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Author(s): William Earl Caplin

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# Harmony and Meter in the Theories of Simon Sechter

by William Earl Caplin

A recent exchange of views in *Die Musikforschung* has brought into focus a major, unresolved question in the history of music theory: is the interrelation of pitch and rhythm treated more consciously and thoroughly by eighteenth-century theorists or by nineteenth-century theorists? Gudrun Henneberg argues that an integration of all musical parameters, including rhythm, underlies the theories of Sulzer, Kirnberger, and Koch and that their conception opposes the tendency of nineteenth-century theorists to construct absolutist systems of the kind developed by Moritz Hauptmann and Hugo Riemann.<sup>1</sup> Wilhelm Seidel, on the contrary, claims that eighteenth-century theorists generally hold an aesthetic of “pure” rhythm, whereby the actual pitches do not participate in creating the rhythmical effect. And he credits the major nineteenth-century figures, again Hauptmann and Riemann, with having incorporated more

<sup>1</sup>“Die Auffassung, der einzelne Formungsfaktor sei in der Musik der Klassik dem Sinngehalt integriert, widerspricht der Tendenz zu verabsolutierender Systembildung in der Theorie des 19. Jahrhunderts” (Gudrun Henneberg, “Was ist der musikalische Rhythmus?—Eine Entgegnung,” *Die Musikforschung*, 29 [1976]: 466); see also, idem, *Theorien zur Rhythmik und Metrik: Möglichkeiten und Grenzen rhythmischer und metrischer Analyse, dargestellt am Beispiel der Wiener Klassik*, Mainzer Studien zur Musikwissenschaft, vol. 6 (Tutzing, 1974).

fully the dynamics of melody and harmony into their systems of rhythm and meter.<sup>2</sup>

Independent of this discussion in Germany, the American theorist Maury Yeston has also contributed to one side of the argument. Like Henneberg, Yeston finds in eighteenth-century theory an incipient mediation between pitch and rhythm that subsequent theorists fail to develop:

The major treatises of the nineteenth century did not continue to investigate rhythm in the context of pitch function, but rather separated issues of the theory of rhythm from the considerable controversies that arose over the nature of tonal pitch systems. [These controversies] would have beclouded any attempt to base a theory of rhythm on a rigorous theoretical system of pitch relations. Thus nineteenth-century theorists were concerned with rhythm as a self-enclosed system of organizing time. . . .<sup>3</sup>

<sup>2</sup>Wilhelm Seidel, review of *Theorien zur Rhythmik und Metrik*, by Gudrun Henneberg, in *Die Musikforschung*, 29 (1976): 226–27; idem, “Zum Verständnis der Akzenttheorie: Eine Antwort auf die Entgegnung von Gudrun Henneberg,” *ibid.*, pp. 468–69; see also, idem, *Über Rhythmustheorien der Neuzeit*, Neue Heidelberger Studien zur Musikwissenschaft, vol. 7 (Bern, 1975).

<sup>3</sup>Maury Yeston, *The Stratification of Musical Rhythm* (New Haven, 1976), p. 19.

Now it is not my intention in the present study either to evaluate the preceding claims or to propose an ultimate solution to this important historical issue; rather, I want simply to introduce into the debate new evidence from an overlooked and, indeed, unexpected source—the *Kompositionslehre* of Simon Sechter (1788–1867), the leading Austrian theorist of the nineteenth-century.

A discussion of pitch-rhythm relationships in Sechter's theory may at first seem surprising, because Sechter's ideas of rhythm, almost entirely derivative of eighteenth-century models, have been virtually ignored by historians of rhythmic theory.<sup>4</sup> Instead, Sechter has gained renown for being the foremost pedagogue of harmony and counterpoint in Vienna (attracting as students both the dying Schubert and the youthful Bruckner) and for originating the famous *Stufentheorie* of harmonic organization.<sup>5</sup> Yet, in Volume 2 of his major treatise, *Die Grundsätze der musikalischen Komposition*, lie important statements on the relation of pitch and rhythm.<sup>6</sup> In a chapter entitled "Von den Gesetzen des Taktes in der Musik" ("On the Laws of Meter in Music") Sechter directly confronts a central issue of musical composition: how should harmonies be dis-

tributed within the measures of a work? Sechter's attempt to answer this question yields what may be the first detailed investigation in the history of music theory into the metrical placement of harmonic structures.

It would be a mistake to judge Sechter's formulations on the extent to which they fulfill his main intention, namely, to provide practical instruction for the student of composition, for it will become apparent soon enough that his rather simplistic rules and primitive examples only begin to treat the wealth of possibilities open to the nineteenth-century composer. Rather, the value of Sechter's prescripts lies in their expression of fundamental principles relating harmony and meter, principles that can function as norms of analysis, not inviolable laws of composition.

To begin my discussion, I will sketch individually Sechter's theory of harmony, developed in the first volume of *Die Grundsätze*, and his theory of meter, which opens the chapter on laws of meter in Volume 2; I will then examine in more detail the way Sechter relates these two domains and evaluate the historical and theoretical significance of his ideas.

Sechter's *Stufentheorie* brings the fundamental-bass theory of Rameau, as transmitted and modified by Kirnberger (and his associates J.G. Sulzer and J.A.P. Schulz), to its fullest expression. Following the lead of these earlier theorists, Sechter holds that every harmony is defined by a *fundamental bass*, a pitch that lies below the actually sounding musical texture.<sup>7</sup> Furthermore, he determines the syntactical suitability and tonal meaning of a harmonic progression by two related, yet distinct, factors: 1) the interval of fundamental-bass motion, and 2) the scale degrees (*Stufen*) upon which the fundamental basses rest, as indicated by the Roman numerals introduced by Abbé Vogler and popularized by Gottfried Weber.

<sup>7</sup>"Also braucht man ausser dem Bass, welchen man hören lassen will, zur richtigen Vorstellung noch einen tieferen, welcher die Fundamentaltöne oder die Grundtöne der Stammaccorde enthält, welchen man daher *Fundamentalbass* nennt" (*Die Grundsätze*, 1:14).

