follow are assigned scale degrees 2 through 7.[76] For example, in the key of C major—which contains no sharps or flats—the seven notes of the scale and their corresponding scale degrees are as follows[77]:



Each of the remaining six scale degrees has a name and a function. For example, the note second in importance to the tonic is scale degree 5, the

70. KOSTKA ET AL., *supra* note 1, at 6–8, 11–12; BOONE & SCHONBRUN, *supra* note 51, at 66–79. For an image reflecting this, see *supra* Introduction.

71. The staff lines are the five horizontal lines that the musical notes are placed on or directly above or below. KOSTKA ET AL., *supra* note 1, at 2. On the treble clef, pictured on the next page, these lines, from bottom to top, represent the notes E, G, B, D, and F, with the spaces in between those lines representing the notes F, A, C, and E. BOONE & SCHONBRUN, *supra* note 51, at 12. If one wishes to represent notes higher or lower than can be represented on the staff lines, ledger lines—short, horizontal lines such as the one representing the first "C" note on the following page—can be added. KOSTKA ET AL., *supra* note 1, at 2.

72. KOSTKA ET AL., *supra* note 1, at 5–12; *see* Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808).

73. KOSTKA ET AL., *supra* note 1, at 11–12.

74. *See id.* If you start on the note E♭ and follow the major key pattern, you get the notes F, G, A♭, B♭, C, D, and E♭, which aligns with the key signature. *Id.* Similarly, if you start on the note C and follow the minor key pattern, you get the notes D, E♭, F, G, A♭, B♭, and C, which likewise aligns with the key signature. *Id.* at 10–12.

75. *See* BOONE & SCHONBRUN, *supra* note 51, at 126. Indeed, a musically significant aspect of the *Fifth Symphony* is that it is composed in a way that creates ambiguity over whether it is in the key of E♭ major or C minor until several measures into the piece. GUERRIERI, *supra* note 2, at 12–13, 22–23 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)).

76. BOONE & SCHONBRUN, *supra* note 51, at 56–57.

77. *See* KOSTKA ET AL., *supra* note 1, at 4–6, 9–11.

dominant.[78] Indeed, musical movement primarily revolves around movement from the tonic to the dominant and back to the tonic.[79] Another important scale degree is scale degree 7, typically referred to as the leading tone because it has a tendency to "lead" or "resolve" to the tonic.[80]

The third element of musical sound, intensity, is a measure of the relative loudness or softness of a musical tone.[81] At a highly technical level it is measured in terms of decibels,[82] but in composed music it is noted using dynamic markings to indicate relative softness, with ***f*** representing loud, ***p*** representing soft, ***ppp*** representing the softest intensity, and ***fff*** representing the loudest intensity.[83] In the excerpt from the opening to the *Fifth Symphony*, the initial dynamic marking is ***ff***, indicating that those notes should be played quite loudly.[84]

The final element of musical sound—timbre, or quality—allows us to distinguish notes of identical pitch, intensity, and duration that are produced by different types of instruments, such as violins versus flutes, tubas, cellos, or human voices.[85] Although all of these instruments may be producing the same note—an E♭, for example—that note sounds strikingly different depending upon whether it emanates from a guitar, clarinet, violin, or a human voice.[86] Beethoven's choice of timbre is not evident from the short excerpt from the *Fifth Symphony* shown above, but if one were to examine the full score, it would show the specific instruments and when they are to be played. Beethoven made a conscious choice to select instruments such as clarinets and strings played in their lowest register—and to avoid any instruments with a bright sound—in order to have the opening instrumental notes play in the range associated with a male voice only and thus to express both a sense of power and doom in the music.[87]

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78. *See* FORNEY ET AL., *supra* note 1, at 19.

79. *Id.*

80. *See* FORNEY ET AL., *supra* note 1, at 18; COPLAND, *supra* note 62, at 54, 68–69. Other scale degrees include the supertonic (scale degree two), the mediant (scale degree three), the subdominant (scale degree four), and the submediant (scale degree six). KOSTKA ET AL., *supra* note 1, at 15–21; BOONE & SCHONBRUN, *supra* note 51, at 56–57; COPLAND, *supra* note 62, at 52–54.

81. BERNSTEIN, *supra* note 54, at 2; MURPHY, *supra* note 4, at 6.

82. *See* POWELL, *supra* note 54, at 91–100; HOSKEN, *supra* note 59, at 19–22.

83. BOONE & SCHONBRUN, *supra* note 51, at 172–74. If one only wants selected notes to be played louder, one can use an accent mark instead for those specific notes. *See id.* at 187.

84. *See infra* Part II.

85. FLEMING & VEINUS, *supra* note 51, at 5; BERNSTEIN, *supra* note 54, at 2–4; MURPHY, *supra* note 4, at 6–7; POWELL, *supra* note 54, at 39–78.

86. *See* FORNEY ET AL., *supra* note 1, at 8, 36; POWELL, *supra* note 54, at 39–78.

87. *See* FORNEY ET AL., *supra* note 1, at 14–15; YOUNG, *supra* note 3, at 64–66 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)); Patricia Stroh, *Beethoven Symphonies: A Guided Tour*, 23 BEETHOVEN J. 96, 96 (2008).

2. The Macro-Level: Rhythm, Melody, and Harmony

When music theorists step back from individual notes and rests and examine a musical composition in broader terms, they typically identify three fundamental elements of music—rhythm, melody, and harmony[88]—with timbre and form sometimes identified as additional elements.[89] This Section will discuss each of these three fundamental elements individually and describe the definitions given to those terms by music theorists. However, the boundaries between these three elements are fuzzy, and they are best thought of as three overlapping circles in a Venn diagram.[90] For example, melodies and harmonies are not wholly independent of one another: Thus, a given melodic sequence typically implies a corresponding harmonic sequence, and vice versa.[91] Moreover—and a critical focal point of this Article—is the connection between rhythm and melody, with the proper definition of the latter incorporating key aspects of the former.[92]

Rhythm, in broad terms, refers to "the movement of music [forward] in time."[93] "[T]he basic unit of rhythm" is "[t]he beat"—"a regular pulse that divides [musical] time into equal segments."[94] These beats are not equal in strength, with some beats perceived as strong and others weak.[95] A song's meter refers to the grouping of those strong and weak beats into measures or bars.[96] In most Western music, the strong beat occurs either every two, three, or four

88. THE NORTON/GROVE CONCISE ENCYCLOPEDIA OF MUSIC 480 (Stanley Sadie & Alison Latham eds., W.W. Norton & Co. 1988) (1988) [hereinafter NORTON/GROVE]; JASON MARTINEAU, THE ELEMENTS OF MUSIC: MELODY, RHYTHM, & HARMONY 2 (2008). *See generally, e.g.*, COPLAND, *supra* note 62 (providing chapters for each element).

89. HUMMEL FISHBURN, FUNDAMENTALS OF MUSIC APPRECIATION 11 (1955); *see* COPLAND, *supra* note 62, at 33.

90. *See* FISHBURN, *supra* note 89, at 11 ("These fundamentals do not stand alone, but are completely interdependent; it is the hearing of all five either consciously or unconsciously that makes our listening experience more pleasant.").

91. NORTON/GROVE, *supra* note 88, at 480 ("It is an oversimplification to regard them as independent, however. Rhythm is an important element within melody itself, not only because each note of the melody has a duration but also because larger-scale rhythmic articulation gives shape and vitality to a melody; while, at least in Western music, harmony often plays a fundamental role in determining the contour and direction of a melodic line, and the harmonic implications of a line of melody may accordingly give it life."); PAUL HINDEMITH, THE CRAFT OF MUSICAL COMPOSITION, BOOK 1: THEORETICAL PART 76–84 (Arthur Mendel trans., 4th ed. 1945) (noting the strong connection between the notes of the melody and the harmony for that measure); DONALD FRANCIS TOVEY, THE FORMS OF MUSIC 91–92 (Meridian Books ed. 1956) (describing melody as "the surface of a series of harmonies," noting that "an unaccompanied melody that fails to imply clear harmonies is felt to be strange and vague," and concluding that "[h]armonic rationality and symmetrical rhythm thus combine to make a tuneful melody an epitome of musical form").

92. *See supra* notes 88–89 and accompanying text.

93. FORNEY ET AL., *supra* note 1, at 11.

94. *Id.*

95. *See id.*

96. *Id.*

beats, and such songs are said to be in duple, triple, or quadruple meter, respectively, with the strongest beat occurring on the first beat in each measure, typically referred to as the downbeat.[97]

Rhythm writ large is often represented in a musical composition by means of a time signature—two numbers written one atop the other immediately to the right of the key signature—which relays information about the number of beats per measure and the durational value of each beat.[98] For example, the time signature of the *Fifth Symphony* is represented by the number 2 atop the number 4.[99] The 2 signifies that there are two beats in each measure, and thus that the song is written in duple meter, with the first beat being strong and the second beat being weak.[100] The four signifies that each beat is worth a quarter note.[101] Notice, however, that the first beat of the *Fifth Symphony*—what would be the strong beat—is on a rest and is thus silent.[102] Thus, it is not until the fourth and final note of the opening motive, the E♭, that we have an audible note that lands firmly on a strong beat.[103]

Realistically speaking, there are a finite number of meters and time signatures in music. With rare exceptions, most Western music can be classified as being in one of four meters.[104] And although theoretically eighteen or more different time signatures can be created by combining a song's meter with its beat unit, as a practical matter, no more than a dozen are regularly used.[105]

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97. DICKEY & FRENCH, *supra* note 59, at 1–3; FORNEY ET AL., *supra* note 1, at 11–12; POWELL, *supra* note 54, at 187–95; KOSTKA ET AL., *supra* note 1, at 25. Some songs have more than four beats per meter, but the strong beat still occurs every two, three, or four beats. FORNEY ET AL., *supra* note 1, at 12. For example, sextuple meter is a compound duple meter that contains two big beats per measure—the first one strong and the second one weak—that are each divided into three notes. *Id.*

98. POWELL, *supra* note 54, at 192; BOONE & SCHONBRUN, *supra* note 51, at 16; MURPHY, *supra* note 4, at 25; KOSTKA ET AL., *supra* note 1, at 28. For an image reflecting this, see *supra* Introduction.

99. *See infra* Part II.

100. FORNEY ET AL., *supra* note 1, at 12; *see* POWELL, *supra* note 54, at 192–95; MURPHY, *supra* note 4, at 25; KOSTKA ET AL., *supra* note 1, at 28.

101. *See* POWELL, *supra* note 54, at 192–98; BOONE & SCHONBRUN, *supra* note 51, at 16; MURPHY, *supra* note 4, at 25; KOSTKA ET AL., *supra* note 1, at 28.

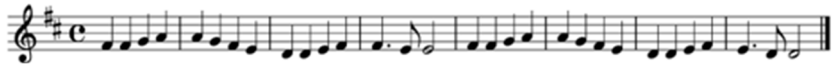
102. *See* GUERRIERI, *supra* note 2, at 5–7 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)); DAVID EPSTEIN, SHAPING TIME: MUSIC, THE BRAIN, AND PERFORMANCE 31–32 (1995) (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)). To illustrate this, see *infra* text accompanying notes 259–63.

103. *See* GUERRIERI, *supra* note 2, at 5–7 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)); EPSTEIN, *supra* note 102, at 31–32 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)). The opening G lands on the tail end of the initial downbeat and thus would get more emphasis than the two G's that follow, but they are all relatively weak compared with the E ♭ . *See* GUERRIERI, *supra* note 2, at 6 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)).

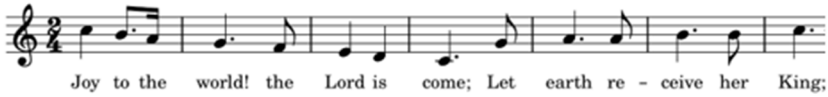
104. FORNEY ET AL., *supra* note 1, at 11.

105. *See* MURPHY, *supra* note 4, at 25–26.

However, rhythm has a second, more granular aspect to its definition that is distinct from the general meter and time signature of a song, can be organized in endless numbers of unique combinations, and—as will be further shown below—is in fact built into the music theorist's definition of melody. Music theorists acknowledge that the term "rhythm" is often used as a blanket term that encompasses not only a song's meter—and the expression of the same within a time signature—but also the specific pattern of long and short note durations found in a song, which is typically referred to as the true rhythm of a song.[106] To be sure, a song's meter and its rhythm are related, and in theory, they can coincide exactly or nearly so[107]; another musical composition written by Beethoven, *Ode to Joy*, presents a rare example of "a [near] one-to-one correspondence between rhythmic and metric events,"[108] with the song having a meter of $\frac{4}{4}$ and consisting almost exclusively of quarter notes grouped in fours[109]:



More often than not, however, they do not coincide exactly; the durations of the notes in a song are typically longer or shorter than the beat.[110] Creating a tension between a song's underlying meter and its specific rhythm can create tension and thus musical interest.[111] For example, the opening to *Joy to the World*, despite being written in $\frac{2}{4}$ time, uses quarter notes sparingly[112]:



Indeed, absent the rhythmic variation, the opening of *Joy to the World* would be of little musical interest, as its pitches represent little more than a descending C major scale that re-ascends in a stepwise fashion.

106. *See* EPSTEIN, *supra* note 102, at 22–28; THE CAMBRIDGE COMPANION TO RHYTHM 70 (Russell Hartenberger & Ryan McClelland eds., 2020); 21 THE NEW GROVE DICTIONARY OF MUSIC AND MUSICIANS 277–79 (Stanley Sadie & John Tyrrell eds., 2d ed. 2001) [hereinafter NEW GROVE]; MURPHY, *supra* note 4, at 10–12; WILLIAM S. NEWMAN, UNDERSTANDING MUSIC 48–50 (1st ed. 1953); COPLAND, *supra* note 62, at 33–36.

107. NEW GROVE, *supra* note 106, at 283–84; MURPHY, *supra* note 4, at 10–13.

108. NEW GROVE, *supra* note 106, at 283–84.

109. Ludwig van Beethoven, *Ode to Joy*, *from* SYMPHONY NO. 9 IN D MINOR, OP. 125 (1824).

110. NORTON/GROVE, *supra* note 88, at 670–71; NEW GROVE, *supra* note 106, at 283–84; *see* MURPHY, *supra* note 4, at 10–13; COPLAND, *supra* note 62, at 33–46.

111. *See* REGINALD SMITH BRINDLE, MUSICAL COMPOSITION 14–17 (1986); JASON YUST, ORGANIZED TIME: RHYTHM, TONALITY, AND FORM 15–16 (2018); NEW GROVE, *supra* note 106, at 283–84.

112. George Frederick Handel, *Joy to the World*, *from* THE MODERN PSALMIST (Lowell Mason & Isaac Watts eds., 1839).

Thus, as a general matter, when we speak of musical time, we must understand that there exists a "temporal duality"[113] between the "strict[,] repetitive[,] regular[,] [and] symmetrical"[114] nature of metric time—in which music is divided into evenly spaced and articulated units—and the "free[,] varied[,] irregular[,] [and] asymmetrical"[115] nature of rhythmic time—the unique organization of time intrinsic to an individual song, which need not conform to the song's overarching meter.[116] Accordingly, there can be a multitude of ways in which a song's rhythm can be constructed[117]—including so-called polyrhythms, in which different instruments and voices follow different rhythmic patterns[118]—and one can thus envision that a song's rhythm (properly defined) can be sufficiently original to entitle it to copyright protection.

A discussion of melody, the second major element of music, flows naturally from the distinction between meter and time signature on the one hand and rhythm on the other. In general terms, melody is defined as the tune of a song, or more specifically, a series of successive musical notes, varying in pitch, that have a particular rhythmic pattern and that are "hear[d] as a recognizable whole."[119] Accordingly, music theorists explicitly identify melody as consisting of two key elements: (1) pitch and (2) rhythm, in the sense of note durations (or what was contrasted above from meter as true rhythm).[120] Moreover, music theorists posit that the distinctiveness of contemporary melodies owe at least as much, if not more, to their rhythmic designs than to their pitch sequences.[121] Indeed, rhythm has been analogized to the human

113. EPSTEIN, *supra* note 102, at 22–23.

114. MURPHY, *supra* note 4, at 12.

115. *Id.*

116. EPSTEIN, *supra* note 102, at 22–28; MURPHY, *supra* note 4, at 12; *see* William E. Caplin, *Theories of Musical Rhythm in the Eighteenth and Nineteenth Centuries*, *in* THE CAMBRIDGE HISTORY OF WESTERN MUSIC THEORY 657, 668–69 (Thomas Christensen ed., 3d ed. 2006); YUST, *supra* note 111, at 15–16; NEW GROVE, *supra* note 106, at 279–83; NEWMAN, *supra* note 106, at 49; COPLAND, *supra* note 62, at 33–39.

