Tristan Chord and an Extended Dispute Over a Century

Ampai Buranaprapuk*[1]

บทคัดย่อ

คอร์ดทริสตันเป็นที่ถกเถียงกันมายาวนานกว่าหนึ่งศตวรรษ มีการวิเคราะห์และตีความคอร์ดนี้ออกมาหลายรูปแบบ ทั้งที่อิงหลักทฤษฎีดนตรีที่คำนึงถึงหน้าที่ของคอร์ด การดำเนินคอร์ดจากคอร์ดหนึ่งไปสู่อีกคอร์ดหนึ่งอย่างมีความสัมพันธ์กัน และที่อิงหลักการวิเคราะห์ดนตรีสมัยใหม่ที่ไม่คำนึงถึงหน้าที่ของคอร์ด หรือความสัมพันธ์ระหว่างคอร์ด บทความนี้ได้ทำการสำรวจวรรณกรรมที่ทำการวิเคราะห์คอร์ดนี้ และนำเสนอผลการวิเคราะห์ต่าง ๆ ที่เป็นไปได้ที่สามารถตีความคอร์ดนี้ นอกจากนี้บทความนี้ยังเปรียบเทียบคอร์ดนี้กับบทเพลงอื่นในศตวรรษที่ 19 ความสัมพันธ์ของคอร์ดทริสตันกับบริบทรอบข้างของคอร์ดในบทเพลงไม่ได้มีความคลุมเครือมากไปกว่าเพลงอื่น ๆ ในศตวรรษที่ 19 ที่นิยมใช้คอร์ดนอกบันไดเสียง คอร์ดทริสตันนี้เป็นตัวอย่างหนึ่งของการใช้เสียงนอกบันไดเสียงที่สุดขั้ว แต่อย่างไรก็ตามการใช้เสียงนอกบันไดเสียงอย่างถึงขีดสุดก็เป็นปรากฏการณ์ที่พบปกติในยุคโรแมนติก

คำสำคัญ: คอร์ดทริสตัน, การใช้เสียงนอกบันไดเสียง, ดนตรีในศตวรรษที่ 19

* Corresponding author, email: ampaiburanaprapuk@yahoo.com

[1] อาจารย์ประจำ วิทยาลัยดุริยางคศิลป์ มหาวิทยาลัยมหิดล

ABSTRACT

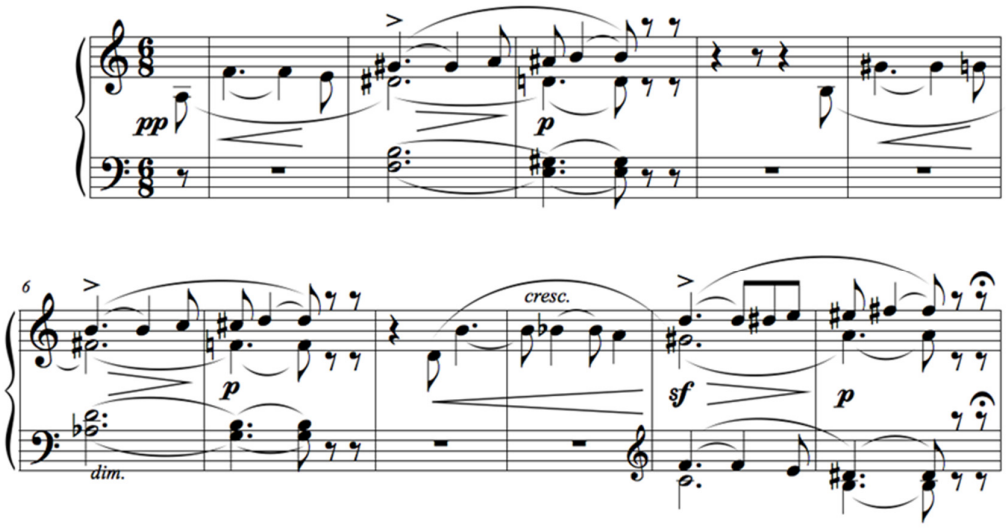
The Tristan chord has been controversially discussed for over a century. There are many analyses that interpret the chord very differently, ranging from functional to totally nonfunctional. This article surveys literature on the chord and presents possible analyses of it, while seeing it in the milieu of other compositions of the nineteenth century. The relation of the Tristan chord to its context is not more complex than that of other works of the nineteenth century. This chord is an example of extremity of chromaticism which is, however, a common phenomenon of the Romantic period.

