Chapter 1

II. The Concept of Development and its Relationship to the Compositional Process

We begin then by challenging the traditional understanding of development, which we believe to be the very backbone of Western art music uniting all musical periods. We find current definitions of the developmental process inadequate as most concern the manipulation of motives and limit the term to the music specifically of the high Classical and Romantic periods. For instance, Walter Frisch gives the popular definition of "development," as a process "in which the smallest elements of a theme – its intervals and rhythms – are continuously modified."[3] On the contrary, we believe that throughout music history, composers were always sensitive to a developmental process that concentrated on working out specific diatonic and chromatic pitch-class relationships that encompassed entire movements, if not entire compositions, and which resulted in a narration of carefully controlled events that guided the listener from one end of the composition to the other.

In a similar vein**,** Arnold Schoenberg's theory of the *Grundgestalt* takes the developmental process as a series of events emanating from surface details potentiating a string of incidents that turn motives into far-reaching organizational devices.[4] Charles Rosen's ideas of

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[3]Walter Frisch, *Brahms and the Principle of Developing Variation,* Berkeley: University of California Press, 1984:36.

[4]Arnold Schoenberg, *The Musical Idea and the Logic, Technique, and Art of Its Presentation: A Theoretical Manuscript by Arnold Schoenberg*, ed., trans., by Patricia Carpenter and Severine Neff (New York: Columbia

motivic transformation are also concerned with the manipulation of surface details.[5] Heinrich Schenker, too, believed that great compositions transformed simple foreground events through a series of compositional manipulations that potentially propel a simple motive into higher levels of middleground structure.[6] Schenker's understanding of structural levels and voice leading revolutionized music theory, finally enabling it successfully to dig beneath immediate foreground events. But even his most profound teachings as well as the often startlingly original speculations of Riemann, Tovey, Dahlhaus, and others, still provide no comprehensive *theory of development*, and so are ultimately unable to unite the various tendrils of compositional organism into a unified whole. Some authors over the past decade or so have attempted to go a step beyond traditional theory. For example, David Epstein courageously offered the idea that a single pitch may be responsible for initiating a whole chain of events that is played out over the course of a composition.[7] James Baker has extensively examined the notion that Classical-era composers seemed to be more than simply interested in composing out the entire chromatic aggregate; in fact, it may have been one of the most significant aspects of Classical-era composition.[8] Eric

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University Press, 1995).

[5]Charles Rosen, *The Classical Style: Haydn, Mozart, Beethoven* (New York: W. W. Norton and Co., 1971-2, rev. ed., 1997), *Sonata Forms* (New York: W. W. Norton and Co., rev. ed., 1988).

[6]Heinrich Schenker, *Free Composition*, trans. and ed. Ernst Oster (New York: Longman, 1979).

[7]David Epstein, *Beyond Orpheus*: *Studies in Musical Structure* (Cambridge: The MIT Press, 1979).

[8]James Baker, "Chromaticism in Classical Music," in *Music Theory and the Exploration of the Past*, Christopher Hatch and David W. Bernstein, eds. (Chicago: University of Chicago Press, 1993): 233-307.

Chafe has discussed hexachords and the harmonic properties of Monteverdi's conception of modality/tonality. But none of these authors has explored these issues in sufficient depth to develop a theory to support their conclusions.[9]

We believe that the process of compositional development may be defined by a chromatic background that coexists with a diatonic contrapuntal background. In the musical examples that follow, we see chromatic events initiated by simple dyad conflicts as foreground manifestations of the interactions of the chromatic and diatonic genera. These chromatic and diatonic events are the two genus expressions of slowly unfolding tonic octaves. In order to help clarify the new theoretical approach, let us briefly examine the way in which a very prominent D♭ is developed in the opening of Haydn's F minor string quartet, Op. 20 no. 5. Within the opening harmonic area, the D♭ first appears twice quite innocently as appoggiaturas to C in the opening statement, then as an inversion of a Bb minor triad, and finally as part of an augmented sixth sonority in the counterstatement/bridge. Gradually, a chromatic element, D♮, is played off the diatonic D♭, and this inflection becomes the basis of a dyad conflict that influences the very essence of the work: both the development section and coda open with D♭ major triads. In fact, we could assert that the D♭/D♮ dyad conflict is responsible for a series of chromatic events that branch outward from this axis, permeating the structure of the quartet. Or, it could be argued that the D♭/D♮ dyad conflict, worked out on increasingly deeper structural levels, informs the philosophical substance and meaning of the work since the entire composition is organized around events influenced by this simple chromatic event.

