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THE REAL RELATIONSHIP BETWEEN KIRNBERGER'S AND RAMEAU'S CONCEPT OF THE FUNDAMENTAL BASS

Cecil Powell Grant

It is ironic that the very theoretical precept for which Jean-Philippe Rameau is perhaps best known remains today his most seriously misunderstood theory: the concept of the fundamental bass. Part of the problem is that this bass, as Rameau conceived it, is not merely an inflexible, mechanical procedure as some believe, but a general hypothesis by which he can demonstrate his own unique harmonic perspective, composed as it is of a wide variety of speculative presumptions and ideals. Hence, while Rameau routinely uses the fundamental bass to reduce literal pitches to a tertiary arrangement, there are many instances where he reaches beyond the written score with it, seeking to establish by inference the aural or logical implications of a passage in terms consistent with the perspective of his system. In the following excerpt from *The Theory of Harmony*, Matthew Shirlaw accurately distinguishes between the literal and inferential application of the fundamental bass in Rameau's work.

Strictly speaking, the Fundamental Bass of Rameau is of more than one kind. There is the fundamental bass which is the direct result of his theory of the inversion of chords,

and which has been in practical use in nearly every textbook of harmony since his time. This bass, which always represents the fundamental note of the harmony, is to be distinguished from the actual bass, the *basso continuo*, in which the bass note may have the Third, Fifth, etc., of the chord. But admirable and useful as this bass may be, the species of Fundamental Bass which Rameau evolves in Book II. of the *Traité de l'harmonie* is even more important. By it Rameau endeavors to explain, on logical and scientific grounds, the laws which govern harmonic succession. A real science of harmony, Rameau perceives, must not be satisfied with the explanation of chords as isolated entities; it must also take into account harmonic succession; it must try to discover the underlying principles which govern the progressions from one harmony to another, and which render these intelligible.¹

Shirlaw concludes his discussion of the latter use of the fundamental bass by illustrating it with an example drawn from Rameau's own *Traité de l'harmonie*.

Even in cases where the Fundamental Bass is not present, it will nevertheless be understood; as in the following passage from Zarlino [see Example 1].²

Past and present writers who have discussed such inferential fundamental analyses have lumped them all under the term "interpolated bass." While this term correctly denotes their use of imaginary or unsounded notes, it does not adequately distinguish between the various applications of the technique by Rameau and others. A more precise representation of such analyses may be made by recognizing two major categories within the "interpolated bass" concept.

The first of these is illustrated by the example quoted above in the Shirlaw excerpt. That analysis presumes that an incomplete chord need not lose its identity even when the absent note happens to be its root. While the literal pitches of the penultimate chord in Zarlino's example would seem to limit it to no more than an inverted diminished triad on the leading tone, Rameau sees and hears for this chord a dominant function. For this reason, he selects the dominant note as the

Zarlino's example

Example of musical notation for Zarlino's example, showing a treble and bass staff with notes and rests.

Fundamental Bass added

Example of musical notation for Fundamental Bass added, showing a bass staff with notes and rests, and a bracket labeled "Perfect Cadence".

Example 1

Fundamental Bass

Example of musical notation for Example 1, showing a treble and bass staff with notes and rests, and a bracket labeled "Perfect Cadence".

Example 2

Basso Continuo

Example of musical notation for Basso Continuo, showing a treble and bass staff with notes and rests.

Fundamental Bass

Example of musical notation for Fundamental Bass, showing a bass staff with notes and rests, and a bracket labeled "Perfect Cadence".

chord's true root. This type of analysis represents an extension of the theory of inversion to those cases where inverted chords, instead of having their lowest note transferred to an upper part, are allowed to omit this note entirely while still retaining their identity as inversions. Such missing roots could no more accurately be described as added or "interpolated" than could those of other inverted chords; on the contrary, these roots are assumed to be ever present although identifiable only through the harmonic context. Hence the term "implied" fundamental note may be more appropriate to such circumstances.

