On Tonal Dynamics and Musical Meaning

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1. Tones, scales, chords, and phrases

Most music around the world, written or unwritten, is and has been made by producing sounds (by voice and wind, string, and membrane instruments) in cyclic temporal sequences, now called measures, or bars, consisting of countable beats, and in cyclic sequences of these sequences corresponding to larger units that can host danceable movements or songs.

The sounds in music are mostly produced as intended manifestations of tones,¹ that is, sounds that have a clear and identifiable F0, a zero formant of a certain frequency, heard as a pitch. The neural reality is that the auditory pathway from cochlea to the primary and secondary auditory cortex contains at least six tonotopic maps and a remarkable differentiation of perceived sounds as stemming either from noisy objects or events, from speech, or from music. The neural distribution of speech versus music is roughly hemispherical, music processing preferring the right hemisphere. Even non-auditory areas of the prefrontal and the fronto-temporal cortex seem involved, when complex pitch constellations such as melodies are processed.² Recent research³ tends to show that the primary auditory cortex in animals is sensitive to early tonal experiences occurring in a critical period window for spectral tuning, and that this ‘tuning’ effect of neo-cortical sensory plasticity stays for the entire adult life of the animal as a reinforced sensitivity to certain pitch values that have been heard in early infancy. We know that human

1. Greek: *tonos*, from the verb *teino*, to tend (a string), etc. Tones can be characterised by their basic formant F0 and their timbre by their higher formants (in so-called Fourier analysis). Sound that are not tones do not offer this possibility.


language acquisition, including phonetic ‘tuning’, takes place in a critical period window (age 2-5 years); tonal interval hearing is apparently acquired in a similar window, though its developmental period is not yet determined.

Interestingly, tones are processed and perceived as detached from their sources, as ‘pure’ pitched sounds. They are, in that sense, abstract entities on a par with phonemes, graphemes, and signal colors (which have names). Instead of referring to their source, as noises do, they refer to other tones that they differ from in time or in pitch space (‘heights’).

Just like these other abstract percepts — phonemes, graphemes, signal colors — their combinations, tonal concatenations, melodic phrases, are easily and often associated with meanings. So telephone jingles and military trumpet signals can be compared to syllables and words, flag signals, and algebraic expressions in this respect. Tones are in fact perceivable abstract symbolic units. They form finite sets of elements whose combinations easily become signifiers (expressions) of signified meanings (contents): especially performative meanings or informative messages, such as orders or indications. Tonal semiosis — the complex function that firstly identifies perceived sounds as tones and secondly identifies combined tones as communicative signals — is thus a remarkable aspect of the semiotics of perception.

Proper names are often used for addressing or calling on persons; the syllables of the names then become vocalized as tones, and the intonation on the pitch and stress sequence of a proper name can then signify a call for attention, a warning, an appraisal, an expression of tenderness, etc. — it is a minimal ‘song’ that takes on the semiotic function of an affective utterance. Intonation profiles on utterances have comparable semiotic functions. We will return to the semiotic functions in question later in this text.

Tonal signals are not yet really music, we might think. Still they are affective communicative phenomena that may be semiotically instructive as to the evolutionary and developmental origins of music; tonal signals may indeed have preceded music, and the transition from signal tones to autonomous tonal music may be rather continuous. Extending and repeating the tonal signals would produce music in the sense of calling attention to the sounding expression itself more than to its signaletic meaning (and then eventually forgetting about the latter).

4. Orange is a color whose name refers to its prototypical fruity source, but red, blue, green, yellow, brown, black, white etc. are colors whose names do not refer to any source. Their combinations in flags, for example, become significant, symbolic.

5. If tonal sequences, micro-melodies, are used as signs — intentionally produced and received as purposely addressing the receiver, thus forming a communicative event —, we might call tones as structural ‘sign parts’ figures in Hjelslev’s sense.