117. *See* YUST, *supra* note 111, at 15–16. During medieval times, there were a limited number of prescribed rhythmic modes, or acceptable patterns of short and long note combinations, but over time the number of different types of note durations expanded and the rules loosened so as to allow great flexibility in composing. *See generally* Anna Maria Busse Berger, *The Evolution of Rhythmic Notation*, *in* THE CAMBRIDGE HISTORY OF WESTERN MUSIC THEORY, *supra* note 116, at 628 (discussing different rhythmic variations).

118. FORNEY ET AL., *supra* note 1, at 11–13; COPLAND, *supra* note 62, at 43–48.

119. FORNEY ET AL., *supra* note 1, at 8–9; *see* JACK PERRICONE, MELODY IN SONGWRITING: TOOLS AND TECHNIQUES FOR WRITING HIT SONGS 2 (Debbie Cavalier & Jonathan Feist eds., 2000); TOVEY, *supra* note 91, at 91; MICHAEL KENNEDY & JOYCE BOURNE KENNEDY, THE OXFORD DICTIONARY OF MUSIC 546 (Tim Rutherford-Johnson ed., 6th ed. 2012); NORTON/GROVE, *supra* note 88, at 480.

120. DICKEY & FRENCH, *supra* note 59, at 1–2; BRINDLE, *supra* note 111, at 13; PERRICONE, *supra* note 119, at 2; TOVEY, *supra* note 91, at 91; KENNEDY & KENNEDY, *supra* note 119, at 546; NEW GROVE, *supra* note 106, at 277 ("Rhythm and pitch are the two primary parameters of musical structure.").

121. BRINDLE, *supra* note 111, at 14; JIMMY KACHULIS, THE SONGWRITER'S WORKSHOP: MELODY 1 (Jonathan Feist & Susan Gedutis eds., 2003); KENNEDY & KENNEDY, *supra* note 119, at 546 (noting that the rhythmic "element is so much a governing factor in the effect of a melody that

"skeleton" (with pitch represented by "the muscle and flesh"), "[w]ithout [which] everything else collapses."[122] As an example, many theorists alter[123] the actual pitches used in the opening motive of the *Fifth Symphony* while keeping its rhythmic design constant, thereby demonstrating that the piece is nonetheless easily recognizable by listeners.[124] Indeed, it is the addition of rhythmic variation to music that distinguishes rather monotonous sounding and indistinct medieval chant—in which each note had an identical rhythmic duration—from later forms of music.[125] Thus, when thinking about the meaning of melody as applied to contemporary music, it is wrong to think merely of the sequence of pitches divorced from their rhythmic values.

Before examining the third fundamental element of music, harmony, it is worth pausing for a moment to explain the way in which musicians measure the interval or distance between pitches. Terms like "minor second," "major third," and "perfect fifth" abound in discussions of music—including in music copyright cases—and these are all references to the interval between two pitches.[126] An example of a musical interval was referenced at the start of this Article, which described the descending "major third" between the last G and the E♭ of the *Fifth Symphony*'s opening motive.[127] An understanding of how to calculate musical intervals is critical not only for the examination of principles of melodic movement in Part II of this Article, but also for understanding how chords—"the simultaneous sounding of three or more pitches" that form the basic building blocks of harmony[128]—are constructed.

Determining the precise interval between two pitches requires a reference to both the absolute *distance* between the pitches as well as the *quality* of the interval.[129] In calculating the distance between two pitches, one counts the

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if, while the notes of a popular melody are left intact, the rhythm is drastically altered, it becomes difficult to recognize the melody"); JEREMY YUDKIN, UNDERSTANDING MUSIC 38 (4th ed. 2005) ("If a melody is sung without its rhythm, it immediately loses much of its essence. Rhythm is as fundamental to music as pitch, possibly even more so. . . . Rhythm is one of the most important distinguishing features in music."); COPLAND, *supra* note 62, at 50–51 ("A sensitivity to rhythmic flow is also important in melodic construction. Many a fine melody has been made by some slight rhythmic change.").

122. PERRICONE, *supra* note 119, at 15.

123. Note that by use of the term "alter," I do not mean that they merely "transpose" the notes up or down by an equal amount, a concept discussed in more detail below. *See infra* Part II. Rather, I mean that they alter completely the relationship between the notes, such as having the fourth note ascend rather than descend.

124. EPSTEIN, *supra* note 102, at 31–32 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)); BRINDLE, *supra* note 111, at 14.

125. *See* Roman Hankeln, *Liturgy and Plainchant, 1150–1570*, *in* 2 THE CAMBRIDGE HISTORY OF MEDIEVAL MUSIC 774, 781–83 (Mark Everist & Thomas Forrest Kelly eds., 2018); DAVID HILEY, WESTERN PLAINCHANT: A HANDBOOK 371–73 (1993).

126. *See* Bright Tunes Music Corp. v. Harrisongs Music, Ltd., 420 F. Supp. 177, 179 (S.D.N.Y. 1976); KOSTKA ET AL., *supra* note 1, at 21; BOONE & SCHONBRUN, *supra* note 51, at 37–39.

127. *See supra* note 8 and accompanying text.

128. FORNEY ET AL., *supra* note 1, at 14.

129. KOSTKA ET AL., *supra* note 1, at 16–18; BOONE & SCHONBRUN, *supra* note 51, at 37.

two pitches themselves.[130] Thus, for example, the distance between scale degrees 1 and 3 in the key of C major constitutes a "third" because the journey from C to E encompasses three pitches: C, D, and E. Similarly, the distance between scale degrees 1 and 5 constitutes a "fifth" because the journey from C to G encompasses five pitches: C, D, E, F, and G.

The second part of the interval name, the quality, is determined by the number of half steps that separate the pitches.[131] Major seconds, thirds, sixths, and sevenths have a separation of two, four, nine, and eleven half steps, respectively, between the two pitches.[132] Their minor counterparts are separated by one less half step, or one, three, eight, and ten half steps, respectively.[133] Perfect unisons, fourths, fifths, and octaves are separated by zero, five, seven, and twelve half steps, respectively.[134] "If a perfect or . . . major interval is made a half step larger," the interval is said to be "augmented."[135] In contrast, "[i]f a perfect or . . . minor interval is made a half step smaller," it is said to be "diminished."[136]

Returning again to the C major scale, we can see examples of these various types of intervals contained therein. The distance between D and E is a major second because there are two half steps between those two notes. In contrast, the distance between E and F is a minor second because only a single half step separates those notes. The distance between C and E is a major third because four half steps separate those notes. In contrast, the distance between E and G is a minor third because they are separated by just three half steps. The distance between C and G—the tonic and the dominant—is a perfect fifth because they are separated by seven half steps.

With this understanding, we can now turn to harmony, the third fundamental element of music. Together, melody and rhythm can be said to refer to the horizontal aspect of music—the movement from one note of a given pitch and duration to the next.[137] In contrast, harmony can be said to refer to music's vertical aspect—the simultaneous "sound[ing] of *two or more* [*pitches*]" at any given point in time.[138] "When three or more notes are sounded together, a chord is produced."[139] More generally, the term harmony refers to "the progression [within a piece of music] from one chord to the next."[140]

130. *See* KOSTKA ET AL., *supra* note 1, at 16; BOONE & SCHONBRUN, *supra* note 51, at 37.

131. *See* BOONE & SCHONBRUN, *supra* note 51, at 37–41.

132. *Id.*

133. *Id.*; *see* KOSTKA ET AL., *supra* note 1, at 16–18.

134. BOONE & SCHONBRUN, *supra* note 51, at 44.

135. KOSTKA ET AL., *supra* note 1, at 19.

136. *Id.*

137. *See* PERRICONE, *supra* note 119, at 40–43; THE BRITANNICA GUIDE TO THEORIES AND IDEAS THAT CHANGED THE MODERN WORLD 159 (Kathleen Kuiper ed., 2010) [hereinafter BRITANNICA].

138. BRITANNICA, *supra* note 137, at 159 (emphasis added); *see* FORNEY ET AL., *supra* note 1, at 14–16; KOSTKA ET AL., *supra* note 1, at xi–xiv.

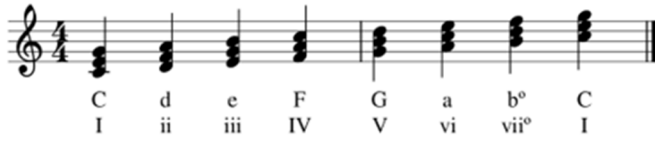
139. FORNEY ET AL., *supra* note 1, at 14–15; *accord* POWELL, *supra* note 54, at 103.

140. FORNEY ET AL., *supra* note 1, at 14; *accord* POWELL, *supra* note 54, at 103.

A lay definition of harmony would be "notes which sound good together,"[141] such as when we hear different voices simultaneously in "a barbershop quartet, or a chorus."[142] Rules of harmony are concerned both with making certain that the notes that are played simultaneously at any given moment in a song sound good together, and that the progression from one set of simultaneous set of sounds to the next set sounds good in sequence.[143]

A basic building block of harmony in Western music is known as a triad, or "a three-note chord" created by stacking two thirds atop one another.[144] If a major third has a minor third stacked atop it, that is known as a major triad.[145] If a minor third has a major third stacked atop it, that is referred to as a minor triad.[146] If two major thirds are stacked atop one another, that is called an augmented triad.[147] Finally, if two minor thirds are stacked atop one another, that is referred to as a diminished triad.[148] More complex chords can be built with more than three notes by stacking additional thirds above the top note to create seventh, ninth, eleventh, and even thirteenth chords.[149]

One can quickly identify the triads that will sound harmonious in conjunction with a given melody by taking the scale that the melody is written in and building triads on each of the notes in the scale, making use only of the seven notes in that scale when building those triads.[150] Thus, for example, for the key of C major, the following would represent the chords associated with that scale:



While Arabic numerals are used to designate scale degrees, roman numerals are used to designate chords.[151] Major chords are represented by upper-case letters, minor chords by lower-case letters, and diminished chords through

141. POWELL, *supra* note 54, at 102.

142. KOSTKA ET AL., *supra* note 1, at xi.

143. *See supra* note 140 and accompanying text.

144. KOSTKA ET AL., *supra* note 1, at 38; *accord* FORNEY ET AL., *supra* note 1, at 12–13; COPLAND, *supra* note 62, at 66–67.

145. *See* KOSTKA ET AL., *supra* note 1, at 38; BOONE & SCHONBRUN, *supra* note 51, at 95–98.

146. *See* KOSTKA ET AL., *supra* note 1, at 38; BOONE & SCHONBRUN, *supra* note 51, at 99–100.

147. *See* KOSTKA ET AL., *supra* note 1, at 38; BOONE & SCHONBRUN, *supra* note 51, at 101–04.

148. *See* KOSTKA ET AL., *supra* note 1, at 38; BOONE & SCHONBRUN, *supra* note 51, at 101–04.

149. KOSTKA ET AL., *supra* note 1, at 40–41, 414–23; COPLAND, *supra* note 62, at 66–67.

150. *See* BOONE & SCHONBRUN, *supra* note 51, at 106–08; KOSTKA ET AL., *supra* note 1, at 54–55.

151. KEITH WYATT & CARL SCHROEDER, HARMONY & THEORY: A COMPREHENSIVE SOURCE FOR ALL MUSICIANS 53 (1998).

the use of the diminished (°) symbol.[152] Thus, in the key of C major—indeed in any major key—the tonic (I), subdominant (IV), and dominant (V) triads are always major triads; the chord built on the leading tone (vii°) is always a diminished triad; and the remaining chords (ii, iii, and vi) are always minor triads.[153] While these are not the only chords that can be used to harmonize a melody (additional options, including secondary dominants and other secondary chords, augmented sixth chords, borrowed chords, and the Neapolitan chord, are possible),[154] they are far and away the ones most likely to be encountered in most modern music that is likely to be the subject of a copyright dispute.

Why is it that the three notes in a triad—such as the notes C-E-G in the tonic triad in the key of C major—dependably sound good when sounded together, while other combinations of three notes, such as C-D-B, do not?[155] The answer has to do with a scientific concept known as "the harmonic or overtone series."[156] Recall that the pitch of a note is defined by its frequency, which has a numeric value.[157] Whenever a pitch of a given frequency x is sounded by a voice or instrument, it not only produces the tone sounded, but also a series of other tones that are multiples of that note's frequency, such as notes with frequencies $2x$, $3x$, $4x$, and onward.[158] The notes represented by those higher frequencies represent not only that same letter note in higher octaves, but also outline the triad built on that initial note.[159] Thus, for example, when you hit the note C on a piano, it produces overtones of the notes E and G. Accordingly, playing the notes C, E, and G simultaneously on the piano will sound pleasing because the E and G notes will align with the overtones created by sounding the note C.

However, to sound pleasing, the harmonic triads (or their complex variants) cannot simply be played at random in conjunction with a melody. Rather, the choice of chord to harmonize a melody at a given point is constrained by two considerations: first, the specific melodic notes that are being sounded at that particular moment of time, and second, the chords that precede and follow it.

As to the first point, to sound pleasing to the ear, the notes of the triad harmonizing any given portion of the melody should generally align with the notes contained in that portion of the melody.[160] Consider, as an example, a

152. *See* BOONE & SCHONBRUN, *supra* note 51, at 99–104, 111–14.

153. *See id.*; KOSTKA ET AL., *supra* note 1, at 55.

154. *See, e.g.*, KOSTKA ET AL., *supra* note 1, at 255–57, 273–75, 286–89, 357–65, 382–88.

155. *See* POWELL, *supra* note 54, at 110–11.

156. HINDEMITH, *supra* note 91, at 16–17; *accord* HOSKEN, *supra* note 59, at 36; PERRICONE, *supra* note 119, at 8; ARNOLD SCHOENBERG, THEORY OF HARMONY 23–27 (Roy E. Carter trans., Univ. Cal. ed. 1983).

157. *See supra* note 59 and accompanying text.

158. *See* HINDEMITH, *supra* note 91, at 16–17; HOSKEN, *supra* note 59, at 36–38.

159. *See* HINDEMITH, *supra* note 91, at 17–23; HOSKEN, *supra* note 59, at 36–38; PERRICONE, *supra* note 119, at 8.

160. *See* PERRICONE, *supra* note 119, at 110–14.

song in the key of C major in $\frac{4}{4}$ time in which the notes C-E-G-E are played. If one cycled through the seven diatonic chords for that key, they would quickly find that the tonic chord (C major)—which contains all four of the melodic notes—sounds the best (although other acceptable options exist), and that aligns with the teachings of the overtone series.

As to the second point, there are descriptive "rules" of harmonic or chord progression that often preordain the appropriate movement from one chord to the other. For example, if one is in a major key and the last chord played was the vi chord, it would ordinarily be followed by either the ii or the IV chord—which would be followed by either the vii° or the V chord—and which in turn would lead to the tonic chord.[161] To be sure, these rules can be broken, and no jail sentence will result. Rather, they are principles based on observation of what sounds pleasing to the Western ear in terms of musical expectations.[162]

Accordingly, given a melody, these twin constraints will significantly limit the number of options that a composer has in terms of selecting the sequence of chords that will be used to harmonize that melody, at least if they want to follow traditional musical conventions. There will often be some choice, but that choice may boil down to selection between a handful of chords. Indeed, in both music theory and piano classes, it is common to give students a melody and have them quickly develop an accompanying harmony to that melody.[163] While there may be some variation in the answers, they will largely fall into a handful of patterns that are implied by the notes in the melody in conjunction with traditional rules of harmony. The limited number of options and the fact that those options have all been identified and used in thousands of songs—the ubiquity of the I-V-vi-IV progression in modern pop songs, for example[164]—suggests that harmony, as a general matter,[165] is an unlikely source for musical originality and thus copyright protection.

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161. *See* KOSTKA ET AL., *supra* note 1, at 98–105.

162. *See id.* at 109; W.A. MATHIEU, HARMONIC EXPERIENCE: TONAL HARMONY FROM ITS NATURAL ORIGINS TO ITS MODERN EXPRESSION 5 (Inner Traditions Int'l ed. 1997) ("[T]he rules of music—including the rules of counterpoint and harmony—were not formed in our brains but in the resonance chambers of our bodies. What feels right and good is what survives.").

163. *See, e.g.*, ALICE M. KERN, HARMONIZATION-TRANSPOSITION AT THE KEYBOARD 3 (1968).