A considerably more esoteric application of the same technique appears in an excerpt from an example in Book III of Rameau's *Traité*, given in Example 2.³ In this case, Rameau views the F major triad as relinquishing its subdominant root to the supertonic upon its repetition after [A], presumably in order to progress more smoothly and convincingly to the succeeding dominant seventh chord on G. He thus proposes that the second of the two F chords be heard as a seventh chord spelled on D, occurring here in first inversion on F with its root suppressed. This particular analysis may appear more arbitrary to modern observers than the preceding one, since it does not seem as clearly specified or required by the harmonic context as does Zarlino's progression. It may be, however, that this reaction is partly conditioned by current analytic practice, which readily accepts the leading tone triad as a dominant component while tending towards a more literal view of the subdominant triad. While we today might challenge Rameau's prerogative to change the root of a repeated chord, we must remember that he is biased specifically towards hearing chordal root successions by the intervals of the fifth or third whenever possible; that is certainly not impossible in the progression of the chords at [A] in Example 2, and in that sense Rameau's application of such an analysis to the subdominant chord is not necessarily more abstract than one involving the leading tone triad.

It must be acknowledged that Rameau adopts a far more radical procedure in analyses such as that in Example 3 of which there are numerous instances in his *Traité*.⁴ For this type of analysis the term "interpolated" bass seems entirely

suitable, since Rameau here willfully inserts a new chord on the half note marked "Y" in a progression which otherwise indicates harmonic movement by whole note only. The goal of this analysis seems identical to that of the preceding example, that is, the conversion of the undesirable bass progression by ascending second into a more acceptable one by third and fifth. Unlike the case in Example 2, however, Rameau cannot achieve the desired result in Example 3 by interpreting one chord as a disguised surrogate for another; he achieves it instead by deciding that what appears to be a single chord may be heard as two separate chords. This technique cannot be viewed as an extension of the theory of inversion, but represents the more daring proposition that a fundamental bass analysis may determine a greater number of chords than are readily apparent in the score. Rameau seems uncomfortable with the artificial interruption of the harmonic rhythm that such insertions often produce. He eventually finds a solution for this situation more satisfactory to him in his theory of the "dual usage" (*double emploi*) of dissonance, which permits one to imagine the simultaneous occurrence of both the sounded and interpolated bass notes, and allows one to adopt that which best suits the convenience of the progression at hand.

Whatever distinctions in terminology or usage one may determine for such fundamental bass analyses, it is certain that they represent far more than a mere reduction of chordal tones to an arrangement in thirds. Indeed, they prove beyond doubt that abstract considerations were an integral part of Rameau's concept of the fundamental bass from its inception.

Johann Philipp Kirnberger, the leading theorist of the Berlin school of the late eighteenth century, regarded his work as the theoretical antithesis of Rameau's ideas. Yet it is a fact that Kirnberger inherited from Rameau his concept of the fundamental bass, as well as many other parts of his theoretical system. Any review of Kirnberger's work should take into account his habit of collaborating with others in producing his treatises without acknowledging their contribution in print. His favorite and ablest collaborator was his pupil, Johann Abraham Peter Schulz. A consideration of Schulz's influence is especially relevant to studying the

various styles of fundamental bass analyses appearing in the treatises published under Kirnberger's name.

In works produced with little or no assistance from Schulz, including the first volume of the compendious *Die Kunst des reinen Satzes in der Musik*, the fundamental bass analyses of the inferential type belong mainly to the *implied* bass category identified above. Conspicuous among these is exactly the same interpretation of the leading tone triad progressing to the tonic chord adopted earlier by Rameau, as illustrated in Example 4.⁵

In addition, this becomes Kirnberger's standard method for demonstrating in the *Kunst* and elsewhere that every seventh chord whose apparent bass note ascends by step will similarly find its real, albeit invisible, fundamental note a third below its written bass note. Example 5, taken from the *Kunst*, establishes the model for such circumstances.⁶ In applying this technique to seventh chords, Kirnberger goes a significant step beyond Rameau, who could permit such an analysis only for simple triads.⁷