Another striking example of Haydn's manipulation of a single pitch-class to effect

[9]Eric Chafe, *Monteverdi's Tonal Language* (New York: Schirmer Books, 1992).

large-scale harmonic motions occurs in the first movement of his String Quartet, Op. 64 no. 3. This work has been the subject of extensive analytical discussion of late, but not single author has remarked on the working-out process of specific pitch-class material.[10] For reasons that will be elaborated upon later, we note that scale-degree ♭3 is a peculiarly disruptive force in the major mode. In particular, this pitch class often connotes the parallel minor, but may equally be disruptive of the tonal space under various harmonic conditions outside tonic harmony, as in the case of Op. 64, no. 3. The first movement of this quartet is in B♭, but Haydn withholds introducing scale-degree ♭3 (D♭) until the "apparent" medial caesura in the dominant harmonic area at m. 33.[11] Instead of bringing the theme to full closure, Haydn undermines the dominant arrival by switching to the minor dominant, F minor. The A♭ thus introduced, yields the even more distant D♭ as a harmony in its own right (m. 40). The D♭ has now become the controlling pitch, effectively bringing the entire period (meaning the first attempt to establish the second harmonic area and its extension into the parallel minor of the dominant) in line by turning itself into an augmented sixth chord that resolves to V/V**.** This prepares the structural arrival to the second harmonic area in m. 48. Haydn further develops this pitch in the development section proper. Here, the theme first presented in m. 33 reappears in B♭ minor (m. 87), D♭ now fulfilling a role that implies the parallel tonic minor. The harmonic area of B♭ minor remains in effect until m. 96 where D♭ now attaches itself to an E♭ triad, creating a dominant seventh

[10]For a comparative overview of analyses of this work see James Hepokoski, "Beyond the Sonata Principle," *JAMS* 55/1, 2002:120ff.

[11]The terminology used here is from Hepokoski, *ibid.:* 123-24.

and pushing the music into A♭. However, Haydn again thwarts expectations by switching mode and plunging the music into A♭ minor. It is only in m. 102 that D♭ finally relinquishes control of this entire flat-key harmonic progression by its transformation into its enharmonic equivalent, C♯. Once C♯ supersedes D♭, D♭s entirely disappear from the pitch-class landscape and the music begins to move toward sharper keys in preparation for the recapitulation. Thus, a substantial portion of the development section is devoted to an unfolding narrative about D♭ and its controlling influence over the harmonic middleground.

Beethoven's "Waldstein" piano sonata in C major, Op. 53, composed about three decades after the Haydn quartet, follows a "Haydnesque" procedure, but takes the simple dyad conflict and promotes it to new levels of developmental sophistication. Beethoven's first use of the chromatic E♭ within a C major context is presented within the first few measures so that the opening statement already contains the chief dyad conflict between the diatonic E♮ and the chromatic E♭. Compared to Haydn's use of D♮ in the op. 20 quartet, which first appears as a simple chromatic passing tone between D♭ and E♭ in the bridge, Beethoven's E♭ has more immediate consequences. Since the opening statement terminates with a cadential 64 chord *that includes E♭*, the E♮/E♭ dyad conflict frames the initial period of the sonata's first movement, pushing the chromatic envelope toward a new level of organizational inventiveness.