164. *See* Williams v. Gaye, 895 F.3d 1106, 1140 n.1 (9th Cir. 2018) (Nguyen, J., dissenting) (citing Axis of Awesome, *4 Chord Song (with song titles)*, YOUTUBE (Dec. 10, 2009), https://www.youtube.com/watch?v=5pidokakU4I [https://perma.cc/2JFF-EHG3]) (explaining the parties' proposition that "a common sequence of four chords serves as the harmonic backbone of innumerable songs").

165. As discussed below, however, to the extent a composer moves outside of the diatonic chords and uses either secondary dominants or non-diatonic chords that create tension and dissonance, those creative choices of harmony might be entitled to copyright protection. *See infra* Section I.B.2.

B. *Overview of Music Copyright Law Principles*

1. Prerequisites for Obtaining a Federal Copyright

Federal copyright law extends copyright protection to "original works of authorship fixed in any tangible medium of expression."[166] Contained therein "are three basic requirements for . . . [obtaining] copyright protection: originality, expression, and fixation."[167] Assuming that these three requirements are satisfied, a variety of different types of creative works are copyrightable, including musical compositions.[168]

The first requirement, originality, should not be confused with novelty.[169] The requirement of originality demands "only that the work was independently created by the author"—"as opposed to [being] copied from" the works of others—"and that it possesses at least [a] minimal degree of creativity."[170] Thus, it is theoretically possible that two people can claim a copyright in identical works if they independently created the works and the remaining requirements of obtaining a copyright are satisfied.[171] The requirement of a minimal degree "of creativity is extremely low; even a slight amount will suffice. The vast majority of works make the grade quite easily, as they possess some creative spark, 'no matter how crude, humble[,] or obvious' it might be."[172] Nonetheless, the requirement is not a toothless one, and in extreme cases a work will be denied

166. 17 U.S.C. § 102(a) (2018).

167. DAVID J. MOSER & CHERYL L. SLAY, MUSIC COPYRIGHT LAW 25 (2012) (citing 17 U.S.C. § 102(a)).

168. Where music is concerned, two distinct copyrights exist. One is in the underlying musical composition itself: the sequence of notes of varying pitch and duration along with their accompanying lyrics, if any. And the second is in a *sound recording* of a musical composition. Palladium Music, Inc. v. EatSleepMusic, Inc., 398 F.3d 1193, 1197 n.3 (10th Cir. 2005); MOSER & SLAY, *supra* note 167, at 34–37. Although the same person can own both copyrights—such as in the case of a singer-songwriter who composes and performs her own songs—more often than not, the copyrights are owned by different persons or entities. *See* MOSER & SLAY, *supra* note 167, at 36; *Palladium Music, Inc.*, 398 F.3d at 1197 n.3. The focus of this Article is on the copyright in the underlying musical composition.

169. Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 345 (1991) ("Originality does not signify novelty; a work may be original even though it closely resembles other works so long as the similarity is fortuitous, not the result of copying.").

170. *Id.*

171. *Id.* at 345–46 ("To illustrate, assume that two poets, each ignorant of the other, compose identical poems. Neither work is novel, yet both are original and, hence, copyrightable."); Calhoun v. Lillenas Publ'g Co., 298 F.3d 1228, 1232–33 (11th Cir. 2002) ("Given the limited number of musical notes (as opposed to words in a language), the combination of those notes and their phrasing, it is not surprising that a simple composition of a short length might well be susceptible to original creation by more than one composer. However, in the realm of copyright, identical expression does not necessarily constitute infringement. Just as two paintings of the same subject in nature may appear identical, the two paintings' origins may be of independent creation." (footnotes omitted)).

172. *Feist Publ'ns, Inc.*, 499 U.S. at 345–46 (quoting 1 NIMMER & NIMMER, *supra* note 38, § 1.08[C][1]).

copyright protection due to a finding that it lacks that "minimal degree of creativity."[173]

The second requirement demarcates a key distinction in copyright law "between ideas and [the] expression" of those ideas, "mak[ing] only the latter eligible for copyright protection."[174] Indeed, federal copyright law makes clear that "[i]n no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery."[175] Accordingly, "every idea" contained within "a copyrighted work becomes instantly available" to others to exploit once that work is made available to the public.[176] Thus, for example, if one comes up with an original idea—say, for example, the idea of a love story between two male penguins—one could copyright the expression of that idea into a specific story, but others would remain free to write their own stories about such a love story.[177]

The final requirement, fixation, limits copyright protection only to those original expressions that have been fixed in some tangible medium. The definition of what constitutes a "tangible medium" is broad, encompassing those forms "now . . . or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device."[178] In the case of a musical composition, that could include sheet music, an audio recording[179] of the song being performed, a computer file containing the notes, and the like.[180] But no matter how fully formed the expression of the original idea is, it would not be entitled to copyright protection if it remained within the composer's head, or if he performed it—even if done so live—without also recording that performance.[181]

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173. *Id.* at 361–64.

174. Eldred v. Ashcroft, 537 U.S. 186, 219 (2003).

175. 17 U.S.C. § 102(b).

176. *Eldred*, 537 U.S. at 219.

177. *See* MOSER & SLAY, *supra* note 167, at 27–28 ("[I]deas must be free for use by all authors because they are the building blocks of creative expression.").

178. 17 U.S.C. § 102(a).

179. An audio recording can satisfy the fixation requirement of both the copyright in the underlying musical composition and the separate copyright in a sound recording of the same. MOSER & SLAY, *supra* note 167, at 34–35. If the owner of the copyright in both the musical composition and the sound recording are the same, the two independent copyrights can be registered using a single application. *See* U.S. COPYRIGHT OFF., CIRCULAR 56A: COPYRIGHT REGISTRATION OF MUSICAL COMPOSITIONS AND SOUND RECORDINGS 2–3 (2021), https://www.copyright.gov/circs/circ56a.pdf [https://perma.cc/AF5K-ZYG3].

180. Mourabit v. Klein, 816 F. App'x. 574, 579 (2d Cir. 2020).

181. *See* Comerica Bank & Tr., N.A. v. Habib, 433 F. Supp. 3d 79, 98 (D. Mass. 2020) (distinguishing between the protections afforded by the federal anti-bootlegging statute and federal copyright laws); BILL SEITER & ELLEN SEITER, THE CREATIVE ARTIST'S LEGAL GUIDE: COPYRIGHT, TRADEMARK, AND CONTRACTS IN FILM AND DIGITAL MEDIA PRODUCTION 8 (2012).

2. Elements of and Defenses to Musical Composition Copyright Infringement Claims

In broad terms, there are two key elements that a plaintiff must show in order to successfully make out a claim that one has infringed upon another's copyright in a musical composition. First, the plaintiff must show that she owns a valid copyright—which requires proof that the requirements of originality, expression, and fixation are satisfied—and second, she must show that the defendant copied protected elements of the plaintiff's work.[182]

Copying may be proven by direct evidence, although that is rare.[183] More commonly, it is proven by showing that the defendant both had access to the plaintiff's work and that there was "substantial" or "probative" similarity between the protected elements of the two works.[184] Access requires more than mere speculation or conjecture[185]; it requires proof that the defendant "had a reasonable opportunity to view [or hear] the copyrighted work," including as a result of widespread dissemination.[186] Alternatively, if access cannot be proven, access can be inferred and a plaintiff can make out a case by showing "striking similarity,"[187] which requires evidence that the similarities are "sufficiently unique or complex so as to preclude all explanations other than copying."[188]

To determine whether two musical compositions are substantially similar, many courts use a two-part analysis that involves "an objective extrinsic test and a subjective intrinsic test."[189] A jury cannot find substantial similarity without evidence that satisfies both tests.[190] The extrinsic test "considers whether two works share a similarity of ideas and expression as measured by

182. *E.g.*, Batiste v. Lewis, 976 F.3d 493, 501 (5th Cir. 2020); Skidmore v. Zeppelin, 952 F.3d 1051, 1064 (9th Cir. 2020) (en banc); Williams v. Gaye, 895 F.3d 1106, 1119 (9th Cir. 2018); Guzman v. Hacienda Recs. & Recording Studio, Inc., 808 F.3d 1031, 1037 (5th Cir. 2015); Calhoun v. Lillenas Publ'g Co., 298 F.3d 1228, 1232 (11th Cir. 2002); Swirsky v. Carey, 376 F.3d 841, 844 (9th Cir. 2004).

183. *E.g.*, *Batiste*, 976 F.3d at 502; *Skidmore*, 952 F.3d at 1064; *Williams*, 895 F.3d at 1119; *Swirsky*, 376 F.3d at 844; *see, e.g.*, Gaste v. Kaiserman, 863 F.2d 1061, 1066 (2d Cir. 1988).

184. *E.g.*, *Williams*, 895 F.3d at 1119; *Calhoun*, 298 F.3d at 1232; *Skidmore*, 952 F.3d at 1064; *Guzman*, 808 F.3d at 1037; *Swirsky*, 376 F.3d at 844; *Gaste*, 863 F.2d at 1066; *Batiste*, 976 F.3d at 502.

185. *Gaste*, 863 F.2d at 1066.

186. *Batiste*, 976 F.3d at 503 (alteration in original) (quoting Armour v. Knowles, 512 F.3d 147, 152–53 (5th Cir. 2007)).

187. *Id.* at 502–05; *Calhoun*, 298 F.3d at 1232 n.6; *Guzman*, 808 F.3d at 1039–40; *Gaste*, 863 F.2d at 1067–69.

188. *Guzman*, 808 F.3d at 1040.

189. *Swirsky*, 376 F.3d at 845; *accord Skidmore*, 952 F.3d at 1064; *Williams*, 895 F.3d at 1119. Some courts do not distinguish between intrinsic and extrinsic analysis. *Swirsky*, 376 F.3d at 849 n.16.

190. *E.g.*, *Skidmore*, 952 F.3d at 1064; *Swirsky*, 376 F.3d at 845. A court must leave the subjective question whether the works are intrinsically similar to the jury, but can decide the case on summary judgment under the extrinsic test if no reasonable jury could find that test to be satisfied. *See Williams*, 895 F.3d at 1119; *Swirsky*, 376 F.3d at 845 (quoting Smith v. Jackson, 84 F.3d 1213, 1218 (9th Cir. 1996)).

external, objective criteria."[191] It further "requires breaking the works 'down into their constituent elements, and comparing those elements.'"[192] The purpose of the extrinsic test is to "permit[] summary judgment in clear cases of non-infringement," and to focus the jury's "attention [on] protected elements and away from unprotected elements."[193] In contrast, "[t]he intrinsic test . . . is subjective," and "asks 'whether the ordinary, reasonable person would find the total concept and feel of the works to be substantially similar.'"[194] Expert testimony by musicologists is appropriate and frequently employed for guiding the jury under the extrinsic test, but not the intrinsic test.[195]

Legal precedent regarding the extrinsic test identifies "melody, harmony, and rhythm"—along with lyrics if the work is not solely an instrumental piece—as the key "building blocks" of musical works,[196] with melody given controlling weight.[197] For a variety of reasons, further detailed below, legal precedent holds that very short melodies are not copyrightable, nor in general are harmony or rhythm.[198] Precedent acknowledges, however, that an author can combine otherwise unprotected elements such as harmonies and rhythms, along with tempo, dynamics, key, instrumentation, and the like—including very short or unoriginal melodies[199]—in an original way that entitles the work to copyright protection despite the inability to copyright its individual components.[200]

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191. *Williams*, 895 F.3d at 1119 (quoting *Swirsky*, 376 F.3d at 845).

192. *Id.* (quoting *Swirsky*, 376 F.3d at 845).

193. *Swirsky*, 376 F.3d at 848–49.

194. *Williams*, 895 F.3d at 1119 (quoting *Swirsky*, 376 F.3d at 845); *accord Skidmore*, 952 F.3d at 1064 (quoting Jada Toys, Inc. v. Mattel, Inc., 518 F.3d 628, 637 (9th Cir. 2008)); Copeland v. Bieber, 789 F.3d 484, 489–90 (4th Cir. 2015).

195. *Skidmore*, 952 F.3d at 1064 (quoting *Jada Toys*, 518 F.3d at 637); *Williams*, 895 F.3d at 1119; *Copeland*, 789 F.3d at 489–90; Lil' Joe Wein Music, Inc. v. Jackson, 245 F. App'x 873, 877 (11th Cir. 2007); *Swirsky*, 376 F.3d at 845 (quoting Three Boys Music Corp. v. Bolton, 212 F.3d 477, 485 (9th Cir. 2000), *overruled by Skidmore*, 952 F.3d); Herzog v. Castle Rock Ent., 193 F.3d 1241, 1257 (11th Cir. 1999); Moore v. Columbia Pictures Indus., Inc., 972 F.2d 939, 945 (8th Cir. 1992); Dawson v. Hinshaw Music Inc., 905 F.2d 731, 733 (4th Cir. 1990); Griffin v. Sheeran, 351 F. Supp. 3d 492, 496 (S.D.N.Y. 2019).

196. *Williams*, 895 F.3d at 1142 (Nguyen, J., dissenting); Bridgeport Music, Inc. v. Still N The Water Publ'g, 327 F.3d 472, 475 n.3 (6th Cir. 2003); TufAmerica, Inc. v. Diamond, 968 F. Supp. 2d 588, 603 (S.D.N.Y. 2013) (quoting Newton v. Diamond, 204 F. Supp. 2d 1244, 1249 (C.D. Cal. 2002)); *see* U.S. COPYRIGHT OFF., *supra* note 15, § 802.3; 1 NIMMER & NIMMER, *supra* note 38, § 2.05.

197. *See supra* notes 32–38 and accompanying text.

198. *See supra* notes 33–38 and accompanying text.

199. *See* Allen v. Destiny's Child, No. 06-cv-6606, 2009 WL 2178676, at *12 (N.D. Ill. July 21, 2009); Bright Tunes Music Corp. v. Harrisongs Music, Ltd., 420 F. Supp. 177, 178 (S.D.N.Y. 1976).

200. *See* Gray v. Hudson, 28 F.4th 87, 101–02 (9th Cir. 2022); *Skidmore*, 952 F.3d at 1074–75; *Swirsky*, 376 F.3d at 848–50; *Three Boys Music*, 212 F.3d at 485; Erickson v. Blake, 839 F. Supp. 2d 1132, 1138–40 (D. Or. 2012); Guity v. Santos, No. 18-cv-10387, 2019 WL 6619217, at *3 (S.D.N.Y. Dec. 5, 2019); Hayes v. Minaj, No. 12-cv-07972, 2013 WL 11328453, at *8 (C.D. Cal. Mar. 7, 2013); Currin v. Arista Recs., Inc., 724 F. Supp. 2d 286, 291 (D. Conn. 2010); Levine v. McDonald's Corp., 735 F. Supp. 92, 96–98 (S.D.N.Y. 1990).

In assessing music copyright infringement claims, two additional considerations could defeat a successful claim. First, to the extent that a musical composition incorporates elements that are found within the public domain, the copying of those elements by the composer of a different musical composition would not constitute copyright infringement.[201] Such public domain elements are considered unprotected elements of a subsequent composition that incorporates them.[202]

Second, two related copyright defenses,[203] the merger and *scènes à faire* doctrines, operate to reinforce the idea-expression dichotomy embodied in copyright law by denying copyright protection to otherwise creative expression.[204] The merger doctrine "provides that, when there" is only one or "a limited number of ways to express an idea, the idea is said to 'merge' with its expression, and the expression becomes unprotected"; to do otherwise would effectively be to grant a copyright to an idea.[205] The *scènes à faire* doctrine provides that even if in theory there are many ways to express an idea, when a specific way of expressing that idea is "'standard, stock, or common to a topic[;] . . . necessarily follow[s] from a common theme or setting'[;] . . . [or is] 'dictated by external factors,'" then it is not entitled to copyright expression.[206] Translated literally as "scenes which 'must' be done,"[207] the "must" refers to constraints imposed by the particular industry or field from which the work emanates.[208] For example, once one decides to write a story about a superhero, it is expected that the story will include such elements as "'perform[ing] feats of miraculous strength,' wearing a 'tight-fitting acrobatic costume[],' battling 'wealthy megalomaniacal villains,' . . . [engaging in] 'self-propelled flight,' or leading a double life," which would all constitute *scènes à*

201. *Skidmore*, 952 F.3d at 1069.

202. *See id.* at 1069–71; MOSER & SLAY, *supra* note 167, at 96–97.

203. These doctrines do not go to the copyrightability of the work itself, but rather serve as "affirmative defenses to [a] claim[] of infringement." Oracle Am., Inc. v. Google, Inc., 750 F.3d 1339, 1358 (Fed. Cir. 2014).

