**General Considerations regarding Tonal and Non-tonal Music**

**Tonal Music** (as represented by the Major/Minor key system developed by Bach): Music based primarily on the diatonic scale’s Ionian Mode whose symmetrical scale structure CDEF (ws, ws, hs) + GABC (ws, ws, hs) - when expressed with triads on each scale degree - placed Major chords at the beginning and end of both structures: I – IV, V – I: the “pillars” of tonal music. This particular scale structure also permitted an uninterrupted circle of Perfect 5ths through the entire pitch collection: 7 – 3 – 6 – 2 – 5 – 1 – 4. Additionally, this scale pattern conveniently placed the tritone (the “Devil in music”) between the 4th and the 7th degree, the two “tendency tones” of C Major. In these ways, the scale’s construction imbued each note of its “Note Collection” with a particularly strong relationship to the Tonicnote - i.e. created a hierarchy between the notes, a “tonal perspective”, which listeners hear instinctively. The scale was no longer simply a succession of notes, but rather it was a progression of tensions which could only be resolved with the arrival of the tonic note.

Harmonically, these “properties” of the Major scale encouraged the 2 chord “Harmonic Exchanges”: I – IV – I, I – V – I (mirror images of each other) which characterize the opening bars of most tonal phrases; the 3 chord “Cadential Progression”: IV – V – I and ii7 – V – I which characterizes the conclusion of phrase groups (as well as tonicizations and modulations); and, in general, the use of harmonic progressions built on the cycle of 5ths (iii – vi – ii – V – I).

Essentially these chord progressions harness and intensify the natural tendencies (energies) of the single degrees of the scale. When connecting chords, the “rules of good voice leading” assure that each voice – whether expressing the root, third or fifth of a particular triad – moves linearly from that chord to the next by following the natural tendencies of the scale degrees. This is why leading tones “must” resolve upwards, why the 7th in a V7 “must” resolve downwards, why common tones are held, why stepwise movement is preferred, why parallel 5ths are avoided, why root movement by fourths and fifths is used for cadence and why a variety of independent voice motion (contrary, oblique and parallel) is recommended. In this way tonal chordal movement is not simply one line “thickened” by parallel triads, as in Debussy’s “planing”, but, rather, it is a composite of several different lines (melodies) each independently expressing the natural “gravitational” pull of a different portion of the underlying scale. In short, **tonal harmonic movement is not simply a chord succession, it is a chord progression which harnesses the scale’s natural linear tendencies in several voices simultaneously**. This is why Debussy invokes a ii – V – I progression when he needs a significant cadence – because it is capable of communicating unmistakable harmonic closure in the midst of his “fluctuating”, open-ended harmonies.

Your Book summarizes the characteristics of tonal music in the following way:
1. melodies built from major and minor scales, whose scale–degree functions point toward the tonic
2. harmonies that relate to each other in functional progressions leading toward a tonic harmony
3. identifiable embellishing tones (dissonant suspensions, neighbors, passing tones) that resolve or imply a resolution.

and summarizes non-tonal music thusly:
Music lacking in one or more of the organizational conventions listed above is non-tonal music.

There are, however, numerous types and gradations of “non-tonal” music. Debussy’s [Sunken Cathedral](https://www.nytimes.com/1911/12/25/music/sunken-cathedral.html) features melodies based on pentatonic scales and various modes. It has a number of rich pentatonic harmonies which are not tied together in a “functional” progression. On the other hand Debussy’s harmonic vocabulary frequently uses tertian harmonies associated with tonality: Major Chords (enriched with added 6ths thanks to the major pentatonic scale figuration), minor chords over a 5th degree (the ii over the 5th degree - a favorite substitute for V7 chords whose note collection is, conveniently, identical with the minor pentatonic scale), Dominant Seventh chords, etc. and he often exploits the tonal implications (tensions) of these harmonies, then subverts the “expected” continuity with one of his harmonic non-sequiturs. Furthermore his arrangement of the tonal centers throughout the piece is reminiscent of tonal procedures. One can easily make a case...
for the piece “being in C” - if not in its measure-to-measure harmonic continuity, at least in its larger structural layout. Compare this compositional approach to Stravinsky’s “traditional” voice leading in his parody of Bach’s Chorale or to the harmonic stratification in his March (L’Histoire du Soldat) or to Bartok’s competing modal centers in his “Song of the Harvest”, i.e. each approach is quite different in its attempt to reorganize the musical material in a way which is fresh, distinctive and yet understandable.

