

WHAT IS A CADENCE?

*Theoretical and Analytical Perspectives
on Cadences in the Classical Repertoire*



*Markus Neuwirth
Pieter Bergé (eds)*

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THE MYSTERY OF THE CADENTIAL SIX-FOUR^{*}

Danuta Mirka

TO BEGIN WITH THE END

One of the favorite tricks played by Haydn on eighteenth-century formal conventions was to begin with a cadence. A celebrated instance occurs in the first movement of his String Quartet in D major, op. 50 No. 6, “The Frog” (Example 1a). This trick has been noticed by several authors¹ but none of them has taken note of the complementary trick at the end of the finale. There (Example 1b), the cadence returns in the coda (mm. 229–231), interrupting the course of this section and being interrupted, in turn, by a general pause.² The following section forms a codetta and draws upon the finale’s croaking theme that gave the quartet its nickname. Consequently, the quartet begins with the end and ends with the beginning—or, it starts with a cadence and closes without it.³

The lack of cadential closure is emphasized in the codetta. Although the function of codettas is to confirm the cadential goal of the preceding section, and many accomplish this through further cadences, this codetta contains no cadence. The final tonic has the third rather than the root in the upper voice, and the bass fills the skip from scale degree $\hat{5}$ to $\hat{1}$ with chromatic steps. This affects the status of the dominant

^{*} I thank Markus Neuwirth for his valuable feedback on an earlier version of this article and David Jayasuriya for improving its English prose.

1. See Rosen, *The Classical Style* (1971), 128; Sutcliffe, *String Quartets, Op. 50* (1992), 100; and Grave and Grave, *The String Quartets of Joseph Haydn* (2006), 237. These authors concentrate on the tonal dimension of this trick. The metrical dimension is discussed in Mirka, *Metric Manipulations in Haydn and Mozart* (2009), 33f.
2. In mm. 229–231 the melodic motive from mm. 1–2 of the first movement is transposed up a fifth and combined with the cadential harmonic progression from mm. 3–4. At the same time, this motive refers to the subsidiary theme of the finale (Grave and Grave, *The String Quartets of Joseph Haydn* [2006], 237). For an analysis of the metrical context of its occurrence in the coda, see Mirka, *Metric Manipulations in Haydn and Mozart* (2009), 179f. The general pause interrupting the cadence after the six-four chord is an ellipsis (Mirka, “Absent Cadences” [2012], 222–226).
3. Sutcliffe (*String Quartets, Op. 50* [1992], 103) takes note of the “inter-movement quotation” in the finale but he does not relate the absence of cadential closure at the end of the quartet cycle to its presence at the beginning.

expected after the cadential six-four (V_4^6) in m. 231. The empty octave A–A following the general pause suggests continuation of the preceding harmony and gives no hint of the dominant. Only with the arrival of the bass on C# does the minor sixth C#–A allow the listener to perceive the first-inversion dominant triad (V_4^6), but this perception is fleeting and delayed because the dominant emerges on the last eighth note of m. 232, stretching back to the octave A–A retained in the listener's memory. The shadowy status of this dominant, spanned between expectation and memory, means that it is degraded to the role of a passing chord between the cadential six-four and the tonic.⁴ Consequently, the cadential six-four from m. 231 does not resolve to the dominant in m. 232 but flips to the tonic in m. 233. Given that the chords framing the dominant consist of the same tones, and the tonic triad arises through inversion of the cadential six-four, the six-four chord changes its harmonic function in retrospect from the dominant six-four (V_4^6) to the tonic six-four (I_4^6).

Allegro

Example 1a: Haydn, String Quartet in D major ("The Frog"), op. 50 No. 6/i, mm. 1–6

IV V_4^6 V V_6 I
 I_4^6 I

4. This differs from the harmonic context at the beginning of the development. The empty octave D–D (mm. 84–86) following the dominant seventh of the main key (m. 83) cannot be construed as its continuation and it brings a change of harmony to the dominant of the subdominant (G major).



Example 1b: Haydn, String Quartet in D major (“The Frog”), op. 50 No. 6/iv, mm. 225–243

THE FOURTH AND THE SIX-FOUR CHORD

The double identity of the six-four chord was a fresh insight of eighteenth-century music theory, emerging from the controversy around the consonant or dissonant status of the fourth.⁵ In the old Pythagorean tradition, which classified intervals according to numerical ratios of string divisions, the fourth was a consonance due to its simple ratio 3:4. As such, this interval was part of the *senario*: the ensemble of intervals arising from string divisions into two, three, four, five, and six equal parts. In the sixteenth century Gioseffo Zarlino posited number six (*numero senario*) as the upper limit of consonances.⁶ Intervals between tones arising from string divisions and the fundamental tone of the undivided string formed the class of *consonantiae absolutae*. The fourth belonged to the *consonantiae relativae*, i.e., intervals between different string divisions without direct participation of the fundamental tone.⁷ The consonant status of the fourth between the fifth and the octave of the harmonic triad was also accepted in the tradition of *trias harmonica* founded by Johannes Lippius. In the early eighteenth century this tradition was continued by Wolfgang Caspar Printz, Andreas Werckmeister, Johann Georg Ahle, and Johann Gottfried Walther, among others.

For the representatives of anti-Pythagorean sensualism, gaining the upper hand from the beginning of the eighteenth century, the fourth was a dissonance. This stream of music theory included “Aristoxenos the Younger” alias Johann Mattheson as well

5. The history of this controversy reaches back to antiquity. My account of the positions taken in the modern era and the state of the debate in the eighteenth century is indebted to Wolfgang Grandjean (*Mozart als Theoretiker* [2006], 94–99) and Ludwig Holtmeier (“Rameaus langer Schatten” [2010], 221–225). More information about the status of the fourth can be found in Joel Lester, *Compositional Theory* (1992).
6. Gioseffo Zarlino, *Le istituzioni harmoniche* (1558), 23–28.
7. In his later treatise, *Dimonstrationi harmoniche* (1571), Zarlino invokes the invertibility of intervals within an octave and explains that the perfect fourth should be consonant because it is an inversion of the consonant perfect fifth. See Lester, *Compositional Theory* (1992), 17.

as the main exponents of the North-German *Generalbasslehre*, Johann David Heinichen and C. P. E. Bach.⁸ In spite of its dissonant status, the fourth of the six-four chord was treated by these authors with a certain degree of freedom: it could be introduced without preparation and, if passing, could be doubled and left unresolved.⁹ The South-German tradition of *Generalbasslehre*, represented by the Salzburg music theorists Georg Muffat, Johann Baptist Samber, Matthäus Gugl, and Michael Haydn, also subsumed the fourth under the dissonances but at the same time distinguished between *quarta dissonans*, colliding with the fifth in the five-four chord, and *quarta consonans*, combining with the sixth in the six-four chord. Irrespective of this distinction, the consonant fourth of some six-four chords was treated as a dissonance: prepared, tied, and resolved.¹⁰

Elements of the Zarlino tradition found their way into the new *Harmonielehre* of Jean-Philippe Rameau presented in his *Traité de l'harmonie* (1722). For Rameau, the fourth is consonant, even if it is not directly generated by the fundamental tone but arises instead from the inversion of the fifth.¹¹ The principle of invertibility (*renversement*) allowed Rameau to treat the six-four chord as the second inversion of a triad. The cadential six-four is understood as the second-inversion tonic triad, with the fundamental bass (*basse fondamentale*) of this chord lying a fifth below the real bass (*basse continue*).¹² In other chords, including the five-four chord, the fourth is in fact the eleventh (*onzième*), i.e., a dissonance which must be prepared and resolved. Beginning with his *Nouveau système* (1726) and the *Generation harmonique* (1737), Rameau justifies the consonant status of the fourth between the fifth and the octave by the fact that it is found in the series of harmonic overtones produced by *corps sonore*. From the mid-eighteenth century onwards, Rameau's views on the fourth and the cadential six-four chord were propagated by his chief advocate in Germany, Friedrich Wilhelm Marpurg.¹³

8. "Aristoxenos the Younger" was the pseudonym used by Mattheson in some of his publications. The most extensive discussion of the fourth is contained in the second part of Mattheson's *Das Forschende Orchestre* (1721), 451–767.