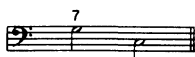
In those of Kirnberger's treatises to which Schulz contributed significantly, including *Die wahren Grundsätze zum Gebrauch der Harmonie*, one may observe a more varied use of inferential-type fundamental bass analyses. First, adoption of the implied fundamental at the under-third for the leading tone triad, illustrated above in Example 4, is routinely applied to triads similarly progressing by ascending second, regardless of their scalar seat. A favorite object of this procedure is the subdominant chord progressing upwards to the dominant triad, as in Example 6 at [*].⁸

Secondly, the *Harmonie* contains many examples of the true *interpolated* bass technique, with its insertion of whole new chords between those apparent in the score. In Example 7, one finds intact Rameau's application of this technique to any triad ascending by step.⁹

Whereas Rameau confines his use of the interpolated bass technique to relatively select cases, Kirnberger and Schulz apply this solution to a wide range of progressions in the *Harmonie*. Among these are a host of dissonant to dissonant, consonant to consonant, and dissonant to consonant chordal successions whose common feature is a progression



[Fundamental Bass]



Example 4



[Fundamental Bass]



Example 5



[Fundamental Bass]

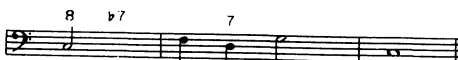


[*]

Example 6



[Fundamental Bass]



Example 7

that appears to violate the axioms of chordal progression or dissonance treatment established by the Kirnberger-Schulz system. The interpolated bass allows the authors of the *Harmonie* to bring these progressions into conformity with their relevant norms. The following excerpt, for example, grants to an irregularly resolved seventh chord its proper resolution.

When great harmonists wish to express something vehemently or to surprise the listener, they take the liberty of eliding entirely the resolution of the essential seventh; . . . Hence instead of this passage [Example 8] and its inversions, one often finds the following passages [Example 9]. In all these passages, the resolution of the essential seventh is elided, and the fundamental harmony is to be understood as [shown in Example 10].¹⁰

It is reasonable to conclude that both this adoption of Rameau's true interpolated bass technique and the extended use of the implied bass note type in the *Harmonie* may be credited to Schulz's influence upon Kirnberger's work. While this development may reflect Schulz's greater susceptibility to Rameau's influence, it in no way contradicts Kirnberger's perspective as earlier articulated in the *Kunst*. On the contrary, the following excerpt from the *Kunst* invites such interpolations, especially when compared with the preceding quotation from the *Harmonie*.

Thirdly, the resolution of the seventh can actually be elided, i.e., the consonant chord originating from its resolution can be omitted, and another dissonant chord can be taken whose dissonance would have been prepared by the omitted chord. So instead of this passage [Example 11] one may take this one [Example 12] through the elision of the consonant chord indicated with *.¹¹

The controversy over the propriety of inferential fundamental bass analyses seems to have originated with the theorist Wilhelm Friedrich Marpurg, Kirnberger's chief detractor and ideological opponent in Berlin. Marpurg regarded himself as the official interpreter and disseminator of Rameau's theories in Germany; from that perspective he pronounces



Example 8



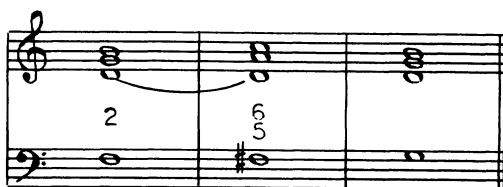
Example 9



Example 10



Example 11



Example 12

Kirnberger's system a distorted version of Rameau's original theories. Marpurg attached to his *Versuch über die musikalische Temperatur* a lengthy appendix entitled *Anhang über den Rameau- und Kirnbergerschen Grundbass*, the chief purpose of which is publicly to discredit Kirnberger and his adherents in their use of the fundamental bass for inferential analyses. As is generally recognized today, however, Marpurg inadequately comprehended many of Rameau's ideas, and modified them to suit his own purposes. Among these certainly must be included Rameau's concept of the fundamental bass, as the following excerpt from the *Anhang* clearly shows:

Mr. Rameau indicates by the word fundamental bass a bass which is nothing more than the raw fundamental chords of the miscellaneous chords contained in the thoroughbass of a piece, exhibited without the slightest connection among themselves. I say without the slightest connection because in the exposition of the fundamental chords the manner of their progression is not taken into consideration; rather, each single chord of the thoroughbass is merely reduced to its fundamental chord.¹²

Here Marpurg specifically denies Rameau's use of the fundamental bass for any purpose other than the literal 'tertiary reduction of individual chords. Not only does he thereby misrepresent Rameau, but Marpurg could scarcely utter a more telling indictment of his inaccurate knowledge of Rameau's system and goals. A theme common to all of Rameau's theoretical works is the search for the proper relationship among chords. With concepts such as string division, the sonorous body (*corps sonore*), the triple and quintuple progressions, and the dual usage of dissonance, to mention but a few, Rameau tirelessly seeks to prove intervallic norms for the fundamental bass progressions of musical practice. Hence Marpurg's false attribution of a random succession to Rameau's fundamental bass classically illustrates his gross misperception of the Frenchman's theoretical perspective, and shows how ill-fated was Rameau to have such a person as defender and explicator of his theories.

On the basis of his own restricted definition of the fundamental bass, however, Marpurg attacks Kirnberger's more

flexible application of the concept as follows:

Since Kirnberger's fundamental bass mainly depends upon the extractor's himself composing and substituting his personal whims for the thoughts of the composer, instead of breaking down the existing tonal fabric and reducing the given construction to its simple elements, so might Kirnberger's fundamental bass be termed not a true fundamental bass, but an *interpolated-bass*.¹³

In so chastising Kirnberger for reaching beyond the written score in fundamental bass analyses, Marpurg remains oblivious to Rameau's frequent use of the same technique.

Marpurg's credibility for making such criticisms is additionally shaken by statements like the following one:

Even if the inventor of the fundamental bass, Mr. Rameau himself, should have made such attempts here and there, and reduced whole pieces to a fundamental bass, I myself would be the first to reproach him on this account.¹⁴

This cryptic remark informs us that Marpurg's first priority is the expression of his own perceptions, not the promotion of Rameau's ideas in purest form. If Marpurg sincerely believed that Rameau did not regularly accompany whole pieces or major musical excerpts with fundamental bass analyses, then he cannot have had much familiarity with Rameau's treatises, in which such analyses are common.¹⁵ This would certainly cast serious doubts upon his competence to evaluate other writers in terms of their fidelity to Rameau. If, on the other hand, one may infer from the last quotation above that Marpurg seems to know more about this than he will admit, and that he chooses to view any such occurrences as irrelevant to Rameau's perspective, one may conclude that Marpurg has adjusted Rameau's theory of the fundamental bass to suit his own taste while cloaking the resulting form in the original authority of Rameau. Whatever his motivation, there is no disputing that Marpurg himself is guilty of the very eclecticism towards Rameau of which he accuses others.

Marpurg's false conclusions about Rameau's use of the fundamental bass might remain merely an innocuous bit of historical irony had they died with him; unfortunately,

however, these errors have been inherited by modern writers. In her article, "The Harmonic Theories of Kirnberger and Marpurg," Joyce Mekeel affirms Marpurg's conclusions in the following selected remarks:

The last of Marpurg's theoretical works contains the *Anhang* in which he discusses and attempts to refute Kirnberger's conception of the fundamental bass. . . . Marpurg attacks Kirnberger for misunderstanding the nature of the fundamental bass. . . . Kirnberger appears to use the fundamental bass to show the aural logic of a progression. This is definitely outside the proper realm of the fundamental bass as originally conceived by Rameau. Marpurg is quick to seize on the error and to pronounce Kirnberger's fundamental bass "not a real fundamental bass." . . .

