

Harmony and its Functionality: A Gloss on the Substantial Similarity Test in Music Copyrights

Sergiu Gherman*

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|---|-----|
| INTRODUCTION | 483 |
| I. THE TEST OF SUBSTANTIAL SIMILARITY AT A GLANCE..... | 485 |
| II. MUSIC THEORY AND FUNCTIONALITY..... | 489 |
| III. PROPOSED PARADIGM: THE FUNCTIONALITY OF HARMONY .. | 492 |
| A. <i>The Sound and its Perception</i> | 492 |
| B. <i>The Functionality of Harmony</i> | 496 |
| C. <i>Musical Anatomy</i> | 502 |
| D. <i>Critiques</i> | 508 |
| IV. INTRINSIC SIMILARITY: DO WE WANT TO SEE THE JURY? | 512 |
| CONCLUSION..... | 515 |

INTRODUCTION

When determining whether two musical works are substantially similar, should the basic harmony in the plaintiff's

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* Litigation Associate, Frost Van den Boom & Smith, P.A. J.D., University of Florida, Levin College of Law, 2006; Doctor of Musical Arts, Boyer College of Music, Temple University, 2003. I am grateful to attorney Edward Lyman, Professor Cynthia Folio and Professor Phyllis Rodriguez-Peralta for their comments on the early draft of this Article. I also thank Veronica Golban for her encouragement and support, and the staff of the Fordham Intellectual Property, Media & Entertainment Law Journal for their hard work and dedication.

composition be deemed protectable under copyright law? This Article argues that it should not be, and offers a new paradigm for the reevaluation of the role harmony plays in the substantial similarity test. The Article contends that basic tonal harmonic progressions should be unprotectable as a matter of law because those progressions constitute a song's functional feature.¹ For example, a twelve-bar blues harmonic progression should be unprotectable not just because of the ubiquitous "public domain" argument, but because of the functional features the harmony possesses.² The twelve-bar structure itself should be treated as a functional feature, because a composer may use the progression a dozen of times within one song to create the type of acoustic pattern listeners call "the blues."

Mass consumers demand music capable of being emulated by a vast number of people, and they demand music in which simple harmony is a prominent trait.³ Protecting simple harmonic material of one composer would hinder the ability of other composers to produce songs with the features demanded by music

¹ Cristle Collins Judd, *Studies on the Origin of Harmonic Tonality by Carl Dahlhaus: Robert O. Gjerdingen*, 74 MUSIC & LETTERS 61 (1993) (book review). Dahlhaus defines harmonic tonality as "the representation of a key by means of associations among chords related to a center." *Id.*; see also Carl Dahlhaus, *Harmony* § 2(iv), in GROVE MUSIC ONLINE [hereinafter GROVE], available at OXFORD MUSIC ONLINE [hereinafter OXFORD], <http://www.oxfordmusiconline.com/subscriber/article/grove/music/50818> (last visited Jan. 31, 2009).

² The notion of the functionality of harmony, as it is understood in the musical context, is to be distinguished from functionality as the term is used in trademark doctrine. Compare *infra* notes 63–64 and accompanying text ("Harmony is . . . functional, because it serves as a support for melody or for a melodic figuration. Harmony anchors the melody into the primary key which functions as a point of reference to a certain pitch class, accompanies the melody into the secondary keys, and provides an aural context in which the listener can better distinguish the character of the melody."), with *Qualitex Co. v. Jacobson Prods. Co.*, 514 U.S. 159, 165 (1995) ("In general terms, a product feature is functional and cannot serve as a trademark, if it is essential to the use of purpose of the article or if it affects the cost or quality of the article, that is, if exclusive use of the feature would put competitors at a significant non-reputation-related disadvantage." (citing *Inwood Labs., Inc. v. Ives Labs., Inc.*, 456 U.S. 844, 851 n.10 (1982) (internal quotation marks omitted))).

³ See generally RICHARD MIDDLETON, *STUDYING POPULAR MUSIC* 34–63 (1990) (discussing Adorno's theory that popular music's two essential elements are "standardization" and "pseudo-individualization") [hereinafter MIDDLETON, *STUDYING POPULAR MUSIC*]; STEPHEN MILES, *CONSUMERISM AS A WAY OF LIFE* 110–11 (1998).

consumers.⁴ The idea of harmonic functionality has not been explored in the legal context, and this Article offers a novel rationale for the legal treatment of harmony that rests on the acoustical properties of sound and on the properties initially articulated by Pythagoras, later crystallized by Renaissance scholars, and subsequently refined by post-modernist music theoreticians. The Article also moves to the principles of music theory and acoustic perception to suggest that the current expectations from juries in applying the intrinsic similarity test are unrealistic. It explains that there are too many factors that impair juries' ability to determine the intrinsic similarity between a composition and its alleged infringer. All notions are analyzed in the context of the substantial similarity test.

The novelty and advantage of the rationale proposed by this Article is that it accounts for the functional features of harmony, as the term "functional" is understood in trademark law.⁵ The approach explains the reasons why the simple harmony, which is inevitably tonal-functional, should generally be unprotectable. The explanation involves an excursion into music theory and the acoustic nature of sound.

I. THE TEST OF SUBSTANTIAL SIMILARITY AT A GLANCE

If a plaintiff proves ownership of copyright, such as by showing a valid certificate of registration with the copyright office,⁶ and proves that the defendant copied protected

⁴ This is because mass consumers of music invariably demand basic harmonies as a feature in the songs. *See* MILES, *supra* note 3, at 122 ("The overall implication here is that the pop music industry is producing products that appeal to a mass market; products that conform to a standardized, rationalized formula and that, as such, pop music is irredeemably commercial.").

⁵ *See supra* note 2 (distinguishing the term functional as it is understood in the context of tonal harmony and in the context of trademark doctrine).

⁶ 17 U.S.C. § 410(c) (2006) ("In any judicial proceedings the certificate of a registration made before or within five years after first publication of the work shall constitute prima facie evidence of the validity of the copyright and of the facts stated in the certificate."); *Johnson v. Gordon*, 409 F.3d 12, 17 (1st Cir. 2005) ("A certificate of copyright constitutes prima facie evidence of ownership and originality of the work as a whole."); *Swirsky v. Carey*, 376 F.3d 841, 851 (9th Cir. 2004) (stating that registration with the copyright office raises presumption of originality under the Copyright Act).

compositional elements of the registered work, then the plaintiff has asserted a valid infringement claim.⁷ To demonstrate copying of the protected elements, the plaintiff must prove actual and actionable copying.⁸ Actual copying is proven by demonstrating that the defendant had access to the plaintiff's work and by a showing of probative similarity between the competing works.⁹ Actionable copying is proven by satisfaction of the substantial similarity test.¹⁰

The substantial similarity test itself varies among circuits.¹¹ In the Ninth Circuit, the test first focuses on extrinsic or objective similarity,¹² which is a question of law, and then upon intrinsic or

⁷ See *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 361 (1991) (To succeed on a copyright infringement claim "two elements must be proven: (1) ownership of a valid copyright, and (2) copying of constituent elements of the work that are original."); *Swirsky*, 376 F.3d at 845 ("[T]he requirement is substantial similarity to protected elements of the copyrighted work. . . ."); 4-13 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT, § 13.01 (MB 2008) ("Reduced to most fundamental terms, there are only two elements necessary to the plaintiff's case in an infringement action: ownership of the copyright by the plaintiff and copying by the defendant." (internal citations omitted)).

⁸ See *Johnson*, 409 F.3d at 20 ("[T]wo elements underpin[] *Feist's* copying requirement: actual copying and actionable copying."); Nicole K. Roodhuyzen, *Do We Even Need a Test? A Reevaluation of Assessing Substantial Similarity in a Copyright Infringement Case*, 15 J.L. & POL'Y 1375, 1383-84 (2007) ("Proof of copying consists of two separate components[:] . . . whether copying occurred . . . [and] whether such copying is actionable (i.e., whether there was too much copying).").

⁹ See *Swirsky*, 376 F.3d at 844 ("[Plaintiff] may establish copying by showing that [defendant] had access to [plaintiff's song] and that [defendant's song] was substantially similar to [plaintiff's song] in [its] protected elements."); see also *Johnson*, 409 F.3d at 20 ("[Absent submission of] direct evidence of actual copying, [plaintiff] must support that element by indirect evidence demonstrating access and probative similarity.").

¹⁰ See *Johnson*, 409 F.3d at 20; Roodhuyzen, *supra* note 8, at 1384 ("In order for appropriation to be actionable, a plaintiff must demonstrate that defendant's work is substantially similar to plaintiff's work such that defendant is liable for copyright infringement. Substantial similarity is a conclusion; it is not a formula or test.").

¹¹ Roodhuyzen, *supra* note 8, at 1385 ("There are two primary tests that most courts follow: the 'ordinary observer' test associated with the Second Circuit or the two-part 'extrinsic-intrinsic' test associated with the Ninth Circuit.").

¹² *Rice v. Fox Broad. Co.*, 330 F.3d 1170, 1174 (9th Cir. 2003) ("[T]he extrinsic test is an objective measure of the 'articulable similarities between the plot, themes, dialogue, mood, setting, pace, characters, and sequence of events.'" (citation and internal quotation marks omitted); see also *Swirsky*, 376 F.3d at 845; *Smith v. Jackson*, 84 F.3d 1213, 1218 (9th Cir. 1996) ("[T]he 'extrinsic' test considers whether two works share a

subjective similarity, which is a question of fact for the jury.¹³ Guided by the indicia of sufficient disagreement between two works, the extrinsic similarity test dissects both works measure-by-measure, with the help of expert music theoreticians and composers, to ascertain whether the defendant has appropriated the specific protectable elements of the plaintiff's work.¹⁴ Dissection spares no compositional component: melody, motifs, melodic contours, tonality, pitch emphasis, bass line, tempo, generic style, rhythm, ornamentation, harmony and lyrics.¹⁵ Past the extrinsic gate, the plaintiff faces the intrinsic similarity test, which simply asks the jury whether the total feel of the two works, in their ordinary and reasonable perception, are substantially similar.¹⁶

In the First Circuit, the experts' testimony is used to prove probative similarity, but is usually "not permitted to aid in the

similarity of ideas and expression based on external, objective criteria."); Roodhuyzen, *supra* note 8, at 1385.

¹³ See Roodhuyzen, *supra* note 8, at 1385.