9. See Mattheson (*Das Neu-Eröffnete Orchestre* [1713], 128; *Das Forschende Orchestre* [1721], 756–760), Heinichen (*Der General-Bass* [1728], 173), and Bach (*Versuch II* [1762], 67).

10. For more information about the Salzburg circle of music theorists, see Federhofer, "Ein Salzburger Theoretikerkreis" (1964), 62–66. The distinction between *quarta consonans* and *quarta dissonans* may have influenced Mozart's distinction between "accordo di quarta consonante" and "accordo di quarta dissonante" introduced in his course of composition for Thomas Attwood (Federhofer, "Mozart als Schüler und Lehrer" [1971/72], 102f.; Grandjean, *Mozart als Theoretiker* [2006], 95f.).

11. See Rameau, *Treatise* (1971), 13f.

12. Nathan Martin pointed out (in personal communication) that Rameau's understanding of the cadential six-four as the second-inversion tonic triad can be inferred from his discussion in the *Traité*, even if it is not explicitly stated. The inference is confirmed in *Nouveau système* (1726), 96, where Rameau indicates the tonic as the fundamental bass of a cadential six-four in an excerpt from Corelli's Sonata in B \flat , op. 5 No. 2/iv. Rameau's view changes in the "Art de la basse fondamentale." His discussion of a suspended fourth that can be accompanied by a suspended sixth over the dominant note implies that he takes the cadential six-four for a double suspension (Christensen, "Rameau's 'L'Art de la Basse fondamentale'" [1987], 30; Martin, "Rameau's Changing Views" [2012], 144–146).

13. See Marpurg, *Handbuch bey dem Generalbasse I* (1755), 28. Nevertheless, Marpurg's discussion of the fourth in the second volume (1757), 78–81, regarding its preparation and resolution, conforms to

The controversy surrounding the fourth was summarized by Johann Philipp Kirnberger in the article “Quarte”, included in the second volume of Johann Georg Sulzer’s *Allgemeine Theorie der schönen Künste* (1771–74):

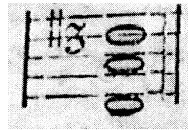
Das reine Verhältniß der Quarte gegen den Grundton ist nach den Längen der Sayten wie $\frac{3}{4}$ zu 1; oder kurz die Quarte wird durch $\frac{3}{4}$ ausgedrückt. [...] Hieraus läßt sich schon abnehmen, daß die Quarte ein angenehm consonirendes Intervall, und das nächste an Annehmlichkeit nach der Quinte, sey. Dafür ist sie auch von den Alten, ohne Ausnahm immer gehalten worden. Hingegen findet man, daß die besten neuern Harmonisten sie meistens, als eine Dissonanz behandeln, und eben den vorsichtigen Regeln der Vorbereitung und Auflösung unterwerfen, als die unzweifelhaftesten Dissonanzen. Da es aber doch auch Fälle giebt, wo Quartan gänzlich wie Consonanzen behandelt werden, so ist daher unter den Tonlehrern, die die wahren Gründe dieses anscheinenden Widerspruchs nicht einzusehen vermochten, ein gewaltiger Krieg über die Frag entstanden, ob dieses Intervall müsse den Consonanzen oder Dissonanzen zugezählt werden. Und dieser Streit ist bey vielen bis auf diese Stunde nicht entschieden. Und doch scheint die Auflösung dieses paradoxen Satzes, daß die Quarte bald consonirend, bald dissonirend sey, eben nicht sehr schwer. Alle ältere Tonlehrer sagen, die Quarte consonire, wenn sie aus der harmonischen Theilung der Octav entstehe, und dissonire, wenn sie aus der arithmetischen entstehe. Andre drücken dieses so aus: die Quarte dissonire gegen die Tonica, hingegen consonire die Quarte, deren Fundament die Dominante der Tonica sey. Beyde Arten des Ausdrucks sagen gerade nicht mehr, und nicht weniger, als wenn man sagte, dieser Accord [Example 2a] klinge gut, und dieser [Example 2b] klinge nicht gut. Dieses empfindet jedes Ohr. In beyden Accorden liegt eine Octave, eine Quint und eine Quarte, wie der Augenschein zeigt. Aber im ersten empfindet man die Quinte in der Tiefe, gegen den Grundton und die Quarte in der Höhe, gegen die Dominante des Grundtones; im andern hingegen liegt die Quarte unten, und klinget gegen den Grundton, die Quinte oben, und klinget gegen die Unter-Dominante, oder die Quarte des Grundtones. Hieraus nun läßt sich das Räthsel leicht auflösen.¹⁴

The pure ratio of the fourth against the fundamental tone, according to the length of the strings, is $\frac{3}{4}$ to 1; or briefly, the fourth is expressed by $\frac{3}{4}$. [...] One may infer from this that the fourth is a pleasing consonant interval, the next in this regard after the fifth. This is for what it has always been taken, without any exception, by the older theorists. Instead, one can see that the newer harmonists treat it in most cases as a dissonance and subject it to the

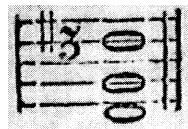
Heinichen’s and Bach’s. Marpurg changes his view of the fourth during the dispute with Sorge and then, again, with Kirnberger. Inconsistencies in his position are described by Daniel Gottlob Türk in the second edition of his *Anweisung zum Generalbaßspielen* (1800), 186f.

14. Kirnberger, “Quarte” (1774), 931f.

cautious rules of preparation and resolution, like the most clear-cut dissonances. Since there are cases in which fourths are treated like consonances, a violent war has broken out among teachers of composition unable to understand the true reasons for this apparent contradiction, as to whether this interval should be counted among consonances or dissonances. And for many of them the controversy remains unresolved to this day. And yet the resolution of the paradox, that the fourth is sometimes a consonance, sometimes a dissonance, is not very difficult. All older teachers of composition say that the fourth is a consonance when it arises from the harmonic division of the octave, and a dissonance when it arises from the arithmetic division. Others express this as follows: the fourth is dissonant against the tonic but consonant against the dominant. Both formulations say nothing more and nothing less than that this chord [Example 2a] sounds good, and that chord [Example 2b] sounds bad. Every ear perceives this. Both chords comprise an octave, a fifth and a fourth, as one may readily observe. But in the first chord, one perceives the fifth below against the fundamental tone, and the fourth above against the dominant of the fundamental tone; whereas in the second chord, the fourth is below and sounds against the fundamental tone, while the fifth is above and sounds against the subdominant or the fourth of the fundamental tone. The enigma can thus easily be resolved.