Yet, E♭ is not the only chromatic consideration here, even if it may be the most conspicuous. Within the first couple of measures of the opening statement, both F♯ and B♭ appear in succession, both pitch classes emanating from the diatonic tritone F - B. The F♯ yields the next accidental, a C♯ appoggiatura that decorates the D to G descending scale passage in the upper voice. Just as F♯ and C♯ were generated from an implied F♮, the upcoming B♭ in the

surprising ♭VII sonority is generated from an explicit B♮ in the bass. Similar to the image of a tree, with F - B as its trunk and with chromatics branching from it, the chromatics themselves now take on a life on their own, generating their own fifth cycles, as if Beethoven were expanding his primary tonal material (C major) with chromatics at both ends of the diatonic spectrum:

C♯ - F♯ / [F] ↔ B / B♭

As the bass continues to descend from C to B♭, and then from B♭ to A♭, creating a modally mixed IV^6 chord, a filling-in of the chromatic spectrum seems under way: E♭ now enters against the A♭ in the bass and the opening statement cadences on the dominant. The cadence is decorated with $^{\flat}64$ -- 53, again featuring E♭. The spectrum of notes now expands to

C♯ - F♯ / [F] ↔ B / B♭ - E♭ - A♭

which not only gives us all twelve pitch classes within the opening statement but also five chromatic pairs and a plethora of secondary dyadic conflicts.

The pitch, E♭, with its enharmonic respelling as D♯ in the counterstatement/bridge, becomes, in this new guise, the leading tone of the second harmonic area. In m. 14, a second period begins by repeating the opening statement with rhythmic diminutions. However, at the point that the parallelism between bridge and opening statement is abandoned in m. 18, a new note enters, the expected-next-sharp G♯ (as part of a $^{\sharp}42$ chord), that initiates a series of

enharmonic respellings in the sharp direction. Continuing in fifths, G♯ motivates D♯ (as an appoggiatura to E♮) and then A♯, presented as part of an augmented sixth chord that eventually tonicizes the major mediant in the third period as the second harmonic area of the sonata**.**

The continual interplay between E♭ and E♮ , combined with more surprising enharmonic twists and turns, becomes the lifeblood of the Waldstein's last movement as well. By the time the entire work has reached its conclusion, Beethoven has unfolded ten enharmonic pairs and has employed an array of twenty-two notes. Each of these events can be traced back to the manner in which Beethoven introduced E♭ in the exposition's opening period!

Traditional theory *à la* Piston would most likely be concerned with the Waldstein's unusual use of chords and their unexpected presentations: actually, the piece is a compulsive chord-labeler's dream (or nightmare, depending upon your outlook). At the point that the second harmonic area would be parsed as V of V of V of V, many students of Piston's theory might run away screaming. Some Riemannian analysts might define the tonality of the second theme as mode mixture of the dominant relative. A motivic analysis might concentrate on the opening melodic gesture, E-F♯-G, following its iterations and transformations over the course of the sonata. A voice-leading analysis in the manner of Heinrich Schenker might also take the E-F♯-G motive as a jumping off point, explain it as rising organically from scale-degree 3, the *Urlinie* E, and deal with its transformation to E-F♯-G♯ in the bridge after a chromatically delineated transfer of register. Such an analysis would undoubtedly concern itself, too, with the arrival of the second harmonic area in E representing a way station, so to speak, dividing the C - G fifth. Of course, all the chromaticism would be understood as embellishing the tonic background.

In each case, present-day theory attempts to deal with the work as a dry canvas, without concerning itself with the compositional and developmental process. "After all," theorists would

undoubtedly argue, "how could we possibly *know* what was going on in Beethoven's head as this masterwork was conceived?" Of course, to claim the *correct* answer to that question would be folly and pretension. What is unique about this new theory, however, is its assumption that there *is* something underneath — perhaps conscious, perhaps unconscious — informing and controlling the compositional process that has never been unearthed. Ours is not a theory of voice leading nor is it one of chord labeling, although it does assume a working knowledge of these important and necessary tools. Also, even though there is an interesting crossover between this theory and meantone tuning, this is not a theory of acoustics and this area of inquiry will not be addressed in this volume. Our primary investigation is not simply motivic, but more specifically developmental. It is the chromatic element in music that creates the necessity for the developmental element since chromaticism needs both to flourish and to resolve; one way or the other, the tension of chromaticism must be both justified and ameliorated. There has always been a diatonic genus *and* a chromatic one as well. Simply describing the developmental process as one of motivic or thematic manipulation has its limitations; however, discussing chromatic content as part of the pre-compositional material of the musical process creates a new perspective with which to approach an analysis. We explore that dissonant element and how it is presented and resolved on the level of the pitch class. The pitch class determines arrays, conflicts, and inflections from diatonic to flat or sharp equivalents; these elements control the composition and teach us, as stated above, what the whole composition is "about."