The twentieth-century composers’ challenge, in fact, was to find adequate compositional tools, equal in power to the sophistication of the Tonal system, to express their own ideas. Earlier generations of composers – Haydn, Mozart, Beethoven, Schubert, Schumann, Liszt, Wagner - had been able to adapt the basic premise of the tonal system as developed by Bach to their own ever changing sensibilities. Such that, in effect, one can still analyze Tristan and Isolde (or Wolf’s Mignon) using essentially the same theoretical “figures” one uses for a Bach Chorale. Chromatic as this late Romantic music may be, we are still on the same theoretical ground – though it is a far more uneven ground due to the constant chromatic modulations!

Debussy changed this (and Mussorgsky before him) with the attention they both gave to different scales, modes and harmonies. Their music pointed out the limitations of the traditional vocabulary of chords and scales used in Major/minor tonality and brought an increased awareness of new harmonic possibilities – an area which was explored by Debussy with his sensuous modal sonorities, by Stravinsky with his dissonant, bitonal stratas and chords, by Bartok with his percussive, peasant-like foot-stamping clusters, etc. Rhythm too was re-invented with an infusion of asymmetrical meters from Eastern Europe folk music and of polyrhythms from Africa.

The origins of the following vocabulary, then, can be found in this post-Wagnerian period - as composers struggled to find ways to control a musical material which was no longer limited to the single perspective of tonality nor to exclusively tertian harmonies. Since any linear or vertical combinations of notes could be used, there were no limits or restrictions. The composer, therefore, had to set his own rules, define his own playing field. He needed to find a rational system, method or principle of organization which supplied unity and coherence to his work, something similar to tonality in its capacity to control and relate harmony at the local and the large-scale structural level.

The following vocabulary helped the composer “keep track” of many of the procedures which, for example, we take for granted in tonal music. When we modulate from C to G major we are simply transposing the Major scale pattern to begin on G. In the process only one note changes between the C and G Note Collections: the F natural becomes F#. But as we know, the same pitches now fulfill very different scalar functions in G Major. Where G had been the 5th degree in C, it is now the 1st degree in G Major – a BIG role change. The note G has become the “star” or, perhaps even better, the “sun” of G Major’s solar system. The “tools” (i.e. “words” are the tools of the mind) mentioned below, then, help composers to organize similar important structural features while using non-tonal materials which are, essentially, new for each piece. In non-tonal music the composer creates not only the piece, but also the unique tonal world upon which it is based. Each piece is, therefore, a unique musical structure from the ground up. To understand it, we must analyze its particular organization – the rules which the composer invented and the way he applied them to compose that music. We must go one step farther than in our analysis of tonal music because, without this extra step, we have no clear idea of the organizing relationships upon which a non-tonal composition is based.

**Vocabulary for describing relationships within and between Note Collections:**

- **Centric Music:** Music that features a central pitch or pitch class (a center) which establishes a sense of hierarchy within the note collection, but which does not imply a functional system of scale degrees in a key or mode.
- **Focal Pitches:** Pitches or pcs that are emphasized (by repetition or motivic use), but do not establish a functional hierarchy – scalar or otherwise.
**Pitch Class:** All the notes that share the same name regardless of register (i.e. C1, C, c1, c2, c3, c4, c5 are all part of the same Pitch Class. Enharmonic spellings as well: Db).

**Collection:** A group of pitch classes that serves as a source of musical materials - a term used interchangeably with “Set”, but usually refers to sets of MORE than 5 elements (i.e. a Collection is a large set). We examine this group of pitch classes by “collecting” them and writing them in ascending order without repetitions. i.e. this is an UNORDERED group of pitches.

If this collection exhibits a center tone which creates a sense of hierarchy (i.e. not all the pcs are of equal importance), we can list the pitch-class collection as a scale.

**Elements:** the pitches or pcs in a set

**Cardinality:** Number of pitches in collection (Number of elements):  
- 2 elements: dyad  
- 3 elements: trichord  
- 4 elements: tetrachord  
- 5 elements: pentachord  
- 6 elements: hexachord

**Superset:** the larger set form from which a subset is selected

**Examples:**

**SUPERSET:** CHROMATIC SCALE  
**COLLECTION (SET):** DIATONIC SCALE  
**Ex. CDEFGAB**  
**SUBSET:** PENTATONIC SCALE  
**Ex. CDEGA or EGABD**

**Complementary Sets:** Two sets of notes which do not share any common elements and, when combined, form a complete chromatic collection (an “Aggregate”). For example, the White key diatonic collection and black key collection are **Literal Complements**. (12 Tone Rows, for example, are often divided in subsets of 2 hexachords which are, by definition, complementary since together they complete a 12 tone row.)