7. Merker (2012) offers a particularly interesting ethological account of the transition from animal vocalization to singing, and from there to language.
A basic and probably universal property of tones is that they are identified by *octaves*, that is, tone intervals corresponding to multiples of an F0. Octave hearing, the perception of octave equivalency, is built into the human brain, apparently by a neural mapping in the auditory thalamus; monkeys and rats are likewise known to perceive octave equivalency. In human cultures, the octave thus becomes a privileged tonal space, into which the tonal formants, or series of harmonics, are projected to form salient intervals with the basic tone (the tonic) and thereby give rise to the phenomenon of tonal *scales*. Humans can distinguish about 240 pitches within an octave in the mid-range of hearing. Nevertheless, most tonal *scales* across cultures contain only five, six or seven tones, counting the basic tone. Some sort of second, third, fourth, fifth, sixth, and seventh are often identified.\(^8\)

*Chords*, probably an invention emerging relatively late in musical prehistory, are identifiable simultaneously sounding multi-pitch entities composed of more than two selected pitch values from a given scale, and often distinguished by their specific pitch-vertical structure. Since chords in scales are identifiable, they combine into identifiable sequences recognized as what we call *harmony*. The Pythagorean foregrounding of the perfect fifth and fourth tones within the octave has inspired Western music theory to build conceptions of harmony on ‘dominant’ fifth-based and ‘subdominant’ fourth-based chords and their relation to the ‘tonic’ chord; we will return to this principle and propose a critical revision of it. Music without chords and harmony instead selects tones from scales and sequences them directly into their melodic *phrases*, or song-like sequences of single tones. Classical Indian ragas and Arabic music are examples of this direct relation, which entails extreme attention to the specific scale. Chords appear, if they do,\(^9\) between scale and phrase, so that the phrase reflects the changing chords and not only the underlying scale. This constellation, *scale–(chord)–phrase*, constitutes the grounding disposition of what I propose to call *tonal architecture*. Musical phrases are heard as expressing or reflecting a given scale or a chord-given part of that scale. The phrase is a sub-melodic entity — a ‘melodeme’, if you will — that is experienced as having a certain identity and whose profile sounds like a short linguistic expression or a proper name (hence my remark on names, *supra*). This imaginary entity, which cognitively may be a sounding representation of a sort of agent, animal or human, is ‘moving around’ in the scale-driven tonal space, emphasizing different parts of the scale, and thereby expressing the scale as a whole. The musical process of a ‘piece’ of music is therefore often described metaphorically as a narrative. Culturally, scales

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8. Gill & Purves (2009) offers a wonderful overview of scales in the world’s music, and suggests that the reduction of pitch values reflects a preference across cultures for intervals used and distinguished by the human singing voice. Indian music subdivides the octave in up to 22 tonal values and distinguishes at least 72 different scales (Vogel [2015]).

9. The Western major and minor scales — the ionian and the aeolian seven-tone modes, respectively — are particularly fit for chord formation, because their intervals optimally match their harmonics.
again are generally connected to emotional states, as the ancient Greeks knew and theorized when linking specific scales (modes, harmoniai) to specific rhythms and texts.\(^\text{10}\) The phrase will consequently sound as figure on a ‘ground’ created by the scale and possibly modified by the chord inserted between scale and phrase.\(^\text{11}\) The general setup of these relations forming the tonal architecture can be summarized in the following simplifying graph:

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure1}
\caption{Tonal architecture.}
\end{figure}

Chords are rhythmic markers, since only one chord can sound at a time, so chord changes must correlate with regular measures (bars). The existence of these regular beat cycles is in fact necessary for the tonal architecture to function.\(^\text{12}\) In very simple cases, one single scale feeds the tones of all chords and all phrases of a song, such as is the case in the following example, from the Western tradition, a simple anonymous tune (and text by Ben Jonson, 1616, “Song to Celia”) in D major, annotated with modern alphanumerical chord notation:

\begin{center}
\begin{tabular}{c}
\hline
PHRASES \hline
\hline
\end{tabular}
\end{center}

\begin{center}
\begin{tabular}{c}
\hline
\hline
CHORDS \hline
\end{tabular}
\end{center}

\begin{center}
\begin{tabular}{c}
\hline
\hline
SCALE \hline
\end{tabular}
\end{center}

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\textbf{10.} Plato mentions this in his \textit{Rep}ublic (III), and Aristotle writes in his \textit{Politics} (VIII): “But melodies themselves do contain imitations of character. This is perfectly clear, for the harmoniai have quite distinct natures from one another, so that those who hear them are differently affected and do not respond in the same way to each. To some, such as the one called Mixolydian, they respond with more grief and anxiety, to others, such as the relaxed harmoniai, with more mellowness of mind, and to one another with a special degree of moderation and firmness, Dorian being apparently the only one of the harmoniai to have this effect, while Phrygian creates ecstatic excitement.” (1340a:40–1340b:5, in Barker 1984-1989).