<sup>4</sup>Seidel devotes little more than a page to Sechter and belittles his treatment of harmony and meter as "purely mechanical" (*Über Rhythmustheorien*, pp. 107–08).

<sup>5</sup>Important studies of Sechter's *Stufentheorie* include: Ernst Kurth, *Die Voraussetzungen der theoretischen Harmonik und der tonalen Darstellungssysteme* (Bern, 1913); Ulf Thomson, "Voraussetzungen und Arten der österreichischen Generalbasslehre zwischen Albrechtsberger und Sechter," (Ph.D. diss., University of Vienna, 1960); Ernst Tittel, "Wiener Musiktheorie von Fux bis Schönberg," in *Beiträge zur Musiktheorie des 19. Jahrhunderts*, ed. Martin Vogel, Studien zur Musikgeschichte des 19. Jahrhunderts, vol. 4 (Regensburg, 1966), pp. 163–201; Carl Dahlhaus, *Untersuchungen über die Entstehung der harmonischen Tonalität*, Saarbrückner Studien zur Musikwissenschaft, vol. 2 (Kassel, 1968).

<sup>6</sup>Simon Sechter, *Die Grundsätze der musikalischen Komposition*, 3 vols. (Leipzig, 1853–54) (hereafter cited as *Die Grundsätze*).

As a rule, Sechter prefers that the fundamental bass descend by the interval of a fifth or third.<sup>8</sup> Sechter admits that some progressions by ascending fifths and thirds are acceptable, for instance, the progressions from I to V or from IV to I, but warns that others are to be avoided.<sup>9</sup> If the fundamental bass appears to ascend stepwise, Sechter adopts Kirnberger's procedure (itself taken from Rameau's "double-employment") of placing a "concealed" (*verschweigener*) bass between the two regular fundamental tones of the progression in order to create the "more natural" motion of a descending third and descending fifth (see Example 1).<sup>10</sup> Going further than his predecessors,

<sup>8</sup>The fundamental bass can also be said to ascend by the inversion of these intervals, the fourth or sixth; for convenience, though, reference will be made throughout the rest of this study to motion by fifths and thirds rather than their inversions.

<sup>9</sup>*Die Grundsätze*, 1:22–24. Sechter's general criterion for the acceptability of chord progressions is curious, for it arises from an apparent technicality of counterpoint. He holds that a chord progresses properly when its fifth chord-factor is 1) prepared by the preceding chord and 2) resolved stepwise in the following chord. These conditions are satisfied by all descending-fifth and descending-third progressions. He then adds that if the fifth cannot be prepared, then the root, which is the note that creates the interval of a fifth with the fifth chord-factor, must be prepared instead. This condition is fulfilled by all ascending fifths and thirds. But Sechter also stipulates that if the interval of the fifth is diminished, then the fifth chord-factor, and not the root, must be prepared and properly resolved. Since Sechter develops his theory within a system of just intonation, he regards the interval between the second and sixth scale degrees to be "diminished" along with the interval between the fourth and seventh degrees. Consequently, the only ascending fifth and third progressions that satisfy his requirements are: I–V, IV–I, VI–III, IV–VI, I–III, and III–V. "Bei der Quint muss entweder sie selbst oder der Ton, wogegen sie eine Quint macht, vorbereitet sein und eines davon stufenweise weiter gehen. . . . Ist aber die Quint falsch, so muss sie selbst vorbereitet sein und dann entweder sogleich um eine Stufe herab gehen oder zuvor noch Sept werden" (*ibid.*, 1:14).

<sup>10</sup>"Um zum Beispiel den Schritt vom Dreiklang der 1ten zu jenem der 2ten Stufe naturgemäss zu machen, muss dazwischen der Septaccord der 6ten Stufe entweder wirklich gemacht oder hinein gedacht werden" (*ibid.*, 1:18); cf. Johann Philipp Kirnberger, *Die wahren Grundsätze zum Gebrauch der Har-*

Sechter also inserts a concealed bass between the fundamental tones of an apparent descending-second progression, such that two descending fifths result (see Example 2).<sup>11</sup>

Example 1. *Die Grundsätze*, 1:18

In Noten in C dur so :

oder mit Verschweigung des zweiten Fundamentes so :

Example 2. 1:33

Vollständig :

Unvollständig :

monie (Berlin, 1773), pp. 51–53 (This work was actually written by Kirnberger's student, Johann Abraham Peter Schulz); also, Jean-Philippe Rameau, *Génération harmonique* (Paris, 1737), p. 129.

<sup>11</sup>*Die Grundsätze*, 1:32–33. Theorists today might be skeptical of Sechter's procedure, but Arnold Schoenberg, for one, was sufficiently convinced of the musical logic of this explanation that he incorporated Sechter's idea into his own *Harmonielehre* (Arnold Schoenberg, *Theory of Harmony*, trans. Roy E. Carter [Berkeley, 1978], pp. 137–39); see Tittel, "Wiener Musiktheorie," p. 197.

As regards the interrelationship of the scale degrees, Sechter is well known for arranging the seven diatonic steps into a circle of descending fifths, the so-called *sechtersche Kette* (“Sechter-chain”). This model of harmonic organization occupies a leading position in his theory, manifested by its frequent use in exemplifying modulation, chromaticism, and even enharmonic transformations. Most historians, however, have overlooked the presence of a second model within Sechter’s system, a model based on the priority of the first, fifth, and fourth degrees of the scale. At the very beginning of *Die Grundsätze*, Sechter ranks the major triads on these three degrees as the most important harmonies in the major mode.<sup>12</sup> In so doing, he reaffirms Heinrich Christoph Koch’s original distinction between “essential” and “non-essential” chords and, as will become more apparent below, anticipates the theory of functional harmony developed by Hugo Riemann.<sup>13</sup> As grounds for assigning special significance to the I, V, and IV chords, which he later calls the *primary* chords, Sechter cites two characteristics.<sup>14</sup> First, only the dominant and subdominant harmonies can directly alternate with the tonic, creating what Sechter terms a “mutual effect” or *Wechselwirkung* (see Example 3).<sup>15</sup> Second, the perception of a tonality requires the presence of all three primary chords: “In order for a triad to be recognized as a tonic, at least the triad or seventh chord of the dominant and the triad of the subdominant must be heard

<sup>12</sup>*Die Grundsätze*, 1:12.