¹⁴ See *Swirsky*, 376 F.3d at 845; *Three Boys Music Corp. v. Bolton*, 212 F.3d 477, 485 (9th Cir. 2000); see also John R. Autry, *Toward a Definition of Striking Similarity in Infringement Actions for Copyrighted Musical Works*, 10 J. INTEL. PROP. L. 113, 117-18 (2002) ("[A]nalytic testimony, including the opinions of expert witnesses in the field, is not only helpful, but essential." (citations omitted)); Roodhuyzen, *supra* note 8, at 1385-86.

¹⁵ See *Swirsky*, 376 F.3d at 849 (discussing the dissection test and its application in other courts); *Three Boys*, 212 F.3d at 485. Other courts have discussed dissection with respect to additional components of musical compositions, including melody, harmony, rhythm, pitch, tempo, phrasing, structure, chord progressions, and lyrics. See, e.g., *Ellis v. Diffie*, 177 F.3d 503, 506 (6th Cir. 1999) (noting that the district court had compared idea, phraseology, lyrics, rhythms, chord progressions, "melodic contours," structures, and melodies under the "ordinary observer" test); *Cottrill v. Spears*, No. 02-3646, 2003 WL 21223846, at *9 (E.D. Pa. May 22, 2003) (unpublished disposition) (comparing pitch, chord progression, meter, and lyrics under the extrinsic test); *Tisi v. Patrick*, 97 F. Supp. 2d 539, 543 (S.D.N.Y. 2000) (analyzing structure, melody, harmony, and rhythm under "striking similarity" test); *McKinley v. Raye*, No. 3:96-CV-2231-P, 1998 WL 119540, at *5 (N.D. Tex. Mar. 10, 1998) (analyzing lyrics, melodies, and song structure). Note, however, that historically courts afforded more protection to melody, harmony and rhythm. See 1-2 NIMMER, *supra* note 7, § 2.05(D) ("It has been said that a musical work consists of rhythm, harmony and melody, and that originality, if it exists, must be found in one of these.").

¹⁶ See *Swirsky*, 376 F.3d at 847; *Three Boys*, 212 F.3d at 485; Autry, *supra* note 14, at 117 ("[The] intrinsic test relies upon the observations of the 'ordinary reasonable person,' eschewing the analytic dissection and expert testimony which characterized the extrinsic test." (citations omitted)); Roodhuyzen, *supra* note 8, at 1385-86.

substantial similarity inquiry.”¹⁷ The greater the degree of probative similarity, the greater the likelihood of a finding of actual copying.¹⁸ The First Circuit, however, analyzes substantial similarity under the “ordinary observer” or “ordinary listener” test.¹⁹ Under the ordinary listener test an allegedly infringed work will be found to be substantially similar to a copyrighted work if an “ordinary person with reasonable attentiveness” concludes, after listening to both, that the former was unlawfully appropriated.²⁰ Practitioners must be aware that some courts vacillate between the use of the probative similarity and substantial similarity tests. The two are not the same, since probative similarity is a threshold matter in showing actual copying, and substantial similarity is a comprehensive test for determining actionable copying.²¹ Notwithstanding the nomenclature variances in the analyses’ frameworks, litigants in one circuit do not appear to receive more substantive rights than in another.

¹⁷ Roodhuyzen, *supra* note 8, at 1392 (internal citations omitted); see *Johnson*, 409 F.3d at 18–19 (“Probative similarity” requires proof that “a sufficient degree of similarity exists between the copyrighted work and the allegedly infringing work to give rise to an inference of actual copying. . . . [I]n examining whether actual copying has occurred, a court must engage in dissection of the copyrighted work by separating its original, protected expressive elements from those aspects that are not copyrightable because they represent unprotected ideas or unoriginal expressions.” (internal citations omitted)); see also *Concrete Mach. Co. v. Classic Lawn Ornaments*, 843 F.2d 600, 606 (1st Cir. 1988).

¹⁸ See *Johnson*, 409 F.3d at 18 (“[P]robative similarity’ requires that the two works are ‘so similar that the court may infer that there was factual copying.’” (quoting *Lotus Dev. Corp. v. Borland Int’l, Inc.*, 49 F.3d 807, 813 (1st Cir. 1995))).

¹⁹ See *Johnson*, 409 F.3d at 18 (“The ‘ordinary observer test’ or, in a musical milieu, the ‘ordinary listener’ test, supplies a framework for gauging substantial similarity.”); Roodhuyzen, *supra* note 8, at 1391.

²⁰ *Johnson*, 409 F.3d at 18.

²¹ *Id.*; see also *Repp v. Lloyd Webber*, 132 F.3d 882, 889 n.1 (2d Cir. 1997) (“Copyright caselaw has caused considerable confusion by the use of the term ‘substantial similarity’ at two different points of the copyright infringement analysis . . . the term “probative similarity” should be used when referring to the initial burden of proving copying by establishing access and/or similarities.” (citations omitted)); *Ringgold v. Black Entm’t Television, Inc.*, 126 F.3d 70, 74 (2d Cir. 1997) (“[W]hen ‘substantial similarity’ is used to mean the threshold for copying as a factual matter, the better term is ‘probative similarity,’ and that ‘substantial similarity’ should mean only the threshold for actionable copying.”).

II. MUSIC THEORY AND FUNCTIONALITY

In order to understand the proposed model for harmony's role in the substantial similarity test, some basic background knowledge of music and its treatment in the law is necessary. The basic harmonic progressions are: tonic-dominant-tonic (I-V-I), tonic-subdominant-tonic (I-IV-I) and tonic-subdominant-dominant-tonic (I-IV-V-I).²² This basic harmony is typically too unoriginal in law to justify the grant of monopolies through copyright protection.²³ Virtually anyone, even with a limited sense of finger coordination, could replicate these simple harmonic patterns. The notion underlying harmonic functionality could be expressed as follows—this simple, rudimentary harmony should be unprotectable as a matter of law not just because it lacks the requisite originality for copyright protection,²⁴ but also because it may be considered “functional” as the term is understood in trademark doctrine.

As such, this Article argues that something akin to the trademark doctrine of functionality should also be applied in the context of copyright law to deny protection to basic harmonic progressions on account of their functional nature.²⁵ In the context of trademark law, the goal of which is to provide protection for marks that identify goods with their manufacturers, the doctrine of functionality has been applied to prevent manufacturers from obtaining control over useful product features as distinguishing marks.²⁶ To provide manufacturers with the exclusive control of useful product features through any means other than patent protection would be to provide such manufacturers with an unfair monopoly advantage over their competitors.²⁷ To take an

²² See Dahlhaus, *supra* note 1.

²³ See 1-2 NIMMER, *supra* note 7, § 2.05[D].

²⁴ See *id.*

²⁵ See *Qualitex Co. v. Jacobson Prods. Co.*, 514 U.S. 159, 165 (1995) (defining the trademark doctrine of functionality); *supra* note 2; see also *McIntyre v. Double-A Music Corp.*, 166 F. Supp. 681, 683 (S.D. Cal. 1958) (A “contribution” of “several bars of harmony” or the “addition” of “harmonic embellishments” are “technical improvisations which are common in the vocabulary of music . . . are de minimis contributions and do not qualify for copyright protection.”).

²⁶ See *Qualitex*, 514 U.S. at 164.

²⁷ See *id.* at 164–65.

example, the doctrine of functionality would provide that even if consumers had come to identify the particular shape of a light bulb with a certain manufacturer, that design could not be protected if it played some role in the functioning of the light bulb (i.e., enhanced the light bulb's brightness or reduced its power consumption).²⁸ To do so would provide the original light bulb maker an unfair advantage "by frustrating competitors' legitimate efforts to produce an equivalent . . . [light] bulb."²⁹

Similarly, for a song to be commercially successful, it must have some harmony. The simpler the harmony, the better, since more fans could later recall the song and perhaps even replicate it in some way. Most, if not all, commercial songs have a simple harmony at the songs' core. Hence, this Article argues that these *simple* harmonic progressions are akin to the functional features of a light bulb and should not be protectable under copyright law.

However, a crucial distinction must be made: while simple harmonic progressions are typically the result of functional considerations, many songs, however, also contain another more sophisticated type of harmony beyond this basic tonal-functional harmony that can be generally referred to as a "fancy harmonic layer."³⁰ The sophisticated harmonic embellishments found in the fancy harmonic layer are dictated less by functional considerations and more by decisions of creative and artistic choice. Thus these harmonic progressions are not functional by nature, and should be afforded the typical protections of copyright law.³¹

This Article also contends that the current system of gauging infringement does not account for the acoustic properties of the categories it deems protected.³² An analysis of the relevant case

²⁸ *Id.* at 165.

²⁹ *Id.*

³⁰ The term "fancy harmonic layer" refers to more sophisticated harmonies, i.e., those beyond the basic harmonic progressions enumerated *supra* in the text accompanying note 22.

³¹ See 17 U.S.C. § 102(a)(2) (2006) (providing copyright protection for "musical works"); 1-2 NIMMER, *supra* note 7, § 2.05 (elaborating on the copyright protection provided for "musical works").

³² See 1-2 NIMMER, *supra* note 7, § 2.05[D] ("It has been said that a musical work consists of rhythm, harmony and melody, and that the requisite creativity [for copyright protection] must inhere in one of these three.").

law shows that courts avoid elaborating on the nature of specific harmonic progressions that potentially warrant copyrightability.³³ Instead, the courts prefer a quantum-of-creativity discussion, which is in the nature of legal conclusion rather than an explanation.³⁴ One problem with this approach is that it does not define the status quo of a particular harmonic combination, and makes it impossible to predict the court's decision in the future vis-à-vis the same combination only in a different composition. Another problem is that this approach unwittingly shifts the focus from the exercise of a creative harmonic choice to the end-result of that exercise.³⁵

The new approach proposed by this Article advocates against the tendency to seek a uniform set of factors that would fit every substantial similarity analysis, while still defending the practice of musical dissection in determining extrinsic similarity. The article also briefly addresses scholastic criticism of the test and comments upon the criticisms' merits before discussing the role of juries in cases involving music. Under the current system of determining infringement, the jury assesses the intrinsic similarity between the

³³ See, e.g., *Johnson v. Gordon*, 409 F.3d 12, 23 (1st Cir. 2005); *Tempo Music, Inc. v. Famous Music Corp.*, 838 F. Supp. 162, 168 (S.D.N.Y. 1993).