Keywords: Tristan Chord, Chromaticism, Nineteenth-Century Music

---

The Tristan chord is one of the most thoroughly discussed topics in the history of music since the premiere of the music drama *Tristan und Isolde* in 1865. Composed by Richard Wagner, the opera was completed in 1859. It contains a puzzling chord—the so-called Tristan chord, the first vertically sounding of four notes together at the beginning of its *Prelude* (Example 1). This chord returns again and characterizes the work. Although this opera is conspicuously bound within the tonal system—functional harmony is used despite postponed resolution to tonic until the end of the music drama, the dissonance of the Tristan chord and the context in which it is placed in the music lead to controversial discussions of the chord and diverse analyses that range from functional to totally nonfunctional. This article discusses how this chord has been perceived and its controversy among theorists since the music drama premiered.

Example 1 The piano reduction of the beginning of the *Prelude* to *Tristan und Isolde*



Analyses of the Beginning of the *Prelude* to *Tristan und Isolde*

The equivocal sound, without an affirming tonic chord and with fleeting shifts to new tonal areas, puzzled listeners especially in the nineteenth century. Hector Berlioz, Wagner's contemporary, was mystified by the sound of the opening of *Tristan*. He described it as "a kind of chromatic moan … whose cruel effect is reinforced by long suspensions which appear in place of proper harmonic resolutions.[2] Stettenheim, in 1873, commented that it was a "wild chaos of tones."[3] Salomon Jadassohn, in his book *Melodik und Harmonik bei Richard Wagner* (1899), said that in the first twelve measures the music goes through fourteen keys.[4] Milton Babbitt explained that the music theory of Jadassohn's time was to "locate things in tonalities" and once things

[2] D. Kern Holoman, cited in Laurence Dreyfus, *Wagner and the Erotic Impulse* (Cambridge, MA: Harvard University Press, 2010), 101.

[3] J. Stettenheim, cited in Stephen Dembski and Joseph N. Straus, ed., *Milton Babbitt: Words About Music* (Madison: University of Wisconsin Press, 1987), 146.

[4] Salomon Jadassohn, cited in Dembski and Straus, *Milton Babbitt*, 146.

are located it makes a piece satisfactory and coherent. Babbitt commented that Jadassohn's analysis may seem chaotic to us but it was satisfactory for him to be able to locate things in their place.[5]

Jadassohn analyzed the chord at m. 2 as the leading tone seventh in F♯.[6] He was right that the Tristan chord sounds like a half-diminished seventh chord and this type of chord is built on the seventh degree of a major scale. But when looking at its context, this seems to be the only chord in F♯ major. His analysis leads to puzzlement when trying to locate it in the context. A similar problem happened with Arnold Schoenberg in his *Theory of Harmony* (1911). Although Schoenberg said "Wagner treats the *E* [the harmony in m. 3] as the dominant of *a* minor," he tried to locate the Tristan chord in a key and it "should indicate *e*♭ minor."[7] Yet he knew this was the worst choice: that the Tristan chord "is actually derived from *e*♭ minor," if it must come from something.[8] He then tried to relate E♭ minor with A minor but these two hardly have anything in common. He concluded that "this assumption is defensible"[9] and he compared the Tristan chord with a diminished seventh chord asserting that it is unnecessary to relate it to a key.[10] This is the point where he suggested how to use vagrant chords; it is not necessary to trace them back "to a key or a degree."[11]

Schoenberg's analysis of the Tristan chord leads to controversy. It is true that he saw the chord as a vagrant chord that later can be put in the context of, to use his term, "homeless phenomena" without relation to the tonal system. However, the

---

[5] Dembski and Straus, *Milton Babbitt*, 146.

[6] Jadassohn, cited in Dembski and Straus, *Milton Babbitt*, 147.

[7] Arnold Schoenberg, *Theory of Harmony*, trans. Roy E. Carter (1978; repr., London: Faber and Faber Limited, 1990), 257.

[8] Ibid.