\textbf{11.} Music without chord structure is, according to frequent observations, strongly and rather unambiguously emotional, whereas chords seem to temperate and nuance — or even remove — emotional reactions to music as experienced in real time. This could be due to the stability of the scale that is not ‘covered’ by chords.

\textbf{12.} See Brandt (2009).
Fig. 2. Single-scale harmony.

Tonic: D, subdominant: G, dominant: A. D’s parallel minor: Hm. All tones of the melody and of the chords are from the D major scale, which is therefore very stable. This Pythagorean chord articulation, and in particular the cadence, here: D/f# -> G -> D/a -> A7 -> D, that is, tonic to subdominant to tonic to dominant to tonic (‘...I will pledge with mine; ...I'll not ask for wine; ...I would not change for thine’), was generalized by the circle of fifths, when finally the ‘well tempered’ tuning allowed chords and cadences to sound ‘well’ enough in scales with all twelve tones as tonic. When this happened, harmony became an art in its own right, one could say. It opened a chord space made of ‘regions’ to which the phrases could ‘travel’ by following ‘paths’ of modulation. So for example, the A7 -> D that we just saw could trigger a further change of situation, such as D7 -> G, and G7 -> C etc. following a section of the new circle of fifths. Such changes of tonic of course affect the scale; a transition from tonic D to tonic G implies a scale change that substitutes the tone c for c#. The melodic phrase will now have to use c instead of c#. If D7 leads us to Gm, the scale changes will be even more important. Why does D7 ‘lead’ anywhere at all, by the way? Where does the dynamic orientation in D7 -> G(m) come from? This is one of the questions to be discussed in the following sections.

13. The stability of the scale apparently contributes to the emotional effect.
14. The first circular temperament was described by the organist-composer Arnolt Schlick in the early 16th century (Spiegel der Orgelmacher und Organisten, 1511), but ‘well temperaments’ did not become widely used until the baroque period. They were forerunners of the modern equal temperament. In Arabic music, tuning assumes 24 equal tones in the octave. In equal temperature, the notions of whole-tone and half-tone intervals stem from the new intra-octave distribution of equal tone steps. These notions are meaningless outside of this frame of tuning (Vogel [2015]).
2. Modulation

Temperament changes the situation substantially, allowing multi-tonic scale shifting. In most cases of written tonal and chord-driven music, the triple relation scale–chord-phrase is therefore much more complex than what is shown in fig. 1. If the chord sequence leads to a local change of topic tone or of the scale type, or both, for example from major to minor and in a different key, then the direction of the determination works both ‘upwards’ and ‘downwards’ in the architecture, which will now look like the following diagram:

![Fig. 3. Modulation.]

So, in baroque harmony, the modulation inverting tonic and dominant is common, as illustrated by J.S. Bach’s Goldberg Aria theme which takes us from tonic G to tonic D. The transition starts in mesure 9, where it is marked by the melodic c#: 
A radical example of tonic-changing modulation can be found in post-bebop jazz\textsuperscript{15} such as John Coltrane’s *Giant Steps*:

\begin{center}
\includegraphics[width=\textwidth]{giant_steps.png}
\end{center}

\textbf{Fig. 5.} Ternary modulation in Coltrane.

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\textsuperscript{15} Notice that to ‘play something’ does not mean the same thing in classical music and in jazz. A jazz composition is not a complete written digital plan for the occurrence of notes, running from start to end of a piece. A jazz composition is a ‘tune’, a short sequence of melodic lines set in some key(s) and underpinned by a series of harmonic ‘changes’ spanning over a repeated ‘chorus’, often less than 40 bars long. The ‘playing’ consists in choosing a tempo, an interpretation of the indicated changes, a phrasing, and offering, after the theme, a suite of choruses displaying free variations based on the main chord structure of the tune.
This short theme offers three tonic bases, each marked by the major seven chord: B∆, G∆, and Eb∆, each accessed through its dominant seven chord, F#7, D7, Bb7, some of which are introduced by their dominant-of-dominant minor seven chord (Am7 → D7 → G∆, etc.), a common figure in jazz, of course called the two-five-one. By contrast, the subsequent transitions, or “giant steps”, from B∆ to D7, from G∆ to Bb7, from Eb∆ to F#7, are far from standard. We will return to the question of how these ‘steps’ work.