³⁴ See, e.g., *Johnson*, 409 F.3d at 23 (“The plaintiff has not presented any evidence contradicting his own expert’s assessment of the ubiquity of the III, II harmonic progression. Virtually by definition, expressions that are common are also unoriginal.”); *Yankee Candle Co. v. Bridgewater Candle Co.*, 259 F.3d 25, 35 (1st Cir. 2001); see also *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345 (1991) (noting that although originality does not require novelty, it does demand that an expression exhibit “at least some minimal degree of creativity”). So it is here: this harmonic progression, which is a stereotypical building block of musical composition, lacks originality. Note that in *Johnson*, the ruling may have been caused by the plaintiff expert’s omission or failure to underscore the fact that the III–II harmonic progression meets the minimum threshold of originality. See *Johnson*, 409 F.3d at 23. The threshold is met because it reverses the conventional order of harmonic progression. Traditionally, the harmony moves from subdominant to dominant group. See *supra* discussion in Part II. Accordingly, ordinarily the II degree precedes III, since II is part of the subdominant group, and III is part of the dominant group. In reversing the order of progression, the minimum degree of creativity should have been met.

³⁵ See *Tempo Music*, 838 F. Supp. at 168 (“We reject the third-party plaintiff’s argument that ‘the proper focus in determining originality is not whether [the composer] exercised ‘creative choices,’ but on the *result* of those choices.’”).

plaintiff's and defendant's songs.³⁶ Many factors impair a jury's ability to determine the intrinsic similarity between two songs, and therefore litigants should not realistically expect jurors, under the current standard, to pass an informed judgment about the music's expressive content.

III. PROPOSED PARADIGM: THE FUNCTIONALITY OF HARMONY

Part III of this Article will discuss the underlying basis for the functionality of harmony paradigm. Succinctly explaining the acoustic phenomenon which spurred the development of harmony per se as the Western world knows it today, this Article demonstrates that in the type of music that is typically litigated, the commercial usefulness of harmony far exceeds its originality—hence the norm of functionality.

A. *The Sound and its Perception*

The world of sound is a world of vibrations and numbers.³⁷ Scholars credited Pythagoras with the discovery of the numerical basis of a sonic vibration.³⁸ Pythagoras observed that a sound

³⁶ Smith v. Jackson, 84 F.3d 1213, 1218 (9th Cir. 1996) (“If plaintiff satisfies the extrinsic test, then the subjective ‘intrinsic test’ asks whether an ‘ordinary, reasonable observer’ would find a substantial similarity of expression of the shared idea.” (quoting Apple Computer, Inc. v. Microsoft Corp., 35 F.3d 1435, 1442 (9th Cir. 1994))); see also Rice v. Fox Broad. Co., 330 F.3d 1170, 1174 (9th Cir. 2003).

³⁷ See, e.g., Charles Taylor & Murray Campbell, *Sound*, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/26289> (last visited Feb. 1, 2009) (discussing the multiple aspects of the sonic phenomenon).

³⁸ See André Barbera, *Pythagoras*, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/22603> (last visited Feb. 1, 2009).

Pythagoras's importance for music lies in his purported establishment of the numerical basis of acoustics. On passing a blacksmith's shop, he is said to have heard hammers of different weights striking consonant and dissonant intervals. He discovered that musical consonances were represented by the ratios that could be obtained from the musical tetractys: 1, 2, 3, 4. The ratios are relations of string lengths or frequencies. . . . A Pythagorean scale consists of 4ths subdivided in two tones plus the remainder.

Id. (internal citations omitted).

phenomenon could be represented through mathematical ratios,³⁹ and that certain ratios generated “pleasant” intervals and others produced “unpleasant” ones.⁴⁰ For example, intervals formed from integers between 1 and 4 (*tetractys*) produced consonances, or pleasant sounding intervals.⁴¹ Conversely, the intervals formed from the ratios outside the *tetractys* generated dissonances.⁴²

During the Renaissance, when Hellenic ideals were infused with new life,⁴³ the consonance group was expanded to include ratios created from integers between 1 and 6.⁴⁴ This expansion marked the beginning for the *major-minor* dichotomy as we know

³⁹ *Id.*; see Claude V. Palisca & Brian C. J. Moore, *Consonance* § 1, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/06316>.

⁴⁰ The consonance, or “symphony,” in Pythagorean tradition should not be confused with the subjective perception of whether the interval sounds pleasant to a human ear. The *tetractys* had symbolic and spiritual connotations; it represented the cosmic harmony, which was extrapolated to the harmony between the human body and soul. See Barbera, *supra* note 38 (“According to the theory of the harmony of the spheres, the distances from the earth to the visible planets and sun, as well as the speeds with which the celestial bodies circle the earth, are in the same ratios as various musical intervals, especially those of the diatonic scale.”); see also Palisca & Moore, *supra* note 39.

⁴¹ See Palisca & Moore, *supra* note 39.

The association of consonance with simple ratios goes back at least to the Pythagoreans of the 5th century bce, who used the term ‘symphonies’ for intervals produced by string lengths in the ratios formed from numbers between 1 and 4. These comprised the octave (2:1), the 5th (3:2), the octave-plus-5th (3:1), the 4th (4:3) and the double octave (4:1).

Id.

⁴² *Id.*

⁴³ See generally Lewis Lockwood, *Renaissance*, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/23192> (last visited Feb. 1, 2009) (discussing the Western music history in the context of sociological changes between the years of 1300 and 1600).

⁴⁴ See Mark Lindley et al., *Interval*, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/13865> (last visited Feb. 1, 2009) (“[I]t was only in the 16th century that the simpler 5:4 and 5:3 ratios became the standard European theoretical ideal. The change corresponded, albeit belatedly, to an earlier change in the practical status of 3rds and 6ths as consonant intervals.”); Palisca & Moore, *supra* note 39 (“Zarlino [in his 1558 treatise, *Le istitutioni harmoniche*] by extending the Pythagorean inner sanctum to the number 6 (senario), was able to admit the ratios 5:4, 6:5 and 5:3 but had to rationalize the minor 6th, 8:5, as a composite interval made up of a perfect 4th and a minor 3rd.”).

it in today's music.⁴⁵ Contemporary psychoacoustical studies show that “[a]s a rough rule of thumb, ratios involving integers greater than 6 are heard as dissonant, while intervals involving ratios less than 6 are heard as consonant.”⁴⁶ Accordingly, there is a direct correlation between the latter ratios and the demands of mass music consumers for mundane forms of expression: a simple harmony, and a simple melody.⁴⁷

Indeed, for centuries the works of great composers pushed the definitions of consonance to the limits of tonality.⁴⁸ However, despite the intellectual possibilities and virtues of impressionist,⁴⁹ neoclassical,⁵⁰ or dodecaphonic⁵¹ systems, “the infantile demands

⁴⁵ See generally Brian Hyer, *Tonality*, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/28102> (last visited Feb. 1, 2009) (discussing conceptual categories in which the melodies and harmonies relate to the tonic pitch class, and the differentiation of the musical material through major and minor modes) [hereinafter Hyer, *Tonality*].

⁴⁶ Palisca & Moore, *supra* note 39, § 2. The sensory theory of consonance explains our preference for simple ratios in two ways. First, through natural tendency to minimize the “beats” effect, which is a kind of noise or interference between the harmonics of the two notes. See *id.* “The second explanation is connected with the fact that action potentials (nerve impulses, ‘firings’ or ‘spikes’) in the auditory nerve tend to be synchronized to a particular phase of the stimulating wave in the cochlea or inner ear” *Id.* See generally David Fowler, *Helmholtz: Mathematical Structure in Music*, in MUSIC AND MATHEMATICS: FROM PYTHAGORAS TO FRACTALS 77, 83–87 (John Fauvel et al. eds., 2003) (providing a condensed discussion on consonance and dissonance phenomena).

⁴⁷ See *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 and by the skill of the ordinary player. To be successful, it must be a combination of tones that can be played as well as sung by almost any one.

Id.

⁴⁸ Hyer, *Tonality*, *supra* note 45.

⁴⁹ See Jann Pasler, *Impressionism* § 1, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/50026> (last visited Jan. 31, 2009) (“In much of Debussy’s music, as in Impressionist pieces by Delius, Ravel and others, the composer arrests movement on 9th and other added-note chords, not to produce dissonant tension but, as Dukas put it, to ‘make multiple resonances vibrate.’ This attention to distant overtones, particularly generated by gong-like lower bass notes, produces a new sense of musical space, in effect giving a greater sense of the physical reality of sound.”).

⁵⁰ See Herbert Antcliffe & Barbara A. Renton, *Wagenaar, Bernard*, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/>

of the popular ear”⁵² yearn for sounds produced from the lower integer ratios, a practice in effect since at least the sixteenth century.⁵³ Faced with the market for increased simplicity, which can be reached by using a limited combination of sounds, the composers of mass consumer music are bound to hear virtually the same sound combinations in each other’s works.⁵⁴

29763 (last visited Jan. 31, 2009) (“Wagenaar’s compositions, in a style that can be described as neoclassical in its use of formal structures, modified to suit his artistic purpose, include tonal and polytonal pieces demonstrating lyrical melodic grace, finely wrought counterpoint and pungent harmonies.”); *see also* The Music Chamber—Neoclassicism, <http://library.thinkquest.org/27110/noframes/periods/neoclassicism.html> (last visited Jan. 11, 2009) (“Neoclassicism . . . combined musical elements from the Classical Period with the newer trends that were emerging early in the twentieth century.”).

⁵¹ *Dodecaphonic*, in OXFORD DICTIONARY OF MUSIC (Michael Kennedy ed., 2d ed. rev.), available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/opr/t237/e3021> (last visited Jan. 31, 2009) (“12 sounds. Adjective describing the system of comp[osition] with 12 notes . . . In the dodecaphonic scale the 12 notes are considered to be of equal status and are so treated.”).

⁵² *Darrell v. Joe Morris Music Co.*, 113 F.2d 80, 80 (2d Cir. 1940) (“It must be remembered that, while there are an enormous number of possible permutations of the musical notes of the scale, only a few are pleasing; and much fewer still suit the infantile demands of the popular ear.”).

⁵³ Palisca & Moore, *supra* note 39, § 2 (“[I]ntervals involving ratios less than 6 are [generally] heard as consonant.”).

⁵⁴ *See, e.g., Marks v. Leo Feist, Inc.*, 290 F. 959, 960 (2d Cir. 1923).