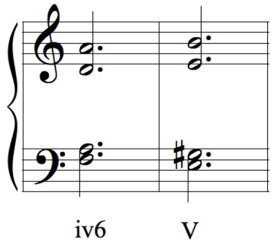
[9] Ibid., 258.

[10] Ibid. Schoenberg, however, continued that he still related the diminished seventh to a key in order to show its practical possibilities to pupils, but not to "restrict its circle of influence."

[11] Ibid.

Tristan chord can, in many ways, be interpreted in relation to A minor for the first three measures, without regarding it as a half-diminished seventh chord which limits it in the context of F♯ major (the leading tone seventh) and E♭ minor (the supertonic seventh). Vincent d'Indy preceded Schoenberg in 1903 with perhaps the simplest analysis of all. The Tristan chord is simply a subdominant chord in A minor considering that G♯ is moving to A and D♯ to D♮, thus it becomes iv6 as seen in Example 2.[12]

Example 2 D'Indy's analysis of the Tristan chord



D'Indy's analysis is logical because in the music the G♯ is really moving to A and D♯ resolves to D♮. It also follows Riemann's theory that all chords can be reduced to I, IV, V functions[13] after eliminating all foreign and dissonant notes from the chords.[14] Daniel Harrison also recognized the chord's subdominant function. He further suggested that the linear notes A-F-D (the first, second, and last notes in mm. 1-3 in Example 1 with stem down in the treble clef) form the subdominant triad in A minor.[15] However, with the subdominant chord interpretation, one may question the B that is held through the measure, but is not part of the subdominant chord. The

[12] Cited in Jean-Jacques Nattiez, *Music and Discourse Toward a Semiology of Music*, trans. Carolyn Abbate (Princeton: Princeton University Press, 1990), 224.

[13] Nattiez, *Music and Discourse*, 223.

[14] Vincent D'Indy, *Cours de composition musicale*, vol. 1 (Paris: Durand, 1903), 117, cited in Nattiez, *Music and Discourse*, 224.

[15] Daniel Harrison, *Harmonic Function in Chromatic Music* (Chicago: University of Chicago Press, 1994), 156.

interpretation that takes B as the root of the chord deems the Tristan chord as a secondary dominant. So it is B7 (V of V) moving to V (E7). The B7 has a lowered fifth, thus it becomes B-D♯-F♮-A with G♯ as an appoggiatura. The analyses of Emil Ergo (1912), Ernst Kurth (1920), and Hugo Distler (1940)[16] agree with this interpretation.

Continuing to consider the B as the root of the chord, Walter Piston,[17] Heinrich Schenker,[18] and Richard Franko Goldman[19] see the chord as built on the second scale degree, ii7 with one note raised (D♯ instead of D♮). With this alteration, it becomes the same chord as in the case of the secondary dominant. Both cases show the preference for the circle of fifths progression—moving up a perfect fourth to V7.

Interpreting the Tristan chord as a French sixth is logical considering the way the chords in mm. 2 and 6 are spelled. But spelling is inconsistent when the chord appears later in the music, thus spelling should not be definitive here. However, the interpretation as a French sixth treats all notes as unaltered while retaining the G♯ in m. 2 as an appoggiatura. It is also in the position that an augmented sixth chord often appears—on the sixth scale degree (flattened in major keys) as a bass note. An example of analysis as a French sixth is in Paul Cooper's *Perspectives in Music Theory* (1973).[20] Robert Gauldin, calling it the "Tristan" sixth, also saw it as an augmented sixth chord—the chord has the interval of an augmented sixth while the rest of the

[16] Nattiez, *Music and Discourse*, 225

[17] Piston saw it as a seventh chord built on the second scale degree, in third inversion, with one note raised (D♯). See Walter Piston, *Harmony*, rev. ed. (New York: W. W. Norton & Company, Inc., 1948), 285.

[18] Schenker analyzed it as a II chord, with combined quality of secondary dominant—two fifths away from the tonic, thus it creates the remoteness and "suspended atmosphere," unlike the first dominant that is one fifth away from the tonic. See Heinrich Schenker, *Harmony*, ed. Oswald Jonas, trans. Elisabeth Mann Borgese (Chicago: University of Chicago Press, 1954), 282-83.

