

### **Eighteenth-Century Thorough Bass, Fundamental Bass, and Formal Analysis**

The 1700s, perhaps more than any other century, may be viewed as the fulcrum at which we may most clearly see the transition between ancient/medieval musical methods and the foundation of theoretical approaches still used today. During these one hundred years, expositions with string divisions give way to those rooted in science; descriptions of counterpoint in terms of intervallic relationships are replaced with harmonic explanations; and nascent studies in phrase structure and form introduce new domains of musical analysis.

#### ***Thorough Bass:***

By the late 1600s, the tendency of Renaissance theory treatises to reconcile counterpoint with respect to the tenor had been (for the most part) replaced with a focus on the lowest voice. Figures – when provided – explicitly identified the intervals over the bass. Since the exception was the 5/3 (implied in the absence of a figure), we see triadic sensibilities permeating thorough-bass theory, even though inversional equivalence was not necessarily recognized.

More complex situations arose with unfigured basses, however. Barring any crystallized notion of major and minor tonality (church keys and modes still prevailed), theorists such as M. de Saint Lambert (1707) and Francesco Gasparini (1708) provided extensive lists of rules to account for the many types of circumstances that might arise in the realization of an unfigured bass. In retrospect, many of these rules seem to tacitly recognize a tonal underpinning, such as the use of a 6/3 chord over the leading tone of a key (or any chromatically raised bass notes). However, the long list of rules (Saint Lambert includes 33) creates a daunting challenge to the improvising keyboardist who might attempt to incorporate them all into an at-sight realization.

To combat this complication, theorists such as Gasparini began to provide typical figures for each degree in the scale. The most well-known example of this technique is the *règle de l'octave*, a term used by François Campion (c1685-1747) in his *Treatise of Accompaniment and Composition* (1716). The *règle* relied on the simplification of tonality into major and minor keys, although the difficulty became then how to develop rules to identify keys and key changes. Perhaps more importantly, by using what were only triads, seventh chords, and their inversions in its figures, the *règle* also implied a harmonic thinking, one in which suspensions and appoggiaturas played more of an ornamental role.

Not all writers on thorough bass ascribed to the recipes as exemplified in Campion, though. Carl Philipp Emanuel Bach (1714-1788) perceptively writes in Part 2 of his *Essay on the True Art of Playing Keyboard Instruments* (1762): "Some have gone to great trouble to systematize the realization of unfigured basses...[but] it is impossible to formulate hard and fast rules which will at once shackle free creations and enable one to surmise the optional twists of a composer to whom bountiful nature has granted a glimpse of the inexhaustibility of the art." The key word here is "composer," for C. P. E. Bach appears more intimately tied to the creation and function of bass lines as compositional resources than as solely accompanimental shorthand, even though his chapter on "Accompaniment" is far longer than the (sadly) scant 15 pages he devotes at the end of his book to "Improvisation."

One of the more direct attempts to outline the path from figured bass to a finished composition can be found in the writings of Friedrich Erhard Niedt (1674-1708). In Part 2 of his *Musicalische Handleitung* (1706), Niedt exhaustively lists elaborations and figuration patterns for simple bass progressions. Moreover, Niedt evenly distributes his attention to both the left

and right hands, thereby downplaying the literal interpretation of figured basses in favor of a more structural-framework approach.

The relationship of thorough bass to composition, however, is perhaps most clear in *Der General-Bass in der Composition* (1728) by Johann David Heinichen (1683-1729), whose choice of title gives quick evidence. In his figured-bass realizations, Heinichen develops a fairly unique approach – one in which the left hand alone often takes entire chords. The benefit (aside from that of sheer volume) is that the right hand is free to play more singing melodies instead of being constricted by the demands of block-chord textures.

Other facets of Heinichen's approach to figured bass are also notable. For example, he seems unconcerned with parallel perfect intervals unless they were between outer voices. This view puts Heinichen in strong contrast to the contrapuntal tradition (e.g. Fux). We may say that Heinichen thus represents the harmonic orientation that began to emerge from the emphasis on bass lines and intervals above the bass. Heinichen, in fact, specifically identifies the 6/3 as derived from the inversion of the 5/3 and uses this derivation to explain the typical doubling rules. However, Heinichen does not recognize the 3 of a 6/4/3 chord as an inversion of the 7th (and thus a dissonance), so the inversional equivalence of a purely harmonic approach does not fully permeate his rationale. The result is that *Der General-Bass* is a compendious work, similar to many thorough bass treatises in that respect, where lists and tables of signatures – along with separate and unique rules as to their preparation and resolution – fill page after page.