In standard jazz, rock, and pop themes, as well as in most romantic 19th century music, we find a pattern of modulations that derives much more directly from the circle of fifths. However, it does not travel very far from the main tonic. In fact, it mainly favors modulation by two whole tone jumps ‘upwards’ and four dominant-based modulations ‘downwards’, in the following manner:

![Standard Modulation Diagram](image)

In the former, notice the high ascent from tonic Bb to D(7) and the return to the tonic from there. In the latter, notice the deep descent from the tonic Cm through Ab7 to Db, which metamorphoses (through the typical jazz substitution Db7/G7) into a dominant G9b chord pointing back to Cm:

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17. The standard modulation shown here from tonic C can of course start from any note, and musicians routinely practise the chord transpositions following from tonic shifts or from instrument tuning.

18. C minor, not major in this case, but the modulation follows the same schema (fig. 6).
My points in showing this modulation schema are, firstly that chord changes create shifts in the underlying scales, which is important for the phrasing ‘on top of’ the chords, both in the theme and in the improvisations that characterize jazz playing; secondly that the ‘vertical’ logic of the tonal travels here follow a whole-tone principle — ‘upwards’ and ‘downwards’ — which is intuitively clear: musicians can hear whether the changes are moving one way or the other, ‘up’ versus ‘down’, and therefore, in what way and direction the scale changes happen in every moment. These points are crucial to the technical understanding of the playing. In Basin Street Blues, the initial scale deformations are the following:
The initial scale (Bb major) is maintained, except for the tones that must be changed due to the following chords (Am – D7), and then again due to its follower (G7); the result is a series of scale deformations that alter the set of tones available for adding secondary melodic lines and for improvising new phrases on the tonal structure of the tune in question.\textsuperscript{19}

3. The dynamics of modulation

So far, we have only tried to uncontroversially (re)organize some trivial but important aspects of tonal architecture and modulation. This body of Pythagorean tonal doxa, however, leaves out some elementary and semiotically interesting questions. First of all, what are the grounds for the anchoring of tonal harmony perception in tonic, dominant, and subdominant chords? In what sense does the dominant chord, especially its septim, make the hearer expect the tonic to follow (e.g. G7 → C)? Since we are speaking in terms of vertical modulation, with significant differences between changes ‘upwards’ and ‘downwards’, is there therefore some sort of tonal gravitation here (G7 → C7 → F7 → Bb …)? \textsuperscript{20}

In his *Harmonielehre*, 1911 (1922), Arnold Schönberg, asking himself the same question, notes the following:

Let us now consider the situation of [the note] c as a central point exerting two attractive forces, one descending towards f, the other ascending towards g … The dependency of the g on the c — which is exerted in the same direction as the attractive force of f — resembles the force of a man who clings to a beam, thus opposing with his body a force contrary to that of gravity. His attraction is exerted in the same direction on the beam as gravity’s attraction on him. But the result of all this is to counter by his own force that of gravity, which justifies the presentation of the two forces as directly opposed.\textsuperscript{21}

\textsuperscript{19} Using a term by the linguist Leonard Talmy, we could call this deformation of the shape of the scale a sort of ‘rubber sheet geometry’. The chord-scale system, which explains the influence of chords on scales, has been theorized by jazz educators since the 1980ies and is now quite well-known (see Nettles & Graf [2002]).

\textsuperscript{20} I discussed these problems in a chapter of Brandt (1994), “Pour une sémiotique de la tonalité” — while presenting a dynamic analysis of *The Goldberg Variations* Theme and its tonal architecture. What follows here is an extended reformulation of that analysis.

\textsuperscript{21} P. 43 in my French translation (1983), from which I translate this passage.
Schönberg’s dynamic view is not particularly clear, as it is not further unfolded; but his vision of the c hanging from a g beam while being drawn downwards by a gravitational f is fascinating as a first phenomenological account of the relation between tonic c, dominant (g) and subdominant (f). It corresponds in a certain sense to our modulation schema in fig. 5, where ‘upwards’ is however interpreted more literally as a relation, not just to g and the chord G but to the chord ascension or descent CDE: C<−(G7-Dm)D<−A7-Em)E. Likewise, the direction ‘downward’ corresponds to our modulation C Bb Ab: Ab<−(Eb7-Bbm)Bb<−(F7-Cm)C.