If Kirnberger does indeed regard his bass as "what the French theorists call the fundamental bass," Marpurg certainly has proved him to be in error. . . . The fundamental bass, as originally conceived by Rameau, cannot contain more than what is contained in the original example. Therefore, in this sense Marpurg is correct when he calls Kirnberger's fundamental bass an "interpolated" bass. . . .

Kirnberger is in error in this instance. . . .¹⁶

Perhaps Mekeel, like Marpurg, has overlooked occasions like those illustrated above where Rameau uses the fundamental bass as an interpretative or inferential device. It is ironic that she has accepted Marpurg's opinions on this matter after having explicitly warned us as follows about his unreliability as a source for Rameau's ideas:

Friedrich Wilhelm Marpurg . . . regarded himself as the first disciple of Rameau in Germany. . . . This was most unfortunate for Rameau, for Marpurg did not understand the full significance of Rameau's theories and, as we shall see, questioned statements without having fully understood their context.¹⁷

In his dissertation, "The Harmonic Theories of Johann Philipp Kirnberger," David Beach likewise adopts Marpurg's view that Rameau's original definition of the fundamental bass precludes analysis by interpolated or inferential notes, as here:

As an avid supporter of Rameau's theories, it is only natural that Marpurg would be critical of Kirnberger's use of it [i.e., the fundamental bass], as well as the theories it represents. . . .

The reason that Marpurg suggests the term "interpolated bass" is that Kirnberger indicates harmonies in the fundamental bass which are implied (at least to Kirnberger), but not literally present in the music. . . . Considered from Marpurg's point of view, he is certainly justified in this characterization. . . . Marpurg's discontent seems to result from the fact that Kirnberger borrowed the term "fundamental bass" from Rameau without using it in the same way. . . .

In the process of demonstrating that Kirnberger's fundamental bass is not really a fundamental bass after all (at least in Rameau's sense of the word), Marpurg aims most of his criticisms at *Harmonie*.¹⁸

Although he defends Kirnberger's (or Schulz's) prerogative to define the fundamental bass in his own way, Beach clearly concurs with Marpurg that Kirnberger applies the fundamental bass in a manner never intended by Rameau. Perhaps Beach was partly influenced towards this conclusion by Mekeel's article, which is included in his bibliography.

The facts in this matter must now be established with finality: Marpurg describes Rameau's fundamental bass concept incompletely and inaccurately. By attempting to protect this theory from all abstract considerations, Marpurg actually pits Rameau against Rameau. Thus one may recognize in Marpurg and his influence upon recent writers a far greater threat to the survival of Rameau's complete fundamental bass concept than that posed by Kirnberger and Schulz, whose version of the theory is essentially compatible with the original model. The continuation of Marpurg's error is in several ways detrimental to our present knowledge of the authors involved: it prevents our realizing that inferential harmonic analyses are a common link between the systems of Kirnberger and Rameau; and it limits our awareness of and objective inquiry into aspects of Rameau's fundamental bass speculations, the profoundly provocative qualities of which have not yet been fully appreciated.