Musical signs available for combinations are about 13 in number. They are tones produced by striking in succession the white and black keys as they are found on the keyboard of the piano. It is called the chromatic scale. In a popular song, the composer must write a composition arranging combinations of these tones limited by the range of the ordinary voice and by the skill of the ordinary player. To be successful, it must be a combination of tones that can be played as well as sung by almost anyone. Necessarily, within these limits, there will be found some similarity of tone succession.

Id.

B. *The Functionality of Harmony*

In music, the tonal-functional harmony⁵⁵ is an outgrowth of the counterpoint⁵⁶ and of its resulting polyphony.⁵⁷ Distilled to basics, the idea behind harmony is relatively simple: harmony is a series of chords that have some musically logical⁵⁸ relationship to each other. Accordingly, a few triads⁵⁹ played in a row will generally produce some simple or “block” harmony.⁶⁰ This harmony is

⁵⁵ See Dahlhaus, *supra* note 1.

[T]he concept of harmony refers less to actual musical structures than to the structural principles underlying intervals and their combinations or chords and their relationships. (In Riemann’s theory of harmonic function, a harmony is the essence of all chords having a like function and thus exists at a much more abstract level than chords with their inversions and notes ‘foreign to the harmony’.) However, harmony considered as a structural principle is just as much an intrinsic part of ancient and medieval music as it is of the tonal system of modern times. The two-note consonance constituted the foundation of the old tonal system, the three-note consonance that of the new. From the 18th century onwards, the scale of any key has been explained as being the result of a reduction of the three principal chords, the tonic, dominant and subdominant: C–E–G + G–B–D + F–A–C = C–D–E–F–G–A–B–C.

Id.

⁵⁶ See Klaus-Jürgen Sachs & Carl Dahlhaus, *Counterpoint*, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/06690> (last visited Jan. 31, 2009). Counterpoint is “the combination of simultaneously sounding musical lines according to a system of rules. It has also been used to designate a voice or even an entire composition . . . devised according to the principles of counterpoint.” *Id.*

⁵⁷ See Wolf Frobenius et al., *Polyphony*, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/42927> (last visited Jan. 31, 2009).

⁵⁸ Note that for a harmonic progression to sound appealing it must follow certain pre-established rules of how to treat the dissonances and fundamental base; not any permutation will produce a consonant and eclectic harmony. See Palisca & Moore, *supra* note 39, § 2.

⁵⁹ A Triad is “[a] chord consisting of three notes which can be arranged to form two superimposed 3rds.” *Triad*, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/28347> (last visited Feb. 2, 2009).

⁶⁰ See Brian Hyer, *Block Harmony*, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/03290> (last visited Feb. 2, 2009) (“A homorhythmic accompanying texture in which harmonies are presented as simultaneous chords, often one per beat, below a more active and soloistic melodic part.”).

called tonal,⁶¹ because the chords exist in a hierarchy in which the main (or “tonal”) group of chords functions as a point of equipoise between the dominant and sub-dominant groups.⁶²

The harmony is also functional, because it serves as a support for melody or for a melodic figuration.⁶³ Harmony anchors the melody into the primary key which functions as a point of reference to a certain pitch class, accompanies the melody into the secondary keys, and provides an aural context in which the listener can better distinguish the character of the melody.⁶⁴ Further, because harmony functions as an accompaniment to the melody, it very seldom, if at all, could possess a value of an independent significance.⁶⁵ As noted, the public seeks this simple tonal-functional harmony to be a part of a “pop” song.⁶⁶

Further, because the tonal-functional system is based mainly on three triad groups,⁶⁷ the number of possible variations in the

⁶¹ See Dahlhaus, *supra* note 1, § 1; Hyer, *Tonality*, *supra* note 45, § 1.

⁶² See Dahlhaus, *supra* note 1, § 1; Hyer, *Tonality*, *supra* note 45, § 1.

⁶³ See Dahlhaus, *supra* note 1, § 1. A parallel is noticeable between the principles underlying functionality of harmony in music and functionality doctrine in the context of the Lanham Act notwithstanding the observation that the two concepts deal with somewhat dissimilar categories: intangible music and tangible goods. Functionality in music promotes harmonic continuity, which serves as a *sui generis* foundation for the melody and as melodic accompaniment. See *id.* In trademarks, functionality protects the free competition in designing features demanded by the buyers regardless of the source of the goods' origin. See generally *Pagliari v. Wallace China Co.*, 198 F.2d 339, 343 (9th Cir. 1952) (stating that a particular feature is functional if it is an important ingredient in the commercial success of a product, and that the interest in free competition permits the imitation of such features in the absence of a patent or copyright). As iterated in note 2, *supra*, there should be no equivocation per se between the term functionality as it relates to harmony and trademark law.

⁶⁴ See generally David Fuller, *Accompaniment*, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/00110> (last visited Feb. 2, 2009) (defining accompaniment “[i]n the most general sense, [as] the subordinate parts of any musical texture made up of strands of differing importance”).

⁶⁵ See *id.*; Dahlhaus, *supra* note 1, § 3(v).

⁶⁶ See *supra* note 52 and accompanying text.

⁶⁷ The three main groups are the tonic, sub-dominant, and dominant groups. See William Drabkin, *Degree*, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/07408> (last visited Feb. 2, 2009) (“The other degrees are as follows: second, supertonic (this is the dominant of the dominant); third, mediant; sixth, submediant; and seventh, leading note.”).

system is scarce.⁶⁸ Additionally, considering that the tonal-functional practice existed since approximately the sixteenth century, to show that a certain harmonic progression has not been in the public domain is almost impossible.⁶⁹

Furthermore, even a cursory look at the hit charts shows that nearly all successful performers sing alongside harmonic accompaniment, suggesting that the public demands songs in which harmony is a feature.⁷⁰ For better or worse, music has become a commodity subject to trade.⁷¹ Similar to goods, music is manufactured, designed to appeal to the largest audience possible, and tailored to specific audiences to achieve the greatest recognition, which is almost invariably measured in dollars.⁷² It, therefore, is reasonable to allow songwriters to benefit in the creation of music from functionality, a protection from which the makers of goods have already been benefiting.

The Restatement of Torts states that a feature of goods is functional “if it affects their purpose, action or performance . . . it is non-functional if it does not have any of such effects.”⁷³ Indeed, harmony affects the song’s purpose, because without harmony,

⁶⁸ Because the tonic is “related” to submediant, subdominant is related to supertonic, and dominant is related to mediant, these enumerated harmonic progressions occupy the tonal-functional universe. *See generally* Dahlhaus, *supra* note 1.

⁶⁹ *See, e.g.*, *Granite Music Corp. v. United Artists Corp.*, 532 F.2d 718, 720 (9th Cir. 1976); *Arnstein v. Edward B. Marks Music Corp.*, 82 F.2d 275, 277 (2d Cir. 1936) [hereinafter *Edward B. Marks*]. *But see Swirsky v. Carey*, 376 F.3d 841, 850 (9th Cir. 2004) (insisting that the compared elements of the songs be found in the same field of music).

⁷⁰ For a discussion of the history and importance of harmony, see Dahlhaus, *supra* note 1.

⁷¹ MILES, *supra* note 2, at 107 (“Pop music is a commodity which can be bought and sold in the marketplace.”).

⁷² *See* Richard Middleton et al., *Pop* § 1, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/46845> (last visited Feb. 2, 2009) [hereinafter Middleton, *Pop*]. That is not to say, however, that only consumerism molds the idiosyncrasies of “pop.” *See id.* (“The forms, themes and pleasures of most pop, then, are marked both by the effects of ‘consumerism’ and by the tensions resulting from a tilt in the structure of social feeling towards ‘youth’, ‘change’ and ‘modernity.’”).

⁷³ RESTATEMENT (FIRST) OF TORTS § 742 cmt. a (1938) (“The determination of whether or not such features are functional depends upon the question of fact whether prohibition of imitation by others will deprive the others of something which will substantially hinder them in competition.”).

there would be merely a simple melodic line with some rhythm—a combination hard to sell in the marketplace. Therefore, protection of the functional features in harmony makes little sense because it would discourage new composers from creating something that is demanded by the audience-consumers. Albeit developed in the context of The Lanham Act,⁷⁴ the courts have not transposed the doctrine of functionality from trademarks to music copyrights.⁷⁵

The simple, basic harmony or variation should not be protectable as it is functional.⁷⁶ While courts have used various traditional copyright doctrines to decline copyright protection for trivial harmonic combinations,⁷⁷ the problem with these doctrines is that they often disregard music's syncretic nature in which every

⁷⁴ See 15 U.S.C. § 1125 (2006). “In a civil action for trade dress infringement under this Act for trade dress not registered on the principal register, the person who asserts trade dress protection has the burden of proving that the matter sought to be protected is not functional.” *Id.* § 1125(a)(3).

⁷⁵ While this doctrine is not used in copyright, the courts do, however, speak of frequencies and commonalities of harmonic schemes. See *Gaste v. Kaiserman*, 863 F.2d 1061, 1068 (2d Cir. 1988) (The court must be “mindful of the limited number of notes and chords available to composers and the resulting fact that common themes frequently reappear in various compositions, especially in popular music. . . . Thus, striking similarity between pieces of popular music must extend beyond themes that could have been derived from a common source or themes that are so trite as to be likely to reappear in many compositions.”); *Selle v. Gibb*, 741 F.2d 896, 905 (7th Cir. 1984) (“[I]n a field such as that of popular music . . . all songs are relatively short and tend to build on or repeat a basic theme.”).

⁷⁶ See *Qualitex Co. v. Jacobson Prods. Co.*, 514 U.S. 159, 164 (1995) (“The functionality doctrine prevents . . . [the inhibition of] legitimate competition by allowing a producer to control a useful product feature.”).