204. *See id.* at 1357–64; Lexmark Int'l, Inc. v. Static Control Components, Inc., 387 F.3d 522, 534–36 (6th Cir. 2004); Gaiman v. McFarlane, 360 F.3d 644, 659–61 (7th Cir. 2004); Ets-Hokin v. Skyy Spirits, Inc., 225 F.3d 1068, 1082 (9th Cir. 2000); Mitel, Inc. v. Iqtel, Inc., 124 F.3d 1366, 1375 (10th Cir. 1997); Gates Rubber Co. v. Bando Chem. Indus., Ltd., 9 F.3d 823, 838 (10th Cir. 1993).

205. *Oracle Am.*, 750 F.3d at 1359–60; *accord Lexmark*, 387 F.3d at 535; *Ets-Hokin*, 225 F.3d at 1082; *Gates Rubber*, 9 F.3d at 838.

206. *Oracle Am.*, 750 F.3d at 1363–64 (first quoting *Mitel, Inc.*, 124 F.3d at 1374; and then quoting Softel, Inc. v. Dragon Med. & Sci. Commc'ns, Inc., 118 F.3d 955, 963 (2d Cir. 1997)); *Lexmark*, 387 F.3d at 535–36; *Mitel*, 124 F.3d at 1375; *Gates Rubber*, 9 F.3d at 838; *Gaiman*, 360 F.3d at 659–61; Alexander v. Haley, 460 F. Supp. 40, 45–46 (S.D.N.Y. 1978); Cain v. Universal Pictures Co., 47 F. Supp. 1013, 1017 (S.D. Cal. 1942).

207. Batiste v. Najm, 28 F. Supp. 3d 595, 601 n.7 (E.D. La. 2014) (quoting Schwarz v. Universal Pictures Co., 85 F. Supp. 270, 275 (S.D. Cal. 1945)); *accord Lexmark*, 387 F.3d at 535.

208. *See Oracle*, 750 F.3d at 1363–64; *Lexmark*, 387 F.3d at 535–36; *Mitel*, 124 F.3d at 1375–76; *Gates Rubber*, 9 F.3d at 838; *Gaiman*, 360 F.3d at 659–61.

faire.[209] Extended most directly into music copyright in cases challenging common themes expressed in the lyrics of songs falling into specific genres[210]—"the subjects of drinking, socializing, and courting are" considered *scènes à faire* in country songs reminiscing about "the good old days," for example[211]—it has also been extended to encompass specific elements of musical compositions that are expected by principles of music theory.[212]

In denying copyright protection to harmony, and more specifically, chord progressions, courts generally[213] rely on one of three rationales. First, that the chord progressions used in most songs today are so common and have been used in so many songs as to lack the bare originality required under federal law to warrant copyright protection.[214] Second, that most common chord progressions, even if once original, have long since entered the public domain and thus are not entitled to copyright protection.[215] Third, and perhaps most persuasively, that in most cases, chord progressions are preordained by rules of harmonic theory—which in turn are based on what is pleasing to the Western ear—and are thus not entitled to copyright protection under the *scènes à faire* doctrine because they are expected by descriptive "rules" within the field of music.[216] However, some legal authorities have acknowledged that

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209. Lewinson v. Henry Holt & Co., 659 F. Supp. 2d 547, 567 (S.D.N.Y. 2009) (first and second alteration in original) (quoting Warner Bros., Inc. v. Am. Broad. Cos., 654 F.2d 204, 210 (2d Cir. 1981)).

210. *See* Bridgeport Music, Inc. v. UMG Recordings, Inc., 585 F.3d 267, 274 n.2 (6th Cir. 2009) (citing Black v. Gosdin, 740 F. Supp. 1288, 1292–93 (M.D. Tenn. 1990)); Brainard v. Vassar, 625 F. Supp. 2d 608, 617–19 (M.D. Tenn. 2009); Johnson v. Foxx, 502 F. Supp. 2d 620, 623–24 (E.D. Mich. 2007).

211. *Brainard*, 625 F. Supp. 2d at 619–20.

212. Steele v. Turner Broad. Sys., Inc., 646 F. Supp. 2d 185, 191 (D. Mass. 2009) ("Both tunes consist primarily of I, IV, and V chords[—]the most commonly used chords in harmony." (citation omitted)); McDonald v. West, 138 F. Supp. 3d 448, 454 (S.D.N.Y. 2015), ("[C]ommon . . . harmonic progressions are not protected."); Tisi v. Patrick, 97 F. Supp. 2d 539, 544 (S.D.N.Y. 2000) ("The sole similarity—the I chord (A chord) to IV chord (D chord) progression—is so common to rock and pop genres (indeed, to every type of Western music) that it alone does not make the songs sound any more similar than countless other songs."); McRae v. Smith, 968 F. Supp. 559, 566 (D. Colo. 1997) ("The chord progressions of both songs, which are known as I–IV–V progressions, are the most common chord progressions in all of the music of Western civilization.").

213. *See* sources cited *supra* note 212.

214. Johnson v. Gordon, 409 F.3d 12, 23 (1st Cir. 2005); Batiste v. Najm, 28 F. Supp. 3d 595, 616 (E.D. La. 2014) (citing *Johnson*, 409 F.3d at 23); Gooch v. Raymond, No. 09-cv-0891, 2012 WL 13055741, at *4 (M.D. Tenn. Feb. 27, 2012).

215. Griffin v. Sheeran, 351 F. Supp. 3d 492, 497 (S.D.N.Y. 2019); *see McDonald*, 138 F. Supp. 3d at 454; *Tisi*, 97 F. Supp. 2d at 543–44; N. Music Corp. v. King Rec. Distrib. Co., 105 F. Supp. 393, 400 (S.D.N.Y. 1952).

216. *See Batiste*, 28 F. Supp. 3d at 613–16; Intersong-USA, Inc. v. CBS, Inc., 757 F. Supp. 274, 282 (S.D.N.Y. 1991); New Old Music Grp., Inc. v. Gottwald, 122 F. Supp. 3d 78, 95–96 (S.D.N.Y. 2015); ROSEN, *supra* note 26, at 163–67; Jeffrey Cadwell, *Expert Testimony, Scènes à Faire, and Tonal Music: A (Not So) New Test for Infringement*, 46 SANTA CLARA L. REV. 137, 153–57 (2005); *see also* Skidmore v. Zeppelin, 952 F.3d 1051, 1079–80 (9th Cir. 2020) (en banc) (Watford, J., concurring) ("[O]nce Randy Wolfe settled on using a descending chromatic scale in A minor, there were a

to the extent a composer moves outside of the diatonic chords and uses either secondary dominants or non-diatonic chords that create tension and dissonance, those creative choices of harmony might be entitled to copyright protection.[217]

In denying copyright protection to rhythm, courts generally begin by equating rhythm with meter.[218] Correctly noting that there are only a handful of possible meters, they note alternatively that the choice of meter is thus either lacking in originality because of common use in countless songs[219] or that it is not entitled to copyright protection as a result of the *scènes à faire* doctrine because the meter is dictated by controlling principles within the field of music.[220]

Finally, in addressing copyright claims connected to a song's melodic line, many legal authorities—often led there by a party's expert witness—begin their analyses by mistakenly equating melody with mere pitch sequence.[221] Where very short melodic phrases are involved, many such courts focus on the limited number of notes available to composers[222]—and more specifically, the limited number of combinations of those notes that sound pleasing to the ear[223]—and reject claims of copyright infringement for one of four reasons. First, that a very short sequence of notes lack sufficient creativity to satisfy the threshold requirement of originality set forth in the copyright statutes and is

limited number of chord progressions that could reasonably accompany that bass line (while still sounding pleasant to the ear).").

217. *See* Tempo Music, Inc. v. Famous Music Corp., 838 F. Supp. 162, 168 (S.D.N.Y. 1993); Cadwell, *supra* note 216, at 157–59.

218. *See Batiste*, 28 F. Supp. 3d at 616; Currin v. Arista Recs., Inc., 724 F. Supp. 2d 286, 291–94 (D. Conn. 2010); Velez v. Sony Discos, No. 05-cv-0615, 2007 WL 120686, at *12 (S.D.N.Y. Jan. 16, 2007); *N. Music*, 105 F. Supp. at 400.

219. *See Batiste*, 28 F. Supp. 3d at 616; *N. Music*, 105 F. Supp. at 400; *Currin*, 724 F. Supp. 2d at 291–94.

220. *See Batiste*, 28 F. Supp. 3d at 616; *Velez*, 2007 WL 120686, at *12; *Currin*, 724 F. Supp. 2d at 291.

221. ROSEN, *supra* note 26, at 159–60; *see* Granite Music Corp. v. United Artists Corp., 532 F.2d 718, 720–21 (9th Cir. 1976); Griffin v. Sheeran, 351 F. Supp. 3d 492, 499–500 (S.D.N.Y. 2019); Newton v. Diamond, 204 F. Supp. 2d 1244, 1253–56 (C.D. Cal. 2002); Hirsch v. Paramount Pictures, 17 F. Supp. 816, 817–18 (S.D. Cal. 1937); U.S. COPYRIGHT OFF., *supra* note 15, § 802.3(A); Paymaneh Parhami, Williams v. Gaye*: Blurring the Lines of Copyright Infringement in Music*, 34 BERKELEY TECH. L.J. 1113, 1139–40 (2019). This focus on comparing pitch sequences stripped of their rhythmic context finds its roots in the "comparative method" pioneered by Judge Learned Hand in the early twentieth century. *See, e.g.*, Hein v. Harris, 175 F. 875, 876–77 (S.D.N.Y. 1910); Fishman, *supra* note 38, at 1880 (describing the history of the comparative method).

222. *See* Williams v. Gaye 895 F.3d 1106, 1142 (9th Cir. 2018) (Nguyen, J., dissenting); Calhoun v. Lillenas Publ'g, 298 F.3d 1228, 1232–33 (11th Cir. 2002); Gaste v. Kaiserman, 863 F.2d 1061, 1068–69 (2d Cir. 1988); Watt v. Butler, 744 F. Supp. 2d 1315, 1323–25 (N.D. Ga. 2010); *Newton*, 204 F. Supp. 2d at 1253; Tisi v. Patrick, 97 F. Supp. 2d 539, 548–49 (S.D.N.Y. 2000); Jones v. Supreme Music Corp., 101 F. Supp. 989, 991–92 (S.D.N.Y. 1951).

223. *See Williams*, 895 F.3d at 1142 (Nguyen, J., dissenting); Darrell v. Joe Morris Music Co., 113 F.2d 80, 80 (2d Cir. 1940); Arnstein v. Edward B. Marks Music Corp., 82 F.2d 275, 277 (2d Cir. 1936).

thus not entitled to copyright protection in the first instance.[224] Second, that given the limited number of notes and countless number of songs, the particular sequence at issue has already been used in numerous prior songs and is thus either lacking in originality or already within the public domain.[225] Third, although not specifically referencing the *scènes à faire* doctrine, relying on expert testimony regarding tendencies in melodic movement or information about a typical singer's vocal range and skill to conclude that the particular movement from one scale degree to the other within the sequence is preordained by principles within the field of music.[226] And finally, a determination that the identity of such a short melodic sequence in two different works is not necessarily a result of copying, but rather coincidence due to the finite number of unique combinations of such notes that sound pleasing to the ear.[227]

C. Observed Dissonance Between Music Theory and Music Copyright Law

A comparison of the definitions given to the terms melody and rhythm by musicians and the definitions given to those terms by many judges adjudicating music copyright claims exposes a fundamental misunderstanding that, in turn, has resulted in precedent that affords too much weight to sequences of musical pitches and too little weight to the rhythmic value of those pitches. As demonstrated in Section I.A, music theorists define melody as consisting of not merely a sequence of pitches, but also the rhythm of those pitches in the sense of their specific note durations.[228] The rhythmic variation of those individual notes combines with the pitch variation to create a sort of unique fingerprint for the melody that is the product of these two independent variables.

However, legal precedents largely discount the relevance of a melody's fluctuating rhythmic design in copyright analysis—incorrectly equating it with a song's largely static meter and time signature[229]—and focus their analysis

224. *See Newton*, 204 F. Supp. 2d at 1253–56; U.S. COPYRIGHT OFF., *supra* note 15, § 313.4(C) (providing that "short musical phrases consisting of only a few musical notes standing alone are not copyrightable[,] . . . even if the phrase is novel or distinctive," and listing as an example of non-copyrightable material "[a] trademark consisting of three musical notes"); U.S. COPYRIGHT OFF., *supra* note 15, § 802.5(B) ("[S]hort musical phrases are not copyrightable because they lack a sufficient amount of authorship (just as words and short textual phrases are not copyrightable) . . . . [A] short phrase of only a few musical notes, such as clock chimes or 'mi do re sol, sol, re mi do' would be considered too short and too lacking in creative expression to be registrable.").

225. *See Newton*, 204 F. Supp. 2d at 1253–56; *Hirsch*, 17 F. Supp. at 817–18.

226. *See supra* text accompanying notes 160–61.

227. *See Williams*, 895 F.3d at 1142 (Nguyen, J., dissenting); *Calhoun*, 298 F.3d at 1232–33; *Gaste*, 863 F.2d at 1068–69; Granite Music Corp. v. United Artists Corp., 532 F.2d 718, 720–21 (9th Cir. 1976); *Darrell*, 113 F.2d at 80; *Arnstein*, 82 F.2d at 277; *Watt*, 744 F. Supp. 2d at 1324; *Newton*, 204 F. Supp. 2d at 1253; *Tisi*, 97 F. Supp. 2d at 545; *Jones*, 101 F. Supp. at 992.

228. *See supra* notes 119–25 and accompanying text.

229. *See supra* note 221 and accompanying text.

almost exclusively on a melody's sequence of pitches.[230] These misunderstandings result in legal precedent that gives undue weight to pitch sequences and too little weight to the rhythmic design of those pitches. This near-exclusive focus on pitch and lack of focus on rhythmic design results in another error in music copyright precedent: a failure to appreciate the musical and, in turn, the legal significance of musical silence in the form of rests.[231]

The cumulative effect of these various musical misunderstandings contained in music copyright jurisprudence can result in decisions that are overinclusive—in that they find copyright infringement when there is none—and underinclusive—in that they fail to see what a music theorist would see as a clear instance of infringement. The remainder of this Article takes a closer look at these misunderstandings and their consequences in music copyright cases. Part II of this Article uses the opening motive of the *Fifth Symphony* to clearly illustrate the distinction between a definition of melody that relies exclusively on pitch sequences and one that takes rhythmic design into account. Part III of this Article enters the debate over the minimum number of notes necessary to have a valid copyright claim. Relying on traditional music theory principles as well as contemporary studies, it demonstrates that to the extent that "notes" refers merely to pitches stripped of their rhythmic context, there is rarely a basis for affording copyright protection to most sequences of notes because much melodic movement, like harmonic movement (as recognized in legal precedents), is largely preordained by rules of music theory that are based on expectations of the Western ear. Part IV of this Article uses both the opening motive of the *Fifth Symphony* as well as a recent copyright dispute between Tom Petty and Sam Smith[232] to demonstrate the significance of musical silence—in the form of rests—into music copyright analysis, a concept overlooked by legal precedents that can result in a failure to identify rather stark instances of copyright infringement.

II. DISTINGUISHING PITCH SEQUENCE AND MELODY

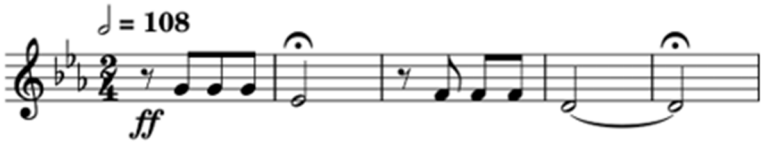
To understand the distinction between a mere pitch sequence and a melody, I will use as my primary example the opening four note motive of Beethoven's *Fifth Symphony*, which has been recognized by several judges to be sufficiently distinctive to warrant copyright protection if Beethoven wrote and

230. *See supra* notes 221–22 and accompanying text.

231. *See supra* notes 51–53 and accompanying text.

232. *See Sam Smith Explains Why He Settled Copyright Dispute with Tom Petty*, *supra* note 19; Brian Mansfield, *Sam Smith to Pay Tom Petty Royalties on 'Stay With Me,'* USA TODAY (Jan. 26, 2015, 11:38 AM), https://www.usatoday.com/story/life/music/2015/01/26/sam-smith-stay-with-me-tom-petty-i-wont-back-down/22346051 [https://perma.cc/PWT4-LYC5]; Guardian Music, *Tom Petty on Sam Smith Song Similarity: 'Nothing More Than a Musical Accident,'* GUARDIAN (Jan. 29, 2015, 12:52 AM), https://www.theguardian.com/music/2015/jan/29/tom-petty-on-sam-smith-similarity-stay-with-me-wont-back-down-musical-accident [https://perma.cc/HPY6-QG6V].

sought copyright protection for the piece under modern U.S. copyright law.[233] Reproduced below are the first five measures of the *Fifth Symphony*[234]:



If we focus *solely* on the pitch sequence, the first four *audible* notes are G-G-G-E♭ (I say audible because the song begins with an eighth note rest that, as demonstrated in Part IV, is musically significant).[235] The key signature tells us that this song is either in the key of E♭ major or C minor.[236] If in the key of E♭ major, the scale degree pitch pattern of the opening four notes is 3-3-3-1 (followed by a four note sequence with the pattern 2-2-2-7); if in the key of C minor, the scale degree pitch pattern of the opening four notes is 5-5-5-3 (followed by a four note sequence with the pattern 4-4-4-2).