NOTES

1. Matthew Shirlaw, *The Theory of Harmony* (Dekalb, Illinois: B. Coar, 1955), p. 98.
2. Ibid., p. 101. Shirlaw has extracted this example from Rameau's *Traité de l'harmonie*, p. 58, meas. 1-3, and has reduced it from open score.
3. Jean-Philippe Rameau, *Traité de l'harmonie reduite à ses principes naturels* (Paris: J. B. C. Ballard, 1722), p. 195, meas. 1-3. The example is simplified here by reduction from open score and omission of numbers and voice labels in the upper parts.
4. Ibid., p. 212, meas. 1-3. Reduced from open score.
5. Johann Philipp Kirnberger, *Die Kunst des reinen Satzes in der Musik*, 2 vols. (Vol. I, Berlin: C. F. Voss, 1771; Vol. II, Berlin and Königsberg: Decker & Hartung, 1776-79), I, p. 70, meas. 1.
6. Ibid., I, p. 66.
7. For an explanation of the way in which Rameau's dissonance theory prevents him from similarly applying such analyses to seventh chords, see Cecil Powell Grant, "Kirnberger Versus Rameau: Toward a New Approach to Comparative Theory," Ph.D. diss., Univ. of Cincinnati, 1976, pp. 198-200.
8. Johann Philipp Kirnberger, (*Die wahren Grundsätze zum Gebrauch der Harmonie* (Berlin: Decker & Hartung, 1773), p. 104, meas. 1.
9. Ibid., p. 52.
10. "Wenn grosse Harmonisten etwas heftiges ausdrücken, oder den Zuhörer überraschen wollen, bedienen sie sich der Freiheit, die Resolution der wesentlichen Septime ganz und gar zu übergehen; . . . So findet man oft statt dieses Ganges . . . und dessen Verwechselungen, folgende Gänge: . . . Bei allen diesen Gängen ist die Resolution der wesentlichen Septime übergangen, und die Grundharmonie ist wie . . . zu verstehen" (ibid., pp. 38-39).
11. "Drittens kann so gar die Auflösung der Septime wirklich übergangen, das ist, der durch die Auflösung entstehende consonirende Accord kann ausgelassen, und gleich ein andrer dissonirender Accord genommen werden, dessen Dissonanz durch diesen ausgelassenen Accord wäre vorbereitet worden. So kann man anstatt diese Ganges durch Weglassung des mit * bezeichneten consoniren Accordes, diesen nehmen" (Kirnberger, *Kunst des reinen Satzes*, I, p. 85).
12. "Der Hr. Rameau bezeichnet durch das Wort Grundbass einen Bass, welcher nichts weiter als die rohen Grundaccorde der in dem Generalbass eines Tonstücks enthaltenen vermischten Accorde ohne die geringste Connexion unter sich darleget. Ich sage ohne die geringste Connexion, weil bei der Darlegung der Grundaccorde nicht auf die Art ihrer Fortschreitung unter sich Bedacht genommen, sondern jeder einzelne Accord des Generalbasses bloss in seine Grundaccorde aufgelöset wird" (Wilhelm Friedrich Marpurg,

Versuch über die musikalische Temperatur [Berlin: J. F. Korn, 1776], p. 232).

13. "Da es bei dem Kirnbergerschen Grundbass hauptsächlich darauf ankömmt, dass der Extrahent selber componiret, und seine eigene Einfälle den Gedanken des Tonsetzers substituïret, anstatt das Vorhandne Tongewebe zu decomponiren, und die gegebenen Zusammensetzungen in ihre simple Elemente aufzulösen: so möchte denn wohl der Kirnbergersche Grundbass kein eigentlicher Grundbass, sondern mit seinem wahren Nahmen ein *Interpolirbass* sein" (ibid., p. 233).
14. "Sollte auch der Erfinder des Grundbasses, der Hr. Rameau selber, hin und wieder dergleichen Versuche gemacht, und ganze Tonstücke in einen Grundbass aufgelöset haben, so werde ich selber der erste sein, der ihn desswegen tadeln wird" (ibid., p. 246).
15. See, for example, the seventy-odd measure original fugue, "Laboravi," so analyzed by Rameau in Book III of his *Traité*, pp. 341–55.
16. Joyce Mekeel, "The Harmonic Theories of Kirnberger and Marpurg," *Journal of Music Theory*, IV (1960), pp. 182–86 passim.
17. Ibid., p. 169.
18. David W. Beach, "The Harmonic Theories of Johann Philipp Kirnberger: Their Origins and Influences," Ph.D. diss., Yale University, 1974, pp. 95–96.