Example 2a: Kirnberger, "Quarte" (1774), 932



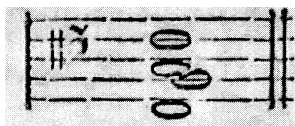
Example 2b: Kirnberger, "Quarte" (1774), 932

The solution proposed by Kirnberger lies in the relation of the fourth to the series of harmonic overtones. In the first chord the fourth belongs to the overtone series and hence is consonant. In the second chord the dissonant character of the fourth results from its collision with the fifth comprised in the series of overtones:

So bald man einen Ton und dessen Octave höret, vornehmlich, wenn man ihn als eine Tonica, als einen Grundton vernimmt, so will das Gehör den genzen Dreyklang vernehmen; besonders höret es die Quinte gleichsam leise mit, wenn sie gleich nicht angeschlagen wird. Nun zwinget man es aber hier die Quarte, statt der Quinte zu hören, die freylich als die

Unter-Secunde der schon im Gehör liegenden Quinte mit ihr stark dissonirt. Man muß sich also jenen zweyten Accord so vorstellen, als wenn diese Töne zugleich angeschlagen würden [Example 2c], wobey das g nur sehr sachte klänge. Daß dieser Accord dissoniren müsse ist sehr klar. Es ist also klar, daß man die Quarte, so consonirend sie auch an sich ist, gegen den Grundton, wegen der Nachbarschaft der Quinte nicht als eine Consonanz brauchen könne. Daher braucht man sie in dieser Tiefe nicht anders, als einen Vorhalt der Terz, wodurch sie allerdings die völlige Natur der Dissonanzen annimmt, und so wie jeder Vorhalt muß behandelt werden.¹⁵

As soon as one hears a tone and its octave, especially when one perceives it as a tonic, or fundamental tone, the ear perceives the whole triad; in particular, one hears the fifth sounding softly, even though it is not struck. But now, instead of the fifth, which it already hears, one forces the ear to hear the fourth, which, as the lower second of the fifth, is strongly dissonant against it. One should thus imagine the second chord as though these tones were struck together [Example 2c], with the G sounding only very weakly. That this chord must be dissonant is very clear. It is also clear that one cannot use the fourth, consonant as it is in itself, as a consonance against the fundamental tone because of the proximity of the fifth. In this location, therefore, one only uses it as a suspension of the third, through which it acquires the status of a dissonance and must be treated like any suspension.



Example 2c: Kirnberger, “Quarte” (1774), 932

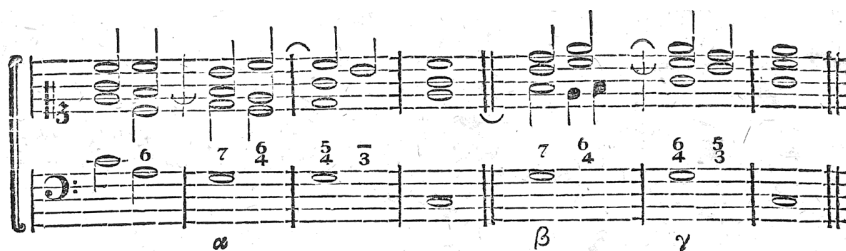
As a consequence of the distinction between the consonant and dissonant fourth, Kirnberger distinguished between the consonant and dissonant six-four chord. The consonant six-four results from the second inversion of a triad and the dissonant six-four is understood as a nonessential dissonance (*zufällige Dissonanz*) made up of suspensions (*Vorhalte*). This distinction is outlined in the first volume of *Die Kunst des reinen Satzes in der Musik* (1771):

Dieser [consonirende Quart-Sexten-]Accord ist unter den consonirenden Accorden der unvollkommenste, so daß man damit ein Stück weder anfangen noch endigen kann. Sonst hat er alle Eigenschaften eines consonirenden

15. Kirnberger, “Quarte” (1774), 932. A brief summary of this explanation can be found in the articles “Consonanz” and “Dissonanz” from the first volume of *Allgemeine Theorie* (1771), 224–227, 262–270, and in the first volume of *Die Kunst des reinen Satzes in der Musik* (1771), 72 (English translation in *The Art of Strict Musical Composition* [1982], 91).

Accordes; nemlich sowol die Quarte als Sexte können verdoppelt werden, sie können frey eintreten, und sie bedürfen nicht, wie die Dissonanzen, einer bestimmten Fortschreitung oder Auflösung, wie in folgendem Beyspiel zu sehen ist. Bey α und β kommt dieser Quart-Sexten-Accord vor; an beyden Stellen ist der eigentliche Grundton C. Bey γ sind Quart und Sexte dissonirende Vorhalte, und der Grundton ist G. In den beyden ersten Fällen empfindet man den Grundton C, hingegen bey γ nur G. Die Quarte dissoniret hier als ein Vorhalt gegen die Terz des Grundtones, welche man empfindet, und die Sexte gegen die Quinte. Dieser consonirende Quart-Sexten-Accord kann sowol in guten als schlechten Takttheilen vorkommen, der andere aber, wie alle Vorhalte, fällt immer auf den guten Theil des Takts.

This [consonant six-four] chord is the least perfect of the consonant chords and thus cannot be used either to begin or to end a composition. Otherwise it has all the properties of a consonant chord; that is, the fourth as well as the sixth can be doubled, both can be introduced without preparation, and neither requires a specific progression or resolution, as do dissonances. This can be seen in [Example 3]. This six-four chord occurs at α and β ; in both cases the fundamental tone [Grundton] is C. At γ the fourth and the sixth are dissonant suspensions, and the fundamental tone is G. In the first two, C is heard as the fundamental tone, but at γ only G is heard as the fundamental tone. Here the fourth and the sixth are perceived as dissonant suspensions that delay the third and fifth of the fundamental tone. The consonant six-four chord can occur on weak as well as strong beats, but the other, like all suspensions, always falls on a strong beat.¹⁶



Example 3: Kirnberger, *Die Kunst I* (1771), 51

In Kirnberger's example the consonant and dissonant six-four chords consist of the same tones (G–C–E) but, while the fundamental tone of the consonant six-four lies a fifth below the bass (C), the fundamental tone of the dissonant six-four coincides with the bass (G). It follows that the consonant six-four chord represents the tonic

16. Kirnberger, *Die Kunst I* (1771), 51f. (*The Art* [1982], 71, translation amended).

(I₄⁶) while the dissonant—cadential—six-four chord is based on suspensions in the dominant triad (V₄⁶).¹⁷

KIRNBERGER, HAYDN, AND THE MYSTERY OF THE CADENTIAL SIX-FOUR

Although *Die Kunst des reinen Satzes* was not published in Vienna,¹⁸ and Kirnberger's writings were not found in Haydn's library,¹⁹ Haydn's annotations in the copy of Fux's *Gradus ad parnassum* include specific references to the second volume of *Die Kunst des reinen Satzes*,²⁰ and Haydn's remarks about Kirnberger's writings are reported by one of his early biographers, Albert Christoph Dies. To be sure, they are not enthusiastic: "He described them as a 'basically strict piece of work, but too cautious, too confining, too everlastingly many infinitely tiny restrictions for a free spirit.' I agreed and added, 'Like tight clothes and shoes, in which a man can neither stir nor move.' 'That's it exactly', was Haydn's answer."²¹ Equally unenthusiastic are Haydn's remarks about Mattheson's *Der vollkommene Capellmeister* and Fux's *Gradus ad parnassum* reported in the further course of Dies's biography, although independent evidence suggests that Haydn held both these works and their authors in high esteem.²² Dies, who studied landscape painting in Rome and became the gallery director to Prince Esterházy,²³ seems to have been strongly influenced by the

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17. The distinction between consonant and dissonant six-four is also discussed in *Die wahren Grundsätze* (1773), 14f., in articles "Quarte" and "Quartsext-Accord" from the second volume of *Allgemeine Theorie der schönen Künste* (1774), 931–934, 934–936, and in *Grundsätze des Generalbasses* (1783), 38, 41, 68. The articles were written by Kirnberger with the help of his pupil, Johann Abraham Peter Schulz. The collaboration between Sulzer, Kirnberger, and Schulz in writing articles about music for *Allgemeine Theorie der schönen Künste* is described by Sulzer in the preface to the second volume of the original edition. In his account, articles from the first volume (letters A–K) were written by himself and Kirnberger. Schulz wrote all articles from the letter S until the end and assisted Kirnberger with earlier articles in the second volume (letters L–R). Schulz himself offers an account of his contribution and claims his authorship of *Die wahren Grundsätze* in a later article published in *Allgemeine musikalische Zeitung* (1800), col. 278.
 18. The Viennese edition of *Die wahren Grundsätze* was published in 1793 (Verlag der k. k. pr. chemischen Druckerey am Graben), and that of *Grundsätze des Generalbasses* by Hoffmeister omits the date of publication.
 19. David Beach ("The Harmonic Theories" [1974], 184) states that Haydn owned a copy of *Die Kunst des reinen Satzes* but he does not disclose the source of this information.
 20. Sumner, "Haydn and Kirnberger" (1975).
 21. Dies, *Biographische Nachrichten* (1976), 41. English translation in Gotwals, *Haydn* (1963), 96.
 22. Haydn prepared two summaries of Fux's *Gradus ad Parnassum* for his pupils: *Gradus-Kommentar* and *Elementarbuch der verschiedenen Gattungen des Contrapuncts, aus den größern Werken des Kapellmeister Fux, von Joseph Haydn zusammengezogen*. In the *Elementarbuch* he quotes one paragraph from Mattheson's *Der vollkommene Capellmeister* (Mann, "Kontrapunktlehre" [1978/79], 195–199). For further influence of Mattheson's opus magnum on Haydn, see Jones, "Becoming a Complete Kapellmeister" (2010).
 23. Gotwals, *Haydn* (1963), xiv–xv.