Thinking about the melody in terms of scale degrees rather than specific notes is critical in order to afford composers adequate copyright protection for their compositions. This is because the vast majority of humans—including accomplished musicians—lack so-called "perfect pitch" or "absolute pitch."[237] Thus, if they hear a G followed by an E♭, they cannot identify the notes heard as G and E♭, respectively. Rather, at best the vast majority of humans (and musicians) have *relative* pitch, meaning that if they hear a G followed by an E♭, they can perceive that the latter is lower (specifically, a major third lower) than the former.[238]

In the field of music, it is not uncommon to transpose a song from the key in which it was originally composed into another key.[239] A typical reason to do so is to align the notes in the song with a given singer's comfortable vocal range.[240] This is relatively easy to do if you think of the original composition in terms of scale degrees rather than specific notes. As it turns out, Beethoven's *Fifth Symphony* is written in the key of C minor,[241] meaning that the scale degree pattern for the first eight notes is 5-5-5-3-4-4-4-2. To transpose it into the key of, say, A minor, we would rewrite the first eight notes to correspond

233. *See supra* notes 9–10 and accompanying text.

234. *See* Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808).

235. *See* GUERRIERI, *supra* note 2, at 5 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)).

236. *See supra* notes 69–74 and accompanying text.

237. POWELL, *supra* note 54, at 11–17; MILES HOFFMAN, THE NPR CLASSICAL MUSIC COMPANION: AN ESSENTIAL GUIDE FOR ENLIGHTENED LISTENING 1–2 (1997).

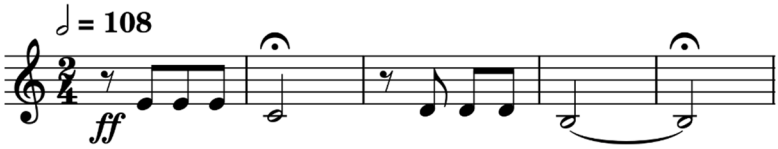
238. *See* HOFFMAN, *supra* note 237, at 3.

239. *See* FORNEY ET AL., *supra* note 1, at 21; KOSTKA ET AL., *supra* note 1, at 7.

240. *See* FORNEY ET AL., *supra* note 1, at 21.

241. *See* GUERRIERI, *supra* note 2, at 12–13, 22–23 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)).

to those same scale degrees in A minor, which would translate into E-E-E-C-D-D-D-B. If we keep the tempo, rhythms, and other musical elements intact, the transposed composition will look as follows[242]:



Despite the fact that our opening pitch sequence has changed from G-G-G-E♭ to E-E-E-C, if you were to go to a piano or other instrument and play this transposed version of Beethoven's *Fifth Symphony*, it will be instantly recognizable as the tune penned by Beethoven.[243] Indeed, unless you are one of those rare people with perfect pitch, you may not even notice that the sequence has been transposed into a different key.

As it turns out, music copyright law correctly recognizes that transposing a series of notes into a different key does not change the song into a different one; the original and transposed tunes still share the same "underlying DNA."[244] In other words, music copyright law correctly recognizes that because the overwhelming majority of consumers of music have only relative pitch, what is entitled to copyright protection in a musical composition is not the *absolute* pitch of the notes, but rather their pitch relative to one another.[245] Thus, assuming Beethoven holds a copyright in the original version of the *Fifth Symphony*, my transposition into A minor would not constitute a new work entitled to copyright protection, but would rather be viewed as infringing upon Beethoven's copyright. [246] For this reason, in music copyright cases, transposing the complaining work and the defending work into the same key is an accepted procedure for comparing apples to apples and determining whether any

242. *See supra* notes 234, 237–41 and accompanying text.

243. *See supra* text accompanying notes 1–10.

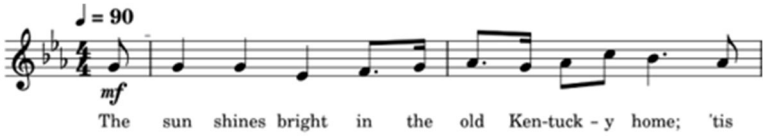
244. Guzman v. Hacienda Recs. & Recording Studio, Inc., No. 12-cv-42, 2015 WL 4612583, at *5 (S.D. Tex. July 31, 2015).

245. *See* Hein v. Harris, 175 F. 875, 876 (S.D.N.Y. 1910) ("I have no difficulty in finding that the defendant's song is an infringement of the complainant's. . . . It is true that the keys are different; but this is a distinction which is of no consequence to the ears of all but those especially skilled in music, and, indeed, even among persons skilled in music the power to distinguish two keys when they are not played in immediate juxtaposition is by no means universal. 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.").

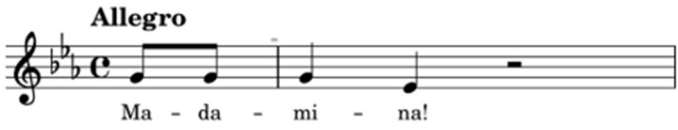
246. *See* We Shall Overcome Found. v. The Richmond Org., No. 16-cv-2725, 2017 WL 3981311, at *14 (S.D.N.Y. Sept. 8, 2017).

infringement exists.[247] Alternatively, in music copyright cases, the notes are translated into scale degrees in order to compare the relative pitch changes.[248]

Yet despite the distinctive, instantly recognizable opening to Beethoven's *Fifth Symphony*, it would be a mistake to focus solely on the pitch sequence G-G-G-E♭ (or the transposition of that into other keys using the scale degree pitch pattern 5-5-5-3) and conclude that it is entitled to copyright protection—and thus that others are not legally entitled to make use of that same sequence of pitches absent Beethoven's permission—independent of other musical characteristics associated with those opening four notes. Indeed, there are numerous songs, running across various musical genres that, when transposed to the same key as Beethoven's *Fifth Symphony*, open with the same sequence of four notes but that sound completely different as a result of various other musical aspects of those songs. For example, the opening four (indeed five) notes of Stephen C. Foster's familiar *My Old Kentucky Home* are identical in pitch to those of the *Fifth Symphony*[249]:



So, too, are the first four notes from the vocal line from Act I, Scene 2 of Mozart's *Don Giovanni* sung by Leporello in the Bass Aria *Madamina, il catalogo è questo*[250]:



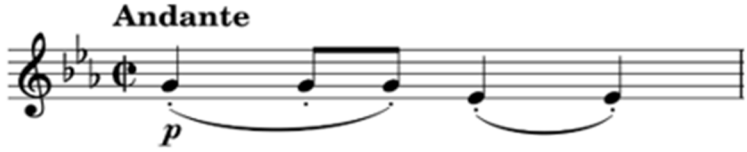
247. *E.g.*, Johnson v. Gordon, 409 F.3d 12, 21 n.5 (1st Cir. 2005); Copeland v. Bieber, No. 13-cv-246, 2016 WL 7079569, at *5 (E.D. Va. Sept. 8, 2016); Tisi v. Patrick, 97 F. Supp. 2d 539, 545 (S.D.N.Y. 2000); Repp v. Webber, 947 F. Supp. 105, 112–13 (S.D.N.Y. 1996); Nom Music, Inc. v. Kaslin, 227 F. Supp. 922, 927 (S.D.N.Y. 1964).

248. *See, e.g.*, Gray v. Hudson, 28 F.4th 87, 93 (9th Cir. 2022); Velez v. Sony Discos, No. 05-cv-0615, 2007 WL 120686, at *11 (S.D.N.Y. Jan. 16, 2007).

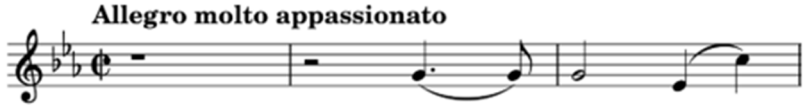
249. *See* Stephen C. Foster, *My Old Kentucky Home, Good-Night* (1853); *supra* note 234 and accompanying text.

250. *See* Wolfgang A. Mozart, *Don Giovanni*, KV 527/04 (1788); *supra* note 234 and accompanying text.

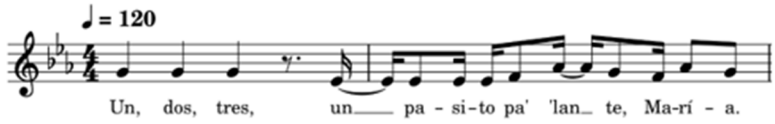
Similarly, the melodic line from the first measure of Franz Schubert's *Impromptu No. 3 in B♭ Major, Op. 142* shares the same opening four note pitch pattern[251]:



In addition, the violin solo from the opening of Felix Mendelssohn's *Concerto in E minor for the violin, Op. 64*—when transposed into the key of C minor—employs the same opening four-note sequence[252]:



And as a final example, the first four pitches of Ricky Martin's popular song *Maria* are identical with those in Beethoven's *Fifth Symphony*[253]:



So, if these six works use the identical pitch sequence in their opening notes, what results in them sounding so different to the listener? A careful comparison of the six pieces shows that the main feature that differentiates the opening notes of each of the works from the others are the different rhythmic values given to each of the four notes in the opening sequence, and thus the relative time devoted to sounding each of the four notes.

In the *Fifth Symphony*, the rhythmic pattern of the first four audible notes in general terms is short-short-short-long,[254] a rhythmic pattern known in classical antiquity as a *quartus paeon* that was not itself unique to Beethoven's

251. *See* Franz Schubert, *No. 3 in Bb Major*, FOUR IMPROMPTUS, D. 935 (OP. POSTHUM. 142) (1839); *supra* note 234 and accompanying text.

252. *See* Felix Mendelssohn, *Violin Concerto in E minor*, OP. 64 (1844); *supra* note 234 and accompanying text.

253. *See* Ricky Martin, *Maria* (K.C. Porter, Robi Rosa & Luis Gomez-Escolar eds. 1995); *supra* note 234 and accompanying text.

254. *See* FORNEY ET AL., *supra* note 1, at 194–99 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)) (describing multimovement cycles).

work.[255] More specifically, the first four *audible* notes have the following durational values: $1/8$ - $1/8$ - $1/8$ - $1/2$. In Foster's work, the sequence is short-medium-medium-medium, or $1/8$ - $1/4$ - $1/4$ - $1/4$. In Mozart's work, the sequence is short-short-medium-medium, or $1/8$ - $1/8$ - $1/4$ - $1/4$. In Schubert's piece, the pattern is medium-short-short-medium, or $1/4$ - $1/8$ - $1/8$ - $1/4$. In Mendelssohn's piece, the pattern is long-short-long-short, or $3/8$ - $1/8$ - $1/2$ - $1/8$. And finally, in Martin's piece—and again focusing only on the audible notes—the sequence is medium-medium-medium-very short, or $1/4$ - $1/4$ - $1/4$ - $1/16$. The following table demonstrates the uniqueness of the rhythmic patterns across the five works[256]:

Composer	General Rhythmic Pattern	Specific Rhythmic Pattern
Beethoven	**short-short-short-long**	$1/8$ - $1/8$ - $1/8$ - $1/2$
Foster	**short-medium-medium-medium**	$1/8$ - $1/4$ - $1/4$ - $1/4$
Mozart	**short-short-medium-medium**	$1/8$ - $1/8$ - $1/4$ - $1/4$
Schubert	**medium-short-short-medium**	$1/4$ - $1/8$ - $1/8$ - $1/4$
Mendelssohn	**long-short-long-short**	$3/8$ - $1/8$ - $1/2$ - $1/8$
Martin	**medium-medium-medium-very short**	$1/4$ - $1/4$ - $1/4$ - $1/16$

In addition to having different rhythmic durations, the six pieces also place emphasis on different pitches in the four-pitch sequence they share in common.[257] Recall that the meter of a song—or its time signature—helps to establish weak and strong beats, with the first beat, or downbeat, being the strongest beat across all meters.[258] Recall further that the time signature of the *Fifth Symphony* tells us that it is written in duple meter—with the first beat being strong and the second beat being weak—and that each beat is worth a

255. *See* GUERRIERI, *supra* note 2, at 36–45 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)); LEO SAMAMA, THE MEANING OF MUSIC 114–16 (Dominy Clements trans., 2016); *see also* Christopher H. Gibbs, *Beethoven's Symphony No. 5 in C Minor, Op. 67*, NPR (June 9, 2006, 10:32 AM), https://www.npr.org/templates/story/story.php?storyId=5473894 [https://perma.cc/44R9-8VB8] (crediting Donald Frances Tovey for the proposition that the rhythmic pattern used by Beethoven was found "in other works from this time" and "that if this indeed represents fate knocking at the door it was also knocking at many other doors").

256. *See supra* notes 234–53 and accompanying text.

257. *See supra* notes 234–53 and accompanying text.

258. *See supra* notes 97–103 and accompanying text.

quarter note.[259] However, because the first beat of the *Fifth Symphony*—what would be the strong beat—is on a rest, and is thus silent, it is not until the fourth and final note of the opening motive, the E♭, that we land firmly on a strong beat.[260] This difference in which note is emphasized also differentiates the opening of the *Fifth Symphony* from that of the other four pieces. Schubert and Martin give the greatest emphasis to the first G only; Foster gives the greatest emphasis to the second G; and Mozart and Mendelssohn give the greatest emphasis to the third G. The different emphasis given to the four audible pitches contained in each of these five songs, coupled with their distinct sequences of rhythmic durations, together alter how these four identical pitches are perceived by listeners.

A third rhythmic aspect related to the opening of Beethoven's *Fifth Symphony* is significant. The fourth and eighth notes have symbols over them known as fermatas,[261] which direct the conductor to hold those notes for as long as they wish to and thus effectively alters the notes' duration.[262] This, when combined with the opening rest and the song's rapid $\frac{2}{4}$ meter, creates ambiguity about the song's overall meter.[263]

A second example—based on a litigated music copyright case—reinforces the importance of not focusing merely on a song's sequence of pitches without regard to the rhythmic duration of those pitches. At issue in *Elsmere Music, Inc. v. National Broadcasting Co.*[264] was an infringement claim brought by the owner of the copyright to the song *I Love New York* against the use of the melody (with substituted lyrics) in a comedic sketch on the television show *Saturday Night Live*.[265] Although ultimately ruling in favor of the defendant on fair use

259. KOSTKA ET AL., *supra* note 1, at 25–28; *see* POWELL, *supra* note 54, at 196–98; BOONE & SCHONBRUN, *supra* note 51, at 16–17; MURPHY, *supra* note 4, at 25; Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808).

260. *See* GUERRIERI, *supra* note 2, at 5–7 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)); EPSTEIN, *supra* note 102, at 31–32 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)). The opening G in the song lands on the tail end of the initial downbeat and thus would get more emphasis than the two Gs that follow, but they are all relatively weak compared with the E♭. *See* GUERRIERI, *supra* note 2, at 6 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)).

261. *See* GUERRIERI, *supra* note 2, at 23 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)).

262. *See* BOONE & SCHONBRUN, *supra* note 51, at 191. Recall, too, that when the song opens, there is an intentional ambiguity about whether it is in the key of E♭ major or C minor. *See* GUERRIERI, *supra* note 2, at 12–13, 22–23 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)). Thus, a significant aspect of the piece is ambiguity over its rhythmic structure and its tonal center that together at least temporarily unsettle the listener's ear. *See id.* at 22–23 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)).

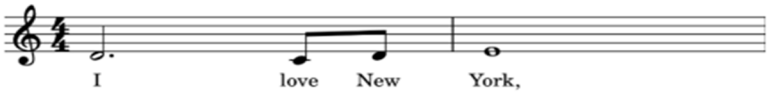
263. *See* GUERRIERI, *supra* note 2, at 5–8, 22–23 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)).