⁷⁷ See, e.g., *Tisi v. Patrick*, 97 F. Supp. 2d 539, 544 (S.D.N.Y. 2000) (finding the I, IV harmonic progression not protectable due to its commonality); *Tempo Music, Inc. v. Famous Music Corp.*, 838 F. Supp. 162, 169 (S.D.N.Y. 1993) (discussing the traditional interpretation of harmony as unprotectable because it “is driven by the melody”); *Intersong-USA v. CBS, Inc.*, 757 F. Supp. 274, 282 (S.D.N.Y. 1991) (finding a certain harmonic progression unprotectable because it appears in many songs); *McIntyre v. Double-A Music Corp.*, 166 F. Supp. 681, 683 (S.D. Cal. 1958) (describing plaintiff’s “inconsequential melodic and harmonic embellishments” as those which “are frequently improvised by any competent musician[,]” and finding that “[s]uch technical improvisations which are in the common vocabulary of music and which are made every day by singers and other performers, are de minimis contributions and do not qualify for copyright protection”); *N. Music Corp. v. King Record Distrib. Co.*, 105 F. Supp. 393, 400 (S.D.N.Y. 1952) (observing that harmony “is achieved according to rules which have been known for many years” and that “[b]eing in the public domain for so long neither rhythm nor harmony can in itself be the subject of copyright”).

increment is inseparable from the whole composition and thus equally important. The idea of harmonic functionality circumvents the aesthetics and focuses on the features that are demanded by the music consumers' market.⁷⁸

When dealing with goods in the copyright context, the courts have come to employ the useful article doctrine to determine whether the useful features of a good are physically or conceptually separable from their purely aesthetic features.⁷⁹ Under the useful article doctrine, courts provide protection to those aesthetic features of goods that are separable from the goods' useful applications, and decline protection where the aesthetic features are not separable from the goods' useful features.⁸⁰

In the trademark context courts have used "the theory of 'aesthetic functionality'" to find that less strictly utilitarian and more ornamental "visually attractive and aesthetically pleasing designs [can be] . . . categorized as 'functional' and hence free for all to copy and imitate."⁸¹

Outside the musical milieu these approaches may be eminently correct, albeit if somewhat difficult to administer.⁸² However the

⁷⁸ Note that there are genres in wide consumer demand, such as "techno" in which neither harmony nor melody are prominent features. See Will Fulford Jones, *Techno*, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/47221> (last visited Feb. 2, 2009).

⁷⁹ See generally 1-2 NIMMER, *supra* note 7, § 2.08 [B][3].

⁸⁰ See *Carol Barnhart Inc. v. Economy Cover Corp.*, 773 F.2d 411, 412 (2d Cir. 1985) ("[P]laintiff's mannequins of partial human torsos used to display articles of clothing are utilitarian articles not containing [physically or conceptually] separable works of art, and thus are not copyrightable."); *Kieselstein-Cord v. Accessories by Pearl, Inc.*, 632 F.2d 989, 993-94 (2d Cir. 1980) (holding that certain ornamental belt-buckles had decorative features that were conceptually separable from their utilitarian function and thus were eligible for copyright protection); 1-2 NIMMER, *supra* note 7, § 2.08 [B][3].

⁸¹ J. THOMAS MCCARTHY, 1 MCCARTHY ON TRADEMARKS AND UNFAIR COMPETITION § 7.79 (4th ed. 2008).

⁸² For discussion and criticism of the aesthetic functionality doctrine, see generally Mitchell M. Wong, *The Aesthetic Functionality Doctrine And The Law Of Trade-Dress Protection*, 83 CORNELL L. REV. 1116, 1118-19 (1998). For a criticism of the useful article doctrine and a suggested alternative approach to copyrightability, see generally Denicola, *Applied Art and Industrial Design: A Suggested Approach to Copyright in Useful Articles*, 67 MINN. L. REV. 707 and see also 1-2 NIMMER, *supra* note 7, § 2.08 [B][3] (discussing the inconsistencies and difficulties courts have faced in administering the useful articles doctrine).

useful article doctrine has only been applied in the context of the copyrightable subject matter category of “pictorial, graphic, and sculptural works”⁸³ which is a separate and distinct category of copyrightable authorship from “musical works.”⁸⁴ Moreover, the useful article doctrine has typically been applied to deny protection for objects that are useful in the strictest of utilitarian senses (i.e., bicycle racks,⁸⁵ paper patterns used to cut dresses⁸⁶) and has afforded copyright protection to objects whose use is merely for amusement or personal enjoyment (i.e., toys,⁸⁷ pig-nose costume masks⁸⁸). Under such a discerning standard of utility, it is hard to imagine that the copyright useful article doctrine could be applied to deny copyright protection to the functional features of harmony.

As for the trademark aesthetic functionality doctrine, however, in the case of music, where a song’s harmonic functionality can dictate its success in the marketplace, separating harmony’s functional features from its aesthetic features may be almost impossible and largely should not be required.⁸⁹

⁸³ 17 U.S.C. § 102(a)(5) (2006); *see id.* § 101 (“[T]he design of a useful article, as defined in this section, shall be considered a pictorial, graphic, or sculptural work only if, and only to the extent that, such design incorporates pictorial, graphic, or sculptural features that can be identified separately from, and are capable of existing independently of, the utilitarian aspects of the article.”); 1-2 NIMMER, *supra* note 7, § 2.08 [B][3] (providing an explanation of the useful article doctrine in the context of its discussion on the copyrightable subject matter category of “pictorial, graphic and sculptural works”).

⁸⁴ 17 U.S.C. § 102(a)(2).

⁸⁵ *Brandir Int’l Inc. v. Cascade Pac.*, 834 F.2d 1142, 1147–48 (2d Cir. 1987) (denying copyright protection for the artistic and aesthetic qualities of a ribbon bicycle rack on the grounds that these qualities could not be conceptually or physically separated from the rack’s utilitarian function).

⁸⁶ *The Beverly Hills Design Studio v. Morris*, 126 F.R.D. 33, 38 (S.D.N.Y. 1989) (“These patterns were used to cut fabric for the manufacture of garments. They did not reflect . . . ‘artistic judgment exercised independently of functional influences’, but were functional products not eligible for copyright protection.”).

⁸⁷ *See Gays Toys v. Buddy L. Corp.*, 703 F.2d 970, 974 (6th Cir. 1983) (“[T]oys do not even have *an* intrinsic function other than the portrayal of the real item.”).

⁸⁸ *See Masquerade Novelty, Inc. v. Unique Indus.*, 912 F.2d 663, 671 (3d Cir. 1990) (“The utilitarian nature of an animal nose mask or a painting of the crucifixion of Jesus Christ inheres solely in its appearance, regardless of the fact that the nose mask’s appearance is intended to evoke mirth and the painting’s appearance a feeling of religious reverence.”).

⁸⁹ *Wong*, *supra* note 82, at 1120 (“[A] feature that ‘affects the cost or value’ of an article is not necessarily ‘essential to [its] use or purpose.’ . . . Decorative, as opposed to utilitarian, features fall squarely within this unsettled area, thereby framing the aesthetic

Litigants, nonetheless, should be able to account for music's purely functional features, because the manner in which music is sold and bought (whether on the streets or the Internet) makes music a commodity, an object of trade, a good.⁹⁰ In the case of music, denying protection to the functional features of harmony outright avoids the potential pitfalls of the conceptual and physical separability tests and the distinction between the aesthetic and the functional as these doctrines would potentially be applied to musical works. As such, litigants should not be forced to draw these distinctions in cases involving harmony, and protection should be denied for harmonies at the primary tonal level precisely because they are inherently functional.

C. *Musical Anatomy*

The harmony that goes beyond the triviality of primary tonal level and blocked chords is and should be protectable under

functionality problem.”); see MCCARTHY, *supra* note 81, § 7.80 (noting the “[u]neven use of the aesthetic functionality doctrine in the modern courts”). In his seminal trademark and unfair competition treatise, Joseph McCarthy goes on to comment that “[t]he notion of ‘aesthetic functionality’ is an unwarranted and illogical expansion of the functionality policy” *Id.* at § 7.81. As McCarthy explains:

Advocates of the theory of aesthetic functionality will often use the 1938 Restatement's example of a Valentine's Day candy box in the shape of a heart to help prove their theory. The assumption is that no one candy purveyor should have the legal right to exclusive use of a heart-shaped candy box and that only the theory of aesthetic functionality can accomplish the job of preventing such an unfair result. My response is that there is no need to invent a theory of 'aesthetic functionality' to achieve the desired result. One way to bar a heart-shaped candy box from trade dress status is to invoke the traditional utilitarian functionality rule. The heart shape is just as 'utilitarian' from a marketing viewpoint as any engineering analysis of rectangular versus circular box sizes and shipping stability and cost of manufacture.

Id. (citation omitted). So it is with harmony: just as the design of a heart-shape box is functional for the marketing and engineering advantages it will provide the box in the marketplace, so too is the nature of harmony at the primary tonal level. As such, harmony, just as a heart-shaped box in McCarthy's example, should be afforded protection for its functional nature without having to resort to the aesthetic functionality doctrine. *See id.*

⁹⁰ The proposition is not an invitation to reopen the door to treat copyright claims masked as claims for false designation of origin under the Lanham Act. *See Dastar Corp. v. Twentieth Century Fox Film Corp.*, 539 U.S. 23, 37–38 (2003).

copyright law. In *Tempo Music, Inc. v. Famous Music Corp.*,⁹¹ a New York district court analyzed whether the harmony and revised melody in the instrumental version of Duke Ellington's *Satin Doll* was protectable when used without lyrics.⁹² Billy Strayhorn's estate argued that the rights to Billy's two instrumental versions of Ellington's *Satin Doll* belonged to Strayhorn and that Ellington owed royalties to Strayhorn.⁹³ Ellington took the position that because harmony is in the common musical vocabulary, it is not protectable as a matter of law;⁹⁴ but the court disagreed.⁹⁵

Instead of focusing on the merits of Strayhorn's harmonic arrangement, the court took a shortcut to the final holding and interpreted Ellington's position as an argument for a heightened originality standard, thus redirecting discussion toward distinction between originality and novelty.⁹⁶ Pointing out that the creative process in choosing between harmonic chords suffices for purposes of the copyright protection,⁹⁷ the court stated that unlike originality, novelty is not necessary for copyright protection.⁹⁸

Legal positivism aside, it is not possible to understand whether the court in *Tempo Music* achieved the "correct" result without having the benefit of substantial similarity analysis and dissection. Beyond mentioning in a somewhat truncated manner the experts' opinions, the court did not compare elements allegedly copied, nor did it engage in a systematic analysis of protectable versus

⁹¹ *Tempo Music, Inc. v. Famous Music Corp.*, 838 F. Supp. 162 (S.D.N.Y. 1993).

⁹² *Id.* at 164.

⁹³ *Id.*

⁹⁴ *Id.* at 168.

⁹⁵ *Id.* ("The Court is not convinced that harmony is unprotectable as a matter of law. While we agree that melody generally implies a limited range of chords which can accompany it, a composer may exercise creativity in selecting among these chords.")

