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Functional Nature of the Cadential Six-Four

Funkcionalna narava kadenčnega kvartsektakorda

Prejeto: 15. oktober 2015
Sprejeto: 7. december 2015

Received: 15th October 2015
Accepted: 7th December 2015

Ključne besede: harmonija, akord, funkcija, kadenca

Keywords: harmony, chord, function, cadential

IZVLEČEK

ABSTRACT

Prispevek predstavlja idejo, da kadenčni kvartsektakord ni zgolj dominanta z dvema akordu tujima tonoma, ampak edinstven bi-funkcijski akord, ki pooseblja boj med toniko in dominanto. Takšen koncept omogoča razlago vseh mogočnih pojavnih oblik tega akorda v glasbeni literaturi.

In this article I support the idea that the cadential six-four is not a mere dominant with two non-chord tones, but a unique bi-functional chord which embodies a conflict between tonic and dominant. This concept allows the explanation of all possible appearances of the cadential six-four in the music literature.

In most harmony sources available today, the cadential six-four chord is conventionally interpreted as a dominant with two accented non-chord tones in the form of a double suspension or *appoggiatura*.¹ This widely shared notion is summarized in Walter Piston's statement that "this is actually a dominant chord in which the sixth and the fourth form *appoggiatura* to the fifth and third respectively".² While this linear approach provides an illustration of the typical manner the cadential six-four is employed, it falls in contradiction with occasional appearances of that chord where its structural equality with the tonic triad is being explored, i.e. when non-chord tones or chromatic chords resolve into the cadential six-four as if they resolve into a tonic. Thus, the cadential six-four's capacity to serve as a point of resolution – to be embellished as a chord on its own – becomes an audible argument against the claim that this chord is nothing more than a mere dominant.

¹ In this essay the general concept of *appoggiatura* as an accented non-chord tone, regardless of melodic contour, is adopted.

² Walter Piston, *Harmony* (New York: W. W. Norton Piston 1941), 117.

Along this line, I felt the need to offer a broader concept of the cadential six-four chord that covers theoretically all of its possible occurrences. This idea, briefly mentioned in some harmony books from the past century, and shared by a number of musicians with whom I had discussions, expanded into the current essay. Here I maintain the idea that the cadential six-four is a *bi-functional chord: a tonic above a dominant bass*. The difference between “two non-chord tones to the dominant” and “a tonic above a dominant bass” is essential in the understanding of phenomena that do not fit the usual description of the cadential six-four. More specifically, I will examine the following situations: 1) the nature of the perfect fourth in a six-four chord and beyond; 2) the cadential six-four compared to a genuine dominant with suspensions; 3) the resolution of non-chord tones into the cadential six-four; 4) the resolution of altered chords into the cadential six-four; 5) the similarity between the cadential six-four and the accented passing tonic six-four; and 6) the extension and free arpeggiation of the cadential six-four.

The last situation on my list has been briefly inspected by David Beach in his third article on the cadential six-four.³ However, he describes the cadential six-four as a plain dominant chord. The polemics among David Beach, Joel Lester, and Allen Cadwallader mainly concern the issue of whether or not the cadential six-four may be a legitimate support of scale degree 3 in the *fundamental line*, as understood in Schenkerian terms.⁴ In my essay I offer a different perspective of analysis concerning the functional ambivalence of the six-four and its potential to serve as a point of resolution. While my ambition is to arrive at a compelling theoretical solution, the deliberations and the examples provided herein are not exhaustive.

In the Mozart excerpt given below, Joel Lester hears the cadential six-four “syntactically as a collection of non-harmonic tones on the arrival of the dominant”.⁵ David Beach, on the other hand, hears the same chord followed by V as one of two chords “representing a single harmonic function (V),” and he adds that “the common bass note is root of both chords”.⁶ On my part, I hear the chord in question as an arpeggiated tonic triad above a dominant bass:

The musical score shows measures 7 through 10 of the first movement of Mozart's Piano Sonata in G, K. 283. The key signature is one sharp (F#), and the time signature is 4/4. Measure 7 begins with a forte (f) dynamic. The melody in the treble clef consists of half notes G4, A4, B4, and C5. The bass line in the bass clef consists of half notes G2, A2, B2, and C3. The chords are labeled below the staff: I, VI (IV⁶), Cad. ⁶/₄, V⁷, and I.

Example 1: Wolfgang Amadeus Mozart, Piano Sonata in G, K. 283 (I), measures 7–10.

3 David Beach, “More on the Six-Four,” *Journal of Music Theory* 34/2 (1990b).

4 See David Beach, “The Cadential Six-Four as Support for Scale Degree Three of the Fundamental Line,” *Journal of Music Theory* 34/1 (1990a); Beach, “More on the Six-Four,”; Joel Lester, “Reply to David Beach,” *Journal of Music Theory* 36/1 (1992); Allen Cadwallader, “More on Scale Degree Three and the Cadential Six-Four,” *Journal of Music Theory* 36/1 (1992).

5 Lester, “Reply to David Beach,” 199.

6 Beach, “The Cadential Six-Four as Support for Scale Degree Three of the Fundamental Line,” 81.

Notice how the tone G in the left hand (which is deemed to be a suspension producing a dissonant fourth) leaps upward to become a seventh of the dominant chord.

Leonard Ratner writes in his textbook of harmony that the cadential six-four chord “is built from the tonic triad, with the fifth of the chord in the bass. It has the special quality of being unstable, so that the upper voices, the root and the third of the triad, tend to settle downward by step into dominant harmony”.⁷ Ratner claims the cadential six-four within the sphere of the tonic, but he points out its instability caused by the second inversion. Alexander Raichev goes further by stating that, “functionally, it is best to regard the cadential six-four chord as a bi-functional sonority in which a conflict between two functions is taking place. This creates tension, so characteristic for bi-functional chords, which resolves in the next stable function [stable triad] that occurs by necessity”.⁸ Similar position is taken by Plamen Arabov who writes: “The cadential six-four has a tonic structure; functional surrounding by S (sometimes T) and D, and functional meaning – prevailing dominant function with a tonic layer above”.⁹ Note that he says “a tonic layer above” – not “two non-chord tones above” – and the difference between the two categories proves significant, as we shall see further.