264. Elsmere Music, Inc. v. Nat'l Broad. Co., 482 F. Supp. 741, 743–44 (S.D.N.Y. 1980).

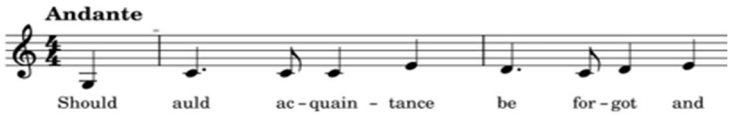
265. *See id.*

grounds,[266] the court nonetheless concluded that the short four-note melodic sequence D-C-D-E of the song was sufficiently distinctive to be entitled to copyright protection.[267]

The specific sequence of four notes at issue in *Elsmere Music, Inc.* was as follows[268]:



Just as with Beethoven's *Fifth Symphony*, the distinctiveness of this melody comes not merely from the sequence of pitches, but also their rhythmic duration. In this case, that duration is something like long-short-short-very long, or $^{3}/_{4}$ - $^{1}/_{8}$ - $^{1}/_{8}$ - 1. Were we to focus solely on the pitch sequence D-C-D-E, we would find another famous song, Robert Burns' *Auld Lang Syne*, using that same sequence in its second full measure[269]:



Yet, as with the *Fifth Symphony* example, *I Love New York* and *Auld Lang Syne* sound very different from one another because the latter uses a rhythmic pattern of medium plus-short-medium-medium, or $^{3}/_{8}$ - $^{1}/_{8}$ - $^{1}/_{4}$ - $^{1}/_{4}$.[270] Moreover, while *I Love New York* locates both the opening D and the closing E on strong beats, only the opening D occurs on a strong beat in *Auld Lang Syne*.

Together, these examples, in conjunction with the background materials on music theory contained in Part I, suggest that melodic sequences derive their uniqueness not merely from the sequence of pitches, but rather from a given sequence of pitches combined with a given sequence of rhythmic durations.[271] Accordingly, the specific rhythmic pattern of the musical notes in a melody should be given at least as much weight, if not more, than the sequence of pitches in music copyright analysis.

266. *See id.* at 744–47. The fair use defense is a privilege that allows someone other than the owner of a copyright to use the copyrighted material in a reasonable manner without the copyright owner's consent. *See* Harper & Row, Publishers, Inc. v. Nation Enters., 471 U.S. 539, 549 (1985); MOSER & SLAY, *supra* note 167, at 207.

267. *See Elsmere Music*, 482 F. Supp. at 744.

268. *Id.*; *see* Steve Karmen, *I Love New York* (1977).

269. *See Auld Lang Syne* (Robert Burns ed., 1788).

270. *See supra* text accompanying notes 268–69.

271. *See supra* Part I.

Although many legal authorities have failed to grasp this distinction,[272] there are fortunately a few legal authorities that appear to understand that pitch sequence, standing alone, means very little stripped of its rhythmic context.[273] Pointing out that to focus "solely on pitch sequence [can] break music down beyond recognition," the Ninth Circuit, in *Swirsky v. Carey*, for example, went on to correctly point out that

> [i]f a musician were provided with a group of notes identified only by numerical pitch sequences, he or she could play that music a number of different ways, none of them being substantially similar to each other. In order to perform a song exactly, the musician would need information about . . . rhythm . . . .[274]

They thus either correctly describe melody as the combination of pitch and rhythm (in the sense of note duration),[275] or at least acknowledge that copyright protects both a song's pitch sequence and rhythms.[276]

To be sure, even courts that fail to grasp the distinction between pitch sequence and melody sometimes arrive at the right result, but their task would be greatly aided by correctly defining melody in analyzing the competing works. A good example of this occurred in *Hirsch v. Paramount Pictures, Inc.*, which involved a claim by the owner of the copyright in the song *Lady of Love* that the song *Without a Word of Warning* copied its melody.[277] Evidence was introduced in support of the defendant indicating that the melody had its source in a work by Johann Strauss, *Die Fledermaus*,

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272. *See supra* text accompanying notes 229–31.

273. *See* Gray v. Hudson, 28 F.4th 87, 99 (9th Cir. 2022) ("[I]t is necessary to distinguish between an abstract sequence of pitches and a melody . . . . Though the concepts are sometimes equated, creating a melody involves more than writing down a sequence of pitches; at a minimum, that sequence must also be 'rhythmically organized' so as to form an '[a]esthetic whole.'" (quoting *Melody*, WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY (2002))); Williams v. Gaye, 895 F.3d 1106, 1145–49 (9th Cir. 2018) (Nguyen, J., dissenting); Johnson v. Gordon, 409 F.3d 12, 21–22 (1st Cir. 2005); Swirsky v. Carey, 376 F.3d 841, 847–48 (9th Cir. 2004); Marks v. Leo Feist, Inc., 290 F. 959, 960 (2d Cir. 1923); Batiste v. Lewis, No. 17-cv-4435, 2019 WL 1790454, at *11 (E.D. La. Apr. 23, 2019); Repp v. Webber, 947 F. Supp. 105, 112–14 (S.D.N.Y. 1996); ROSEN, *supra* note 26, at 4, 155 (contending that pitch sequence alone is not ordinarily copyrightable).

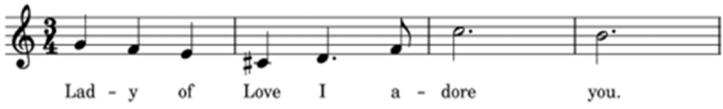
274. *Swirsky*, 376 F.3d at 848 n.13.

275. *E.g.*, *id.* at 846–47 & n.9; Levine v. McDonald's Corp., 735 F. Supp. 92, 95 (S.D.N.Y. 1990); ROSEN, *supra* note 26, at 153 (correctly describing melody as "[t]he name given to the combination of linear successive musical notes (or pitches) and their corresponding durational values").

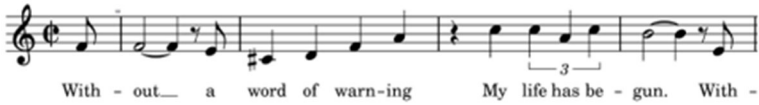
276. *See* Hines v. W Chappell Music Corp., No. 20-cv-3535, 2021 WL 2333621, at *3 (S.D.N.Y. June 8, 2021). At least one authority grasps this general concept, but erroneously indicates that *each* note duration in the sequence *must* differ from the others in order to constitute a protected melodic sequence. *See* ROSEN, *supra* note 26, at 155 (citing Hirsch v. Paramount Pictures, Inc., 17 F. Supp. 816, 817 (S.D. Cal. 1937)). This seems clearly incorrect, as demonstrated by a song such as Beethoven's *Ode to Joy*, which is made up almost exclusively of quarter notes. *See supra* notes 107–09 and accompanying text.

277. *See Hirsch*, 17 F. Supp. at 817.

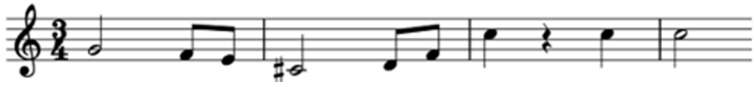
that had long since entered the public domain.[278] The court described the melody from the Strauss piece in terms of its pitch sequence, describing it as "g-f-e-c sharp-d-f-c natural-c-c," and indicated that the plaintiff's work was identical save for "one change, plaintiff using 'b' instead of the 'c' in the Strauss waltz" for the final note.[279] The melody of the plaintiff's work, *Lady of Love*, is as follows[280]:



The melody of the defending work, *Without a Word of Warning*, is as follows[281]:



Finally, the melody from the Strauss piece, *Die Fledermaus*, is as follows[282]:



The *Hirsch* court ruled against the plaintiff, relying on two grounds. First, that the pitch sequence was largely identical to that of the Strauss piece which was already in the public domain.[283] And second, that in listening to the plaintiff's work and the defending work, the court's lay impression was that they "carried no identity of melody" when transposed into the same key.[284] The court's ultimate conclusion is correct but would have been greatly aided by a focus on rhythmic differences between the two songs.

As an initial matter, the songs have different rhythms in the larger sense of that concept, with *Lady of Love* and *Die Fledermaus* being in $\frac{3}{4}$ time, a triple meter with a strong initial beat that has a waltz feel to it.[285] In contrast, *Without*

278. *See id.*
279. *Id.* at 817–18.
280. *See id.* at 819 (citation omitted).
281. *See id.* (citation omitted).
282. *See id.* at 818–19 (citing Johann Strauss II, *Die Fledermaus* (1874)).
283. *See id.* at 817–18.
284. *Id.* at 818.
285. *See* FORNEY ET AL., *supra* note 1, at 12; KOSTKA ET AL., *supra* note 1, at 25.

a Word of Warning is written in cut time, or $\frac{2}{2}$,[286] a duple meter with a strong initial beat that has a march feel to it.[287] The differing meters will, of course, shift not only the feel of the songs, but also which pitches get the most rhythmic emphasis.

At the micro-level of rhythmic analysis, and ignoring for now the rests, the durations of the pitches are rather different from one another. The first measure of *Lady of Love* follows the underlying meter, with each of the first three pitches (G-F-E) in that measure a quarter note, and the first note, the G, serving as the strong beat.[288] In contrast, *Without a Word of Warning* not only replaces that first G with an F, but it falls on the upbeat of the prior measure, with the emphasis on the second note in that first three-note sequence.[289] Moreover, unlike in *Lady of Love*, the three pitches are not equal in duration, but rather follow a pattern of short-long-short, or $\frac{1}{8}$ - $\frac{3}{4}$ - $\frac{1}{8}$.[290]

Things are reversed rhythmically with the remaining notes in each piece. The second measure of *Lady of Love* starts with a C sharp on the downbeat that mirrors the underlying meter, but the remaining two pitches—D and F—differ in rhythmic duration, a dotted half note followed by an eighth note.[291] In *Without a Word of Warning*, those same three pitches are equal in duration.[292] From then on, the divergence is even more significant, with *Lady of Love* devoting a full measure to the final two pitches—C and B—with each pitch commencing on a strong downbeat.[293] In contrast, *Without a Word of Warning* ends its second full measure on an A, uses a rest on the downbeat of the next measure, and then follows a pitch sequence of C-C-A-C-B-E that has much shorter rhythmic durations than the final C and B of *Lady of Love*.[294]

Thus, the *Hirsch* court's lay, subjective intuition that the two songs sound different—a method of analysis consistent with the intrinsic test for finding similarity between two different works[295]—was accurate and arrived at the correct outcome. However, had it incorporated an accurate definition of melody that encompasses rhythmic duration into its analysis, it would have aligned the objective, extrinsic test of copyright infringement with the subjective, intrinsic one.[296]

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286. *See* HOWARD SHANET, LEARN TO READ MUSIC 49 (1956); BOONE & SCHONBRUN, *supra* note 51, at 169.

287. *See* FORNEY ET AL., *supra* note 1, at 12; KOSTKA ET AL., *supra* note 1, at 25.

288. *See supra* text accompanying notes 280–82.

289. *See supra* text accompanying notes 280–82.

290. *See supra* text accompanying notes 280–82.

291. *See supra* text accompanying notes 280–82.

292. *See supra* text accompanying notes 280–82.

293. *See supra* text accompanying notes 280–82.

294. *See supra* text accompanying notes 280–82.

295. *See supra* notes 194–95 and accompanying text.

296. *See supra* notes 189–95 and accompanying text.

III. PITCH SEQUENCE, STANDING ALONE, RARELY WARRANTS COPYRIGHT PROTECTION

In rejecting copyright claims to very short sequences of notes, some courts and individual judges have focused on the fact that, given that there are only so many notes in a scale, granting copyright protection to short melodic sequences of, say, three notes, would quickly exhaust the supply of possible unique three-note combinations open to other composers to use.[297] For example, in her thoughtful dissent in *Williams v. Gaye*,[298] Judge Nguyen reasoned that because the musical octave is divided into twelve notes, "[t]here are only 12[*12*12,] or 1,728 unique combinations of three notes."[299] She quickly suggested that this is an overstatement, because many of those combinations would not sound pleasing to the ear.[300] Specifically, she noted "that it's 'unusual' to use the five notes that fall between the seven notes of the scale,"[301] implying that, more realistically, the number of unique combinations is really 7*7*7, or 343 unique combinations of three notes. In any event, the general thrust of the argument is that short melodic sequences should not be granted copyright protection because that would eventually prevent other composers from making use of *any* three notes in sequence since they would all be protected by copyright. This would cut against a major policy running through copyright law: the balance between protecting the labor of individual authors and promoting other authors' ability to create and disseminate works.[302] The limited monopoly that copyrights grant to authors ensure them the opportunity to secure a fair return on their work; however, there is a comparable public interest in maintaining other authors' ability to produce their own artistic expression.[303] Allowing the small number of three-note combinations to all be protected by copyright would unduly stifle artistic expression and thus cut against the public interest.

In my view, Judge Nguyen has made an excellent start in addressing this issue, but there are two important teachings from music theory that lead me to conclude that she is simultaneously overstating and understating the extent of the problem. First, the overstatement: By equating, as many jurists do, melody with pitch sequence, and ignoring rhythmic variation,[304] she is overstating the problem. Even accepting that there are only 343 unique combinations of three

297. *See* Williams v. Gaye, 895 F.3d 1106, 1144 n.6 (2018) (Nguyen, J., dissenting).

298. *Id.*

299. *Id.*

300. *See id.* Other courts and individual judges have likewise acknowledged that the number of possible combinations is further limited by the fact that only a small number of these combinations sounds pleasing to the Western ear. *See* cases cited *supra* note 223.

301. *Williams*, 895 F.3d at 1144 n.6 (Nguyen, J., dissenting) (citation omitted); *accord* Skidmore v. Zeppelin, 952 F.3d 1051, 1070–71 (9th Cir. 2020) (en banc).

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

303. *Id.*

304. *See supra* text accompanying notes 229–31; *see also Williams*, 895 F.3d at 1144 n.6 (Nguyen, J., dissenting) (considering fewer combinations than would be present with rhythmic variation).

pitches, there are many more unique combinations of three pitches *of different rhythmic duration*. The examples set forth in Part II—of slight variations in rhythm transforming the four-pitch opening sequence in the *Fifth Symphony* into entirely distinct melodies—only touch the surface in demonstrating that each unique combination of pitches in turn contains numerous unique combinations of rhythmic patterns.[305] If we assume for the sake of simplicity that the only note durations that can be used are whole, half, quarter, eighth and sixteenth notes—along with dotted half, quarter, and eighth notes—that affords us eight unique combinations of rhythm for each of the three notes and seven different pitches, or fifty-six possibilities per note. Accordingly, the correct number of unique combinations of three notes, taking both pitch and rhythm into account and assuming only the use of diatonic notes, is 56*56*56, or 175,616 unique combinations.[306] Once we hit four-note sequences, this balloons to 9,834,496 unique combinations. Even these calculations understate the number of unique combinations, since they fail to take into account the fact that, in conjunction with the meter and time signature of the piece as well as the placement of rests, one can shift which notes land on strong and weak beats.[307] This reinforces the conclusion from the Introduction and Part I that courts must take rhythm (in the sense of melodic note durations) into account both when establishing copyright policy and adjudicating specific copyright disputes, and that if they do so, policy considerations should not result in a denial of copyright protection to short sequences of three or four notes on the ground that it will unduly lock others out of creating musical works.[308] On the other hand, once we drop to just two-note sequences, the number of unique combinations drops to just over 3,000, which seems as though it may be small enough that granting copyright protection could unduly stifle musical creativity.

However, in a different sense, Judge Nguyen understates the extent of the problem. That is because, of the 343 unique combinations of diatonic notes that are possible, most of those would never be used in anything that our ears would appreciate as music or that would ever be performed as such. That is because just as harmonic movement is constrained by rules that in turn are based on what is expected by and pleasing to the human ear, so too is melodic movement.[309] Moreover, other conventions in melody writing—including practical considerations of the capabilities of most human voices and the range of instruments—further constrain the number of realistic combinations of pitches.[310]

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305. *See supra* Part II.

306. *Cf.* Oli Freke, *How Many Melodies Are There?*, +PLUSMATHS (Nov. 6, 2014), https://plus.maths.org/content/how-many-melodies-are-there [https://perma.cc/UDK6-J4WQ] (using different assumptions but the same methodology).

307. *See* FORNEY ET AL., *supra* note 1, at 12; KOSTKA ET AL., *supra* note 1, at 25.

308. *See supra* Introduction and Part I.

309. *See supra* note 216 and accompanying text.

310. *Cf. supra* note 237 and accompanying text (explaining the limitations of human hearing as it relates to perfect pitch).