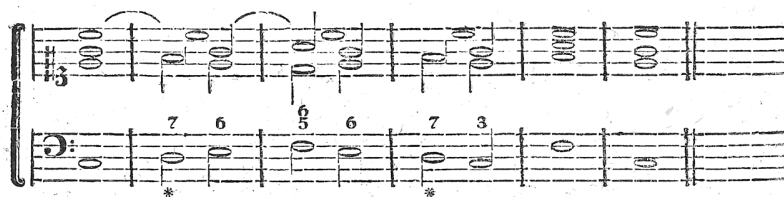
proto-Romantic aesthetics of genius, so the words he ascribes to Haydn may reflect his own disdain for music theory in general and Kirnberger's theory in particular.²⁴ But, even if Haydn's remarks about this theory were as critical as Dies wants us to believe, they still betray that Haydn knew it very well.²⁵

One may suppose that this knowledge was not limited to the theory of counterpoint. If Haydn compared Kirnberger's teaching of counterpoint with Fux's, he could also have compared Kirnberger's approach to harmony with theories by other authors. Since he owned the thoroughbass treatises by Mattheson, Heinichen, Gugl, and Kellner on the one hand, and Marpurg on the other,²⁶ he would have been aware of the controversy surrounding the status of the fourth, and might have been intrigued by Kirnberger's solution presented by its author as an important achievement.²⁷ What might have attracted Haydn's attention was the fact that the distinction between the consonant and dissonant six-four was not clear-cut. While the metrical position on the weak beat was reserved for the consonant six-four, the strong beat could host both consonant and dissonant six-four chords. Other features of the dissonant six-four, regarding the preparation and resolution of dissonances and the prohibition of

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24. The only author whose work receives praise from Haydn (or Dies) is C. P. E. Bach, himself a prototype of the Romantic genius. According to Dies, the first handbook purchased by Haydn was Bach's, and Dies's account of this purchase, leading to the quotation in the main text, plays Bach against Kirnberger: "Haydn had left a lot to chance in the purchase of the work. Fortune was especially kind to him. It played into his hand the winning ticket among so many blanks, but proceeding in this way is not to be recommended and may in most cases cancel out the hoped-for advantage forever. Haydn's procedure, however, was not so altogether blindly undertaken. He did not buy until he had inspected, and could then trust to his own sound judgment for a correct decision. Still his natural judgment could have led him astray if fortune had dealt him, instead of Bach's, works like Kirnberger's, which must also have pleased him and still would have been in a certain way bad for him. But far from finding fault with Kirnberger's writings in general, I here set down Haydn's own opinion" (Dies, *Biographische Nachrichten* [1976], 41; Gotwals, *Haydn* [1963], 96). Despite the final disclaimer, one cannot avoid the impression that Dies puts the following words in Haydn's mouth.
 25. This is the conclusion drawn from Dies's report by Pohl (*Haydn I* [1878], 176) and confirmed by Sumner ("Haydn and Kirnberger" [1775]). Haydn's familiarity with Kirnberger's theory could have been fostered by Kirnberger's pupil, Baron Gottfried van Swieten. Until 1777, van Swieten was the Austrian ambassador in Berlin, where he took lessons in composition from Kirnberger and stayed in close contact with Kirnberger's patron, Anna Amalia, Princess of Prussia. Mozart too could have learned Kirnberger's theory in the circle of Baron van Swieten (Mann, "Leopold Mozart" [1989/90], 32). The Attwood exercises show different fundamental bases for consonant and dissonant six-four chords (Gruber, "Mozarts Lehre" [1982], 127–131; Grandjean, *Mozart als Theoretiker* [2006], 14f.).
 26. Pohl, *Haydn I* (1878), 389–391; Deutsch, "Haydns Musikbücherei" (1969), 220f.; Landon, *Chronicle V* (1977), 314–316. David Kellner (*Treulicher Unterricht* [1743], 71f.) briefly reports the controversy around the fourth but follows the representatives of the North-German *Generalbasslehre* and subsumes the fourth under the dissonances.
 27. Not only in the article "Quarte" from *Allgemeine Theorie*, quoted above, but also in his composition handbook. The distinction between the consonant and dissonant six-four in *Die Kunst des reinen Satzes* is supplemented by a vast footnote running through four pages and including four musical examples ([1771], 51–54; *The Art*, [1982], 71f.). When he returns to this distinction in the course of his discussion of suspensions, he concludes in another footnote: "This is the proper way to distinguish between the consonant and the dissonant fourth, about which so much has been disputed" ([1771], 73; *The Art* [1982], 91). In *Die wahren Grundsätze* (1773), 15, he flags the importance of his achievement with a similar remark.

their doubling, are only valid in the strict style. In the free or *galant* style they lose their binding power. In Kirnberger's own words, "the freer style permits the introduction of an unprepared dissonance, the omission of resolution, and the resolution of dissonance in another voice."²⁸ Consequently, a six-four chord can enter as a dissonant six-four but be treated as a consonant six-four. This is what happens in the finale of Haydn's op. 50 No. 6. It is thus not far-fetched to suggest that the change in harmonic function of the cadential six-four from the dominant to the tonic was Haydn's practical conclusion drawn from Kirnberger's theoretical work.

Haydn could have found in this work not only the distinction between the dissonant and consonant six-four but also the category of passing chords derived from passing dissonances. Of course, this last category was not new with Kirnberger: passing dissonances were discussed in almost every thoroughbass treatise and the passing seventh (*septima in transitu*) was usually illustrated with examples of conjunct ascending or descending bass lines against a sustained chord or tone. Similar examples are shown by Kirnberger in *Die Kunst des reinen Satzes* (Example 4). The ascending chromatic bass line in the finale of op. 50 No. 6 (Example 1b) contains *septima in transitu* within the dominant triad.²⁹



Example 4: Kirnberger, *Die Kunst I* (1771), 85; *The Art* (1982), 104, example 5.9

But the peculiarity of Haydn's cadential manipulation is that the dominant triad itself forms a passing chord. The category of passing chords had not been exposed before Kirnberger and does not appear in *Die Kunst des reinen Satzes* but it is introduced by him or Johann Abraham Peter Schulz in *Die wahren Grundsätze [...]* als Zusatz zu *der Kunst des reinen Satzes* (1773):

Es giebt in der Harmonie durchgehende Accorde, die sich auf keine Grundharmonie gründen; sie sind wie die durchgehenden Töne in der Melodie anzusehen, und entstehen aus diesen, wenn verschiedene Stimmen sich durchgehend bewegen. [...] Daher sind durchgehende Accorde Zwischenaccorde, bey denen eine oder mehrere Stimmen durch eine stufenweise mehrtheils consonirende Fortschreitung von dem vorhergehenden

28. Kirnberger, *Die Kunst I* (1771), 80; *The Art* (1982), 100.

29. Kirnberger shows a passing seventh between the dominant triad and its first inversion in another example (*Die Kunst I* [1771], 87; *The Art* [1982], 106, example 5.15).

zu dem folgenden Grundaccord übergehen. Sie stehen allezeit zwischen zweyen Grundaccorden, die entweder dieselben sind, oder doch sehr natürlich auf einander folgen.³⁰

In harmony there are passing chords based on no fundamental harmony; they have to be considered like the passing tones in the melody and arise from them when several voices pass through. [...] Therefore passing chords can be called chords-in-between. They occur when one or more voices pass from the preceding to the following fundamental chord through a stepwise and largely consonant motion. They always stand between two fundamental chords which are either the same or follow each other in a very natural way.