[19] Richard Franko Goldman suggested that it "may be a II or a VII or merely a connection to a more explicit harmony" and it may "be an accessory to a dominant seventh." See Richard Franko Goldman, *Harmony in Western Music* (New York: W. W. Norton & Company, Inc., 1965), 157-58.

[20] Paul Cooper, *Perspectives in Music Theory: An Historical-Analytical Approach* (New York: Dodd, Mead & Company, Inc., 1973), 219.

chord can be altered.[21] All three cases (secondary dominant, second scale degree, and augmented sixth) create the parallel in voice-leading: an accented non-harmonic note moving to a harmonic note both in mm. 2 and 3 and again in mm. 6 and 7, transposed a minor third higher. In all three cases, the chord functions as a predominant chord that leads to a dominant.

There are many other possibilities such as a chord built on the seventh degree (G♯)[22] and analyses that deal with voice-leading rather than functional harmony. William Mitchell (1967) saw the ascending line G♯-A-A♯-B (mm. 2-3) as a reflection of the descending F-E-D♯ (mm. 1-2) in the cello, with the line being completed by D in the English horn. Both lines create parallelism that both fill out a minor third (G♯-B in the ascending line and F-D in the descending line).[23] Babbitt, in a lecture in 1983, interestingly pointed out "the central one of three Tristan chords (mm. 2, 6, and 10)" i.e. the one in m. 6 "contains G♯, B, D, and F♯, just as the upper line moves from G♯ to B [mm. 2-3], B to D [mm. 6-7], and D to F♯ [mm. 10-11]."[24] He argued that this relationship was "a little stronger than" trying to sort out whether it is in which key or what these dominant seventh chords, which never resolve to a tonic, would indicate.[25] Babbitt also looked at the symmetry of the intervallic structure of chords, saying that the chord in m. 2 contains a tritone (F-B) and a fourth (D♯-G♯) and when G♯ moves to A it forms two tritones (F-B and D♯-A). Measure 3 inverts it; the chord on the downbeat has two tritones (E-A♯ and G♯-D) and when A♯ moves to B it forms the intervals of a tritone (G♯-D) and a fourth (B-E, inverted fifth). So the dominant seventh chord (the chord at the end of m. 3) has the same structure (a tritone and a fourth) as the Tristan chord which, one may insist upon hearing it,

[21] Robert Gauldin, *Harmonic Practice in Tonal Music* (New York: W. W. Norton & Company, Inc., 1997), 435.

[22] Nattiez, *Music and Discourse*, 227.

[23] Cited in Nattiez, *Music and Discourse*, 227-28.

[24] Dembski and Straus, *Milton Babbitt*, 148.

[25] Ibid.

functions as a dominant seventh chord.[26] These are only examples of analyses on the Tristan chord among countless others. The literature on the chord is so large that it evinces how much this topic has been discussed.

Before *Tristan und Isolde*

Examples of music that use the exact same pitches of the Tristan chord are found in the first movement of Beethoven's Piano Sonata in E♭ Major, Op. 31, No. 3 (1802)[27] and Chopin's Mazurka in C Minor, Op. 56, No. 3 (1843-1844).[28] In Beethoven, the chord has a similar effect to the Tristan chord as it is heard vertically with some emphasis. In Chopin, however, it is more of a result of voice-leading and the chord appears as a suspension.

The chord in Beethoven's Sonata (see Example 3) is in a transitional passage near the arrival of the second theme of the sonata form. So its destination is to reach the dominant key B♭ major of the second theme. At m. 33 (Example 3b), we see the parallelism with the opening measure which features a six-five chord on the second scale degree (Fm7). In m. 33, C♭ replaces C♮, thus it becomes a half-diminished seventh chord with the same pitches as the opening Tristan chord. An effect similar to that of *Tristan* is in mm. 36 and 38 where the chord appears with the exact spacing of Wagner's Tristan chord. This chord is transposed a tone higher in mm. 40 and 42. In m. 42, the chord shares certain notes with the German sixth chord that comes in m. 43. This German sixth moves to the dominant chord in the key of B♭ major as expected that this passage will end in a half cadence in the new key B♭ major. Beethoven uses these half-diminished seventh chords (built on F and then G) to arrive at a new key. This creates instability of tonality, as is common in transitional passages.