⁹⁶ *See id.* at 168–69 ("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." (quoting *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345 (1991)).

⁹⁷ *Id.* at 169. "This emphasis on creative process rather than novel outcomes is consistent with the standard in other jurisdictions which emphasize creative inputs beyond mere technical changes any skilled musician could make." *Id.* at 169 n.11 (citing *McIntyre v. Double-A Music Corp.*, 166 F. Supp. 681 (S.D. Cal. 1958)).

⁹⁸ *Id.* at 168–69 ("Once it is understood that originality, for copyright purposes, looks to creative process rather than novel outcomes or results, it becomes clear that harmony can, as a matter of law, be the subject of copyright.")

unprotectable musical textures, or otherwise explain the compositional merits of Strayhorn's arrangement. To a trained listener, Strayhorn's arrangement seems to go beyond trivial when it employed dissonant harmonies,⁹⁹ but the same dissonances exist in the orchestral version of Ellington's *Satin Doll*. Yet the court does not expressly distinguish via dissection the harmonies in the two pieces.¹⁰⁰ Hence, in answering that harmony is not automatically unprotectable as a matter of law, the *Tempo Music* court does not give a guide as to which elements within Strayhorn's harmony were legally determinative—an important issue, which only raises further questions.¹⁰¹

The inherent subjectivity of the aural perception demands a side-by-side comparison of the competing works through dissection.¹⁰² However, an overzealous use of dissection may lead to fragmentation of the work beyond recognition—a practice branded as hyper-dissection.¹⁰³ In this respect, the opinions in *Swirsky v. Carey*¹⁰⁴ and *Johnson v. Gordon*¹⁰⁵ are illustrative. While the Ninth Circuit in *Swirsky* overruled the lower court's excessive dissection of a musical block,¹⁰⁶ the First Circuit in *Johnson* shrugged at the appellant's objection to hyper-dissection and affirmed the lower court's decision.¹⁰⁷

⁹⁹ The tension of the parallel seventh chords, when juxtaposed to the relaxed chromatic parallelisms of the triads with perfect fifths in the bass, generates a fresh and even novel effect.

¹⁰⁰ See *id.* at 167–72.

¹⁰¹ See *id.* at 165–72.

¹⁰² Cf. Roodhuyzen, *supra* note 8, at 1418–19 (addressing the pitfalls created by the substantial similarity test).

¹⁰³ See *Johnson v. Gordon*, 409 F.3d 12, 25 (1st Cir. 2005). Hyper-dissection involves “overlooking the forest for the trees . . . [when] the court [does] not see the overall similarity between [the songs] because it analyzed fragments of the two and ignored similarities that were recognizable only within a wider context.” *Id.*

¹⁰⁴ *Swirsky v. Carey*, 376 F.3d 841 (9th Cir. 2004).

¹⁰⁵ *Johnson*, 409 F.3d at 12.

¹⁰⁶ See *Swirsky*, 376 F.3d at 847–49. “[N]o approach can completely divorce pitch sequence and rhythm from harmonic chord progression, tempo, and key, and thereby support a conclusion that compositions are dissimilar as a matter of law.” *Id.* at 848.

¹⁰⁷ See *Johnson*, 409 F.3d at 26. A possible, if at all needed, reconciliation between the two cases may be that the extent of the probative similarity finding in *Johnson* was greater than it was in *Swirsky*, and therefore the *Swirsky* court did not have to go too deeply in the dissection—an argument based on the “inverse ratio” rule that the more evidence of probative similarity is present, the less evidence is necessary to prove

The reluctance of the courts to announce a uniform set of factors that would satisfy the extrinsic test has been frustrating.¹⁰⁸ It would be difficult for a court to create a definite set of factors that would function as a litmus test for every copyright infringement action because each author of an original work has a unique creative process. For example, in *Three Boys*, a set of five elements were found dispositive: “(1) [T]he title hook phrase (including the lyric, rhythm, and pitch); (2) the shifted cadence; (3) the instrumental figures; (4) the verse/chorus relationship; and (5) the fade ending.”¹⁰⁹ Indeed, it would be uncanny to claim that application of these five factors to the songs in *Swirsky* or *Johnson* should lead to a similar end-result as in *Three Boys*; after all, not all songs may have title hook phrases, or shifted cadences, or fade endings.

Judges cope with the tests’ uncertainties in their own ways. For example, the Ninth Circuit in *Swirsky* took a holistic approach to dissection; observing the trial court’s omission from analysis of certain elements like genre,¹¹⁰ “key, harmony, rhythm, and tempo,”¹¹¹ the Ninth Circuit in *Swirsky* stated that even if some elements are individually unprotected, they may still be protected when combined.¹¹² No definite clues followed as to a combination of which and of how many elements would satisfy the test. Rather,

substantial similarity. *See id.* at 18–26 (discussing the requirements for probative and substantial similarity and dissecting the songs); *Swirsky*, 376 F.3d at 844–45 (“Carey conceded that she had a high degree of access to [plaintiff’s song]. *Swirsky*’s burden of proof of substantial similarity is thus commensurately lowered.”); *see also* *Rice v. Fox Broad. Co.*, 330 F.3d 1170, 1178 (9th Cir. 2003) (“Under the ‘inverse ratio rule,’ we ‘require a lower standard of proof of substantial similarity when a high degree of access is shown.’” (quoting *Three Boys Music Corp. v. Bolton*, 212 F.3d 477, 485 (9th Cir. 2000))).

¹⁰⁸ *See Swirsky*, 376 F.3d at 849 (acknowledging refusal to announce a uniform set of factors to be sufficient for extrinsic test).

¹⁰⁹ *Three Boys*, 212 F.3d at 485.

¹¹⁰ *See Swirsky*, 376 F.3d at 848.

¹¹¹ *See id.* at 848 n.13 (“In order to perform a song exactly, the musician would need information about key, harmony, rhythm, and tempo—the type of information not included in the district court’s comparison.”).

¹¹² *See id.* at 848.

the court just noted that, “concentration solely on pitch sequence may break music down beyond recognition.”¹¹³

By contrast, the court in *Johnson* delved into the painstaking comparison of the compositional elements of the songs at issue.¹¹⁴ In a laudatory analysis the court explained the technicalities of the extrinsic test: it outlined the interplay between the compositional/musical importance and the legal importance of the song’s structural segments that litigants could use as a prediction for the types of musical combinations that will or will not satisfy the extrinsic test.¹¹⁵ For instance, the court stated that, even by using transposition, raising melody by a perfect fifth, and then using inversion and retrograde, the plaintiff was still far from proving a “meaningful degree of similarity” between a two-bar melodic slice.¹¹⁶ Further, analyzing the next two measures, the court noted that harmonic progression from III to II constituted a “stereotypical building block” and that the plaintiff was unable to rebut its own expert’s assessment of “ubiquity of [the] III, II harmonic progression.”¹¹⁷

The difference in which the courts in *Swirsky* and *Johnson* treated *scenes a faire* arguments is notable.¹¹⁸ When the defendant in *Swirsky* argued that a certain allegedly copied portion of the melody was not protectable because it resembled the lines from the folk songs *For He’s a Jolly Good Fellow* and *The Bear Went Over the Mountain*, the court countered that the comparisons are “not in the same relevant ‘field’ of music,” thus stripping an apparently valid argument of its force.¹¹⁹ Moreover, the opinion added that the common element must be found in more than two songs.¹²⁰

¹¹³ *Id.* at 848 n.13. Perhaps an understatement, since the district court’s opinion focused on more than the pitch sequences. *See id.* at 847–48.

¹¹⁴ *Johnson v. Gordon*, 409 F.3d 12, 21–24 (1st Cir. 2005).

¹¹⁵ *Id.*

¹¹⁶ *Id.* at 21.

¹¹⁷ *Id.* at 23.

¹¹⁸ “*Scenes a faire* analysis requires the court to examine whether [component] similarities that plaintiffs attribute to copying could actually be explained by the common-place presence of the same or similar [components] within the relevant field.” *Swirsky*, 376 F.3d at 850 (citing *Smith v. Jackson*, 84 F.3d. 1213, 1219 (9th Cir. 1996)).

¹¹⁹ *Id.* at 850. Note that the *scenes a faire* argument may come at a cost to the defendant/composer’s reputation. The defendant may need to forget his own professional pride and assert that the allegedly copied portions in his music were taken from the public

By contrast, when the plaintiff in *Johnson* charged that the pitches 5-5-4-3-7-1 used in the melody were replicated by defendant as 5-5-4-3-2-1, the court simply pointed that a 5-4-3-2-1 contour is very common,¹²¹ such as in *Row, Row, Row Your Boat*, specifically the melodic portion corresponding to the words “life is but a dream.”¹²² The *Johnson* court, in contrast to the *Swirsky* court, analyzed the comparable pitches despite the fact that they were not in the same “relevant ‘field’ of music.”¹²³

Finally, in dissecting the compositions, some courts addressed the commonality of the key or tonality in which the plaintiff and defendant’s songs were written.¹²⁴ Arguably, the key of the song is irrelevant, because nowadays almost all music is equally tempered,¹²⁵ and will sound the same in any key to listeners who

domain and are unoriginal as a matter of law. For just as in the case of the plaintiff, the defendant’s legal right rests on the interest of financial gain, and the risk of being looked down upon in musical circles is likely to be outweighed by the risk of paying thousands of dollars in damages. *See, e.g., Arnstein v. Porter*, 154 F.2d 464, 473 (2d Cir. 1946) (“The plaintiff’s legally protected interest is not, as such, his reputation as a musician but his interest in the potential financial returns from his compositions which derive from the lay public’s approbation of his efforts.” (citations omitted)).

¹²⁰ *Swirsky*, 376 F.3d at 850. For more demanding views see *Tisi v. Patrick*, 97 F. Supp. 2d 539, 543–44 (S.D.N.Y. 2000) (noting harmonic progression used in both compositions so common as to be “found in songs in all genres”); and also *McRae v. Smith*, 968 F. Supp. 559, 566 (D. Col. 1997) (stating that chord progressions found in both compositions “are the most common chord progressions in all of the music of Western civilization”).

¹²¹ *Johnson*, 409 F.3d at 21. Under the *Ursatz* theory of Heinrich Schenker, all pieces of tonal music have a basic structure of either 3-2-1, 5-4-3-2-1, or 8-7-6-5-4-3-2-1. *See* MIDDLETON, *STUDYING POPULAR MUSIC*, *supra* note 2, at 193.