Arnold Schoenberg’s position is close to that of Raichev’s and Arabov’s. He notices: “There is then in the six-four chord a conflict between its outward form, its sound, and its inner constitution. Whereas its outward form indicates, for example, the 1st degree, its constitution, its instinct demands the Vth degree”.¹⁰

Two main points attract our attention in the citations above: 1) none of the four authors mentions the presence of a dissonant fourth in the structure of the cadential six-four; and 2) none of them thinks that the cadential six-four contains non-chord tones. I will address these points separately further down.

On the Nature of the Perfect Fourth

Behind the perception of the cadential six-four as a dominant chord with one consonant and one dissonant suspension (*appoggiatura*) stands the notion of the perfect fourth as a dissonant interval under certain conditions – namely, when the lowermost voice in the texture is involved in the formation of that interval. This principle stems from the aesthetics of the old masters of polyphony, and it has become a major argument for musicians who treat the cadential six-four as a dissonant structure. With the advent of homophony it has been realized, however, that the employment of major and minor triads in second inversion does not necessarily create the same perception of dissonance as it does in a typical 16th century polyphonic situation. For example, Jean-Philippe Rameau considered the perfect fourth a consonance under all circumstances, as he wrote: “Similarly, the fourth arises from the inversion of the perfect chord

7 Leonard G. Ratner, *Harmony: Structure and Style* (New York: McGraw-Hill, 1962), 110.

8 Alexander Raichev, *Хармония [Harmony]*, 3rd ed. (Sofia: Nauka i Izkustvo, 1974), 42.

9 Plamen Arabov, *Хармония с аранжиране за хор [Harmony with Arrangements for Choir]* (Sofia: Muzika, 1991), 43.

10 Arnold Schoenberg, *Theory of Harmony*, trans. Roy Carter (Berkeley: University of California Press, [1922] 1983), 76.

and, being a consonance, its progression is unlimited".¹¹ In support of his study, Rameau cites Gioseffo Zarlino, who, in his fundamental treatise *Le istitutioni harmoniche* (1558) "treats the fourth as a consonance in practice" because "it is the inversion of the fifth".¹² In his deliberations, Zarlino, according to Rameau, leans on the scholarship of Ancient Greeks and on the calculation of interval ratios.

In accord with the notion of the perfect fourth as a consonant interval, Rameau considers the six-four a consonant chord which has the same root (fundamental bass) as the "perfect chord" it is derived from. However, he points out that both the sixth chord and the six-four chord must be called "imperfect" because "their properties differ from those of their source".¹³ Therefore, Rameau admits that chord inversions do not possess the stability of the root position triad.

In his article "An Historical Approach to Six-Four Chords," Norman Wick draws a contrast between the aesthetics of Jean Philippe Rameau and Gottfried Weber, on the one hand, and the ideas of Carl Philip Emanuel Bach and Johann Heinichen, on the other. The former two musicians supported the "vertical notion" of the six-four chord, and the latter two favored the more linear approach of the figured bass tradition.¹⁴ According to Bach and Heinichen, the fourth above a bass tone is always a dissonance, and their opinion is in agreement with the principles of the strict 16th century counterpoint. This view, strongly supported by such influential writers as Heinrich Schenker and Carl Schachter seems to have become a prevailing notion today. Norman Wick summarizes the concept about the dissonant fourth:

*"The fourth above the bass in a six-four functions ordinarily as a suspension, appoggiatura, passing tone, or neighboring tone. It is a dissonant tone whether it is called a fourth or an eleventh. This fact remains true despite any arguments about which pitch is acoustically stronger in the vertical sense (the bass or the fourth above it), and despite any assertions that the six-four is just a less perfect form of some root position triad."*¹⁵

Following the general logic of Norman Wick's statement, the reader seems to be left with two options to choose from:

- a. Genuine triads in second inversion do not exist – what looks like a second inversion triad is actually a dissonant, accidentally obtained sonority that can never be considered a substitute for a root position chord;
- b. Genuine triads in second inversion do exist, but they are dissonant derivatives of a root position chord, even if this chord is a consonant triad.

I think that both options suggested above are highly problematic because their logic stems from an unquestionable generalization on the quality of the perfect fourth

11 Jean-Philippe Rameau, *Treatise on Harmony*, trans. and ed. Philip Gossett (New York: Dover, [1722] 1971), 92.

12 Ironically, Rameau treats the eleventh as a dissonant interval that should be prepared and resolved, since for him the procedure of its derivation is different than the one producing the fourth (ibid., 92–93).

13 Rameau, *Treatise on Harmony*, 41.

14 Noramn L. Wick, "An Historical Approach to Six-Four Chords," *Theoria* 5 (1991): 61–73.

15 Ibid., 67.

when it includes the bass note. This logic ignores such factors as texture (polyphonic or homophonic), metric organization (strong or weak), and context (surrounding harmony). Moreover, it implies that the so-called arpeggiated six-four chord is also a dissonant sonority. It seems as though Norman Wick hears dissonant chords all over the place in those polkas, waltzes and marches which involve arpeggiated major and minor triads...It would not be an exaggeration to say that this implication goes beyond common sense. If Norman Wick were generalizing on such intervals as the second, the tritone or the seventh – dissonances whose inversions yield other dissonances – one could hardly object his position from tonal music's perspective. But when an absolute conviction is expressed about the dissonant qualities of an interval whose inversion is a perfect consonance, a reasonable doubt arises. Schoenberg comments on the striking contradiction between the claim that the fourth above a bass note must be a dissonance and the principle that "the inversion of every perfect consonance yields a perfect consonance." He exclaims: "That is too contradictory, not simple enough to be natural".¹⁶ I cannot help agreeing with him.

When I compare Norman Wick's concept of the dissonant fourth with the position expressed by J. P. Rameau, certain thoughts cross my mind. Rameau's arguments that the inversion of a consonance produces another consonance and that a triad has two legitimate inversions stand up to reason. He did not feel the need to evaluate the quality of the fourth in a polyphonic texture, referring to a time *when the principles of functional harmony had not crystallized yet*.