<sup>13</sup>Heinrich Christoph Koch, *Versuch einer Anleitung zur Composition*, 3 vols. (Leipzig, 1782–93), 1:53; Riemann’s theory can be found in any number of his mature works, e.g., *Grundriss der Kompositionslehre*, 2 vols. (Leipzig, 1889) and *Vereinfachte Harmonielehre oder die Lehre von den tonalen Funktionen der Akkorde* (London, 1893).

<sup>14</sup>In the chapter “Vom einstimmigen Satze” in Volume 2, Sechter specifically distinguishes the primary triads (*Hauptdreiklänge*) from the remaining secondary triads (*Nebendreiklänge*) (*Die Grundsätze*, 2:151).

<sup>15</sup>*Ibid.*, 1:13.

Example 3. *Wechselwirkung*, 1:13



before.”<sup>16</sup> Thus, the primary chords acquire structural importance within a key by virtue of their special syntactical relationship as well as their capability of expressing tonality.

As Sechter proceeds to consider the use of chords on the other scale degrees, the *secondary* chords, two general schemes emerge: 1) the minor triads on the sixth, second, and third degrees can be arranged to follow by a descending third the primary chords on the first, fourth, and fifth degrees respectively (see Example 4a); 2) the minor triads can be so ordered that they “imitate” the descending-fifth V–I cadence (see Example 4b). The diminished triad on the seventh degree fits into both schemes either by being placed a third below the II

Example 4. 1:13



<sup>16</sup>“Damit man einen Dreiklang als jenen der Tonica wirklich erkennen kann, müssen wenigstens auch Dreiklang oder Septaccord der Dominant und Dreiklang der Unterdominant vorher gehört werden” (*ibid.*, 1:101).

chord or by joining with the IV chord to complete the circle of descending fifths (see Example 5).<sup>17</sup> This second scheme, of course, yields Sechter's famous *Kette*; but it is important to appreciate a change in emphasis in this model of harmonic organization from Sechter's original distinction between primary and secondary chords. In the circle of descending fifths, the dominant and tonic harmonies retain their structural importance at the close of the progression, but the subdominant harmony, residing farthest from the concluding tonic, is consigned the most subordinate position of all. In the first scheme (Example 4a), on the contrary, the integrity of the *primary-chord* model, as I will call it, is more completely preserved insofar as each of the minor secondary triads is linked directly to one of the primary triads lying a third above. As will be seen shortly, both models of harmonic organization—the circle of fifths model and the primary-chord model—find further expression in Sechter's principles relating harmony and meter.

Example 5. 1:13

But before turning directly to that issue, I want to consider briefly some aspects of metrical theory that will pertain to the discussion below. Although specific definitions vary widely,

<sup>17</sup>Ibid., 1:13.

theorists generally agree that meter concerns the organization of musical time into specially differentiated events that alternate with each other more or less regularly. This differentiation of events is conventionally designated by a variety of metaphorical pairs of terms, such as accent-unaccent, strong-weak, upbeat-downbeat, and arsis-thesis. Furthermore, metrical organization is conceived to be hierarchical, in that the alternation of accented and unaccented events can occur simultaneously at various levels of structure. Finally, an individual meter is labeled “duple,” “triple,” “quadruple,” and so forth according to the number of unaccented events that regularly alternate with accented ones.

In evaluating any theory of meter, it is useful to distinguish between two points of view under which the theory can be formulated and applied analytically. In the first, musical events become accented or unaccented according to their location within a preexistent metrical framework, a framework that is defined by such notational devices as time signatures, bar lines, and beamings. This *notated-meter* point of view, as it can be called, has been adopted by most theorists, indeed, to such an extent that this viewpoint has come to dominate our everyday notions of meter. Nevertheless, there are some serious objections to this conception, of which the most significant is the simple observation that the notation often fails to correspond with the metrical interpretation that the unprejudiced listener actually hears. Hence, theorists have become increasingly aware of the fact that notation may very well represent meter but not necessarily determine it. And thus a second point of view assumes that the musical events themselves can *express*, so to speak, a metrical interpretation independently of the notation. A theory formulated from this *expressed-meter* point of view, as I will call it, seeks to discover the specific musical forces—be they dynamic, durational, or tonal—that are responsible for creating metrically accented and unaccented events.

To be sure, almost all theories of meter contain in varying degrees elements of both the notated-meter and expressed-meter



positions, and, as I hope to make clear, Sechter's theory is no exception. Fortunately, it will not be necessary here to enter into a detailed study of his approach because in most essential points it conforms to the general conception of meter discussed above. Like most late eighteenth-century and early nineteenth-century theorists, Sechter describes metrical organization as a hierarchy of accents and unaccents: the first beat of every measure brings the primary accent, while the following beats contain different grades of secondary accentuation or else remain completely unaccented.<sup>18</sup> Example 6 presents Sechter's representation of accents in two different meters at up to five levels of structure. In applying his theory to the analysis of real music, Sechter operates for the most part within a notated-meter point of view: the musical events acquire their metrical interpretation when they

Example 6. 2:15

Example 6 consists of five staves of musical notation. The first staff is in 1/2 meter, the second in 3/4, the third in 2/4, the fourth in 3/2, and the fifth in 2/2. Each staff shows a sequence of notes with arrows indicating accents and unaccents. The first staff has a primary accent on the first beat and secondary accents on the second and third beats. The second staff has a primary accent on the first beat and secondary accents on the second and third beats. The third staff has a primary accent on the first beat and secondary accents on the second and third beats. The fourth staff has a primary accent on the first beat and secondary accents on the second and third beats. The fifth staff has a primary accent on the first beat and secondary accents on the second and third beats. The notation includes various rhythmic values and rests, and the staves are labeled with 'u. s. w.' at the end.