---

[26] Ibid., 149-50. Babbitt also referred to m. 2 of Schoenberg's Opus 33a that sounds as if it functions as a dominant seventh.

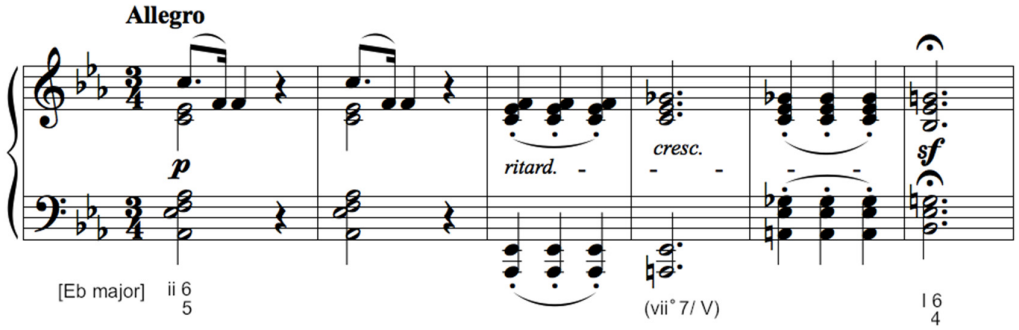
[27] Walter Frisch, *Music in the Nineteenth Century* (New York: W. W. Norton & Company, Inc., 2013), 10.

[28] Goldman, *Harmony in Western Music*, 156-59.

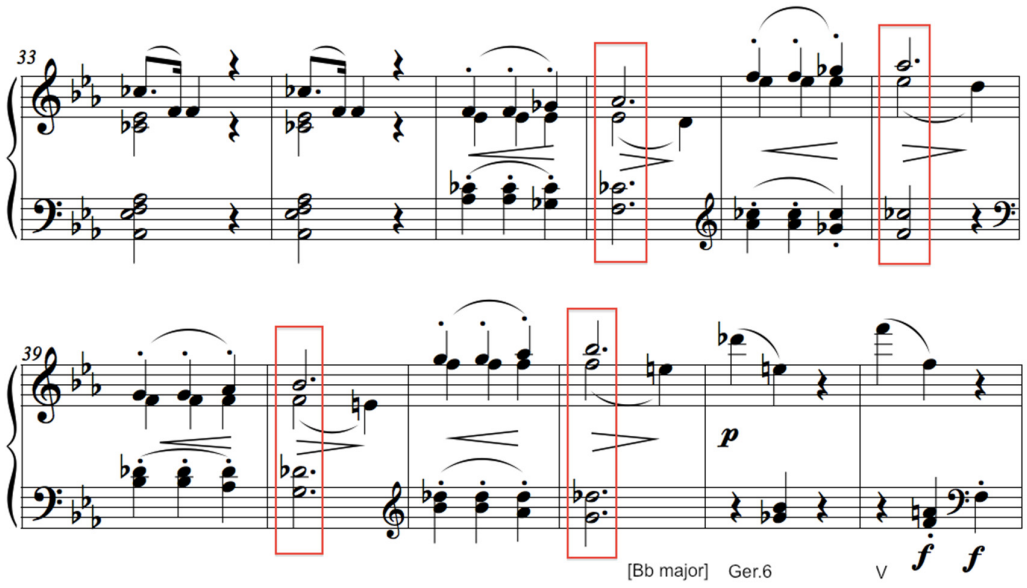
The case of Beethoven, unlike Wagner's *Tristan*, is between something that is meant to arrive somewhere (although it is not easy to see the relationship between each chord). For Wagner, the chord is more startling as it appears at the opening as if it comes from nowhere.