¹²² *Johnson*, 409 F.3d at 21–22.

¹²³ *Swirsky*, 376 F.3d at 850.

¹²⁴ *See, e.g., Tisi*, 97 F. Supp. 2d at 548; *Arnstein*, 82 F.2d at 277.

¹²⁵ Mark Lindley, *Equal Temperament*, in GROVE, *available at* OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/08900> (last visited Feb. 2, 2009). Equal temperament is:

A tuning of the scale based on a cycle of 12 identical 5ths and with the octave divided into 12 equal semitones, and consequently with 3rds and 6ths tempered, uniformly, much more than 5ths and 4ths. Equal temperament is now widely regarded as the normal tuning of the Western, 12-note chromatic scale.

Id.

do not possess an absolute pitch.¹²⁶ Accordingly, a coincidence in the key or tonality does not have a tendency to show that a copying is more or less probable.¹²⁷ Analyzed from a different side, an infringer could transpose a protected element into a different key, and even though now there will be two different tonalities, the copyright would obviously be infringed.

D. Critiques

Several criticisms were directed at the current framework for determining substantial similarity.¹²⁸ Some commentators addressed the courts' fundamental reliance on the outdated notions of melody, harmony and rhythm, which are not reflective of

¹²⁶ Richard Parncutt & Daniel J. Levitin, *Absolute Pitch*, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/00070> (last visited Feb. 2, 2009).

The ability either to identify the chroma (pitch class) of any isolated tone, using labels such as C, 261 Hz or *do* ('passive' absolute pitch), or to reproduce a specified chroma—for example, by singing or adjusting the frequency of a tone generator—without reference to an external standard ('active' absolute pitch (AP); Bachem, 1937; Baggaley, 1974; Ward, 1982). Both skills may be called 'tone-AP'. Absolute pitch may also involve recognizing whether a familiar piece is played in the correct key (passive), or singing a familiar song in the correct key (active); this skill is known as 'piece-AP.'

.....

Only about one person in 10,000 claims to have tone-AP [absolute pitch] (Profita and Bidder, 1988).

Id.

¹²⁷ See FED. R. EVID. 401 ("Relevant evidence" means evidence having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence.").

¹²⁸ See, e.g., Autry, *supra* note 14, at 118–41 (discussing the effects of various similarity standards); Alan Korn, *Issues Facing Legal Practitioners in Measuring Substantiality of Contemporary Musical Expression*, 6 J. MARSHALL REV. INTELL. PROP. L. 489, 489 (2007) (discussing the inadequacy of the substantial similarity test in the face of ever-changing expression in modern "jazz, avant-guard, world music, and . . . hip-hop"); Yvette Joy Liebesman, *Using Innovative Technologies to Analyze for Similarity Between Musical Works in Copyright Infringement Disputes*, 35 AIPLA Q.J. 331, 334–35 (2007) (critiquing the subjectivity resulting from the current applications of substantial similarity tests); Aaron Keyt, Comment, *An Improved Framework for Music Plagiarism Litigation*, 76 CAL. L. REV. 421, 441–43 (1988) (addressing deficiencies in the current substantial similarity test for its unresponsiveness to the social context in which certain works were created and the music theory behind them).

contemporary musical expression.¹²⁹ These reproaches are mostly correct. Indeed, the courts deal with contemporary music using outdated measuring sticks; after all, outside the courtroom the definitional ambit of melody and harmony have changed dramatically since the landmark music copyright infringement case of *Arnstein v. Porter*, decided by the Second Circuit in 1946.¹³⁰ However, the compositional essence of the music ending up before the courts is not new: those compositions invariably use tonal-functional harmony at their core, and have a traditional song-like melody—all common features of songs since the eighteenth century.¹³¹ Notwithstanding the critiques and the fact that the courts base their decisions on somewhat outdated norms of melody and harmony, the substantial similarity test adequately responds to the litigants' current needs.

So long as the litigated music is grounded in principles of traditional harmony and melody, it does not matter that a classically-trained expert is hired to testify about a “pop” or “rap” genre, even if the expert does not have a formal academic training or experience in the particular genres.¹³² The demand for experts with long Curricula Vitae (“CV”) caters to the assumptions that the longer the CV, the better the expert appears in the eyes of the judge and the jury.¹³³ Similarly, pure pragmatism suggests that the longer the CV, the higher the chance that a judge would favorably rule on the preliminary matters of admissibility and on the expert's “helpfulness” in assisting the jury, and the higher the possibility

¹²⁹ See, e.g., Korn, *supra* note 128, at 489–91 (discussing the fact that the courts' general “definition of music [as melody, harmony and rhythm] fails to account for unique methods of musical expression that exist beyond those narrowly drawn boundaries”); Keyt, *supra* note 128.

¹³⁰ *Arnstein v. Porter*, 154 F.2d 464, 473 (2d Cir. 1946); see 4-13 NIMMER, *supra* note 7, § 13.03 [E][3][A][i] (discussing the significance of *Arnstein*). The more recent decision in *Swirsky v. Carey* in 2004 in the Ninth Circuit focuses more on using expert testimony to satisfy an objective standard. *Swirsky*, 376 F.3d at 849.

¹³¹ See Norbert Böker-Heil et al., *Lied* § IV, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/16611> (last visited Feb. 2, 2009).

¹³² See, e.g., GEORGE ROCHBERG, *THE AESTHETICS OF SURVIVAL: A COMPOSER'S VIEW OF TWENTIETH-CENTURY MUSIC* 88–89 (2005) (discussing the fact that all music (both pre and post twentieth-century) “is rooted in the same basic prototype”).

¹³³ See Autry, *supra* note 14, at 120–21.

that the jury would give greater weight to the expert's testimony at the time of deliberation.¹³⁴ After all, having recognition in an underground rap club is not the same as heading a music theory department at Berkeley or NYU.¹³⁵

In another criticism of the substantial similarity test, Yvette Joy Liebesman, a law clerk at the time, noted the inherently subjective and inconsistent results that stem from the application of the current substantial similarity test.¹³⁶ To balance the test's subjectivity, Liebesman invited the creation of either a "Mega-Element Analysis" test,¹³⁷ or alternatively a "Mathematical Modeling Analysis" test, to be considered in determining the level of similarity between competing works.¹³⁸ Although conceptually admirable inventions, these models will likely hit practicality obstacles. The software database that both of these tests would rely on may need reconfiguration for every new and unaccounted

¹³⁴ *Id.*; see also FED. R. EVID. 104(a) (providing that the qualification of an expert witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court); FED. R. EVID. 104(e) (explaining that the rule does not limit a party's right to introduce "evidence relevant to weight or credibility"); *United States v. Haro-Espinosa*, 619 F.2d 789, 795 (9th Cir. 1979).

¹³⁵ Notwithstanding, now there are pop and jazz scholars in the field of music theory such as Mark Butler who wrote a book analyzing techno/house music and whose expertise in the area could be perceived as more fitting to the subject matter. See generally MARK J. BUTLER, *UNLOCKING THE GROOVE: RHYTHM, METER, AND MUSICAL DESIGN IN ELECTRONIC DANCE MUSIC* (2006).

¹³⁶ See Liebesman, *supra* note 128, at 333–35.

¹³⁷ *Id.* at 345 ("Although analyzing a song under the broad, artistic categories of harmony, melody, structure, and rhythm may be a good starting point for determining the level of similarity between songs, it should be expanded. [T]he current breakdown leads to contradictory results and conflicting expert testimony. One solution is to further subdivide each of these categories into a large number of artistic elements for a detailed dissection of the songs in question. [Liebesman] refer[s] to this proposed test as Mega-Element Analysis.").

¹³⁸ *Id.* at 349–56 ("Using the physics of music, a math and physics-based copyright infringement test . . . [which may be referred to as a] Mathematical Modeling Analysis . . . test, could be developed to analyze the distinct characteristics of a musical tune."). A mathematical approach to music has found some supporters. See Bozena Kostek, *Perception-based Data Processing in Acoustics: Applications in Music Information Retrieval and Psychophysiology of Hearing*, in 3 *STUDIES IN COMPUTATIONAL INTELLIGENCE* 137 (2005) (purporting to show the way soft computing methods could be applied to avoid ambiguous decision making in musical signal processing and pattern classification).

musical invention.¹³⁹ Absent such reconfiguration, the program may show the existence of novelty or originality, where in fact none exists, and vice versa.¹⁴⁰

Additionally, there are questions as to how the proposed mathematical models would distinguish between legal and musical originality, two standards which must be distinguished. While the constitutional protection¹⁴¹ of musical works extends only to works that are original,¹⁴² originality is a value-laden notion. In law, the originality threshold for copyright protection is quite low.¹⁴³ By contrast, in the music community, the standard for originality is high, and is more akin to legal novelty.¹⁴⁴ A work could be considered utterly unoriginal from a musicological perspective, yet benefit from copyright protection.¹⁴⁵ It is very

¹³⁹ See *id.* at 345–47, 354 (showing the proposed tests’ reliance on music databases).

¹⁴⁰ For a discussion on how the proposed tests would work and some of the legal obstacles to their implementation, see Liebesman, *supra* note 128, at 344–62.

¹⁴¹ U.S. CONST. art. I, § 8, cl. 8. (“The Congress shall have Power . . . [t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”).

¹⁴² 17 U.S.C. § 102(a) (2006) (“Copyright protection subsists . . . in original works of authorship” including “musical works.”); see *Feist Publ’n, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 346 (1991) (“Originality is a constitutional requirement.”).

¹⁴³ See H.R. REP. No. 94-1476, at 51 (1976), as reprinted in 1976 U.S.C.C.A.N. 5659, 5664 (“The phrase ‘original works of authorship,’ which is purposely left undefined, is intended to incorporate without change the standard of originality established by the courts under the present [1909] copyright statute. This standard does not include requirements of novelty, ingenuity, or esthetic merit, and there is no intention to enlarge the standard of copyright protection to require them.”).

¹⁴⁴ See CRAIG JOYCE ET AL., COPYRIGHT LAW 84–86 (7th ed. 2007) (distinguishing the copyright standard of originality from the patent requirement of novelty). This is generally true regardless of whether the music is part of a classical domain, or belongs to jazz, rap or hip-hop modes of expression. Historically, the nineteenth century notions of originality regarded reworking one’s own music as unoriginal, since “the invention of new melodies and new effects had replaced the skilful manipulation of given material as the sign of a great composer.” J. Peter Burkholder, *Borrowing* § 9, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/52918pg9> (last visited Feb. 2, 2009).