**Aggregate:** 2 sets of notes which appear simultaneously (for example: with one Hexachord in LH and its complement in RH) and form a collection containing all 12 pitch classes.

**Segment:** refers to an ORDERED collection of pitches or pitch classes. When a segment contains 12 distinct pcs, one from each pitch class, it is called a Twelve-Tone Row.

**Twelve Tone Row:** A specific ordering of all 12 pitch classes. This “row” serves as both harmonic control and musical motive. According to Arnold Schoenberg’s formulation of his “Method for Composing with Twelve Tones”, all twelve pitches must be stated before a pitch can be repeated – i.e. this rule methodically promotes a continuous “turn over” of the entire chromatic content. **Pitch segments** may be sounded in succession, as a melody; sounded simultaneously, as chords; or different segments of the row may combine as melody and accompaniment. The twelve-note row (or “series”) has four equally important forms: the original (0), the original inverted (I), the retrograde of the original (R) and the retrograde inversion of the original (RI). These rows can be transposed to begin on each of the 12 chromatic tones (Tn) and these transpositions are intended to serve the composer in much the same way as traditional modulations served tonal composers. (The registral placement of the rows is particularly important in favoring this process.) A “Row Chart” displays all of these possible forms and their transpositions – a total of 48 rows.
Dodecaphonic music: Music composed using the Twelve Tone method. Representative composers are the so-called "Second Viennese School": Arnold Schönberg, Anton Webern, Alban Berg.

Serial Music: Music composed with ordered segments of musical elements – typically pitch or pitch-class segments. Twelve Tone Music is, by definition, serial music. The term “Serial Music”, however, is applied particularly to twelve tone music in which other musical parameters – such as durations, dynamics and articulation - have been organized serially as well. Schönberg did not do this, but his student, Anton Webern, did. See his Piano Variations.

Invariance: A feature – a pitch, an interval, a motive, a chord, etc. - of pitch organization which remains unchanged even though rows, sets or segments have changed. This invariant feature is a structural possibility offered by a particular note collection – and can be termed one of the "properties" of that collection. It may contribute strongly to the musical identity of a work and may, indeed, provide the basic formal idea of the work.

Property: Term used to describe the structural possibilities afforded by a particular note collection. Important properties are derived from the intervals contained within the note collection:
1. The kind of intervals (and relative number of each) establishes the intervalllic “color” or “taste” of a note collection. This determines the harmonies that this set can produce and the melodies which are natural to it. Using this material exclusively allows the composer to integrate the “vertical” and the “horizontal” dimensions. (Recall Bartok’s observations.)
2. In this regard, the amount of symmetry (whole step scale, octatonic scale, etc.) which might exist within the collection will control the amount of harmonic variety which the collection can produce i.e. a collection with only a few intervals will be monochrome, less colorful but more unified.
3. The relationships which exist between a collection and its various transpositions and/or inversions (Common tones, identical patterns, Invariance, aggregates, complements, etc.) will suggest how the harmonic areas established by each successive collection might be interconnected. Such relationships can be exploited by a composer to convey a sense of harmonic movement and, eventually, a sense of return. The composers we are dealing with, greatly changed the means of composition – each one in a very personal way, but NONE of them abandoned the general ideas of tonal music – of establishing a harmonic center, moving away from it and returning to it for closure i.e. the metaphor provided by traditional tonal music remained fundamental to their structural thinking.

Repertoire suggestions (Performances of many of these works can be found on YouTube):
Claude Debussy: 1862 – 1918, France
Piano Works: “Preludes, Book 1 and 2”, “Études”
Orchestral Works: “Prelude to the Afternoon of a Faun”, “Images”, “La Mer”, “Jeux”
Igor Stravinsky: 1882 – 1971, Russia/France/United States
Piano Work: “Petrushka”, “Tango”, “Piano Rag Music”
Chamber Music: “L’Histoire du Soldat”
Béla Bartók: 1881 - 1945, Hungary/United States
Chamber Music: “String Quartets N. 4, 5 and 6”, “Sonata for Two Pianos and Percussion”
Arnold Schönberg: 1874 – 1951, Austrian/United States
Chamber Music: “Pierrot Lunaire”, “Verklärte Nacht”, “String Quartet N. 4”
Orchestral Works: “Five Pieces for Orchestra”, “A Survivor from Warsaw”, “Concerto for Piano and Orchestra”