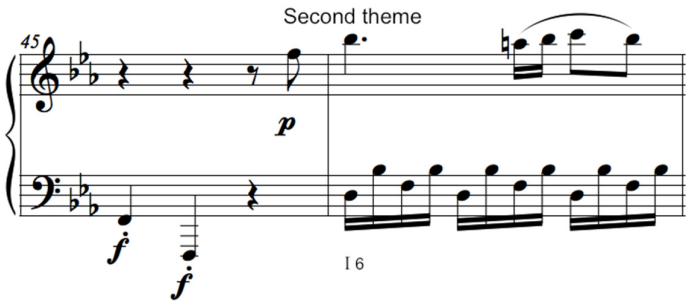
Example 3 First movement of Beethoven's Piano Sonata in E♭ Major, Op. 31, No. 3

a. mm. 1-6



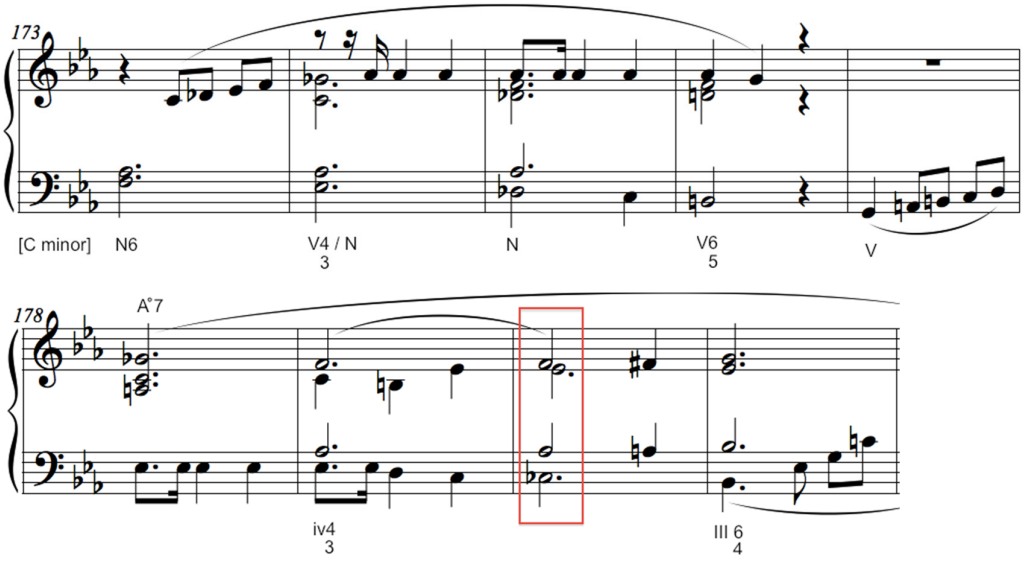
b. mm. 33-46





The chord in Chopin's Mazurka, Op. 56, No. 3, is in m. 180 (see Example 4). Unlike in the Beethoven, this chord is a passing chord with a suspension in the top part, but it is similar to Beethoven in that it alters from Fm7 chord (C♮ moves to C♭). Similar progression is also found: A diminished seventh chord finally arrives at E♭ major triad in second inversion (see Examples 3a and 4). This passage is very chromatic. It is situated near the end of the piece and instead of ending the piece in the tonic C minor, it ends in the parallel major key.

Example 4 Chopin's Mazurka, Op. 56, No. 3, mm. 173-181[29]



[29] This excerpt, although with some changes in notation, is based on the first edition published in Paris by Maurice Schlesinger. Subtle details differ from edition to edition.

After *Tristan und Isolde*

Wagner inspired many composers after him so profoundly that we can label a certain time in their lives "Wagnerian period." The Tristan chord is used in the following works: Strauss's *Tod und Verklärung* (1888-1889), mm. 161 and 270[30]; Debussy's *En sourdine* (1891), m. 1[31]; Debussy's *Prélude à l'après-midi d'un faune* (1891-1894), mm. 18-20[32]; Scriabin's Piano Sonata No. 4 (1903), first movement, m. 8[33]; and Berg's *Nun ich der Riesen Stärksten überwand* (1910), end of m. 2.[34] In the last example, Robert Gauldin also pointed out that E dominant seventh chord that follows the Tristan chord also appears in this song of Berg at the end of m. 4.[35]

Dispute over the Tristan Chord and Functional Theory

The misconception of the Tristan chord as a departure from the functional theory has arisen for more than a century. The cases mentioned above show that the chord was heard and interpreted with great disparity from person to person. In the case of Schoenberg, it even leads to the notion that the chord is a step toward atonality. Arnold Whittall, in the Oxford Companion to Music, also pointed out this misconception: "[Wagner's] startling placement of it as the first chord heard in the Prelude … and the evident symbolic import he attached to it, have encouraged later commentators to assign a special significance to the chord as the first and most decisive step on the road to the genuinely new—and often anti-tonal—music of the

---

[30] David Larkin, "The First Cycle of Tone Poems," in *The Cambridge Companion to Richard Strauss*, ed. Charles Youmans (Cambridge: Cambridge University Press, 2010), 74-75.