¹⁴⁵ *Feist*, 499 U.S. at 345–46. The Court in *Feist* explained:

[t]he requisite level 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’. 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. To

tempting for litigants to confuse the two standards, so as to make it harder on the opponents to show that their work is legally original while arguing that from a musicological perspective it is compositionally unoriginal.

IV. INTRINSIC SIMILARITY: DO WE WANT TO SEE THE JURY?

Just as a visual work of art occupies space, music occupies time. Music is a process, and any musical discourse implies time passage.¹⁴⁶ The listener is expected to last through the entire performance not only to resonate with the overall expressive idea, but also to comprehend the relationship between the music's discrete structural parts.¹⁴⁷ A musical discourse is never all in one place and in one time, and hence any listening experience involves memory—specifically recognition.¹⁴⁸

Once a piece has been presented to a listener, the listener could potentially pass a judgment on it. Yet the inherent abstractness of aural perception makes articulation of one's listening experience difficult.¹⁴⁹ Absent training, the listener is less likely to remember and recognize the presence or absence of the key original elements, and this is especially so if the listener does not belong to the type of audience toward which the music is geared.¹⁵⁰

illustrate, assume that two poets, each ignorant of the other, compose identical poems. Neither work is novel, yet both are original and, hence, copyrightable.

Id. (citing 1 NIMMER, *supra* note 7, §1.08[C][1] (1990)); *Sheldon v. Metro-Goldwyn Pictures Corp.*, 81 F.2d 49, 54 (2d Cir. 1936)).

¹⁴⁶ See W. Jay Dowling, *Perception of Music*, in BLACKWELL HANDBOOK OF PERCEPTION 470–71 (E. Bruce Goldstein ed., 2001) (“Music consists of sound organized in time, intended for, or perceived as, aesthetic experience.” (citation omitted)).

¹⁴⁷ See *id.*

¹⁴⁸ See Diana Deutsch et al., *Psychology of Music* § II(4)(ii), in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/42574pg2> (last visited Feb. 3, 2009) (“Recognition is a process that operates in perception to match incoming information to previously stored information.”).

¹⁴⁹ See Dowling, *supra* note 146.

¹⁵⁰ For an insightful discussion on musical perception, see JANE O’DEA, VIRTUE OR VIRTUOSITY? EXPLORATION IN THE ETHICS OF MUSICAL PERFORMANCE 4–17 (2000); see also Autry, *supra* note 14, at 123.

But can litigants realistically expect that random people in the jury box can pass an informed judgment on the music's expressive content? Music communicates through symbols arranged in time; in a way, the musical language dissects and arranges time into segments.¹⁵¹ If the listener understands the musical language, he should also be able to interpret the expressive content embedded in the music.¹⁵² The music speaks through combinations of pitches, rhythm, meter, timbre, organizational form and many other structural elements.¹⁵³ These combinatory elements are representational of the style, genre and composer.¹⁵⁴ However, when the listener is unable to categorize the elements into familiar structures, the listener's musical memory declines and the person cannot recognize the composition's expressive content.¹⁵⁵ Accordingly, a juror's familiarity with the specific expressive elements is quite important for the juror to recognize the particular similarities or dissimilarities between the plaintiff and defendant's songs.¹⁵⁶

The musical vocabulary escapes our daily conversations. While subjects such as emergency rooms, civil rights, or criminal courts pervade the media and coffee-shop parlance, the notions of harmony, melodic motifs and tonality bypass our lives. The ordinary juror is expected to learn to distinguish between key musical elements and to understand their inter-relationships during the trial. Such expectation is utopian, however, considering a lack of general familiarity with the necessary musical concepts and considering the abstractness of aural perception.¹⁵⁷

Potentially one could counter that juries have traditionally decided cases dealing with unfamiliar notions in medical malpractice, securities litigations and the like. Nonetheless, the level of familiarity in those areas is still much greater, because the

¹⁵¹ See generally Bruno Nettl, *Music*, in GROVE, available at OXFORD, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/40476> (last visited Feb. 3, 2009) (discussing the concept of music).

¹⁵² See *id.*

¹⁵³ See *id.*

¹⁵⁴ See *id.*

¹⁵⁵ See Deutsch, *supra* note 148.

¹⁵⁶ See *id.*

¹⁵⁷ See Autry, *supra* note 14, at 116.

underlying disciplines are based on the laws of physics, chemistry or jurisprudence with which the general public is acquainted through the mass media, education or both. On the other hand, rules of music, such as harmony and counterpoint, are outside of the general public's knowledge. It therefore appears that the jury's task in analyzing music is markedly different from other areas.¹⁵⁸

The jury's difficult task, if performed correctly, is worthy of a well-trained ear. A juror, as an "ordinary listener" and "an ordinary person of reasonable attentiveness," upon listening to the plaintiff and the defendant's works should be able to determine whether "the defendant unlawfully appropriated the plaintiff's protectable expression."¹⁵⁹ In doing so, the juror is supposed to pay special attention to the works' aesthetic appeal and be willing to overlook eventual disparities between them.¹⁶⁰ Surely, the test uses jurors' susceptibility to sensory consonance,¹⁶¹ as well as takes in stride the fact that after several hours of trial for an untrained juror's ear those two songs will blend together and sound relatively the same. Lastly, to add to the mix, there is a factor of

¹⁵⁸ See *id.* at 113 (discussing the unique nature of the subject matter under copyright law).

¹⁵⁹ See *Johnson v. Gordon*, 409 F.3d 12, 18 (1st Cir. 2005).

¹⁶⁰ See *id.* ("The key is whether 'the ordinary observer, unless he set out to detect the disparities, would be disposed to overlook them, and regard [the works'] aesthetic appeal as the same.'" (citing *Peter Pan Fabrics, Inc. v. Martin Weiner Corp.*, 274 F.2d 487, 489 (2d Cir. 1960)).

¹⁶¹ See *Palisca & Moore*, *supra* note 39.

'Sensory consonance' refers to the immediate perceptual impression of a sound as being pleasant or unpleasant; it may be judged for sounds presented in isolation (without a musical context) and by people without musical training. 'Musical consonance' is related to judgments of the pleasantness or unpleasantness of sounds presented in a musical context; it depends strongly on musical experience and training, as well as on sensory consonance. These two aspects of consonance are difficult to separate, and in many situations judgments of consonance depend on an interaction of sensory processes and musical experience.

....

Psychoacoustic studies have usually emphasized sensory consonance, and tried to explain it in terms of the physical nature of the sounds and the way the sounds are analyzed in the peripheral auditory system.

atonality to which modern music appears to adhere.¹⁶² The studies show that listeners are more likely to recall tonal material than atonal material.¹⁶³ Accordingly, the jurors are much more likely to err in distinguishing between the two sections in post-modern jazz than between two tonal-functional pieces.

While litigants possess a right to bring their case before a jury, the multitude of factors that hinder the jury's job, such as the peculiarities of the acoustical and sensory phenomena associated with music¹⁶⁴ and the vagaries of the jury system, suggest that the resolution of the case before a jury needs to be sparing. In music even a musicologist cannot completely and objectively extricate from the process of listening.¹⁶⁵ What then can be said of a lay juror performing a trained professional's job?

CONCLUSION

The low threshold of originality has often been used as an assault on commercial successes of those who were simply better at delivering popular musical features to the masses. This article focuses on one of such popular features—harmony. More specifically, this article focuses on the way in which the idea of harmonic functionality shields potential defendants from the above-mentioned assaults. Today, without a well-defined test to determine whether a particular harmony is copyrightable, the courts simply pick a side by deciding, intuitively or otherwise, whether a particular harmonic progression is minimally creative.

Id.

¹⁶² See Anthony Watkins, *Scale, Key, and Contour in the Discrimination of Tuned and Mis-Tuned Approximations to Melody*, 37 PERCEPTION & PSYCHOPHYSICS 275, 276 (1985).

¹⁶³ *Id.* at 282.

¹⁶⁴ See Palisca & Moore, *supra* note 39 (discussing the “psychoacoustic factors” of music).

¹⁶⁵ Even while deconstructing a song, the musicologist's inner ear is always at work and the song literally “sounds” within the expert's head as she performs the analysis. In this light the *Swirsky* defendants' comment as to Dr. Walser's perception of the work as it sounded to him makes perfect sense. See *Swirsky v. Carey*, 376 F.3d 841, 847 (9th Cir. 2004).

The proposed paradigm of harmonic functionality provides a new turf on which the debate regarding copyrightability of harmony can take place. This paradigm first and foremost recognizes the commercial value of basic tonal harmony. In the context of the extrinsic similarity test, the proposed paradigm explains harmony from historical and psycho-acoustic perspectives. In the context of the intrinsic similarity test, the same psycho-acoustic rationale is offered to explain the inevitable judgment flaws that could stem from submitting a case before an uninitiated jury.

Instead of looking for a uniform rule that would cue litigants to the right number of factors to satisfy the extrinsic test, this Article suggests the focus shift to the structural elements of each song and the analysis of each one from the acoustical perspective. Given the fact that dissection calls for experts in a very specialized field of musicology, composition and music theory, the suggestion is for practitioners to work closely with musical experts. The practitioner is also invited to pay special attention to areas in which musically important elements are misaligned with the legally important elements.

This Article devoted a special place to the idea of harmonic functionality and to the idea that the musical marketplace demands songs written with simple harmony—hence, greater leeway should be given to defendants in justifying their simple harmonic choices. Further, it stated that mere equivocation between functionality of the tonality and the legal doctrine of functionality is unwarranted. The Article posited that a key to prove or disprove substantial similarity in music should lie in the natural acoustic phenomenon—a concept unsusceptible to political or legal changes. The proposed paradigm of harmonic functionality rests in the nature of sound itself, and fits into the substantial similarity analysis framework the way that analysis already exists. The paradigm demands neither a change of established legal principles nor a specialized knowledge in its comprehension.

Finally, the Article proposed that the extrinsic similarity factors could not be divorced from the idea that the application of those factors is inherently subjective, and that the subjectivity is rooted as much in the nature of the acoustic properties of the sound as in

2009]

HARMONY AND ITS FUNCTIONALITY

517

the perception of the listener. As to intrinsic similarity, the Article showed and justified its skepticism of the juries' ability to work with novel musicological concepts and offer a valid answer to the legal question posed in the context of intrinsic similarity test.