The developmental process in classical music exists on many levels. Just as there are an infinite number of pieces, so are there countless ways of exploring the musical material of any one of them. The most obvious method of exploration is closely connected to thematic/motivic variation; meaning that the melodic contour, rhythm, or intervallic structure of a motive is

manipulated in such a way that it becomes a source of unity over the course of the movement or work. Very often all the thematic material of a movement is derived from the opening statement; the composer systematically reveals, and works out, each musical element within the motive until all possible constructions seem to be exhausted. This method is closely associated with Beethoven, although the process is equally valid for Haydn and Mozart, not mention earlier composers such as J.S. Bach. However, underlying the motivic manipulation there are other, subtler developmental procedures that may only be revealed through careful study of the scores. The reasons for these deeper, almost hidden structures is not always easily explained, but they seem to pervade all the major works of the period, most notably in those of Haydn, Mozart and Beethoven.

The concept is not dissimilar to that used by composers in the later Middle Ages and the Renaissance, where a conspicuous foreground event was supported by a background structure which was not readily apparent. In the Middle Ages, isorhythm was the source of many hidden structures, the slow rate of the tenor and its relationship to *talea* and *color* being almost impossible to discern. In the Renaissance, complex canons, almost amounting to musical games, served the same purpose. For example, the prolation canons of Ockeghem, Josquin, and Pierre de la Rue, where imitations proceeded at different rates of prolation, were not meant to be overly conspicuous. The object was to achieve a perfectly smooth contrapuntal harmony, and a regular rhythmic flow, despite the fact that all or some of the voices were moving at different metrical rates. It is virtually impossible to hear that two voices are always in a prolational canon during the Kyrie of Josquin's *Missa L'homme Armé Super Voces Musicales*, just as it is virtually impossible to hear that the borrowed cantus, the *L'homme armé* melody, begins on subsequent pitch levels of the natural hexachord in each movement of the same mass.

In the latter part of the eighteenth and early nineteenth centuries, these underground manipulations were still utilized, and were just as important to the overall progress of the composition. Disguised developmental procedures now became a deeper level development within the more foreground, thematic development of the composition: thus while motivic/rhythmic manipulations were carried out on a foreground level, dissonant pitch-class relationships (chromatic tones foreign to the diatonic mode), both as fixed pitch class configurations and as transpositions of an initial pitch class configuration, operated concurrently, albeit more discreetly.

This particular developmental process arose from a need to resolve dissonant relationships within a given tonality. In terms of harmony, a dissonance refers to any pitch class that is foreign to the diatonic scale. (In pre-tonal music these pitch classes are derived from the relationship between *musica ficta* and *musica recta*.) In a classical symphony, one without a slow introduction, dissonant tones appear, at first, embedded within the opening diatonic phrase, often within the immediate context of a chromatic trichord in which a diatonic tone is stated, inflected up or down a half-step, and then locally resolved; for example, C as diatonic pitch → C♯ as chromatically inflected pitch →D as tone of resolution. The chromatically inflected tone often moves as a leading tone — and thus an inner voice of some dominant or dominant-related triad — or as a Neapolitan, or often as some kind of ♭VI, including chords of the augmented sixth. Chromatic trichords may appear in any voice and may form the initial articulations of chromatic aggregates.