Having raised a reasonable suspicion about the true duality of the perfect fourth, Arnold Schoenberg questions the dissonant character of the six-four chord with the following words:

*"Nevertheless, whereas in the actual dissonance tones sound together that can never in any arrangement be consonant, the tones of the six-four chord are in other arrangements absolutely consonant (triad, sixth chord). The demand of the six-four chord for resolution, to be treated as a dissonance, is thus by no means as stormy as that of a real dissonance. The six-four chord and the actual dissonance have only this in common, that in both lies a conflict that attracts attention, that seems to have a right to special consideration, to special treatment."*¹⁷

The assertion that [major and minor] *six-four chords do not possess an actual dissonance* is essential in Schoenberg's statement. With this claim he seems to challenge those who attribute a "chameleonic" character to the perfect fourth but cannot explain convincingly the cause of its alleged metamorphosis.

Let us compare the metrically strong or accented six-four chord with the weak or unaccented passing, pedal, and arpeggiated six-four chords:¹⁸

¹⁶ Schoenberg, *Theory of Harmony*, 75.

¹⁷ Ibid., 76.

¹⁸ The arpeggiated six-four occasionally occurs on an accented beat, but this does not alter its nature of a second inversion triad substituting for a root position triad.

II⁶ Cad. $\frac{6}{4}$ V⁷ I I V $\frac{6}{4}$ I⁶ I IV $\frac{6}{4}$ I

Example 2: Cadential, Passing, and Pedal Six-Four Chords.

($\frac{6}{4}$) ($\frac{6}{4}$) ($\frac{6}{4}$) ($\frac{6}{4}$) ($\frac{6}{4}$)

Example 3: Arpeggiated Six-Four Chords.

Naturally, an arpeggiated six-four chord obtained through a melodic figure in the bass, represents an inversion of a root position triad. This is true even when this chord appears on an accented or relatively accented beat. Leonard Ratner confirms this concept by writing: "If the bass voice has melodic ornamentation of a triadic type, it may create a six-four position during the course of its action. In such cases, the six-four position needs to be bracketed by stronger positions of the same chord".¹⁹ According to Norman Wick, however, we are supposed to hear a number of dissonant triads in the example above, since for him and many others any fourth above a bass tone is a dissonant interval. I have become curious about the process of acoustic and functional perception of genre music on the part of musicians who claim that all six-four chords are dissonant...

Addressing the functional qualities of the passing and the pedal six-fours, Alexander Raichev writes: "As far as the function of the weak six-four chords is concerned, the problem is relative. When the harmonies change in a slow tempo, we perceive the six-four as an inversion of a certain function. In a moderate or especially fast tempo the weak six-four is functionally assimilated by the surrounding chords".²⁰

Regarding the weak six-four chords discussed above, Ratner's and Raichev's statements reflect a situation that has been observed in the homophonic style for a long

¹⁹ Ratner, *Harmony: Structure and Style*, 113.

²⁰ Raichev, *Хармония [Harmony]*, 44.

time: the weak six-four chords are smooth and unimpressive, and the special conditions they are placed in help them to express the original function of the triad they stem from, with a minimum degree of ambiguity. In short, the weak six-four chords (major and minor) do not produce a dissonance, even though there is a perfect fourth between the bass and the root of the chord.

But this is not all. Even in the cadential six-four chord, where the potential disagreement between the bass and the outer structure is made prominent by a metric accent and a connection to a dominant chord, the presence of a real dissonance is hard to prove. One simple acoustic phenomenon stands in the way: the structural equality of the six-four sonority with the tonic triad. This factor is explored compositionally in a variety of manners. Therefore, at best, one may argue that the cadential six-four possesses a simulated (or feigned) dissonance which reflects the functional duality embodied in that chord. This suggestion echoes Schoenberg's opinion on the difference between the six-four chord and „the actual dissonance,“ which has been quoted above.

The three principal intervals which stem directly from the fundamental tone in the harmonic tone series and represent no inversion of previously existing relationships are the perfect octave, the perfect fifth, and the major third. The perfect fourth is an inversion of the perfect fifth which is the third harmonic tone, produced directly by the source. Led by the observation that the inversion of a true consonance produces another true consonance, of which proof is given within the span of the first eight harmonics²¹, I propose the following evaluation of the qualities of the perfect fourth in various circumstances.

A. Generally viewed, the perfect fourth is a true consonance. It may be perceived as a simulated dissonance when:

- a) it is a non-chord tone;
- b) it is a member of a chord whose dissonant quality depends on a genuine dissonance such a second, a seventh, or others (diminished or augmented intervals, for example).
- c) it is a member of a typical accented six-four chord such as the cadential six-four whose bass becomes a prominent acoustic phenomenon demanding its own overtones. This phenomenon is not present in the typical unaccented six-four chords – passing, pedal, or arpeggiated – all of which are weak representatives of an original consonant triad. Even when a major or minor arpeggiated six-four chord falls on an accented beat, it is still a consonant triad.

B. If there is a general agreement that the perfect fourth is a consonance in a certain vertical arrangement, and if there is no general agreement on its dissonant qualities – even when it includes the bass note – a conclusion may be drawn that the fourth itself is not a reliable factor in the discussion of the functionality of the six-four chords. Only when it is viewed in correlation with such factors as functional ambivalence and metric accent does it become a facet in this regard.

21 Except the seventh harmonic which produces a dissonant interval.

Genuine Dominant with Suspensions versus Cadential Six-Four

In the light of Walter Piston's deliberations about the dominant function of the cadential six-four, the example below illustrates the steps of deriving that chord from a dominant triad – first the dominant appears with a single suspension, and then it occurs with a double suspension. In both cases, the suspended tones are resolved:

The musical notation is presented in two systems, labeled 'a.' and 'b.', each with two staves (treble and bass clef) and a 2/4 time signature. Below each system are three chord symbols: IV⁷, V₄⁵ = 5, and I. In system 'a', the first measure shows a dominant triad (IV⁷) in the bass and a single suspension (V₄⁵) in the treble. The second measure shows the resolution to a triad (I). In system 'b', the first measure shows a dominant triad (IV⁷) in the bass and a double suspension (V₄⁶) in the treble. The second measure shows the resolution to a triad (I).