Let us begin with our revised assumption that of the twelve pitches in an octave, realistically, only seven of those will be used in most instances. To be sure, that is an overstatement, since musical interest is added through the occasional use of notes outside of the scale,[311] and in particular, songs written in the minor mode are more likely to employ chromatic variations of the sixth and seventh scale degrees.[312] But setting those nuances to one side and assuming for the sake of simplicity that only the seven diatonic notes are generally used, that does not mean that they are used with equal frequency. Specifically, pitch distribution studies consistently demonstrate that of the seven diatonic scale degrees and five non-diatonic ones, certain notes appear in compositions with far greater frequency than others. Indeed, forty percent of the notes in most compositions are either the tonic or the dominant, scale degrees 1 and 5; another forty percent of the notes are scattered across scale degrees 2, 3, and 4; and the remaining twenty percent of notes account for everything else, with the lion's share of that scale degrees 6 and 7 and only a small percent represented by non-diatonic notes.[313] Accordingly, a more nuanced calculation of the number of unique combinations would need to take into account the fact that, as a practical matter, the odds are not equal that each of the notes in the scale will be used for any given note in the sequence.

The teaching of the pitch distribution studies tells us that the odds are very high that the first note in any given sequence of pitches will come from one of the first five diatonic scale degrees, and thus that, as a practical matter, there are not twelve or seven but really more like five realistic pitch options for the first pitch in a sequence. One might be tempted to use those studies to conclude that the number of likely unique combinations of three pitches is thus 5*5*5 or 125. On the one hand, this is probably too low an estimate since twenty percent of notes can be something outside of the first five diatonic notes. The needed calculations are too complex for the purposes of this Article, but suffice it to say the number of likely combinations is somewhere between 125 and 343 based on what we know so far.

The larger problem is that the calculations thus far have blindly employed the "product rule" to calculate the number of unique combinations of pitches. The product rule is a way to count the number of objects or events that can be built up from smaller ingredients by making a sequence of choices.[314] It provides that the total number of possibilities is calculated by multiplying the

311. *See* FORNEY ET AL., *supra* note 1, at 18–21; KOSTKA ET AL., *supra* note 1, at 255, 441–42, 449–50.

312. *See* KOSTKA ET AL., *supra* note 1, at 10; BOONE & SCHONBRUN, *supra* note 51, at 43–44, 55; PERRICONE, *supra* note 119, at 38–39.

313. *See* Joshua D. Albrecht & David Huron, *A Statistical Approach to Tracing the Historical Development of Major and Minor Pitch Distributions, 1400–1750*, 31 MUSIC PERCEPTION: INTERDISC. J. 223, 223 (2014); David Temperley & Elizabeth West Marvin, *Pitch-Class Distribution and the Identification of Key*, 25 MUSIC PERCEPTION: INTERDISC. J. 193, 193 (2008); DAVID HURON, SWEET ANTICIPATION: MUSIC AND THE PSYCHOLOGY OF EXPECTATION 148 (2006).

314. *See* NICHOLAS A. LOEHR, BIJECTIVE COMBINATORICS 3 (Kenneth Rosen ed., 2011); People v. Collins, 438 P.2d 33, 36 (Cal. 1968) (en banc).

number of choices at each stage in the decision-making process by one another.[315] For example, if license plates in a given state consist of three uppercase letters followed by four digits, the number of possible choices of license plates is 26*26*26*10*10*10*10 or 175,760,000.[316] Similarly, if there are two dice, each with six sides, there are 6*6 or 36 unique combinations of numbers being rolled.[317] However, the product rule's calculation assumes that the smaller individual events are mutually independent, in that what happens with one has *no* effect on what happens with the other, as is the case when a pair of dice is rolled.[318] If in fact there is some correlation between one of the ingredients and the others, use of the product rule will greatly overstate the number of possible combinations.[319]

As it turns out, in any given sequence of musical pitches, the pitches are *not* independent of one another. Rather, once a composer has selected their first note in the sequence, the notes that follow are severely constrained both by principles of melodic movement that are based on expectations of the human ear as well as pragmatic considerations.[320] As a result, the calculations we have done thus far greatly overstate the number of unique combinations of pitch sequences.

As an initial matter, in any given sequence of pitches, not all "[p]itches . . . are . . . equal in importance."[321] Rather, some pitches are said to be more stable than others, with scale degrees 1, 3, and 5 perceived as stable and the remaining pitches perceived as unstable.[322] To please the human ear, unstable pitches need to resolve to a nearby stable pitch.[323] In major keys, this is most consistently reflected in the resolution from scale degree 7 to scale degree 1, followed to a somewhat lesser degree by the resolution from scale degree 4 to scale degree 3 in both major and minor keys.[324] In major keys, scale degree 2 often resolves to scale degree 1,[325] but in minor keys, scale degree 3 is lowered, making its underlying frequency closer to scale degree 2 and thus allowing it to resolve either downward to scale degree 1 or upward

315. *See* LOEHR, *supra* note 314, at 3.

316. *Id.*

317. *See Collins*, 438 P.2d at 36 n.8.

318. *See id.* at 36–37, 39.

319. *See id.* at 39.

320. *See supra* notes 160–62 and accompanying text.

321. 1 EARL HENRY & MICHAEL ROGERS, TONALITY AND DESIGN IN MUSIC THEORY 121 (Sarah Touborg et al. eds., 2005).

322. *Id.*; PERRICONE, *supra* note 119, at 9.

323. *See* 1 HENRY & ROGERS, *supra* note 321, at 121; PERRICONE, *supra* note 119, at 9.

324. KOSTKA ET AL., *supra* note 1, at 67; PERRICONE, *supra* note 119, at 9; *see* DICKEY & FRENCH, *supra* note 59, at 20; Stacey Davis, *Using Tendency Tones to Teach the Morphology and Syntax of Chromatic Harmony*, *in* THE ROUTLEDGE COMPANION TO MUSIC THEORY PEDAGOGY 131, 132–33 (Leigh VanHandel ed., 1st ed. 2020).

325. *See* DICKEY & FRENCH, *supra* note 59, at 20; 1 HENRY & ROGERS, *supra* note 321, at 121; PERRICONE, *supra* note 119, at 9.

to scale degree 3.[326] In major keys, scale degree 6 tends to resolve either downward to scale degree 5 or by ascending through scale degree 7 to scale degree 1.[327] In minor keys, scale degrees 6 and 7 are sometimes raised and sometimes lowered: In the former, scale degree 6 tends to resolve to scale degree 7 and in turn scale degree 1; while in the latter, scale degree 7 tends to resolve to scale degree 6 and in turn to scale degree 5.[328] Non-diatonic pitches, when used, resolve to the nearest diatonic pitch, regardless of stability.[329] This tendency of unstable pitches to resolve to the nearest stable pitch is sometimes referred to in music theory literature as melodic magnetism.[330] Moreover, the relative stability or instability of individual notes in a chord effects harmonic movement, thus more clearly connecting melodic and harmonic movement to one another.[331]

Relying solely on these insights about melodic magnetism, we see that there are likely to be far fewer unique combinations than originally calculated. Consider, for example, a sequence that begins on scale degree 1. Since scale degree 1 is stable, it is not constrained and can jump to any other scale degree. Suppose that it goes to scale degree 3, also a stable scale degree that can jump to any other scale degree. In turn, suppose that it then jumps to scale degree 6, an unstable scale degree. Principles of melodic magnetism tell us that it is rather likely that the next note in that sequence will either be scale degree 5 or a voyage through scale degree 7 to scale degree 1.[332] To be sure, the resolution from stable to unstable note is not always immediate; musical interest is sometimes created by maintaining the tension and delaying the resolution.[333] Thus, for example, the sequence 1-3-6 might be followed chromatically by a lowered scale degree 6 before resolving to scale degree 5—but in most cases, it will get to a nearby stable pitch soon enough.[334]

Yet, principles of melodic magnetism are not the only patterns of melodic movement. Research on musical expectations have identified five other observations—"pitch proximity, step declination, step inertia, melodic regression, and melodic arch"—that explain patterns of melodic movement across cultures and that are based, at least in part, on the expectations of the

326. *See* STEVE LARSON & ROBERT S. HATTEN, MUSICAL FORCES: MOTION, METAPHOR, AND MEANING IN MUSIC 127–28, 230–31 (2012); PERRICONE, *supra* note 119, at 38.

327. *See* 1 HENRY & ROGERS, *supra* note 321, at 121–24; PERRICONE, *supra* note 119, at 9–10.

328. *See* 1 HENRY & ROGERS, *supra* note 321, at 124; PERRICONE, *supra* note 119, at 38–39.

329. *See* PERRICONE, *supra* note 119, at 10.

330. LARSON & HATTEN, *supra* note 326, at 74, 88–90.

331. *See* PERRICONE, *supra* note 119, at 92–94 (explaining that the relative stability of chords is based on the number of stable and unstable tones that make up the chord, and concluding that "[d]egrees of stability and tone tendencies remain the same, whether conceived horizontally (melodically) or vertically (harmonically)"); COPLAND, *supra* note 62, at 68–69 ("Chords built on the tonic, dominant, and subdominant degrees bear the same relative attraction to one another as the tonic, dominant, and subdominant tones taken alone.").

332. *See supra* notes 321–31 and accompanying text.

333. *See* PERRICONE, *supra* note 119, at 10.

334. *See id.* at 10–13.

human ear.[335] The first of these, pitch proximity, refers to the finding that small intervals tend to predominate in melodic movement, with the movement from one note to the next typically no more than a major second apart.[336] The second observation, step declination, refers to the fact that large melodic intervals tend to be ascending from a lower note to a higher note, while smaller melodic intervals are more likely to occur on the descent from a higher to a lower note.[337] The next two observations are related to the second one: Melodic regression refers to the finding that large melodic leaps tend to be followed by a change of direction,[338] while melodic arch refers to the fact that there is a general tendency for melodies to rise upward and then descend in pitch, forming an arch-shaped contour.[339] The final observation, step inertia, refers to the fact that small melodic movement of a major second or less tends to be followed by further melodic movement in the same direction, at least when the movement is moving in a descending direction.[340]

Most of these observations about how music is composed align with listener expectations. Thus, for example, evidence suggests that listeners of music process smaller intervals more easily than larger ones, which explains the prevalence of pitch proximity in music.[341] Similarly, listeners tend to expect pitches that follow one another to move in the same direction, explaining the prevalence of step inertia in written music.[342]

A pragmatic limitation on choice of pitch must be added to all of this: "singableness," or the limitations imposed by the human voice.[343] Most augmented and diminished intervals, major and minor sevenths, and intervals exceeding an octave tend to be difficult for humans to sing.[344]

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335. HURON, *supra* note 313, at 74.

336. *See id.* at 74–75; HINDEMITH, *supra* note 91, at 187–96; PERRICONE, *supra* note 119, at 38–42.

337. *See* HURON, *supra* note 313, at 75–77; LARSON & HATTEN, *supra* note 326, at 74, 83.

338. *See* HURON, *supra* note 313, at 80–85; LARSON & HATTEN, *supra* note 326, at 74, 83.

339. *See* HURON, *supra* note 313, at 85–88; LARSON & HATTEN, *supra* note 326, at 74, 83.

340. *See* HURON, *supra* note 313, at 77–80; LARSON & HATTEN, *supra* note 326, at 74, 96.

341. *See* HURON, *supra* note 313, at 74–75.

342. *See id.* at 77–80.

343. *See* ARNOLD SCHOENBERG, FUNDAMENTALS OF MUSICAL COMPOSITION 98 (Gerald Strang & Leonard Stein eds., 1967) ("[T]he concept of the melodious is intimately related to the concept of singableness. . . . Singableness, in a more popular sense, implies relatively long notes; smooth linkage of the registers; movement in waves, more stepwise than by leaps; avoidance of augmented and diminished intervals; adherence to the tonality and its most closely related regions; employment of the natural intervals of a key; gradual modulation; and a cautious use of dissonance."); TOVEY, *supra* note 91, at 91 ("[T]he most narrowly melodic element, the rise and fall of pitch, is a capacity of the human voice . . . ."); PERRICONE, *supra* note 119, at 3.

344. *See* KOSTKA ET AL., *supra* note 1, at 67 (cautioning to avoid augmented intervals and those larger than an octave); *see also* SCHOENBERG, *supra* note 343, at 98 (explaining that singableness can come from more stepwise vocal melodies than leaps); JOHANN JOSEPH FUX, THE STUDY OF COUNTERPOINT 29–30 (Alfred Mann ed. & trans., 1965) (demonstrating confusion on singing over an octave).

A handful of legal authorities have recognized, largely in reliance on expert witness testimony, that principles of melodic movement coupled with limitations on the abilities of the human voice can constrain pitch selection in melody writing.[345] In effect, these decisions implicitly or explicitly conclude that short pitch sequences of, say, two or three notes, are not entitled to copyright protection because they are *scènes à faire*.[346] At least one recent case has recognized that principles of melodic movement may even result in a denial of copyright protection to longer sequences of pitches.[347]

While it is hard to quantify the net effect of the above delineated principles, I believe, for two main reasons, that together they weigh strongly against granting copyright protection to even longer sequences of pitches independent of their specific rhythmic design. First, principles of melodic movement and limitations on the human voice suggest that our initial estimates of the number of unique combinations of pitch sequences is far lower than initially estimated and, indeed, that much pitch-to-pitch movement largely represents *scènes à faire*. Second, there are so many different ways to alter a given sequence of pitches through rhythmic changes that it would make little sense to give one person a monopoly on a pitch sequence, standing alone. Take, for example, the four-pitch sequence of the opening of Beethoven's *Fifth Symphony*. Part II of this Article identified five other pieces of music that make use of those pitches with altered rhythms to create wholly different sounding melodies.[348] But that only touched the surface of the number of possibilities. Assuming as we did before eight different possible rhythmic values per note, the number of unique rhythmic combinations of

345. *See, e.g.*, Johnson v. Gordon, 409 F.3d 12, 21–22 (1st Cir. 2005) (noting concession that "the melodic contour employed by the defendant[]—[]the descending scale of 5, 4, 3, 2, 1—was a 'very common' [one] . . . that appears in . . . songs [like] 'Row, Row, Row Your Boat'" (citation omitted)); Schultz v. Holmes, 264 F.2d 942, 944 n.2 (9th Cir. 1959) ("The common utilization by different compositions of a few notes such as herein found to exist occurs frequently in the field of popular music, particularly because of the limited number of pleasing tonal combinations within the average person's range of voice and skill."); Marks v. Leo Feist, Inc., 290 F. 959, 960 (2d Cir. 1923) ("In a popular song, the composer must write a composition arranging combinations of these tones limited by the range of the ordinary voice . . . ."); Gray v. Perry, No. 15-cv-05642, 2020 WL 1275221, at *6 (C.D. Cal. Mar. 16, 2020) ("Dr. Decker testified that 'scale degrees have tendencies' in popular music such that, to make a pleasant consonant sound, '3 wants to go down to 2' and '2 desperately wants to go to 1' because '1 is our home note,' which indicates that the way the ostinato resolves is not so much original as it is necessary . . . ." (citation omitted)); McDonald v. Multimedia Ent., Inc., No. 90-cv-6356, 1991 WL 311921, at *4 (S.D.N.Y. July 19, 1991) ("[T]he particular note on which plaintiff focuses—a 5 following a [one-lower-six] progression—is a common and much-used tone in traditional western music (as is indeed the entire three note sequence)."); ROSEN, *supra* note 26, at 155 n.18 ("Tone succession or pitch sequence constitutes a pure form of *scènes à faire*, because in the Western scale the key in which a composition is written is comparable to a force mandating that certain events occur. For example, it is virtually mandated that a composition logically end usually on a cadence of 5 to 1 . . . .").

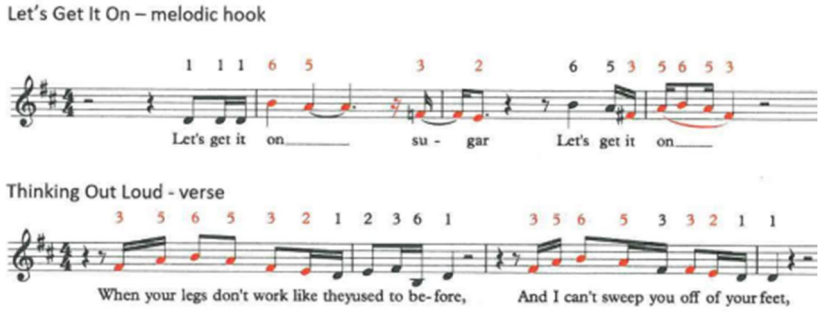
346. *See* cases cited *supra* note 345.

347. *See* Gray v. Hudson, 28 F.4th 87, 94, 100 (9th Cir. 2022) (relying on such expert testimony to deny protection for a repeated six-note sequence).

348. *See supra* Part II.

those eight pitches is 8*8*8*8, or 4,096. As the number of pitches in the sequence increases, so too does the number of unique rhythmic combinations, making an entitlement to copyright protection seem even less warranted.