<sup>18</sup>Ibid., 2:12.

are placed into the a priori framework of accents. At the same time, however, Sechter is conscious of the limitations inherent to the notated-meter approach. He notes, for example, that composers often fail to indicate true changes of meter in the course of their compositions; thus they frequently notate a passage such as that in Example 7a entirely in one meter, as shown in Example 7b.<sup>19</sup> As I now proceed to the central topic of my investigation—the interrelationship of harmony and meter—it will be important to consider the extent to which Sechter's dissatisfaction with notated meter, evident in Example 7, becomes translated into the definite awareness of an expressed-meter point of view.

Example 7. 2:90

Example 7 consists of two staves of musical notation. The first staff is in 3/4 meter, the second in 2/4, the third in 3/4, the fourth in 2/4, the fifth in 3/4, and the sixth in 2/4. Each staff shows a sequence of notes with arrows indicating accents and unaccents. The notation includes various rhythmic values and rests, and the staves are labeled with 'u. s. w.' at the end.

With the unpretentious statement, “Now we come to the application of harmony to meter,” Sechter begins his important discussion of how the composer should arrange specific harmonies within a metrical scheme.<sup>20</sup> Sechter first observes that

<sup>19</sup>Ibid., 2:86–90.

<sup>20</sup>“Nun kommen wir zur Anwendung der Harmonie auf den Takt” (ibid., 2:15).

the “simplest way” to distribute chords in a piece of music is to introduce one new fundamental bass at the beginning of each measure (see Example 8).<sup>21</sup> He then puts forth a corollary rule: a change of harmony must coincide with the onset of every measure, no matter how many chords the measure contains. “All the remaining ways [of distributing chords] share with the simplest way the fact that with each new measure, a new fundamental bass must either actually enter, or at least appear to enter; the latter, however, should seldom happen.”<sup>22</sup>

Example 8. 2:91



Thus, Sechter introduces a principle that, when stated conversely, continues to be taught to all beginning students of theory: do not repeat a harmony across the bar line. To be sure, Sechter is not the first theorist to raise this injunction. Already in the mid-eighteenth century, Rameau cautions against syncopating the fundamental bass, and subsequently both Kirnberger and Vogler discuss the poor effect of continuing the same harmony

<sup>21</sup>“Die einfachste Art bleibt immerhin diejenige, wo nur mit jedem neuen Takte ein neuer Fundamentalbass eintritt. . .” (ibid.).

<sup>22</sup>“Alle übrigen Arten haben mit der einfachsten das gemein, dass mit jedem neuen Takte auch ein neuer Fundamentalbass entweder wirklich eintritt oder wenigstens einzutreten scheint, welches Letztere indess selten geschehen muss” (ibid.). It is not clear what Sechter means by a fundamental bass that “seems to enter” since he offers no further explanation and cites no examples.

from a weak beat to a strong one.<sup>23</sup> But this idea has a more significant function in Sechter’s system than is the case with these earlier theorists, for as he proceeds to consider more complicated harmonic-metric combinations, one fundamental principle emerges that unifies all of his observations: the composer must clearly indicate the primary metrical accents by creating a decisive change of harmony at the beginning of every measure.

Sechter’s main task, then, is to develop criteria for determining the metrical decisiveness of harmonic progressions. And not surprisingly, he formulates his rules in terms of fundamental-bass motion. Thus, as regards the arrangement of two harmonies in a measure, Sechter states:

The least conspicuous way for the fundamental bass to contain two tones in a duple meter is if the fundamental bass leaps by a descending third from the first beat to the second beat and then again leaps by an ascending fourth or fifth in order to make the entrance of the next measure more perceptible.<sup>24</sup> (See Example 9)

Example 9. 2:16



<sup>23</sup>Rameau, *Génération harmonique*, p. 175; Johann Philipp Kirnberger, *Die Kunst des reinen Satzes in der Musik*, 2 vols. (Leipzig, 1771–9), 2:32–4; Georg Joseph Vogler, *Tonwissenschaft und Tonsezkunst* (Mannheim, 1776), pp. 36–7.

<sup>24</sup>“Die am wenigsten auffallende Art, dem Fundamentalbasse zwei Töne in einem zweizeitigen Takte zu geben, ist die, wenn man ihn von dem Tone, den er beim ersten Takttheile hat, beim zweiten Takttheile um eine Terz abwärts springen, und sodann, um den Eintritt des nächsten Taktes fühlbarer zu machen, ihn wieder um eine Quart oder Quint aufwärts springen lässt” (*Die Grundsätze*, 2:16).



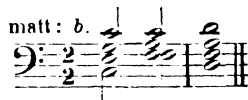
Sechter adds that the ascending-third progression can also be used within the measure, in which case the descending fifth is the preferred motion into the following downbeat (see Example 10).<sup>25</sup>

The distribution of harmonies is poor when the two chords of the measure form a fifth-relationship, while the beginning of the next measure is approached by the leap of a third (see Example 11). Sechter explains the inadequacy of this arrangement by noting, “In that way, the new measure would be weakly articulated because there is less difference between the chords than there previously was.”<sup>26</sup> In other words, the second and third chords in Example 11 are less differentiated than the first and second chords. Presumably, the source of the differentiation is the number of common-tones between the chords. Since pro-

Example 10. 2:17



Example 11. 2:16



<sup>25</sup>Ibid.

<sup>26</sup>“Dadurch würde der neue Takt matt angedeutet, weil die Accorde zu wenig Unterschied haben, und doch zuvor mehr Unterschied hatten” (ibid.).

gressions by a third result in two common-tones, the chords lack sufficient differentiation for articulating the primary accent of a measure. The chords of a fifth progression, on the contrary, have only one common-tone; hence, the greater difference between these chords renders the primary accent “more perceptible.” Sechter does not explain any further why third-progressions are incapable of indicating the primary accent, yet the statements and examples that he does offer prompt additional speculation.