### ***Fundamental Bass:***

The different rules for handling thirds, fourths, fifths, etc. when presented in different contexts created an obvious conceptual weight for music theory. Although the triad and its

invertibility were recognized by prior theorists (Avianus, Harnish, Lippius, etc.), it was not until Jean-Philippe Rameau (1683-1764) that a consistent attempt was made to organize all sonorities with reference to a core of basic chord types. The power of Rameau's theory, espoused in his *Treatise on Harmony* (1722), derived from his wedding of the seventh chord to the triad as the single pair of structurally important harmonies in music. By recognizing the invertible quality of the seventh chord, rules for preparation and resolution of dissonance could be greatly simplified, since the location of the chordal seventh was now the only crucial point.

Rameau reckoned the dissonance of this chordal seventh with respect to the *fundamental bass*, a term that somewhat mirrors the modern conception of the chordal root in simpler cases. Taking this theory to its extreme, however, Rameau attempted to explain all dissonances – most notably suspensions – as chordal sevenths. To do so necessitated a *supposed bass* (which we would label as the root) that lay beneath the fundamental bass. For example, in a 4-3 suspension over a D in the bass, the fundamental bass would actually be A since this is the note that forms a seventh with the suspended G; D in this case is the supposed bass a fifth below the fundamental.

The notion of the fundamental bass held more promise than just simplifying dissonance treatment, however; Rameau was concerned with the progression of this fundamental bass to explain harmonic succession. A basic premise of Rameau's theory was that the progression of the fundamental bass should duplicate the intervals of the triad, i.e. fundamental-bass motion should be only by thirds, fifths, or their inversions. Obvious exceptions to this rule in practice (such as the fauxbourdon technique of parallel 6/3) were attributed to compositional "license." To further address this avoidance of stepwise motion in the fundamental bass, Rameau introduces his theory of the *double emploi* in his *Génération harmonique* (1737). Through *double emploi*, Rameau can also explain a seventh chord in first inversion as an "added sixth"

chord in root position. By empowering his theory with analytical flexibility, however, Rameau necessarily weakens the simplicity of purely inversional chord types.

It is also in the *Génération harmonique* that Rameau abandons the painstaking generation of consonances from mathematical ratios and string divisions as proposed in Part 1 of his *Traité*. Having been exposed to the research of Joseph Sauver (1653-1716) on the overtone series, Rameau develops the notion of the *corps sonore* as the basis for consonance. Based on a flawed understanding of acoustics, however, he goes even further to derive the minor triad from a downward version of this series.

For a variety of reasons, including the dense and poorly organized quality of Rameau's prose, his works were often disseminated in condensed form by other writers, many of whom unfortunately misinterpreted or misrepresented Rameau's ideas. Rameau himself attempted a repackaging of his ideas in his *Démonstration* (1750), but it was through the work of Jean le Rond d'Alembert (1717-1783) that Rameau's ideas were mostly immediately broadcast. D'Alembert was drawn to the deductive aspect of Rameau's theories such that d'Alembert boiled them down to a lucidly-presented musical system. The result was d'Alembert's widely-read *Éléments de musique, théorique et pratique, suivant les principes de M. Rameau* (1752), which excluded practical considerations in favor of the cohesiveness of the system itself.

The importance of d'Alembert's *Éléments* is strongly tied to Friedrich Wilhelm Marpurg (1718-1795), whose translation of the work into German (1757) made Rameau's theories – although misrepresented – directly available to the German-speaking public. Marpurg thereby becomes an advocate for Rameau's ideas, although in a somewhat distorted form. For example, in Marpurg's *Handbuch bey dem Generalbasse und der Composition* (1762), he extends the notion of *supposition* such that 9th, 11th, and 13th chords can undergo inversion as well.

It is in reaction to this concept of *supposition* that Georg Andreas Sorge (1703-1778) entered into debate with Marpurg during the mid-1700s. Sorge had a deep interest in acoustics and proposed in his *Compendium harmonicum* (1760) that all structural harmonic entities (7ths, 9ths, etc.) were the result of the first 32 partials. Even more importantly, Sorge (in 1757) identifies tied dissonances as the product of "the mixture of two chords," thereby going against the Rameau/Marpurg requirement of reconciling all simultaneities to a single chordal basis.