Consider a recent case, *Griffin v. Sheeran*,[349] brought by the owners of the copyright in Marvin Gaye's 1973 hit *Let's Get It On* ("LGO") against Ed Sheeran, alleging that the latter's 2014 hit *Thinking Out Loud* ("TOL") infringed upon the former's copyright.[350] In denying the defendant's motion for summary judgment,[351] the trial court relied on the plaintiff's contention that "the distinctive eleven-note pitch sequence 6-5-3-2-6-5-3-5-6-5-3 in the melodic 'hook' or chorus of LGO is substantially copied and used as the verse melody of TOL."[352] The opinion included the following excerpt from the plaintiff's brief comparing the two melodies[353]:



One can immediately observe that the plaintiffs and the court are focusing here on a mere sequence of pitches stripped of their durational rhythms and the placement of strong and weak beats. The LGO melody commences on a strong beat on scale degree 6 for a duration of a quarter note. It then drops to scale degree 5, where it remains for a duration of $^{5}/_{8}$. That is followed by a $^{1}/_{16}$ note rest and then a drop to a chromatic note outside of the scale, an F natural, which is a lowered or flattened scale degree 3, where it remains for a duration of an eighth note that starts on the upbeat of the first measure and flows into the downbeat of the second measure. It then drops to scale degree 2 for a duration of $^{3}/_{16}$, after which there is a rest of $^{3}/_{8}$, followed by a leap to scale degree 6 for a quarter note. The second measure ends with two quick sixteenth notes, one on scale degree 5 followed by one on scale degree 3. The final measure contains the final four pitches—5-6-5-3—in a durational pattern of $^{1}/_{16}$-$^{1}/_{8}$-$^{1}/_{16}$-$^{1}/_{4}$.

349. Griffin v. Sheerin, 351 F. Supp. 3d 492, 492 (S.D.N.Y. 2019).

350. *Id.* at 494–96 (first citing Tom Petty, *Let's Get It On* (1973); and then citing Ed Sheeran, *Thinking Out Loud* (2014)).

351. *Id.* at 502.

352. *Id.* at 499–500 (footnote omitted) (first citing Tom Petty, *Let's Get It On* (1973); and then citing Ed Sheeran, *Thinking Out Loud* (2014)).

353. *Id.* at 500 (first citing Tom Petty, *Let's Get It On* (1973); and then citing Ed Sheeran, *Thinking Out Loud* (2014)).

Trying to compare the two songs is challenging, because the plaintiffs have not alleged that the pitch sequence is exact; rather, they allege that it is similar, but that other factors (including harmonic accompaniment) justify a finding of infringement.[354] However, the melodic similarities are still quite hard to see. For one, the songs use completely different pitches on the strong first beats of each measure. And while some pitches share a similar durational rhythm, many others do not. Even assuming that the pitch sequence is exactly identical, there are at least 8^11 or nearly nine *billion* different combinations of rhythmic durations for those eleven pitches. Surely it makes little sense to grant the heirs of the LGO copyright a monopoly on all of those combinations. This is especially so given that the melodic movements we see here are totally expected given the findings detailed above on melodic movement. The movement from 6 to 5 is a typical movement from an unstable to a stable pitch. The downward inertia to flattened scale degree 3 followed by scale degree 2 likewise follows from melodic theory. The next seven notes also clearly follow melodic expectations: Starting with the same expected movement from 6 to 5, the melody then bounces between stable pitches 3 and 5 with a brief ascent to and return from scale degree 6. The shape of the melody is known as conjunct melodic movement in a wavelike contour, a very common type of melodic motion.[355]

Indeed, implicit in guidance issued by the U.S. Copyright Office is that even an eight-pitch sequence, stripped of any rhythmic context, is not entitled to copyright protection. Using *solfège*, a form of describing musical pitches that uses names—do, re, mi, fa, sol, la, ti—in place of scale degrees 1 through 7,[356] the U.S. Copyright Office has indicated that one cannot copyright the sequence "mi do re sol, sol, re mi do."[357] Although they do not elaborate on their reasoning, they list as a separate example of something not entitled to copyright protection "[a] trademark consisting of three musical notes."[358] To me, the way to make sense of this is to think of the latter, with its use of "notes," as referring to notes that have both a pitch and rhythmic duration. So harmonized, it is consistent with what I have argued above: There may be too few unique combinations of three-note sequences (taking both pitch and rhythm into account) to allow them to be copyrighted, but even longer sequences consisting of pitches only are likewise not entitled to copyright protection.

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354. *See id.*

355. *See* FORNEY ET AL., *supra* note 1, at 8–9.

356. *See* STEVE PROSSER, ESSENTIAL EAR TRAINING FOR TODAY'S MUSICIAN 14–16 (2000).

357. U.S. COPYRIGHT OFF., *supra* note 15, § 313.4(C); *accord id.* § 802.5(B).

358. *Id.* § 313.4(C). Trademark and copyright can independently protect a musical composition, with each form of intellectual property protection subject to different limitations. The reference in the Copyright Office guidance to "[a] trademark consisting of three musical notes" is likely a reference to the three-note melodic sequence G-E-C constituting the "NBC chimes," which are protected by trademark but that likely would not be protected by copyright according to the guidance. *See* Kenneth L. Port, *On Nontraditional Trademarks*, 38 N. KY. L. REV. 1, 23 (2011).

IV. THE SOUND OF SILENCE

Recall that our basic working definition of music is a combination of sound *and* silence, with silence not merely bounding the musical composition, but also interrupting the sequence of musical sounds contained therein in the form of brief pauses—or rests—for dramatic or other effect.[359] The role of silence is somewhat understudied in music theory,[360] although the scholarship that exists acknowledges its musical significance.[361] Indeed, it has been suggested that the term used in music to describe musical silence—rest—is an unfortunate choice, since it suggests incorrectly that silence has a negative rather than a positive value in music.[362] A discussion of musical silence is, however, completely absent in legal precedents adjudicating music copyright disputes.[363]

The failure of legal precedents to acknowledge and take musical silence into account is hardly surprising. Recall that while the element of duration is common to both musical sound and musical silence,[364] only musical sound has a pitch.[365] To the extent that legal precedents generally equate melody with pitch sequence divorced of the rhythmic durations of those pitches, they are quite naturally going to overlook those elements of music that lack a pitch.

But silence, as we saw, plays an important role in distinguishing the opening motive of Beethoven's *Fifth Symphony* from the works of Mozart, Foster, Schubert, Mendelssohn, and Martin. The opening rest in the *Fifth Symphony* altered which pitches landed on strong beats and which landed on weak ones,[366] not only changing the feel of the melody but also creating ambiguity for the listener about the song's overriding meter.[367]

Indeed, the failure of courts to take musical silence into account means that courts debating the minimum number of notes required to obtain copyright protection are not even counting notes correctly. In other words, while the opening motive of Beethoven's *Fifth Symphony* may be a four-*pitch* sequence, it is a sequence of five *notes* if you take the opening, intentional silence into account.

The importance of taking account of musical silence is readily seen in a recent copyright dispute between Tom Petty and Sam Smith. The dispute, which settled without a lawsuit being filed, involved an allegation that Smith's

359. *See supra* text accompanying notes 51–53.

360. *See* Margulis, *supra* note 52, at 251; Julie P. Sutton, *Hidden Music: An Exploration of Silence in Music and Music Therapy*, *in* MUSICAL CREATIVITY: MULTIDISCIPLINARY RESEARCH IN THEORY AND PRACTICE 252, 254 (Irène Deliège & Geraint A. Wiggins eds., 2006).

361. *See supra* notes 51–53 and accompanying text; Sutton, *supra* note 360, at 254; Andrew Edgar, *Music and Silence*, *in* SILENCE: INTERDISCIPLINARY PERSPECTIVES 311, 311 (Adam Jaworski ed. 1997).

362. *See* Margulis, *supra* note 52, at 246.

363. *See supra* Section I.B.

364. *See supra* notes 56–58 and accompanying text.

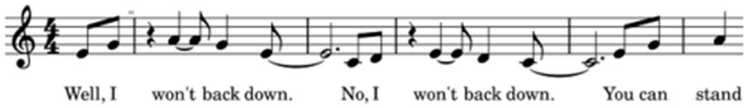
365. *See supra* notes 59–61 and accompanying text.

366. *See supra* Part II.

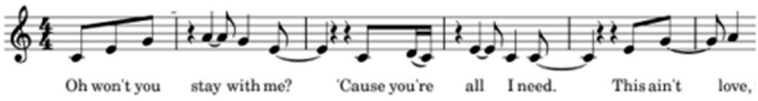
367. GUERRIERI, *supra* note 2, at 12–13, 22–23 (citing Ludwig van Beethoven, *Symphony No. 5 in C Minor*, OP. 67 (1808)).

2014 hit song *Stay With Me* infringed on the copyright that Tom Petty had in the melody for his 1989 song *I Won't Back Down*.[368] The strength of Tom Petty's claim against Sam Smith was criticized by copyright scholar Charles Cronin, with Petty's claim characterized as a mere claim "to a single repeating 3-note descending motif that can be heard in innumerable pop songs."[369] While I am a great admirer of Cronin's work, I respectfully disagree with his analysis of this particular case. Taking into account a critical moment of musical silence common to both pieces, what we have is not a mere three-note sequence but rather a much longer one. Moreover, the sequence as found in both pieces has a near-identical rhythmic footprint.

The melodic sequence from Tom Petty's song is as follows[370]:



While that from Sam Smith's song proceeds as follows[371]:



The three notes that Cronin refers to are associated with the words "won't back down" in Petty's song and "stay with me?" in Smith's song. That three-pitch sequence is 6-5-3 in both pieces. Even focusing on just these three pitches, the rhythmic similarities are striking. The note durations of the first two pitches are identical in both pieces. Moreover, while the duration of the last note is shorter in Smith's piece than in Petty's—Petty lingers on the note for $^{7}/_{8}$ while Smith spends $^{3}/_{8}$ and replaces the remainder with a half note rest—they share a common trait of starting the note on the upbeat one measure and continuing into the downbeat of the next.

However, there is much more in common between the melodies of these two pieces. That three-pitch sequence is preceded in both pieces by a quarter note rest, or a moment of melodic silence, on the upbeat of the measure. If one has ever listened to the pieces—or any other piece with a rest embedded in the midst of a phrase—that moment of melodic silence is significant to the

368. *See supra* note 19 and accompanying text.

369. *Comment by Charles Cronin on Tom Petty v. Sam Smith*, GEO. WASH. L. BLOGS: MUSIC COPYRIGHT INFRINGEMENT RES., https://blogs.law.gwu.edu/mcir/case/inplay-tom-petty-v-sam-smith [https://perma.cc/NCE5-ARUU].

370. *See* Tom Petty, *I Won't Back Down* (1989).

371. *See* Sam Smith, *Stay With Me* (2014).

listener, since it surprises them by interrupting their expectations,[372] and causes them to start filling in the empty space mentally.[373] Indeed, this sort of silence as interruption is much rarer and more striking than the more typical musical silence that serves as a boundary between phrases or sections of a song.[374] And, as with the opening rest in the *Fifth Symphony*, it impacts which pitches in the melodies land on strong and weak beats.

In turn, treating the quarter note rest as a note common to both pieces creates a bridge to the upbeat of the previous measure. In that measure, Petty has two eighth notes that follow the pitch sequence 3-5; Smith has those same two pitches with the same rhythmic durations in the upbeat of that measure.[375] Accordingly, we are now up to a six-note melodic sequence that, save for the final pitch, has an identical rhythmic footprint in both pieces. At the very least, we have at least five full notes with identical pitches and rhythmic durations.

But beyond that, the next three measures of both pieces exhibit continued similarities between the two pieces, with some modest differences, that reinforce the similarities beyond that five- or six-note sequence. Petty divides the upbeat of the measure between two eighth notes that climb from scale degree 1 to scale degree 2, while Smith does the same save for splitting the second eighth note into two sixteenth notes and drifting back down to scale degree 1 on the second sixteenth note. Both pieces begin the downbeat of the next measure with a quarter note rest, followed by tied quarter and eighth notes on scale degree 3. The next note is a quarter note in both pieces, but it descends down to scale degree 2 in Petty's song and to scale degree 1 in Smith's song. Both songs end the measure on scale degree 1 and carry that into the next measure in the same way that they did with scale degree 3 two measures back. That measure ends with two eighth notes on scale degrees 3 and 5 in both pieces, with Smith carrying that for an extra eighth note into the downbeat of the next measure. The next note in both pieces is a quarter note on scale degree 6.

In sum, taking all of the various teachings of this Article into account—including an accurate definition of melody and treating intentional musical silence as doctrinally significant—this presents a good case for a finding of copyright infringement, assuming proof that Smith had access to Petty's song

372. *See* Margulis, *supra* note 52, at 249–50 (describing a quarter note rest appearing on a downbeat when it had not appeared in previous downbeats as "sound[ing] striking and unexpected"); Edgar, *supra* note 361, at 312; Sutton, *supra* note 360, at 254.

373. *See* Guy Capuzzo, *Elliott Carter and Musical Silence: Intermittences and "Sound and Silence in Time,"* 64 J. MUSIC THEORY 37, 41 (2020) ("[E]stablishing a musical pattern and then abandoning it inevitably leaves a kind of echo behind in the mind of the listener, a basis for comparison, an expectation for the future, and as he listens attentively this psychic silence begins to be alive with echoes which are shared with the composer and the performer but which never reach the state of physical sound." (citation omitted)); Margulis, *supra* note 52, at 255 ("When external stimuli are withdrawn, internal projections, imaginings, constructions, and assumptions emerge more recognizably. A musical silence often functions primarily to encourage this emergence.").

374. *See* Margulis, *supra* note 52, at 252–55.

375. To be sure, Smith precedes those two notes with an additional eighth note on scale degree 1, see *supra* note 371 and accompanying text, but it is common even within a single piece of music to make minor adjustments to the rhythm of a repeating melody to fit a song's text.

and no other copyright defenses are applicable. At a minimum, five notes are identical in pitch and rhythm. It is thus perhaps no surprise that Smith opted to quickly settle the case, giving Petty cowriting credit along with a share of any royalties earned from *Stay With Me*.[376]

CONCLUSION

This Article has modeled how a rigorous interdisciplinary approach to music copyright law can ensure that courts arrive at just results in music copyright cases. The approach that I have suggested draws on relevant theoretical materials from the field of music and balances them with the policies that underlie U.S. copyright law to achieve a more holistic analysis in music copyright cases. More specifically, this Article has focused on the importance of correctly defining the term "melody" to include rhythmic considerations, and to give appropriate weight to pitch and rhythm—including musical silences in the form of rests—both when addressing copyrightability in the first instance and when determining the significance of similarities between two works.

However, this Article has only scratched the surface in terms of identifying ways in which legal jurists can arrive at accurate results when adjudicating music copyright disputes by aligning copyright jurisprudence with relevant theoretical and historical materials from the field of music. Numerous other issues that have arisen in the field of music copyright law—such as the presumed non-copyrightability of harmony[377] and the fixation requirement as applied to music copyrights[378] to name just two—could benefit from such an interdisciplinary approach.

In an ideal world, the President might appoint, and the Senate might confirm judges in the vein of Frederick Edward Weatherly to adjudicate such disputes while they continue to craft musical masterpieces. I acknowledge the unlikelihood of that, as well as the unlikelihood that this Article has filled all the music theory gaps facing judges adjudicating music copyright disputes.

Yet judges need not be faced with the choice between throwing up their hands in despair or returning to school to obtain a formal education in music theory and history. As an initial matter, this Article provides judges as well as attorneys representing clients with a sufficiently detailed overview of the intersection between music theory and music law to enable them to ask probing questions of experts hired by parties to music copyright disputes. Moreover, Rule 706 of the Federal Rules of Evidence empowers judges to appoint independent experts on music theory and history not aligned with any party who can either render an opinion or simply educate the judge and jury on relevant matters within their areas of expertise.[379] Finally, continued cross-pollination between the fields of music and law resulting in

376. *See supra* Part I; *Sam Smith Explains Why He Settled Copyright Dispute with Tom Petty*, *supra* note 19.

377. *See supra* Section I.B.2.

378. *See supra* notes 178–81 and accompanying text.

379. *See* FED. R. EVID. 706(a).

interdisciplinary scholarship will help ensure that all aspects of music copyright jurisprudence are informed by a rigorous understanding of principles of music theory underlying the musical works that are at the heart of music copyright disputes.

Although music copyright law has historically served as a challenging intersection of the confusing fields of music and law, the interdisciplinary approach to the subject modeled by this Article—if adopted by other scholars and employed by legal jurists to inform their decision-making—will serve both to rationalize future music copyright decisions and prevent unworthy claims from being brought in the first instance.