As has already been noted, Sechter stipulates that in all cases, the beginning of every measure must be accompanied by a new fundamental bass, or in other words, by a change of harmony. But by discouraging the use of third-progressions into the downbeat of a measure and by appealing to the relative lack of differentiation created by such progressions, Sechter suggests that motion of the fundamental bass by a third does not fully achieve genuine harmonic change. Or, put differently, he intimates that despite the literal difference of fundamental bass, third-related chords represent, to some extent, the same harmony, and thus this “single harmony” should not be used across the bar line. Of course, such an interpretation of Sechter’s views cannot be reconciled within a strict *Stufentheorie*, wherein each of the seven fundamental basses of a key defines a distinct harmony. His ideas bring to mind, rather, an alternative approach, namely, a theory of functional harmony such as that of Hugo Riemann’s, in which three harmonic functions—tonic, dominant, and subdominant—can be expressed not only by the original I, V, and IV harmonies but also by “substitute” chords on VI, III, and II respectively, chords that form a third-relationship with the original harmonies.

It can be recalled that an anticipation of Riemann’s functional theory is already found in Sechter’s primary-chord model of harmonic organization (see again Example 4a). To be sure, when Sechter first introduces this model, he does not imply that the subordinate chords express the same harmonic function as the primary chords lying a third above. But when he later states

that progressions by thirds cannot be used to articulate the downbeat of a measure because they are insufficiently differentiated, he raises the possibility of reducing third-related chords to one harmonic function. In this way, he brings his primary-chord model a step closer to Riemann's theory.

One additional musical example reinforces perhaps the foregoing interpretation. Sechter notes that Example 12 is "more tolerable" (*erträglicher*) than Example 11 because at least "the beginning of the new measure is not articulated more weakly than the second beat in the preceding measure."<sup>27</sup> In other words, the second beat in the first measure of Example 12 is not made stronger than the downbeat of measure two because third progressions are used throughout both measures. Of course, Sechter still refers here exclusively to fundamental-bass motion when he regards each of the descending-third progressions to be metrically weak. Nevertheless, it is tempting to speculate that Sechter unconsciously perceives the decisive change in function from tonic to subdominant at the beginning of the second measure to be sufficient means for articulating the primary accent, thus making the example "more tolerable."

Example 12. 2:16



Before moving on to examine Sechter's principles for three and more chords per measure, let us pause briefly to consider the

<sup>27</sup>“So wird doch der Eintritt des neuen Taktes nicht matter bezeichnet, als der Eintritt des zweiten Takttheils im vorigen Takte” (ibid.).

general position under which he relates harmony and meter. Strictly speaking, all of his statements are formulated from a notated-meter point of view: the composer sets the fundamental-bass progressions into a preexistent metrical framework. Nonetheless, by using such phrases as “to make the entrance of the next measure more perceptible” and “the new measure would be weakly articulated,” Sechter speaks in terms that strongly connote an expressed-meter point of view, one in which the harmonic progressions themselves are directly responsible for rendering the meter comprehensible to the listener. To be sure, Sechter never specifically claims that harmony creates meter, yet his concern that a primary accent be clearly “pointed out” (*angedeutet*) by a decisive change of harmony reveals an awareness of expressed meter that far surpasses most previous theory.

In the course of discussing how three chords should be distributed in a measure, Sechter introduces another principle of harmony and meter. First, he restates the basic requirement that the downbeat of every measure must be articulated more decisively than the preceding upbeat. He then summarizes the metrical qualities of harmonic progressions. “Leaps of a third are weak, but leaps of a fourth or fifth are decisive; however, leaps of an ascending fourth and descending fifth are the most decisive.”<sup>28</sup> With the general distinction between thirds and fifths, Sechter merely repeats his earlier position. But he then raises a new issue by according descending-fifth progressions greater metrical strength than ascending fifths. Unfortunately, he does not try to justify this refinement, and an appeal to his former criterion of harmonic differentiation obviously fails, because both the ascending and descending varieties of the fifth progression create just one common-tone between the chords.

<sup>28</sup>“Matt sind Terzensprünge, entscheidend aber die Quarten- und Quintensprünge; der Quartsprung aufwärts und der Quintsprung abwärts sind aber am entscheidendsten” (ibid., 2:19).

Nevertheless, Sechter does provide the basis for a likely explanation when he states early in his treatise that all descending fifths are “imitations” of the V–I cadential progression and, in a later passage, specifically shows that a dominant-tonic relationship is expressed at each step in the circle of descending fifths (see Example 13).<sup>29</sup> Sechter stops short, though, of relating such dominant-to-tonic expression directly to meter. Other theorists, however, have moved in this direction: both Abbé Vogler and, later, Moritz Hauptmann hint at a connection between tonic harmony and metrical accent,<sup>30</sup> and Hugo Riemann formulates this relationship even more explicitly.<sup>31</sup> Indeed, a number of prominent theorists today recognize that the motion

Example 13. 2:26

The image shows two staves of musical notation in bass clef. The first staff contains a sequence of chords: C major (Tonica), G major (Dominant), F major (Ton.), C major (Dom.), F major (Ton.), C major (Dom.), F major (Ton.), C major (Dom.),. The second staff continues the sequence: F major (Ton.), C major (Dom.), F major (Ton.), C major (Dom.), F major (Tonica), u. s. w. (and so on).

<sup>29</sup>Ibid., 1:17. “Da übrigens jeder Schritt [in the circle of fifths] einen Tonfall bezeichnet, wenn auch nur der von der 5ten zur 1ten Stufe den eigentlichen Schlussfall bildet: so kann jeder Accord gewissermassen einen Abschnitt machen und zugleich Veranlassung eines folgenden Abschnittes werden, d. h. jeder Fundamentalton kann gewissermassen erst als Tonica, dann als Oberdominant gelten. . .” (ibid., 2:25).