Because instances of such chords include both dissonances and consonances, the dominant triad from the Haydn example may be subsumed under this category. The emergence of a passing dominant embedded within the tonic can be reconstructed from Example 5a, which shows a series of passing tones in the bass against the tonic triad sustained in the upper voices. The last four notes of the bass line in Example 5a form a diatonic version of the chromatic bass in Example 1b. The metrical reduction of this example (Example 5b) features the eighth-note rhythmical values used by Haydn. If Example 1b featured a sustained triad, equivalent to G–C–E in the right-hand part of Example 5b, then the C[#] of the cello on the last eighth note of m. 232 would be a passing tone, like the B in the left-hand part of Example 5b, and the flip from the cadential six-four in m. 231 to the tonic in m. 233 would be uncovered. The reduction of texture to two voices by dropping the first violin and viola parts conceals the flip in that it allows the listener to relate the C[#] of the cello to the A of the second violin and to hear it as a harmonic tone of the dominant triad. The perception of this dominant is further enhanced by the descent of the second violin from G to F[#] in m. 233, which forms a 4–3 appoggiatura within the tonic triad and sets this chord apart from the dominant triad in m. 232. Since passing chords “are based on no fundamental harmony,” the dominant triad has no fundamental tone (*Grundton*) but it “stands between two fundamental chords” whose fundamental tone is the tonic.³¹

30. Kirnberger, *Die wahren Grundsätze* (1773), 34. For the question of authorship, see footnote 17.

31. David Beach points out that the category of the passing chord implies a distinction between chord and harmony, “a distinction which is not fully developed until the twentieth century” and which “would appear to be the origin of Heinrich Schenker’s important definition of chord versus scale step” (“The Harmonic Theories” [1974], 74). He and Jürgen Thym elaborate upon this point in their translation of *Die Kunst des reinen Satzes* (Kirnberger, *The Art* [1982], 104).



Example 5a: Kirnberger, *Die wahren Grundsätze* (1773), 49



Example 5b: Kirnberger, *Die wahren Grundsätze* (1773), 50

Traces of Kirnberger's influence are even more evident in the opening movement of Haydn's String Quartet in E-flat major, op. 64 No. 6. This movement contains two cadential manipulations based on the equivocation between the dominant and the tonic six-four, in strategies of postponing final cadences within the exposition and the recapitulation. In the exposition (Example 6), the PAC in the dominant key of B-flat major occurs first in m. 36. The following passage of triplet figuration builds to a stronger cadence, which however proves to be deceptive (DC): it runs into the diminished six-five chord on scale degree $\hat{6}$ (m. 39). This chord turns toward the cadential six-four in m. 41 but the resolution to the dominant-seventh chord is not followed by further resolution to the tonic. Instead, the $V_4^6-V_7$ harmonic progression is repeated *piano* in m. 42. The following measures bring ever faster repetitions during which the dominant sevenths have ever shorter rhythmical values and fall on ever weaker metrical positions. This technique undermines their harmonic function: rather than resolutions of the dominant six-four (V_4^6), these chords are increasingly heard as neighbor notes of the second-inversion tonic (I_4^6).

Violin I

Violin II

Viola

Violoncello

35 PAC

40 DC

I^6_3 ii^6_4 V^6_5 V^7 vii^6_5/V I

p f f^z

V^6_5 V^6_4 etc. I^6_4 I^6_3 etc. I

Example 6: Haydn, String Quartet in E-flat major (1790), op. 64 No. 6/i, mm. 35–45

In the eighteenth century such neighbor notes were subsumed under the category of passing notes: notes that pass between metrical beats. While they are only fleetingly mentioned in *Die Kunst des reinen Satzes*, passing dissonances are posited by Kirnberger as the third category of dissonances (*durchgehende Dissonanzen*), distinct from essential (*wesentliche*) and nonessential dissonances (*zufällige Dissonanzen*), in the article “Dissonanz” from Sulzer’s *Allgemeine Theorie der schönen Künste*:³²

Jedermann fühlt, wie natürlich es ist, wenn der Gesang um eine Terz steigt oder fällt, durch die Secunde in die Terz zu steigen oder zu fallen. Wenn aber die tiefere Stimme inzwischen ihren ordentlichen Gang behält, so werden die Töne, die man im Durchgang berührt, nothwendig gegen sie dissoniren. Fast eben so natürlich ist es auch, daß man anstatt einen Ton zweymal hinter einander, wie die Melodie es erfordert, anzugeben, auf den

32. The three categories of dissonances are reaffirmed in *Grundsätze des Generalbasses* (1781), 64, where Kirnberger refers his reader to the discussion in *Allgemeine Theorie*. Before Kirnberger, similar types of dissonances were introduced by Georg Andreas Sorge in *Vorgemach der musicalischen Composition* (1745–1747). Sorge adopts the distinction between passing dissonances and syncopations from Johann Crüger (*Synopsis musica* [1630]) and supplements it with Heinichen’s category of “anschlagenden Dissonanzen” (see Holtmeier, “Rameaus langer Schatten” [2010], 232f.), but this distinction is of no consequences for the six-four chord. For Sorge, who draws upon the tradition of *trias harmonica*, the fourth is a consonance and the cadential six-four chord is a second-inversion tonic triad.

zweyten durch einen Vorschlag, von dem halben Ton über oder unter ihm komme, da denn dieser Vorschlag ebenfalls eine Dissonanz ausmacht. Man sehe folgende Beyspiele: [Example 7] Hier ist allemal auf der guten Zeit des Takts die Harmonie völlig consonirend; nur in dem Uebergang von der ersten Zeit des Takts auf den zweyten kommen in den obern Stimmen Töne vor, die gegen die Grundstimme, die inzwischen liegen bleibt, dissoniren. Da diese Durchgänge dem Gesang natürlich sind, so brauchte man sie, ob sie gleich mit dem Baß dissonirend gefunden wurden. Wegen der Geschwindigkeit des Ueberganges wird die consonirende Harmonie nur einen Augenblick unterbrochen, und sogleich auf den folgenden Schlag mit einer doppelten Annehmlichkeit wieder hergestellt.³³

Everyone feels how natural it is, when the melody rises or falls by a third, to fill in such a skip with a second. When the lower voice retains its regular progression, the tones touched upon in transition will necessarily be dissonant against it. It is almost as natural, instead of providing one tone twice in a row, as the melody requires, to reach the second tone through a semitone from above or below, which also creates a dissonance. See the following examples: [Example 7]. Here the harmony on the strong beat of the measure is always fully consonant; only in transition from the first to the second beat of the measure do tones in the upper voice occur which are dissonant against the stationary bass. Since these transitions are natural for the melody, they are needed even though dissonant against the bass. Because of the speed of the transition, the consonant harmony is interrupted only briefly, and immediately restored on the following beat to even greater satisfaction.