Example 4: Steps in the Supposed Derivation of the Cadential Six-Four.

Similar examples are displayed in many theory books as *proof of the unquestionable dominant function of the cadential six-four*. I agree that Example 4b visually demonstrates how a dominant function may be initiated through a double suspension and then carried out as a triad. Historically, the cadential six-four sonority may have been derived through linear motion as many other chords (if not all) have been. But once a chord has been evaluated aesthetically, composers begin to use it deliberately in a variety of manners, some of which exceed the limitations of originally implied procedures. Leonard Meyer calls this process a “shift from the constraints of linear counterpoint to those of vertical harmony” (Meyer 2000, 234-237). He also observes that “once harmony became a fully syntactic parameter, explicit discord, upon which contrapuntal action depends, could be dispensed with” (ibid.). In the case of the cadential six-four, the levels of dispensing with the idea of an “explicit discord” include but are not limited to: unusual resolutions of the “suspensions” by a leap or by a step in the direction opposite to the expected one; embellishments of the “discord” itself with suspensions and other non-chord tones; resolution of dissonant chords into the “discord”; and free arpeggiation of the „discord.“ An example of the first situation is shown below. It displays some of the melodic contours that are encountered above the complex Cad.6/4 – V (V7). The odd resolutions of the “suspensions” or “appoggiaturas” are shown with numbers that were left vertically unarranged to reflect more clearly the unusual motion. Notice also the motion of the fifth scale degree in the upper voices:

Example 5 shows how different the treatment of the “suspensions” or “appoggiaturas” in the cadential six-four may be from the manner true suspensions and appoggiaturas resolve in counterpoint. These illustrations are enhanced by the striking case in the Mozart excerpt (Example 1), where the supposed „dissonant fourth“ performs an upward leap at a fourth to become a dominant seventh. The embellishment of the

cadential six-four with non-chord tones and the resolution of dissonant chords into it will be reviewed in separate sections later.

a. b. c. d.

6 - 3 6 - 7 6 - 7 6 - 8
4 - 5 4 - 5 4 - 8 4 - 5

Example 5: Unusual Resolutions of the “Suspensions” in the Dominant Chord.

Let us return to Example 4 that suggests how the six-four has been derived. The difference in the aural effects of 4a and 4b cannot be ignored: while on the downbeat of the second measure of 4a a dominant chord sounds with a suspended tone which makes the sonority dissonant and intense, on the downbeat of the second measure of 4b an ambiguous structure sounds that is lacking the same degree of intensity – the initiated dominant function in the bass is somewhat blurred by the structural equality of the vertical sonority with the tonic triad. While the label $V6/4$ seems to justify the physical operation, the aural expectation of a dissonant and an indisputable dominant chord at that very moment is not being met.

The difference between the aural impacts of the two structures discussed in Example 4 suggests the idea of testing their genuine dominant qualities with a simple operation. We will use the same progressions, this time leaving the dominant chords on “their own,” that is, without resolving the suspended tones prior to their resolution into the tonic²²:

a. b.

IV^7 V_4^5 I IV^7 $V_4^6?$ I

Example 6: Test for the Presence of Genuine Dominant Qualities in $V5/4$ and $V6/4$.

As a result of this manipulation, the difference between Example 6a and Example 6b becomes striking: while the second chord in 6a maintains its dominant function and produces a convincing authentic resolution, its counterpart in 6b, stripped of a

²² The parallel fifths between tenor and soprano in Example 6a are allowed for the sake of keeping the tone E in the soprano, which visualizes better the operation in the upper voices.

real dominant support, fails to produce an authentic resolution and, combined with the following tonic triad, sounds like an arpeggiated tonic six-four on a downbeat. This is why no piece of music would ever end with such a fake cadence as Cad.6/4 – I. Notice also the metamorphosis of the perfect fourth in Example 6b; as a result of the direct interaction between I6/4 and I5/3, it does not even operate as a *simulated dissonance*.

The above experiment prompted a musician to exclaim that one could not expect from a “dismembered sonority” [the cadential six-four placed directly before a root position tonic] to behave like a dominant. I replied that a true dominant with suspensions never sounds like a “dismembered sonority,” even if it resolves directly into the tonic. Had the cadential six-four been a true dominant, it would have represented a self-sufficient chord which did not have to be followed by another dominant for its validation.

The following illustration will put a final touch in this rationale. Compare the effect of a genuine dominant with a double suspension to the effect of a *fake dominant with a double suspension* (cadential six-four):

a. b.

V¹³_{sus} I V⁶₄ ? I

Example 7: Genuine Dominant with Suspensions versus Cadential Six-Four

The dominant seventh chord with a double suspension in Example 7a may be explained as an incomplete V13 sus chord. It does a convincing job in its direct connection to the tonic, eliminating the necessity of handling the suspensions prior to the resolution. In contrast, its counterpart in Example 7b fails to convince anyone in its dominant qualities – it needs a real dominant as a “moderator” between itself and the root position tonic.

What inference could be derived from the examples we have just reviewed? I think it would be reasonable to declare that *the cadential six-four is not a genuine dominant with suspensions, because it needs further functional clarification, while a true dominant with suspensions is always a self-contained function which does not need further clarification.*

Generally speaking, a major or minor six-four chord is heard as cadential when: a) it occurs on a metrically stronger position than the following chord; b) it is preceded by a subdominant, tonic, or submediant, and c) it is followed by the dominant.²³ But even

23 Occasional exceptions of this principle occur; sometimes the cadential six-four is followed by VI, first inversion tonic, or some other chord, and the dominant is delayed or avoided. The impression may still be one of a cadential chord, because of the way it has been introduced as a metrically stressed triad. In some of those cases the perfect fourth is not treated as a dissonance, and the chord may receive another interpretation such as *an accented tonic in second inversion* (especially when followed by a tonic in first inversion).

when those conditions have been fulfilled, the cadential six-four still fails to qualify as a fully-fledged dominant. The examples and comments that follow will provide additional evidence in this regard.