<sup>30</sup>Vogler, *Tonwissenschaft*, pp. 36–37; Moritz Hauptmann, *The Nature of Harmony and Metre*, trans. W. E. Heathcote (London, 1888), p. 326.

<sup>31</sup>“The accented beat has a similar meaning to the tonic chord in a harmonic progression. It is therefore conceivable that a progression appears more easily understandable if the tonic chord is brought on an accented beat. . .” (“er [the accented beat] ist von ähnlicher Bedeutung wie der thetische Klang in der harmonischen These. Es ist daher begreiflich, dass eine These desto leichter verständlich erscheint, wenn sie die Tonika auf dem guten Takttheil bringt. . .”) (Hugo Riemann, *Musikalische Syntaxis* [Leipzig, 1877], p. 76).

from dominant to tonic, as an expression of tonal stability, directly relates to the succession upbeat-to-downbeat, and this harmonic-metric phenomenon surely lies at the heart of Sechter’s observations.<sup>32</sup>

The use of four or more chords in a measure gives Sechter the opportunity to discuss how harmony can articulate multi-level metrical organization. He recommends that in a quadruple meter, for example, the composer should consider ways to make the secondary accent on the third beat more decisive than the unaccented second beat, at the same time reserving the greatest strength for the primary accent at the beginning of the following measure. To accomplish this, he calls upon his favorite model of harmonic organization—the circle of fifths—and claims that the closer a progression lies to the concluding tonic, the stronger is its metrical articulation. In other words, the most decisive progression is V to I, less decisive is II to V, even less so VI to II, and so forth.<sup>33</sup> Example 14 presents a small sample drawn from Sechter’s many illustrations of how the circle of fifths can be set in a variety of meters and rhythms. In each case, the secondary accent is articulated by a more decisive harmonic progression than the preceding beat, while the approach to the downbeat of the following measure contains the strongest motion, V–I.

<sup>32</sup>See Grosvenor Cooper and Leonard B. Meyer, *The Rhythmic Structure of Music* (Chicago, 1960), p. 118; Carl Dahlhaus, “Über Symmetrie und Asymmetrie in Mozarts Instrumentalwerken,” *Neue Zeitschrift für Musik*, 124 (1963): 209. Not all theorists agree on this point; Wallace Berry, for example, holds that tonal function is metrically neutral (*Structural Functions in Music* [Englewood Cliffs, N.J., 1976], p. 330).

<sup>33</sup>“Wenn man, wie billig, dafür sorgen will, dass der Eintritt des dritten Takttheils entscheidender sei als jener des zweiten, entscheidender aber der Eintritt des ersten Takttheils im neuen Takte als jener des zweiten, dritten und vierten Takttheils, und der Fundamentalbass doch Tonfälle, d. h. Schritte in die Unterquint oder Oberquart, machen soll: so ist nöthig zu bemerken, dass der Schritt von der 5ten zur 1ten Stufe am entscheidendsten, minder entscheidend der Schritt von der 2ten zur 5ten Stufe, noch minder jener von der 6ten zur 2ten, wieder minder jener von der 3ten zur 6ten, noch minder jener von der 7ten zur 3ten, noch minder jener von der 4ten zur 7ten Stufe ist” (*Die Grundsätze*, 2:22).

## Example 14. 2:23–24

Thus these examples appear to satisfy fully his conditions for achieving metrical differentiation within the measure.

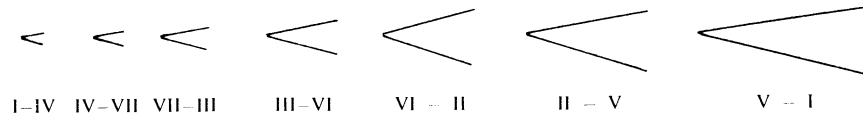
At first thought, Sechter's ranking of the seven descending-fifth progressions seems plausible enough: the greater the proximity to the tonal center, the greater the tonal stability, and hence, the greater the metrical expression. But further reflection casts serious doubt on such a direct harmonic-metric correspondence. The problem concerns the very nature of accent itself, for an individual event can be perceived as accented only in relation to surrounding events that are clearly unaccented. Hence, in order to create a secondary accent in a quadruple meter, the third beat must not only be preceded by a weak second beat, as Sechter requires, but also be followed by a weak fourth beat, a fact that he simply overlooks. In every one of his examples, however, the fourth beat of the measure contains a more decisive harmonic progression than the preceding beat, a condition that theoretically conflicts with the perception of the third beat as accented. The basic cause of this discrepancy is that Sechter's model of ever-increasing harmonic-metric expression (which I have illustrated in Example 15) fails to correspond with the model of alternating accents and unaccents that he himself offers in his theory of meter earlier in the treatise (Example 6). Consequently, Sechter's ranking of the descending-fifth progressions falls short of realizing his goal of hierarchical, metric articulation.

Since Sechter devotes several pages of his treatise to discussing the metrical significance of the circle of fifths, it is possible that some other motives—both musical and strictly theoretical—may have induced him to propose this harmonic-metric relationship. For example, in perceiving the undeniable “drive to the cadence” associated with the circle of fifths, Sechter may very well have attributed this rhythmical quality to meter. Or, to take another example, Carl Dahlhaus has suggested that Sechter may have tried to use meter as additional justification for establishing his *Kette* as a paradigm of harmonic tonality.<sup>34</sup> Of course, both of these possibilities suffer from the same defect discussed before: the scales of measuring ever-increasing harmonic strength, on the one hand, and alternating metric accentuation, on the other, are simply incompatible.