[31] Frisch, *Music in the Nineteenth Century*, 10-11.

[32] David J. Code, "Hearing Debussy Reading Mallarmé: Music *après Wagner* in the *Prélude à l'après-midi d'un faune*," *Journal of the American Musicological Society* 54 (2011): 518-520.

[33] Kenneth Smith, "Erotic Discourse in Scriabin's Fourth Sonata." *British Postgraduate Musicology* 7 (2005), http://www.bpmonline.org.uk/bpm7/smith.html. And Ampai Buranaprapuk, "Connections between Music and Poetry in the Piano Poems of Alexander Scriabin" (PhD diss., Mahidol University, 2013), 47.

[34] Gauldin, *Harmonic Practice*, 614-17.

[35] Ibid.

20th century."[36] Whittall concluded that this is a misconception because Wagner used the chord as an unstable sonority "to enhance the music's eventual arrival at points of tonal clarity and consonant harmonic stability."[37] In Grove Music Online, this similar misconception appears: "It played an important role in the last developments of chromatic harmony in the late 19th century and the early 20th, and seems to have been crucial to the limitation of the applicability of functional theory to harmonic analysis" although this same source explained that the chord "can be explained in ordinary functional harmony as an augmented (French) 6th ... or alternately as an added 6th chord in first inversion with chromatic alterations," it nevertheless has "its own harmonic significance in this work."[38]

The relationship of the Tristan chord to its context is not more complex than many other works of the nineteenth century. To limit examples of this to only two examples cited above, Examples 3 and 4 above, both use chords that are a result of voice-leading and hard to pinpoint in exact function. Although these chords do not appear at the opening of their works as in *Tristan*, tonic tonality is sometimes made obscure at the opening, like in the Beethoven (Example 3a) composed as early as 1802. Chromaticism is used throughout the majority of the piece. Although the tonic arrives in m. 6 (Example 3a), it is not as strong as we expect—it is in third inversion and preceded by A diminished seventh chord as if leading to the key of B♭ (the A♮ in the bass really arrives at B♭, but this B♭ is part of the E♭ major triad). Thus the tonic harmony is not to be fully revealed until a certain stage.

---

[36] *The Oxford Companion to Music*, s.v. "Tristan chord,"
http://www.oxfordmusiconline.com/subscriber/article/opr/t114/e6936?q=tristan+chord&search=quick&pos=2&_start=1#firsthit (accessed September 28, 2016).

[37] Ibid.

[38] *Grove Music Online*, s.v. "'Tristan' chord,"
http://www.oxfordmusiconline.com/subscriber/article/grove/music/28398?q=tristan+chord&search=quick&pos=1&_start=1#firsthit (accessed September 28, 2016).

The idea of hiding the tonic harmony is famously employed in Chopin's Prelude, Op. 28, No. 2 (1838-1839) in A minor, the same key as *Tristan*'s Prelude. The tonic tonality does not arrive until the very last chord. On the way to the tonic, the whole course of the piece, functional theory hardly explains these chords. While in *Tristan*'s Prelude, relation is clearer and one hears a cadence (E7 to A) in m. 24 to affirm its tonality at that point. Paul Hindemith also set out key tonalities of the *Prelude* to *Tristan* in the first book of *The Craft of Musical Composition* and suggested that "A is indisputably the tonal center of the whole."[39]

Wagner himself did not intend the music to be revolutionary. According to Nattiez, Wagner's essays and correspondence "show clearly that he did not write the Tristan chord to revolutionize musical language" but "because chromaticism was for him one means to express an image of amorous desire."[40] The unobtainable love between Tristan and Isolde, the yearning and longing of the two in the drama are what Wagner wanted to depict. Wagner wrote, in around 1860, about their ardent love and suffering, "one thing alone still living: yearning, yearning, unquenchable, ever-regenerated longing—languishing, thirsting; the only redemption—death, extinction, eternal sleep!"[41] He continued, "The musician who chose this theme as introduction to his love drama, feeling himself in the presence of the essential, boundless element of music, could have only one concern: how to limit himself, since the theme is inexhaustible. And so he let the insatiable longing well up one time only, but in a long-drawn-out progression …"[42] It is this one long-drawn-out progression that has led to controversy, since a tonic triad is not there to affirm a tonality, leaving this dispute still being discussed controversially, and placing *Tristan*