Resolution of Non-Chord Tones into the Cadential Six-Four

In Example 8 the tone D is suspended above the cadential six-four chord. It resolves downward to C which, in its turn, becomes a suspension over the dominant harmony and resolves downward to B:

The musical notation shows a progression of chords in 2/4 time. The first measure is the Tonic (I) with notes C4, E4, G4. The second measure is the Supertonic (II⁶) with notes D4, F4, A4. The third measure is the Cadential Six-Four (Cad. ⁶/₄) with notes C4, E4, G4 and a suspended D4 above. The fourth measure is the Dominant Seventh (V⁷) with notes F4, A4, C5 and a suspended C4 above. The fifth measure is the Tonic (I) with notes C4, E4, G4. Arrows indicate the resolution of D4 in measure 3 to C4 in measure 4, and C4 in measure 4 to B4 in measure 5. Labels 'susp.' and 'res.' are placed above the notes to indicate these functions.

Example 8: Suspension and Resolution within the Cadential Six-Four (9-8 towards tonic's root).

This illustration raises the question: What is the function of the chord in the second bar? Those who are inclined to answer “The function is dominant” will have to explain the following discrepancies:

1. Why does the tone D – a member of the dominant – sound like a dissonant non-chord tone above what is deemed to be a dominant function?
2. Why does the tone C – a non-chord tone to the dominant – sound like a chord tone above what is deemed to be a dominant?

How could a chord tone sound like a dissonant suspension, and a non-chord tone sound like a consonant resolution?

On the other hand, if the answer is “The chord in question is bi-functional,” everything falls in place; the suspended tone collides with the tonic structure of the cadential six-four and resolves into it as if it resolves into a tonic triad. The dominant function, initiated by the bass tone, does not undermine the aural effect of suspension and resolution within the tonic component. Eventually, the entire cadential six-four, as a bi-functional chord, gives way to the dominant function claimed by the bass note.

Example 9 is similar to the progression we have just reviewed. The tone F, suspended above the cadential six-four, resolves downward into E. Subsequently, E is treated as another suspension as it moves downward to D. Again, the suspended tone F, being a member of a dominant seventh chord, sounds like a foreign element to the chord that is deemed to be a dominant itself; and the tone E, a non-chord tone to the dominant, sounds like a resolution over that same “dominant” function:

Example 9: Suspension and Resolution within the Cadential Six-Four (4-3 towards tonic's root).

In the following excerpt from a Mozart sonata, the cadential six-four is embellished chromatically with passing tones in m. 154 and with a suspension in m. 155. The suspension, which would be oddly labelled 5-4 in reference to the bass note, is actually a disguised 9-8 suspension as referred to the root of the tonic, and this is how it would be perceived. The didactic Example 8 given above is drawn from cases like this one:

Example 10: Wolfgang A. Mozart, Piano Sonata in C minor, K. 457 (I), measures 153–156.

In the next excerpt Mozart introduces suspensions and passing tones to the cadential six-four and to the dominant, respectively:

Example 11: Wolfgang Amadeus Mozart, Piano Sonata in B-flat, K. 281 (I), measures 7–8.

Notice how the composer embellishes identically the tonic structure of the cadential six-four and the following dominant chord. This is illustrated in Example 12. The

dominant function, initiated by the bass of the cadential chord does not undermine the aural effect of tonic embellishment in the layer above:

Example 12 shows a schematic interpretation of Beat 2. The treble clef has a melodic line with notes marked with 'x' above them. The bass clef has a sustained bass line. Fingerings 6-5-4-3 are indicated for both hands. Chord symbols T/D and D are shown below the bass line.

Example 12: Schematic Interpretation of Beat 2 from the Mozart Excerpt in Example 11.

A similar pattern is shown in Example 13, where the fifth, the third and the root of the tonic above the dominant bass are displaced by non-chord tones:

Example 13 shows measures 33-35 of Mozart's Piano Sonata in A minor. The treble clef has a melodic line with notes marked with 'x' above them. The bass clef has a sustained bass line. Chord symbols II6, Cad. 6/4, V7, and I are shown below the bass line.

Example 13: Wolfgang Amadeus Mozart, Piano Sonata in A minor, K. 310 (I), measures 33-35.

These non-chord tones, accented by nature and clashing with the accompaniment, have the potential meaning of appoggiaturas as shown bellow. In a slower tempo and larger note values their effect would be more palpable:

Example 14 shows a schematic interpretation of the 6/4 portion from the Mozart Excerpt in Example 13. The treble clef has a melodic line with notes marked with 'x' above them. The bass clef has a sustained bass line. Chord symbols T/D and D are shown below the bass line.

Example 14: Schematic Interpretation of the 6/4 Portion from the Mozart Excerpt in Example 13.

In Example 15 Beethoven embellishes the cadential six-four chord with accented neighboring tones:

E: II_S⁶ alt. $\frac{4}{3}$ Cad. $\frac{6}{4}$ V⁷ I

Example 15: Ludwig van Beethoven, Piano Sonata in A, Op. 2 No. 2 (IV), measures 6–8.

Notice also that I have labeled the first chord in Example 15 as an altered subdominant built on the second scale degree, instead of as a secondary dominant (V6/5 of V). The reason for that is the fact that the resolution into the cadential six-four does not represent a tonicization of V but occurs in a sonority that has a tonic structure. On the other hand, this resolution is not necessarily deceptive. I shall refer to this problem again later.

Let us review Example 16 which is particularly interesting. Ironically, here the third and the fifth of the dominant triad embellish the cadential six-four on weak beats, in the form of anticipations:

IV Cad. $\frac{6}{4}$ V⁷ I

Example 16: Ludwig van Beethoven, Piano Sonata in E-flat, Op. 7 (I), measures 11–13.