This concludes an examination of Sechter's principles relating specific fundamental-bass progressions to meter. As he considers the arrangement of five to eight chords in a measure, Sechter simply applies the three basic rules for the placement of harmonies that have already been discussed: 1) progressions by a descending or ascending third should be used only within the measure because they lack sufficient harmonic differentiation to articulate the primary accent; 2) descending fifths are more metrically decisive than ascending ones, due most likely to the dominant-tonic expression inherent in all descending-fifth progressions; 3) secondary accentuation within the measure can be indicated by the circle of descending fifths, since the metrical

<sup>34</sup>“In der Sequenz I–IV–VII–III–VI–II–V–I, dem Anschauungsmodell der Theorie Sechters, sind zwar beide Momente—die vollständige Skala und die Progression in Quintschritten—enthalten; doch begründet das äussere Zusammenreffen keinen inneren Konnex. Und Sechter scheint den Mangel selbst empfunden zu haben, denn an entlegener Stelle, in einem Kapitel über ‘Gesetze des Taktes,’ skizziert er einen vermittelten Gedanken. Je näher ein Fundamentschritt in der Sequenz der abschliessenden Tonika komme, um so ‘entscheidender’ sei er” (Dahlhaus, *Untersuchungen*, p. 31) (emphasis added).

## Example 15



strength of a given progression increases as it nears the concluding tonic.

Conspicuously missing from these principles, of course, is any mention of stepwise progressions of the fundamental bass. But since Sechter explains such apparent motion by a step as combinations of descending thirds and fifths with a “concealed” bass (see again Examples 1 and 2), the use of these progressions is already covered by the previous rules, and Sechter obviously feels that additional comment is unnecessary.<sup>35</sup>

Up to this point, I have discussed the metrical placement of harmonies in terms of their fundamental-bass motion only. But this does not exhaust Sechter’s treatment of the relationship between harmony and meter, for he is not only concerned with chords that possess a fundamental bass, but also with those that function non-harmonically, that is, chords that are reducible to higher-level structures. In a recent study, Robert P. Morgan has shown that Sechter’s theory occupies a significant position in

<sup>35</sup>In effect, progressions by a second could be placed on any beat, since the motion from the concealed bass to the next actually sounding bass is always a descending fifth, a progression that has no metrical restrictions.

the history of reduction analysis.<sup>36</sup> Morgan cites an example from Volume 1 of *Die Grundsätze* (see Example 16) in which Sechter demonstrates how all of the scale degrees in a key (with the exception of the leading tone) can function as temporary tonics without losing their identity as individual *Stufen*. Each scale degree becomes a local tonic through the presence of subordinate chords (*Nebenharmonien*) that do not necessarily have a harmonic relation to the broader, controlling tonality.<sup>37</sup> Sechter gives an even more detailed account of this reduction technique in the chapter on laws of meter in Volume 2 of his treatise, and in so doing he presents some important relationships between meter and the hierarchical analysis of harmony.

Sechter first raises the possibility of harmonic reduction in discussing the use of three chords in a measure of triple meter. He notes that the simplest arrangement is to place the same harmony at both the beginning and end of the measure and to let the chord on the second beat form a *Wechselwirkung* with the

<sup>36</sup>Robert P. Morgan, “Schenker and the Theoretical Tradition: The Concept of Musical Reduction,” *College Music Symposium*, 18 (1978): 72–96.

<sup>37</sup>*Ibid.*, p. 89–91. “Eine grosse Ausdehnung bekommt das Wesen des Chromatischen dadurch, dass man, ausser der 7ten, jede übrige Stufe als Tonica ansieht. . .” (*Die Grundsätze*, 1:157).

Example 16. 1:158–59

Example 16. 1:158–59

Chord labels: C, G, E, A, F, D, G, C, C, G, E

surrounding harmony (see Example 17).<sup>38</sup> (*Wechselwirkung*, it may be remembered, refers to the alternation of tonic and dominant or tonic and subdominant, as in Example 3, and recalls Sechter's primary-chord model of harmonic organization.) Sechter goes on to point out that the arrangement of chords in Example 17 actually belongs to the category of just one harmony per measure "because each second chord [in the measure] can be considered interpolated, and the fundamental bass belonging to the beginning and end of the measure is regarded as the primary harmony."<sup>39</sup> Thus, the *Wechselwirkung* converts the initial chord of the measure into a local tonic, which in turn makes it possible to reduce the dominant or subdominant chord on the second beat. The use of five or more chords in a measure permits the reduction of more than just the dominant and subdominant. As Example 18 shows, chords on other scale degrees can be reduced to a single harmony provided that a good progression leads back at the end of the measure to the harmony found at the beginning.<sup>40</sup>

Example 17. 2:19

Example 17. 2:19

u. s. w.

<sup>38</sup>Ibid., 2:19.

<sup>39</sup>"Weil jeder zweite Accord als eingeschoben betrachtet werden kann, und man den Fundamentalton, der zu Anfang und Ende des Taktes gehört wird, als Hauptsache ansieht" (ibid.).

<sup>40</sup>"Obwohl nun die Selbstständigkeit aller sechs Fundamentalnoten für jeden Takt [in Example 19a] im Einzelnen nicht streitig gemacht wird, so gilt doch für das Ganze in jedem Takte nur derjenige Fundamentaltone, der zu Anfange und zu Ende desselben gehört wird" (ibid., 2:31).



Example 18. 2:31, 34

Example 18 consists of two systems of musical notation. The first system has three staves, each with a bass clef. The top staff contains a melodic line with eighth notes. The middle and bottom staves contain chords. Chord labels 'C', 'G', 'C', 'G', and 'C' are placed below the staves. The second system also has two staves with bass clefs. The top staff has a melodic line with eighth notes and some accidentals. The bottom staff has chords. Chord labels 'E', 'A', 'D', 'G', and 'C' are placed below the staves.