This differentiation between chordal dissonance and non-chordal dissonance formed the crux of the later argument between Johann Philipp Kirnberger (1721-1783) and Marpurg. Kirnberger, in his 2-volume treatise *Die Kunst des Reinen Satzes* (1771-79) delineates essential (*wesentlich*) from non-essential (*zufällig*) dissonances, where the former category includes chordal sevenths while the latter encompasses suspended notes. Kirnberger's distinction is crucial, for in Marpurg's conception, the seventh in a root-position chord is the same as that in a 7-6 suspension. Kirnberger, however, views the 7-6 suspension as the inversion of the 9-8. In fact, Kirnberger posits that all suspensions are the byproduct via inversion of either 4-3 or 9-8 suspensions. Through this simple example, we can see how Marpurg's conception of harmony was in some ways tied more directly to thorough-bass practice, despite his modernized musical conceptions. Similarly, Kirnberger betrays thorough-bass influences in his treatise, where he provides tables of chord inversions despite the simplicity of the underlying theory.

### ***Formal Analysis:***

While thorough-bass teachings became bogged down in the ever-increasing complexity of figures and their rules for preparation and resolution, however, harmonic theory also became stifled with a wide variety of chord types, inversions, and extensions. Neither tradition

adequately addressed the basic compositional question (and demand) of how to string these vertical structures into a fully-formed piece. Each adhered to more of a note-to-note, chord-to-chord approach.

In response to this myopic view of music, theorists began to focus on the larger picture. This enlarged vantage came in the scope of an emphasis on melody, phrase, and form. One early example can be found in the work of Johann Mattheson (1681-1764). Mattheson was a strong advocate for the modernization of music theory, as exemplified by his disagreements with the conservative Johann Heinrich Buttstett (1666-1727) during the 1710s. It is Mattheson's theory of melody, first presented in his *Kern melodischer Wissenschaft* (1737) but more fully formed in Part 2 of *Der vollkommene Capellmeister* (1739), that shows his forward-looking tendencies, particularly to the melodically-driven *galant* style at the height of the Classical period. Much of Mattheson's theory involves drawing parallels between music and language, and thus his treatise shows a strong influence of the rhetorical tradition. However, often bubbling to the surface of his discussions are motivic or rhythmic elements, which reveal his concern with the cohesive, organic aspect of composition hitherto underemphasized by prior theorists.

Yet although Mattheson displays a noticeable divorce in approach from his contemporaries, it is not until Joseph Riepel (1709-1782) that phrase theory reaches a point where it can stand on its own, unchained from the abstractly-descriptive rhetorical nomenclature. Riepel instead develops a healthy portion of his own terms, which in most cases better describe specific musical characteristics than any terms appropriated from the Trivium. Riepel, for example, coins the *Monte*, *Fonte*, and *Ponte* descriptions of four-bar melodic/harmonic stereotypes. More importantly, Riepel – in his *Rudiments of Musical Composition* (1752-68) – categorizes any given phrase (*Absatz*) with respect to its length (*Zweyer*, *Dreyer*, *Vierer*, etc.)

and cadence type. Periodicity and phrase syntax become paramount, and thus Riepel provides numerous examples of irregular and extended phrase structures. In some respects, his explanations of phrase transformations take on an almost Schenkerian tone.

Perhaps the most unified and comprehensive 18th-century approach to harmony, melody, and form, however, appears in the writings of Heinrich Christoph Koch (1749-1816). Koch borrows a fair portion of his ideas and terminology from Riepel and Johann Georg Sulzer (1720-1779), but goes to much greater effort to illustrate every theoretical point with musical examples. Of the three volumes of Koch's *Versuch einer Anleitung zur Composition*, volumes 2 (1787) and 3 (1793) describe the core of his phrase theory. Like Riepel, Koch divides phrases into those ending on tonic (*Grundabsatz*) versus those on dominant (*Quintabsatz*), and Koch uses a similar analytic symbology of triangles and squares for delineating sub-phrases (*Einschnitte*). But Koch additionally discusses how phrases can be arranged – e.g. "good" versus "bad" phrase successions – and in so doing, provides an aesthetic formulation of higher-level musical structure. Also akin to Riepel, Koch preferences the four-bar phrase; yet Koch is unable to provide a consistent definition of exactly what a "phrase" is, per se, and in some cases, contradicts his own definition. One problem is that Koch directly ties phrase lengths to the number of measures in a simple meter, but in so doing, avoids any musical or perceptual methodology that does not rely on a notational system.

As Koch's treatise stands at the end of the 1700s, therefore, we see fundamental questions of music theory remaining unanswered. Yet during this century, theoretical focus radically shifted from tenor (e.g. Fux) to bass, melody, and finally the harmonic and formal structure of all parts. More importantly, though, the multiple streams of modal and contrapuntal theory were distilled into the wellspring of modern tonal theory.

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