The next example displays a series of suspensions (beginning with a triple suspension over the II chord) introduced to each chord on the downbeat of each measure and resolved accordingly. An interesting feature is the direct comparison between an embellished cadential six-four and an embellished dominant chord; a double suspension (marked with an “x”) is emphasized over the cadential six-four and resolved into the tonic fifth and third degrees, respectively; then a suspension is introduced over the dominant structure and is resolved into the dominant fifth degree. The suspensions over the cadential six-four are nothing more than disguised 6-5 and 4-3 as referred to the tonic note:

VII⁷/II II Cad. $\frac{6}{4}$ V⁷ I

Example 17: Frederic Chopin, Grande Valse Brillante, Op. 18, measures 9–12.

Another excerpt from the same waltz illustrates a similar embellishment of the cadential six-four (Example 18). Here the tones suspended above it are both members of V7 as is the appoggiatura on beat two; they sound foreign to the tonic structure of the six-four into which they resolve. The arrival of V7, on the other hand, falls in conflict with the tones of the previous resolution and makes them sound like another double suspension above the dominant structure. Notice that the dominant chord tones are present in the left hand below the suspension. This is another direct comparison between an embellished cadential six-four and an embellished dominant:

II⁶ Cad. $\frac{6}{4}$ V⁷ I

Example 18: Frederic Chopin, Grande Valse Brillante, Op. 18, measures 82–85.

Resolution of Altered Chords into the Cadential Six-Four

The examples presented until this moment revealed how non-chord tones treated the cadential six-four as a tonic. The various resolutions of entire altered chords into the cadential six-four are similar in effect. Such resolutions also allow one to draw a fine nuance between the function of an altered subdominant and that of a secondary dominant – a topic that is broad enough to generate another research paper. Here I will limit the discussion to several illustrations accompanied with explanations.

If we look back at Example 15, we will realize that the F#7 chord does not function as a secondary dominant because no secondary triad is tonicized. On the other hand, it does not resolve deceptively, for its resolution does not bring “surprise”. If it did, we might label

that function as a V7 of V which resolved deceptively into the cadential six-four. A customary explanation of this situation in most theory books would read: "This is a secondary dominant whose resolution into V is delayed by the appearance of the cadential six-four chord." This explanation reveals the fact that the manner in which the altered chord resolves or "behaves" has not been taken into account. When this chord resolves into I, I⁶, and I⁶/4 (cadential or passing) it reveals one type of behavior, and when it resolves directly into V it reveals another type of behavior. The behavior of the chord is its harmonic function.

The resolutions of the so-called "common tone diminished seventh chord" (which is either a II⁷ altered in major or a IV⁷ altered in minor), displayed below, sound identical, although the chord in Example 19c may not be a tonic but a cadential six-four instead. The bass of the cadential chord has a dominant function, but this does not change the behavior of the diminished chord – it still treats the six-four as a tonic structure and resolves into it accordingly:

Example 19 consists of three musical examples, labeled a, b, and c, each showing a resolution of an altered S II⁷ chord. Example a shows a resolution from an altered II² chord to the tonic I. Example b shows a resolution from an altered II⁷ chord to the tonic I⁶. Example c shows a resolution from an altered II⁶ chord to the cadential six-four I⁶/4 (Cad. ⁶/₄).

Example 19: Resolutions of an Altered S II⁷ into the Tonic and the Cadential Six-Four.

To interpret the diminished seventh chord in 19c as a misspelled VII⁷ of V would be relatively inaccurate on account of the tendency of D# to resolve upward and the tendency of C to remain in place as a link to the following chord. These tendencies disclose the fact that D# is the actual root of the chord. On the other hand, in the resolution of VII⁷/V into V the tendencies change; the former root (D#) converts into a seventh (Eb) which resolves in an opposite direction; and the former seventh (C) becomes a fifth which also resolves downward. The differences between those two resolutions are illustrated below:

Example 20 consists of two musical examples, labeled a and b, comparing resolutions. Example a shows a resolution from an altered II⁶/5 chord to the cadential six-four Cad. ⁶/₄. Example b shows a resolution from an altered II⁶ chord to the diminished seventh VII⁷ of D, which then resolves to the tonic V.

Example 20: Difference between the Resolutions of SII alt. and DVII⁷ of D.

The following music excerpt from a Beethoven sonata (Example 21) exemplifies the resolution presented in Example 20a. The departure from the diatonic II⁶/5 shows the origin of the altered chord that follows and resolves into the cadential six-four. Regardless of the original spelling, the tone B-flat (A#) is the actual root of the diminished seventh

chord as it resolves upward to B. However, in G minor, the same chord would be spelled exactly as Beethoven did, and it will represent an altered IV7 chord. An interesting observation is the lack of tendency to resolve on the part of the seventh chord degree when the supertonic resolves into the cadential six-four or the tonic. This tone is the tonic note itself, and it simply remains in place as a link between the two chords. However, the dissonant interval between the seventh degree and the root (an augmented second between tenor and soprano, spelled here as a minor third) does resolve into a major third.

5

cresc. *sf* *p*

I V³ I⁶ V⁶ I = IV V³ I⁶ II⁶ alt. Cad. $\frac{6}{4}$ V⁷ I

Example 21: Ludwig van Beethoven, Piano Sonata in G, Op. 14 No. 2 (II), measures 5–8.

Notice also the manner in which the cadential six-four connects the dominant in example 21; neither does it sound like a dominant with suspensions, nor do the “suspensions” resolve in the manner they are expected. Another “violation” is the appearance of the six-four on a beat which, although relatively accented, is weaker than the downbeat on which the dominant follows. These deviations, viewed in correlation with the fact that the cadential six-four appears as a chord of a temporary resolution, only reveal how diverse the exploration of that sonority could be.

Other typical usages of altered subdominant chords resolving into the cadential six-four involve the chords containing a diminished third/augmented sixth. Functionally, they are no different from the *common tone diminished seventh chord* explored above. In Example 22, the II⁴₃ (b5) chord contains an augmented sixth as it resolves into the cadential six-four. The chord of resolution occupies a whole measure and it hardly sounds like a “dominant with a double appoggiatura,” given the combination between the compact sonority in the left hand and the accompaniment in the right hand:

16

ff *sempre legato*

II⁴₃ alt. b⁵ Cad. $\frac{6}{4}$ V

Example 22: Frederic Chopin, Etude in E, Op. 10 No. 3, measures 16–18.