Example 7: Kirnberger, “Dissonanz” (1771), 264

The musical examples with which Kirnberger illustrates his discussion are strikingly similar to the harmonic progression observed in the Haydn example. If the bass of

33. Kirnberger, “Dissonanz” (1771), 263f.

Kirnberger's examples shown in boxes is omitted, what remains in the right-hand part is an alternation between the second-inversion tonic triad and its neighbor-note chord. The rhythmical values of these chords also correspond to those used by Haydn. This issue is addressed by Kirnberger in the further course of his commentary:

Damit aber das, was solche Durchgänge wirklich im Gesang angenehmes haben, durch das Dissoniren nicht verdorben werde, so müssen die dissonirende Töne schnell durchgehen, und in der nächsten Zeit des Takts muß die consonirende Harmonie wieder hergestellt seyn. Kommen sie im gemeinen oder langsamen Takt vor, so können sie nicht länger als ein Achteltakt, bey dem Allabreve oder der geschwinden Bewegung aber, nicht länger als Viertel seyn.³⁴

But, in order that the pleasant effect of such transitions in the melody is not ruined by the dissonance, the dissonant tones must pass quickly, and the consonant harmony must be restored on the next beat. If they occur in common time or slow tempo, they cannot be longer than an eighth note, but in *alla breve* or fast tempo they cannot be longer than quarters.

In the first movement of op. 64 No. 6, notated in C meter, passing dissonances cannot be longer than quarters and these are the rhythmical values chosen by Haydn in m. 43. The diminution of these values in m. 44 can be interpreted as a shift of passing dissonances from beat subdivisions, represented by quarters, to their further subdivisions into eighth notes or as a change from C to c meter.³⁵ By contrast, the seventh chords in mm. 41–42 cannot be interpreted as passing dissonances in the light of Kirnberger's commentary because the rhythmical values of half notes represent beats (*Taktzeiten*) of C meter. In the strict style this metrical level is not suitable for passing dissonances but only for suspensions, which fall on strong beats and resolve on weak beats, yet in the free style passing dissonances can be longer than in the strict style and take a full beat or measure.³⁶ This allows Haydn to perform his trick and invite the listener to reinterpret the dominant sevenths in mm. 41–42 as augmented passing notes in the light of the following acceleration. The trick is possible because suspensions (V_{4-5}^{6-7}) and passing dissonances (I_{4-5}^{6-7}) have the same strong-weak metrical profile, with dissonances exchanging their metrical positions: suspensions (V_4^6) fall on strong beats while passing dissonances (I_5^7) occur on weak beat subdivisions. The

34. Ibid., 264.

35. Such changes take place several times throughout the movement and the manipulation of the cadence may refer to them. For detailed discussion of the changes between C and c meter in op. 64 No. 6/i, see Mirka, *Metric Manipulations in Haydn and Mozart* (2009), 82f., 196f., 202f.

36. Kirnberger makes this observation in connection with Example 4: "In the strict style the notes marked with an asterisk would be passing notes; thus they would have to be of short duration and fall on unaccented beats. But the free style is not bound to this rule, so that these sevenths can last a full measure" (Kirnberger, *Die Kunst* [1771], 85; *The Art* [1982], 104).

final step to the tonic in m. 45 thus forms no resolution of the dominant seventh but a resolution of neighbor notes (I_{5-4}^{7-6}) combined with the flip of the tonic triad from the second inversion to the root position (I_4^6-I).

The same trick is repeated in the recapitulation but the strategy of postponing the final cadence is longer than in the exposition and it reveals a further nuance of Haydn's manipulation (Example 8). After the PAC in m. 118, the triplet figuration of the first violin crashes into the raised-sixth chord on scale degree $\hat{6}$ (m. 121) but the deceptive cadence takes a different course than in the exposition (m. 39), leading to the six-five chord on scale degree $\hat{7}$ in m. 122 and the triad on scale degree $\hat{1}$ in m. 123. This harmonic progression, embedded within a stepwise ascent of the bass $\hat{3}-\hat{4}-\hat{5}-\hat{6}-\hat{7}-\hat{1}$, follows the rule of the octave (*règle de l'octave*): the standard harmonization of an ascending and descending scale.³⁷ Given the familiarity of this schema in the eighteenth century, a step from scale degree $\hat{5}$ to scale degree $\hat{6}$ supporting the raised-sixth chord leads the listener to expect a further step up to scale degree $\hat{7}$ supporting a six or six-five chord.³⁸ This expectation is fulfilled in m. 122, when the bass continues its ascent to the tonic ($\hat{5}-\hat{6}-\hat{7}-\hat{1}$), but it is thwarted in m. 41 (Example 6), when the bass steps down to the dominant. The same surprise takes place at the end

37. The best-known versions of the rule of the octave were published by Gasparini, (*L'armonico pratico* [1708], 55–58), Heinichen (*Gründliche Anweisung* [1711], 201–204; *Der General-Bass* [1728], 745–750), Campion (*Traité d'Accompagnement* [1716], 21), Rameau (*Traité* [1722], 384–387; English translation in *Treatise* [1971], 396–397), Mattheson (*Kleine General-Baß-Schule* [1735], 250–253), Kellner (*Treulicher Unterricht* [1743], 29–41), and Bach (*Versuch* [1762], 328). While Campion, Rameau, Mattheson, and Kellner assign a sixth chord (6) to the sixth degree of the ascending scale in major and reserve the raised-sixth chord (6 \sharp) for the descending scale, Gasparini and Bach include the raised-sixth chord in both directions. Heinichen does not show it at all and harmonizes the sixth degree of his schemata with a triad (5) or a sixth chord (6). For further discussion of the rule of the octave, see Christensen, “The Règle de l'Octave” (1992), and Lester, *Compositional Theory* (1992), 72–74.

38. Deceptive cadences based on the rule of the octave are often used by Haydn and Mozart. So far I have identified such cadences in Haydn's String Quartets op. 64 No. 4/i (mm. 82–85), op. 64 No. 6/iv (mm. 174–177), op. 76 No. 3/i (mm. 103–104), and op. 77 No. 2/iv (mm. 161–162), in his Piano Trio No. 43 in C major, Hob. XV:27/ii (mm. 61–63) and in Mozart's String Quintets K. 516/ii (mm. 9–10) and K. 614/iv (m. 302). Some of them feature general pauses between chords on scale degrees 6 and 7 and restate the main theme on scale degree 1. Their interest consists in the tension between the harmonic deception caused by the interruption of the cadential schema before the tonic and the continuation of the rule of the octave up to the tonic in compliance with the natural implication of the ascending scale (see Meyer, *Explaining Music* [1973]; Narmour, *Beyond Schenkerism* [1977]). The fact that the rule of the octave complies with the cognitive mechanism of implication–realization accounts for the use of this schema in Mozart's K. 614/i (mm. 11–14) and Haydn's op. 54 No. 3/i (mm. 29–32), where it occurs in connection with “overridden caesuras” caused by false half-cadences (see Mirka, “Punctuation and Sense” [2010], 240–242 Ex. 2, 249 Ex. 5).

of the recapitulation.³⁹ From this point of view the cadential six-four chords in mm. 41 and 140 cause secondary deceptions that prepare the final tricks.⁴⁰

The musical score is for measures 117 to 129. It features four staves: Violin I, Violin II, Viola, and Violoncello. The key signature is two flats (B-flat and E-flat). Measure 117 is marked with a 'PAC' (Pacification) and a triplet of eighth notes. Measure 118 is marked with a 'DC' (Da Capo). The figured bass notation for measures 117-119 is as follows:

117: I^6 ii^6 V^6_4 V^7 vii^{c6}/V
 118: I^6 ii^6 V^6_4 V^7 vii^{c6}/V
 119: I^6 ii^6 V^6_4 V^7 vii^{c6}/V

The figured bass notation for measures 120-121 is as follows:

120: V^6_5 I^6
 121: I^6 ii^6 V^6_4 V^7 vii^{c6}/V

The figured bass notation for measures 122-129 is as follows:

122: I^6 ii^6 V^6_4 V^7 vii^{c6}/V
 123: I^6 ii^6 V^6_4 V^7 vii^{c6}/V
 124: I^6 ii^6 V^6_4 V^7 vii^{c6}/V
 125: I^6 ii^6 V^6_4 V^7 vii^{c6}/V
 126: I^6 ii^6 V^6_4 V^7 vii^{c6}/V
 127: I^6 ii^6 V^6_4 V^7 vii^{c6}/V
 128: I^6 ii^6 V^6_4 V^7 vii^{c6}/V
 129: I^6 ii^6 V^6_4 V^7 vii^{c6}/V

39. The double format of analytical annotations—combining figured-bass symbols and Roman numerals—in Examples 6, 8, and 9a reflects the tension between the tradition of *Generalbasslehre* that bore the rule of the octave and the new *Harmonielehre* advocated by Kirnberger. Even if Kirnberger did not use Roman numerals, his fundamental basses anticipated this system of analysis and stimulated its development by Georg Joseph Vogler around the same time.