[39] Paul Hindemith, *The Craft of Musical Composition, Book 1: Theory*, 4th ed., trans. Arthur Mendel (New York: Schott, 1970), 214-15.

[40] Nattiez, *Music and Discourse*, 47.

[41] Cited in Piero Weiss and Richard Taruskin, *Music in the Western World: A History in Documents*, 2nd ed. (Belmont: Thomson Schirmer, 2008), 320.

[42] Ibid.

as an example of extremity of chromaticism—a common phenomenon of the Romantic era, however.

Bibliography

Buranaprapuk, Ampai. "Connections between Music and Poetry in the Piano Poems of Alexander Scriabin." PhD diss., Mahidol University, 2013.

Chopin, Frederic. *Mazurka, Op. 56*. Paris: Maurice Schlesinger, n.d.

Code, David J. "Hearing Debussy Reading Mallarmé: Music *après Wagner* in the *Prélude à l'après-midi d'un faune*." *Journal of the American Musicological Society* 54 (2011): 493-554.

Cooper, Paul. *Perspectives in Music Theory: An Historical-Analytical Approach*. New York: Dodd, Mead & Company, Inc., 1973.

Dembski, Stephen, and Joseph N. Straus, ed. *Milton Babbitt: Words About Music*. Madison, WI: University of Wisconsin Press, 1987.

Dreyfus, Laurence. *Wagner and the Erotic Impulse*. Cambridge, MA: Harvard University Press, 2010.

Frisch, Walter. *Music in the Nineteenth Century*. New York: W. W. Norton & Company, Inc., 2013.

Gauldin, Robert. *Harmonic Practice in Tonal Music*. New York: W. W. Norton & Company, Inc., 1997.

Goldman, Richard Franko. *Harmony in Western Music*. New York: W. W. Norton & Company, Inc., 1965.

Grove Music Online. "'Tristan' chord." Accessed September 28, 2016. http://www.oxfordmusiconline.com/subscriber/article/grove/music/28398?q=tristan+chord&search=quick&pos=1&_start=1#firsthit.

Harrison, Daniel. *Harmonic Function in Chromatic Music*. Chicago: University of Chicago Press, 1994.

Hindemith, Paul. *The Craft of Musical Composition, Book 1: Theory*. 4th ed. Translated by Arthur Mendel. New York: Schott, 1970.

Larkin, David. "The First Cycle of Tone Poems." In *The Cambridge Companion to Richard Strauss*, edited by Charles Youmans, 59-77. Cambridge: Cambridge University Press, 2010.

Nattiez, Jean-Jacques. *Music and Discourse Toward a Semiology of Music*. Translated by Carolyn Abbate. Princeton: Princeton University Press, 1990.

Oxford Companion to Music, "Tristan chord." Accessed September 28, 2016. http://www.oxfordmusiconline.com/subscriber/article/opr/t114/e6936?q=tristan+chord&search=quick&pos=2&_start=1#firsthit.

Piston, Walter. *Harmony*. Rev. ed. New York: W. W. Norton & Company, Inc., 1948.

Schenker, Heinrich. *Harmony*. Edited by Oswald Jonas. Translated by Elisabeth Mann Borgese. Chicago: University of Chicago Press, 1954.

Schoenberg, Arnold. *Theory of Harmony*. Translated by Roy E. Carter. 1978. Reprint, London: Faber and Faber Limited, 1990.

Smith, Kenneth. "Erotic Discourse in Scriabin's Fourth Sonata." *British Postgraduate Musicology* 7 (2005). http://www.bpmonline.org.uk/bpm7/smith.html.

Weiss, Piero, and Richard Taruskin. *Music in the Western World: A History in Documents*. 2nd ed. Belmont, AZ: Thomson Schirmer, 2008.