Concerning the differentiation between altered subdominants and secondary dominants, a few more remarks need to be added. Many analysts would not pay attention to such functional nuances, while others would refuse to make a distinction. The expectation in practice is that different labels and different spellings will continue to circulate interchangeably. However, for those who are particularly attentive to the chord's behavior in different contexts, distinction in functionality may be the preferred manner of analysis.

Similarity between the Cadential Six-Four and the Accented Passing Tonic Six-Four

A striking feature in the exploration of the $I6/4$ sonority is observed when it is introduced as a cadential six-four but is connected as a passing tonic six-four. Technically, the first six-four in the progression below is passing, but it is introduced on a downbeat and is preceded by a “dramatic” altered subdominant; unusual features for a passing tonic six-four which is typically found on weak beat, surrounded by diatonic subdominants:

19

I II⁶ alt. I⁶ VII⁴ I⁶ II⁶ Cad. ⁶ V⁷ I

Example 23: Wolfgang Amadeus Mozart, Piano Sonata in A, K. 331 (III), measures 19–24.

A similar treatment of $I6/4$ is found in Beethoven's *Für Elise* (Example 24). The middle section of the piece (mm. 45–52) represents a modulating period from F major to C major. In the second half of the period, what sounds like a cadential six-four in A minor is introduced after the tonic of F major to initiate a modulation from F to a. However, this idea is abandoned and the six-four sonority is treated as a passing common chord in a modulation to C major. Two versions of analysis are provided below to reflect two different possible perceptions:

49

modulation to C major

F: I III⁶ = VI⁶ II Cad. ⁶ V⁷ I

I = VI (a:) I⁶ IV=II

sempre legato

Example 24: Ludwig van Beethoven, *Für Elise* [Bagatelle No. 25], measures 49–52.

The cadential six-four chord may be freely extended for as long as the composer's common sense allows. This technique is typically applied in classical and romantic instrumental concertos at moments where a greater delay in the dominant entrance is sought. Naturally, such extensions, often presented in different forms of arpeggiation, do not sound like dissonant structures with non-chord tones, but create the effect of free re-arrangement of a tonic triad over a dominant bass, as in the following example:

Example 25: Pyotr Ilyich Tchaikovsky, Piano Concerto in B-flat, Op. 23 (I), measures 436–440.

Let us observe the following excerpt from Mozart's Piano Concerto in C major. The six-four chord on the downbeat of m. 375 is introduced dramatically as cadential, but its subsequent occurrences in mm. 375-378 will probably be heard as pedal six-fours because of the brief alternations between dominant and tonic above the bass. However, this "fusion" of cadential and pedal six-four is subordinate to the general impression of the cadential six-four being expanded for seven measures before the appearance of the dominant in m. 382. Interestingly, the brief dominant fluctuations in mm. 375-377 are working as embellishments of the extended cadential six-four:

374

P.C.

legato sempre

Orch.

f

II⁶ alt.

Cad. $\frac{6}{4}$

376

379

382

V_4^3

V_3^3

I

Example 26: Wolfgang Amadeus Mozart, Piano Concerto in C, K. 467 (I), measures 374–384.

Other interesting features are the embellishment of scale degrees 3, 1, and 6 in the solo piano passage in mm. 378-379, and the tonic outline in the scale and accompaniment in m. 381. When we listen to those passages we do not associate them with “*appoggiaturas*” to the dominant, even though they occur above a dominant bass.

The empirical evidence presented so far concerns such occurrences of the cadential six-four chord where its structural equality with the tonic triad is compositionally explored, revealing the potential of the cadential sonority to serve as a chord of resolution. This phenomenon naturally defies the conventional view of the cadential six-four as a dominant with non-chord tones.

In relation to the various resolutions of non-chord tones and chromatic chords into the cadential six-four, a reductive analysis would place the embellishment of the tonic structure at one level, and the eventual resolution of the entire six-four into the dominant at another, deeper level. At that level, one may even call the cadential six-four “a dominant in a process of formation,” keeping in mind that this process does not involve a resolution of non-chord tones; rather, it represents a solving of a functional conflict between the tonic and the dominant in favor of the dominant function. In addition, as one has realized, this “dominant in a process of formation” does not have the character of a genuine dominant with suspensions, for the latter can be connected directly with the tonic and produce an authentic resolution, while the cadential six-four is incapable of such a feast.

The notion of two functional levels in a chord is quite different from the notion of a chord with a double suspension – typically, non-chord tones and chromatic chords do not resolve into suspensions – they resolve into chords, and one such chord may be bi-functional. The bi-functionality does not undermine the aural effect of resolution of those elements into a vertical entity which coincides with the triad built on the first scale degree. For instance, as discussed in Example 10, the oddly looking 5-4 suspension in reference to the bass note of the cadential six-four (which deceives the viewer to think that this is a consonance which resolves into a dissonance!), will be aurally perceived as a dissonant 9-8 suspension to the root of the tonic triad. This perception has nothing to do with a simple “embellishment of the embellishment” – in fact, the tonic component in the cadential six-four is activated through the introduction of a non-chord tone to it, and ironically – this foreign tone is a member of the dominant triad! Consequently, to recognize two functional levels in the cadential six-four – a tonic and a dominant – means to dismiss the absolute equalization of that chord with a dominant function.

In Schenkerian analysis the cadential six-four is not recognized as a separate entity with its own character; it is explained as an ornamentation of the dominant chord, even at the surface level. Therefore, the various appearances of that chord as a point of resolution seem to pose a problem before a Schenkerian analyst, even if he or she did not recognize that. As it has already been stressed, typically, non-chord tones and chromatic chords do not resolve into ornamentations – they resolve into chords. The analyst may choose to address this problem by: 1) revising the analytical methods so that a new perspective of viewing the cadential six-four as a vertical entity opens; or 2) explaining all these resolutions into the cadential six-four as phenomena that occur

at a non-existing level, i. e. “above the surface,” or 3) pretending that such a problem does not exist.