40. Since the framework (*Gerüst*) of the raised-sixth chord on scale degree $\hat{6}$ can be filled with the perfect fourth or a diminished fifth (see Holtmeier, “Heinichen, Rameau, and the Italian Thoroughbass Tradition” [2007], 38f.; “Rameaus langer Schatten” [2010], 147f.), the diminished six-five chord in m. 138 is equivalent to the raised-sixth chord in m. 121. Given that both chords occur after triplet figuration, the expectation of the former chord to move to the six-five chord on scale degree $\hat{7}$ is based on both extra-opus and intra-opus styles (Narmour, *The Analysis and Cognition of Basic Melodic Structures*, [1990]).

Example 8: Haydn, String Quartet in E-flat major (1790), op. 64 No. 6/i, mm. 117–144

The last example of cadential manipulation based upon the equivocation between the dissonant and consonant six-four chord to be discussed in this article is chronologically the first. It comes from the opening movement of Haydn's String Quartet in C major op. 33 No. 3, "The Bird" (Example 9a).⁴¹ After the final cadence of the recapitulation (PAC, m. 151), the coda proceeds to build up a more emphatic cadence decorated by soloistic display in the first violin, but instead of resolving to I, the V⁷ turns toward the raised-sixth chord on scale degree $\hat{6}$ (DC, m. 161). This turn is surprising not only because it forms a deceptive cadence but also because it comes too early: given the harmonic rhythm of the preceding passage (mm. 156–160), the tonic is expected to occur one measure later. The raised-sixth chord in m. 161 is identical with the one encountered in the first movement of op. 64 No. 6 (Example 8, m. 121) but, rather than ascending to the tonic, the bass steps down to scale degree $\hat{5}$. The six-four chord in m. 163 thus

41. For my earlier discussion of this manipulation, see Mirka, "Das Spiel mit der Kadenz" (2004), 33–35.

forms a secondary deception setting the stage for the subsequent trick. Because this chord restores the two-measure harmonic rhythm after the deceptive cadence in m. 161, the dominant is expected to occur in m. 165. Contrary to this expectation, the six-four chord continues, but at the very moment when the listener expects the dominant and is frustrated since it does not occur, she⁴² recognizes the main theme. Even more: she becomes aware that the theme has started two measures earlier. At first, it was concealed by the continuation of the accompaniment and the motivic material from mm. 161–162. Only in m. 165, when the texture changes and the ostinato accompaniment is abandoned, can one discover the origin of this material in the main theme. This recognition coincides with the moment when, at the beginning of the movement (Example 9b), it becomes clear to the listener that the opening material, in fact, makes up a theme (m. 4). The first three measures give her no hint of this formal function. Likewise, when the main theme returns during the sonata form's second half (Example 9c), it is only after the first three measures, which now appear under the disguise of a new harmonization, that the listener is capable of recognizing the beginning of the recapitulation (m. 111). Haydn's manipulation, aiming at the belated recognition of the main theme in the coda, turns out to be part of an over-arching strategy.⁴³

42. My usage of gender-specific pronouns is conditioned by my own gender.

43. Although the first movement of op. 33 No. 3 has been frequently discussed, this strategy has remained unnoticed. Only James Webster (*Haydn's Farewell Symphony* [1991], 143) and William Caplin (*Classical Form* [1998], 275 [n. 15]) observe the delayed entrance of the tonic shortly after the presentation of the main theme's upper voice at the beginning of the (veiled) recapitulation. However, they do not draw any conclusion from this observation regarding the recognizability of the thematic return nor do they bring it into relation with the statements of the main theme at the beginning and the end of the movement (see Mirka, "Das Spiel mit der Kadenz" [2004], 35 [n. 24]).

156

DC

162

ii^6_4 V^6_4 V^7 vii^6/V

V^6_4 I^6_4 V^6_4 I

Example 9a: Haydn, String Quartet in C major ("The Bird"), op. 33 No. 3/i, mm. 147–167

This recognition is of consequence for the harmonic function of the six-four chord. Since the equivalent chord in the main theme (Example 9b, mm. 1–3) was the first-inversion tonic and this is what remains of the six-four chord after the dominant root has disappeared from the bass (Example 9a, mm. 163–164), the dominant function of the cadential six-four (V^6_4) coexists with the tonic function (I^6_4). The equivocation between these functions is sustained in mm. 165–166 through adjustments made by Haydn in relation to the equivalent portion of the main theme (mm. 4–6): the bass starts from scale degree $\hat{5}$ and reaches it again on the second beat of C meter, which enhances the dominant function, while the syncopations fall on scale degree $\hat{1}$, which emphasizes the tonic function of the six-four chord. The dominant function is further enhanced by the resolution of the six-four chord to the dominant seventh, but this resolution is not followed by further resolution to the tonic. What follows instead is a repetition of the V^{6-7}_{4-5} harmonic progression in m. 166. Only then does the dominant seventh resolve. Haydn emphasizes this resolution through an octave leap of the cello, dynamic change to *forte* and multiple stops in the second violin part, but the tonic triad in m. 167 occurs after the tonic harmony has long since been established in the form of the six-four chord, which alternates with the passing chord ($I^6_4-I^7_5$). The coexistence between the dominant and tonic functions in mm. 163–166 results from an overlap between the cadential six-four and the tonic which is caused by omission

of the dominant expected to occur on the downbeat of m. 165. This omission is not made up by the dominant seventh on the last quarter of the measure, and the V_5^7 –I harmonic progression in mm. 166–167 does not complete the cadence announced by V_4^6 in m. 163. Rather, its formal function is post-cadential: it closes a codetta after an absent cadence. The post-cadential function of mm. 165–167 is evident from the repetition of a segment in mm. 165–166, which is typical of codettas, as is the evaded cadence in m. 166.⁴⁴ As noted in connection with the finale of op. 50 No. 6 (Example 1b), the function of a codetta is to confirm the cadential goal of the preceding section. If there this function was abrogated in order to emphasize the lack of cadential closure, here the codetta makes up for this lack and creates a false impression of the final cadence. This sheds light on the unusual structure of the main theme: the theme is prepared to function as a codetta. Haydn clearly planned this manipulation from the outset and structured the theme in accordance with it. Just like “The Frog,” “The Bird” begins with the end and ends with the beginning, only this time the end is not brought about by a cadence but by post-cadential material.

Allegro moderato

Example 9b: Haydn, String Quartet in C major (“The Bird”), op. 33 No. 3/i, mm. 1–6

44. The former feature of codettas, described by Janet Schmalfeldt as “one more time technique,” is closely related to the latter. As Schmalfeldt (“Cadential Processes” [1992], 47f. [n. 12]) points out, this technique was described as “doubling of cadences” (*Verdopplung der Cadenzen*) by Joseph Riepel (*Grundregeln zur Tonordnung insgesamt* [1755], 61) and as “multiplication of cadences” (*Vervielfältigung der Cadenzen*) by Heinrich Christoph Koch (*Versuch III* [1793], 191; English translation in *Introductory Essay* [1983], 148). The phenomenon of “evaded cadence” is subsumed by Koch under deceptive cadences and explicitly related to codettas: “When several cadences follow one another in a closing phrase (*Schlußsatz*) by means of either an appendix (*Anhang*) or the repetition of the cadence, one often places a different tone than the caesura note in one of the last cadences and thus deceives the ear in its expectation of the closing tone. If that occurs it is called a *deceptive cadence* and can be produced not only by the upper voice but also by the bass” (*Versuch II* [1787], 444f.; *Introductory Essay* [1983], 50).