One striking feature in all of Sechter's examples is that reductions are confined to a single measure only. Although he does not explain, nor even show an awareness, of this limitation to his reduction analyses, a probable reason can be found in his central principle of harmony and meter: the beginning of every measure must be marked by a decisive harmonic change. If reductions were to span more than one measure, some of the primary accents would be insufficiently articulated. Example 19 shows how metrical considerations limit the extent of reduction. Sechter remarks that each measure in this passage actually contains only two harmonies, because the second chord of the measure, forming a *Wechselwirkung* with its neighbors, can be

Example 19. 2:21

Example 19 consists of two systems of musical notation. The first system has two staves with treble clefs. The top staff contains a melodic line with eighth notes. The bottom staff contains chords. The second system also has two staves with treble clefs. The top staff contains a melodic line with eighth notes. The bottom staff contains chords.

considered merely subordinate.<sup>41</sup> The chord on the fourth beat, however, must be analyzed as a genuine harmony, because "the weight from the fourth beat to the first beat of the next measure is greater than that from the second beat to the third beat."<sup>42</sup> If, for example, the dominant chord on the last beat of the first measure were reduced along with the second beat, then there would be no true change of harmony at the beginning of measure two; the tonic would prevail throughout. Thus despite the fact that both of the dominant chords in measure one are in *Wechselwirkung* with the tonic, the second dominant must be considered genuine because it is the last beat in the measure and must effect the change of harmony required to articulate the following down-beat. It is important to note that harmonic relationships are no criterion in deciding which of the two dominants is reduced; rather, the decisive factor is the metrical placement of the chords, as Sechter himself makes clear in referring to the "greater weight" of the primary accent.

<sup>41</sup>Ibid., 2:21.

<sup>42</sup>"Hier muss noch bemerkt werden, dass, wenn hier der Eintritt des neuen Taktes auch mit dem nämlichen Fundamentaltone bezeichnet wird, der im vorigen Takte auf den dritten Takttheil kam, man deswegen doch den Accord, der auf den vierten Takttheil kommt, als wirklich, und also nicht als eingeschoben betrachtet; denn das Gewicht vom vierten bis zum ersten Takttheile des nächsten Taktes ist grösser, als jenes vom zweiten bis zum dritten Takttheile" (ibid., 2:22).

Two examples of six chords per measure show again how meter alone determines the harmonic analysis. In Example 20a, Sechter considers the six chords in each measure of 6/8 meter to represent just two basic harmonies, because the chords on the second and fifth eighth-notes are in “intimate *Wechselwirkung*” with their surrounding chords. Each measure in Example 20b also has two harmonies only, but here, the *Nebenharmenien* fall on the second half of beats one and two of the 3/4 meter.<sup>43</sup> Sechter then notes, “I have intentionally made the first measure in these examples similar, in order to meet the objection that both six-beat meters are the same.”<sup>44</sup> Sechter’s choice of the word *similar* to describe the first measures in Example 20 is significant: the foreground content of each measure may indeed be identical, but the background harmony is not the same, as the analyses added under each example reveal. The cause of the variant interpretations can only be attributed to a sole differentiating factor—meter: setting the same series of chords in differ-

Example 20. 2:30

a) *6/8* C G C A D G

b) *3/4* C G C G C A

<sup>43</sup>*Ibid.*, 2:30.

<sup>44</sup>“Ich habe übrigens absichtlich den ersten Takt in diesem Beispiele jenem im vorigen Beispiele ähnlich gemacht, um dem Einwurfe, es wären beide sechszeitige Taktarten einander gleich, zu begegnen” (*ibid.*, 2:31).

ent metrical patterns yields different higher-level harmonic structures.

On the evidence of these, and many other of Sechter’s examples, one general principle describes the role of meter in his reduction analyses: chords located on accented beats and on the last upbeat of the measure have greater structural importance than chords residing on the remaining unaccented beats. Such a principle, of course, generally operates under a notated-meter point of view; the metrical interpretation of the chords is fixed prior to their harmonic interpretation. Thus, whereas Sechter reveals an expressed-meter position when discussing harmonies that are unequivocally defined by fundamental-bass motion, he reverts to a strict notated-meter viewpoint as soon as he needs an a priori meter to resolve ambiguities in harmonic reduction. Of course, Sechter is neither the first theorist, nor the last, to use notated meter for determining the structural significance of chords. In the late eighteenth-century, Schulz, writing under the name of his teacher Kirnberger, observes that non-harmonic passing chords “can only come on a weak beat because it is necessary to feel a fundamental harmony on each strong beat.”<sup>45</sup> And our own century has seen an even greater reliance on notated meter for harmonic, as well as melodic, reductions, as the hierarchical analysis of pitch organization in relation to rhythm has become more widespread. But since the concept of notated meter is itself theoretically precarious, the validity of its employment in reduction analyses, be it in Sechter’s theory or in more recent work, is questionable and deserves further investigation.

Indeed, I have raised in this study many issues—both historical and purely theoretical—that require more examination and

<sup>45</sup>“Sie können daher auch nur auf schlechten Taktzeiten vorkommen, weil bey jedem auf einer guten Taktzeit angegebenen Accord im Gefühl ein Grundaccord nothwendig wird” (Kirnberger, *Die wahren Grundsätze*, pp. 34–35).

interpretation. But as discussed at the outset, the entire question of the relationship between pitch and rhythm is far from settled. Although I have dealt with the contributions of one theorist only, I hope that a step has been taken to counter the notion that nineteenth-century theory ignores significant issues of pitch-rhythm interaction. To be sure, some shortcomings to Sechter's theories have been revealed in the preceding discussion. By requiring a non-reducible harmony at the end of every measure, he greatly restricts the scope and flexibility of his reduction analyses. And his ranking of the seven descending-fifth progressions on the basis of their proximity to the tonic is irrelevant to questions of meter due to the incompatibility of measuring tonal and metrical strength. But Sechter's positive achievements must be emphasized as well. By holding that third-related chords should not be used from the end of one measure to the beginning of the next, because they lack sufficient harmonic differentiation, Sechter anticipates features of functional harmony and suggests that his *Stufentheorie* is a more subtle description of harmonic forces than some critics, eyeing only the profusion of Roman numerals, have been willing to acknowledge. In addition, his recognition that descending-fifth progressions are more decisive than ascending ones is an important, early reference to the metrical expression of dominant-to-tonic motion. Finally, at a time when most theorists merely continue the eighteenth-century concern with how individual dissonant structures are metrically placed, Sechter's interest in the way progressions of consonant harmonies can articulate meter marks a significant advance in the theory of harmonic-metric relationships.