The chromatic trichord is controlled by a more crucial chromatic pitch-class relationship based upon a “fixed dyad,” a diatonic pitch inflected to its nearest half-step neighbor with the same “family” name, such as E♭ to E♮ or A to A♯. This, in turn, becomes the basis for a

developmental process that is intricately linked to the completion of the chromatic aggregate. Thus the initial diatonic tone and its inflection becomes a dyadic seed undergoing growth and transformation over the course of the entire movement. The first movement of Mozart's Symphony no. 40 in G minor provides an excellent case in point. The E♭-D semitone, so prominent in the opening theme, is juxtaposed by an E♮ in the bass of measure 14; an F♮/F♯ is also a prominent dyad before this, but this relationship is a diatonic one in G minor. The E♮ then descends to an E♭ that supports an augmented sixth chord in the next bar, the two pcs, E♮ and E♭, heard as inflections of one another. More striking is the fact that E♮ in m. 14 is preceded by a B♭ in the same voice, the resulting tritone giving even more prominence to the sudden appearance of the E♮. This same juxtaposition returns sixteen bars before the end of the movement where the E♮/E♭ dyad is resolved into tonic harmony. The same E♭ augmented sixth returns, highlighted by a quarter rest in the line. Interestingly, all the other fixed dyads are resolved at the same time, each one carefully spelled as an inflection of the same pc. The E♭/E♮ dyad maintains its prominence throughout the symphony: at the opening of the second harmonic area it appears within a chromatic trichord, F-E♮-E♭, in the strings and is then expanded over the remainder of the exposition. Significantly, this dyad is fixed no matter which local harmony is functional at the moment. In the second movement the E♭/E♮ dyad is the last but most significant of a series of dyadic pairs that are in play throughout the movement. In the fourth movement, the E♭/E♮ dyad is prominent in the opening measures and, surprisingly, remains so until the very end of the symphony with E♮ maintaining its autonomy in rising melodic minor scales in the cellos and basses stated three times eight measures before the double bar. In fact, any expectations we might have had of E♮ finally resolving into its E♭ diatonic

counterpart are never fulfilled, perhaps a manifestation of Mozart's wit.

The effect of a dissonant tone or chord within a diatonic statement of a theme initiates a ripple effect similar to that described in chaos theory. In chaos theory a small, an almost insignificant event, assumes ever larger and larger proportions that causes a stable system in which it operates to undergo constant deflections and deviations, thus destabilizing that system. The technical name for this process is "sensitive dependence on initial conditions", and would seem to be valid for any situation, scientific or artistic, in which an ordered system is subjected to random variation stemming from an initial, often minuscule, event.[12] Thus, a dissonance implanted within a diatonic line at the outset of a composition assumes ever greater structural significance until it becomes the main preoccupation of the movement, conditioning every event in its course.

Chaos theory acknowledges, however, that what appears to be random is, in fact, pure scientific calculation, "order *masquerading* as randomness."[13] Similarly, what at first appears as a random romp through unrelated dissonant keys in a development section, or as an unusual harmonic gesture within a bridge that leads to a totally "wrong key" at the start of the second harmonic area of the exposition, turns out, after careful examination, to be part of a calculated design, fulfilling the possibilities of the initial chromatic gesture.

For tonal dissonance to operate as a developmental procedure, it must arise from the diatonic background, be worked out through motivic manipulation as well as through projection into deeper levels of structure, and then resolve into the diatonic pitch field from which it

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[12]James Gleick, *Chaos: Making a New Science* (Penguin Books: New York, 1987).

[13]*ibid.*, p. 22.

emerged. Often this means that the primal dissonance of the movement, or the entire composition, must seek resolution into the tonic triad. This might not occur until the coda of the sonata-form movement.

Once a dissonant relationship is established at the outset, either as a dyad conflict or as part of a trichord, the natural procedure is then to “work out” the initial chromatic inflection, allowing it to become the focal point of the composition. This is only to be expected since dissonances appearing within an initial phrase tend to lead to their own expansion; a subsequent diatonic motion, without expanding upon the implications of the initial dissonance(s), would only dissolve the tension prematurely.