Violin I

Violin II

Viola

Violoncello

108

p

cresc.

f

p cresc.

f

Example 9c: Haydn, String Quartet in C major ("The Bird"), op. 33 No. 3/i, mm. 108–113

AFTER THE END

In this article I have concentrated on a specific question of eighteenth-century music theory related to the harmonic function of the cadential six-four chord. I would like in conclusion to raise a general question on the relationship between music theory and composition. Until recently this relationship was usually discussed in terms of the aesthetics of genius inherited by twentieth-century scholars from the nineteenth century.⁴⁵ In the accounts of the compositional process inspired by this aesthetics, theoretical rules were often presented as restrictions on the free spirits of great composers that fettered their creative fantasy "like tight clothes and shoes, in which a man can neither stir nor move." In this regard, we were heirs of Albert Christoph Dies.⁴⁶ But the aesthetics of genius was not Haydn's aesthetics. This is evident from Haydn's own description of his compositional method confided to the same biographer: "I wrote what seemed to me good and corrected it afterwards according to the rules of harmony. Other devices I have never made use of. Several times I took the liberty not of offending the ear, of course, but of breaking the usual textbook rules, and wrote beneath these places the words *con licenza*."⁴⁷ The picture of a composer subjecting

45. Even more than for Haydn, this holds true for Mozart. See Grandjean's brief but instructive reflections about the tension between Mozart's genius and his theoretical knowledge (Mozart als *Theoretiker* [2006], 187f.).

46. The same disdain for theoretical rules shows through several anecdotes reported by the other of Haydn's early biographers, Georg August Griesinger. One of them concerns, in fact, the status of the fourth: "Someone told Haydn that Albrechtsberger wished to see all fourths banished from the purest style. 'What does that mean?' replied Haydn. 'Art is free, and will be limited by no pedestrian rules. The ear, assuming that it is trained, must decide, and I consider myself as competent as any to legislate here'" (Griesinger, *Biographische Notizen* [1810], 114; Gotwals, *Haydn* [1963], 61). Griesinger was influenced by Kant and quotes his remarks about genius in reference to Haydn (*Biographische Notizen* [1810], 113). Dies refers to Schiller (*Biographische Nachrichten* [1976], 62). See Gotwals, *Haydn* (1963), 60, 110.

47. Dies, *Biographische Nachrichten* (1976), 61; Gotwals, *Haydn* (1963), 109. This and the other quotations from Haydn's early biographies, contained in footnotes 46 and 49, are cited and related to the aesthetics

the fruits of his creative fantasy to the rules of harmony is utterly different from the image of a Romantic genius. Haydn's freedom from textbook rules and references to the ear are not to be taken as signs of his disdain for music theory but originate in music theory. In fact, they stem from the anti-Pythagorean music-theoretical tradition influenced by the sensualist philosophy of John Locke.⁴⁸ Eighteenth-century treatises by Mattheson and Heinichen include critical reflections about the status of rules and diatribes against "paper rules" that satisfy only the eye. They insist on subjecting theoretical rules to the authority of the ear and acknowledge the right of composers to licences (*exceptiones*) based on this authority.⁴⁹ Kirnberger inscribes himself in this tradition in his preface to the first volume of *Die Kunst des reinen Satzes*:

Ich weiß gar wol, daß die größten Meister bisweilen von den strengen Regeln abweichen, und dennoch durchaus wohlklingend sind. Dieses aber konnten sie nur darum thun, weil ihnen die Beobachtung des allerstrengsten geläufig war. Niemand, als sie allein, würde sich aus den Harmonien, die gegen die Regeln gesetzt sind, ohne Nachtheil des Wohlklanges, herausgefunden haben.

I know very well that the greatest masters occasionally deviate from the strict rules, and yet their compositions always sound good. However, they could do this only because they were well-versed in the strictest rules. Only they could have found the way out of harmonies that are composed contrary to the rules without detriment to the euphony.⁵⁰

For him and his predecessors, theoretical rules formed part of the science of composition that had to be studied in order to refine the ear and aid the natural genius.⁵¹ The

of genius by Elaine Sisman ("Haydn, Shakespeare, and the Rules of Originality" [1997], 6–8).

48. The first German music theorist to adopt Locke's sensualist philosophy was Johann Mattheson. In the introduction to his first treatise, *Das Neu-Eröffnete Orchestre* (1713), 4, he quotes one of Locke's most famous maxims: "Nihil est in Intellectu, quod non prius fuit in sensu." For more details about Mattheson's project of sensualist music theory, see Christensen, "Sensus, Ratio, and Phntogos" (1994), and Hinrichsen, "Mattheson" (2004), 1340.
49. See Mattheson, *Das Neu-Eröffnete Orchestre* (1713), 2–16; *Das Beschützte Orchestre* (1717), 103, 143f., 151, 154, 204; *Das Forschende Orchestre* (1721), 1–450, and Heinichen, *Der General-Bass* (1728), 2–5, 18–20, 92f., 766f. Another passage of Griesinger's biography, illustrating Haydn's attitude toward rules, reflects current debates of eighteenth-century music theory: "Strict theoreticians meanwhile found much to take exception to in Haydn's compositions [...] He was not put out by this, for he had soon convinced himself that a narrow adherence to the rules oftentimes yields works devoid of taste and feeling, that many things had arbitrarily taken on the stamp of rules, and that in music only what offends a discriminating ear is absolutely forbidden" (Griesinger, *Biographische Notizen* [1810], 16; Gotwals, *Haydn* [1963], 13).
50. Kirnberger, *Die Kunst I* (1771), [ii–iii] (*The Art* [1982], 7f.).
51. Heinichen (*Der General-Bass* [1728], 20–24) writes about three prerequisites of a good composer: genius (*Genie*), science (*Wissenschaft*), and experience (*Erfahrung*). Together, they make up the most sought-after aesthetic quality—taste (*Gout*). Haydn's famous remark to Leopold Mozart about his son's taste (*Geschmack*) and the science of composition (*Compositionswissenschaft*) after the performance of Wolfgang's String Quartets K. 458, 464, and 465 could have been inspired by Heinichen (Bauer and Deutsch, *Mozart: Briefe und Aufzeichnungen III* [1963], 373).

study of this science was not only indispensable to prevent composers from remaining “pure naturalists”⁵² but could also be a source of their inspiration, if exploration of theoretical rules led them to the discovery of affinities between seemingly unconnected phenomena. The ability to draw connections between such phenomena was the chief characteristic of wit, the central category of late-eighteenth-century aesthetics and, at the same time, a feature that Haydn possessed in abundance. His tricks exploring the affinity between the consonant and dissonant six-four count among the supreme manifestations of wit (Witz) as an intellectual disposition distinct from mere humor (Laune).⁵³

What I have sought to demonstrate here is that these tricks can be described in terms of Kirnberger’s theory; in fact, this is the earliest theory that allows for their description. Of course, Haydn could have intuited the double identity of the six-four chord or derived it from inconsistencies of earlier harmonic theories independently of Kirnberger—but the categorical distinction drawn by Kirnberger between the two functions of the six-four chord might well have inspired Haydn’s attempts to construct a bridge between them. The question as to whether Haydn’s intention was to affirm this distinction by demonstrating the consequences of blurring it, or to ridicule Kirnberger’s theory by showing that the harmonic functions of these two chords can be easily exchanged, must remain open. Whatever the answer, the cadential puns based on the equivocation between the consonant and dissonant six-four reveal Haydn’s knowledge of current harmonic theories and draw witty conclusions from music-theoretical debates of the time.

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52. Mattheson, *Das Neu-Eröffnete Orchestre* (1713), 13.

53. For this distinction and a survey of contemporaneous accounts of Haydn’s wit and humour, see Wheelock, *Haydn’s Ingenious Jestings* (1992), 19–51.

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