As far as the label $V6/4$ is concerned, it looks rather confusing when attached to a six-four chord which has a tonic structure. This situation is revealed in the following comparison:

The image shows two musical examples, a and b, on a grand staff (treble and bass clef). Example a shows a sequence of chords: I (C major), II⁶ (D minor), V⁶₄? (F major), V⁷₃ (G minor), and I (C major). The V⁶₄? chord is boxed. Example b shows a sequence: I (C major), V⁶₄ (F major), and I⁶ (C major). The V⁶₄ chord is boxed. The labels are placed below the bass line of each staff.

Example 27: False Coincidence in the labelling of Two Different Structures.

If only figured bass numbers were used, both chords in the boxes would be correctly labelled as six-four structures. But when the same Roman numeral is attached to both of them, it confuses the eye and the mind, for it concerns two entirely different sonorities. Well, some musicians would not label the chord in Example 27b on the grounds that it is a part of a “tonic prolongation”. The matter of functional prolongation may be a subject of heated debates, and the analysis of a music excerpt in this respect will depend on different factors such as: metrical position, tempo, subscription to rigid definitions, and personal bias. Concerning example 27b, one may either leave the label as it is, or place it in parenthesis, or omit it. These actions will depend on one’s goal at the moment: to be concrete, or to generalize. Whichever the situation, labelling the passing six-four is not a mistake, and when analysts do that, they may be willing to avoid any possible confusion between that chord and the cadential six-four, whose label shall be different. To the objection that one cannot mechanically separate the $V6/4$ label from the entire $V6/4-5/3$ complex, one may reply that, had the cadential six-four been a true dominant with suspensions, such a separation would have been perfectly possible, as in $V7sus4 - I$, or $V7sus6/4 - I$, for example. In the two latter cases, both dominants are separated from the possible additions of $V7/3$ and $V7/5/3$, respectively, because true dominants with suspensions may move directly into the tonic (depending on style), without spoiling the effect of an authentic resolution.

Summary and Final Remarks

The main points of my observations regarding the cadential six-four are summarized in the following list:

- The perfect fourth, which is regarded either as a consonance or as a dissonance – depending on the arrangement of a given sonority, the context, and the aesthetics of a musical epoch – fails to serve as a solid argument in favor of an unquestionable dominant function of the cadential six-four chord.

- The tension within the cadential six-four is not caused by a dissonant fourth, but by a functional conflict between tonic and dominant.
- While a genuine dominant chord with suspensions produces an authentic resolution even if the suspensions are not resolved prior to its motion into the tonic, the cadential six-four chord – placed directly before a tonic triad – fails to produce an authentic resolution. This means that it is not a genuine dominant with suspensions.
- Occasionally, non-chord tones and altered chords resolve into the cadential six-four chord. Such resolutions bring forth the structural equality of the six-four with the tonic triad, and they would be impossible if the cadential six-four were a dominant with two non-chord tones.
- Occasionally, a six-four may be introduced as a cadential chord but connected as a passing chord; this phenomenon reveals its structural equality with the tonic.
- When the cadential six-four is freely extended or arpeggiated, the aural effect is not one of moving around non-chord tones above a dominant bass, but one of arpeggiating a tonic triad above a dominant bass.

The idea of the cadential six-four as an intrinsic combination of tonic and dominant opens the door to the explanation of all possible occurrences of this chord. Its functional duality is caused by two factors: 1) metrical prominence which turns the bass tone into a contrasting element to the upper structure, and 2) special functional surrounding (by S and D or T and D). As for the weak six-four chords (passing and pedal), they do not possess that degree of functional duality because they appear in different conditions related to the absence of metrical prominence, the presence of a smooth bass line and a uniform harmonic encirclement. These factors help us to perceive the weak six-four chords as triads in second inversion. On the other hand, the arpeggiated six-four does not necessarily have a smooth bass line but, being a part of an arpeggiated triad, it leaves no doubt about its qualities of a second inversion chord.

I believe this discussion has been persuasive enough to suggest the following conclusion: *Granting the cadential six-four a full license of being a dominant is no less erroneous than declaring it as a tonic in second inversion.* The cadential six-four is a bi-functional chord in which a unique conflict between the two most polar harmonic functions – tonic and dominant – is manifest.

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POVZETEK

Običajna razlaga kadenčnega kvartseksakorda kot dominante z dvema poudarjenima neakordičnima tonoma izpušča pomembno značilnosti, ki je po redkoma raziskana: njegovo strukturno enakost s toničnim kvintakordom. Ko je kadenčni kvartseksakord obogaten z zunajakordnimi toni ali ko se različni alterirani akordi vanj razvežejo, postane ta akord začasna točka razveza in njegova tonična vloga pride bolj do izraza. Razlika med dominantno z zadržki in kadenčnim kvartseksakordom postane očitna tedaj, ko se vsak od teh akordov razreši neposredno v toniko: prvi ustvari avtentično razrešitev, četudi se zadržki ne razrešijo takoj, drugemu pa takšna razrešitev na uspe in mu mora slediti dominantna. Stavki, kjer je kadenčni akord zastavljen v

prostem *arpeggiu*, ustvarjajo zaznavo premikajočih se toničnih triad prek basa na dominantni in ne gre toliko za predstavitev para zunajakordičnih tonov znotraj akorda na dominantni. V članku je ob tem predstavljen tudi drugačen pristop k razumevanju vloge čiste kvarte.

Raziskava želi podkrepiti idejo, da je kadenčni kvartseksakord edinstven dvofunkcijski akord, ki pooseblja boj med toniko in dominantno.

Glavne premise mojega eseja izhajajo iz klasičnih pristopov k harmonični funkcionalnosti, ki jo je osnoval J. P. Rameau, razvili pa Hugo Riemann, Rimsky-Korsakov, Arnold Schoenberg, Walter Piston, Ben Zion Eliezer, Plamen Arabov in drugi, ki so imeli tonalnost za polje dinamične interakcije med tremi glavnimi funkcijami harmonije: toniko, subdominanto, dominantno in njim pripadajočim akordom.