Why does the *septim chord* call for the nearest fifth below it? The dynamics proposed by Schönberg does not include a consideration of the *chords* in his remark since he thinks that the tones themselves are doing the dynamic work, not the chords. Nevertheless, the septims are strong introducers of tonic chords: G7 → C, D7 → G, etc., and I have to insist on wondering why this is so. Why would G7’s call be stronger than G’s as such, or than the call of G6 or GΔ.

The Pythagorean doxa, and the often unclear relations between scales, chords and phrases, may hide certain aspects of the way chords exist and work. In the following section, I will introduce a supplementary view of tonal dynamics which may help clarifying the septim question and in general the mechanisms involved in the dynamics of modulation.

Suppose that chords are conceptualized cognitively as dynamic attractors for phrases, so that phrases are experienced as moving between chords the way animals, for example cats, move between places that are more or less ‘attractive’, for different reasons. If chords are cognized as places supporting phrases, for a phrase to be ‘in’ such a place will mean that it either uses the chord’s tones or other tones that sound ‘right’ because they belong to the scale that the chord is suggesting. If a phrase ‘jumps’ from one place (chord) to another, this event expresses a dynamic shift in the respective force of the harmonic attraction underlying the shift. If the phrase p jumps from G to C, it means that G is weakened and C, the stronger attractor, is strengthened, so G ‘loses’ p whereas C ‘wins’ p. G < C.
G(p) → C(p)  

Meaning: space X(phrase y), phrase y in space X

G is weakened as an attractor if it takes on a septim (G7). So the modulation G7→C ‘sends’ p from G to C. But why would the septim produce that dynamic change? This effect may have a figurative explanation.

We think of a C chord as the triad of tones ceg, but figuratively, as a place in tonal space it could instead be thought of as a whole-tone series cde limited by half-tones b and f. In this view, cde would be the base of the C chord, which would have various possible satellites, namely the tones of the scale outside the base that may be added for various reasons, in particular the fifth of the tonic c, for stability. If a b flat is added to C=cde, then the whole-tone base is expanded into four tones, C7= b.flat-c-d-e, so that it now easily ‘spills’ its possible melodic content into the subdominant base F=fga, in the sense that there are now, figuratively, two half-tone thresholds between these bases: b.flat→a and e→f. The involved phrases will typically use these ‘sensitive’ openings to go from C to F. Similarly then, if a fourth tone f is added to the dominant base G=gab, the expanded attractor G7=fgab opens two doors, f→e and b→c, which means that we get the dynamics of G7→C. And as in the Goldberg example above, G→A7 by the expansion of gab to gabc# thus leading to D because c#→d and g→f#.

In a well-tempered major scale, the circle of fifths will therefore invite chord modulations in both directions, ‘upwards’ through the dominant fifths or ‘downwards’ through the subdominant fifths, C→cdef#→G→gabc#→D… or C→b.flatcde→F→e.flatfga→Bb.

According to this figurative principle, minor chords are composed of two whole-tone bases, namely Cm=c-d and e.flat-f-g, which creates easy communication between the parallel chords Cm and Eb, since the half-tone door is always open between them. This structure also explains the frequent cascades Dm→Gm→Cm→Fm etc.; the explanation of the feeling of naturalness to these changes is that the upper base of one minor chord shares tones with the lower base of the next minor chord (in that direction). The transition therefore sounds as a dripping descent of the upper base into a new lower base, like a sort of gemmation.

We can now reconsider Giant Steps (fig. 5) and notice that the shifting tonic bases B, G, and Eb are connected by whole tone steps. When chords change scales, which is drastically the case in this theme, a particular challenge for jazz musicians, they still sound connected if modulations follow whole-tone expansions, as from B to G: B= b-c#-d#→d#-c#-b-a-g→g-a-b=G, and from G to Eb through b-a-g-f-e.flat. The second part of Coltrane’s theme moves upwards: Eb→G→B, and the phrases of the theme follow; from consisting of isomorphic descending lines in

22. This is the semio-syntax of attractor dynamics presented in Brandt 1992, based on Thom 1972.

23. I first presented this view in the chapter on catastrophe theory and dynamic analysis of music, exemplifying it by a melodico-harmonic study of the Goldberg Aria theme, in Brandt 1994. The catastrophe topology makes it possible to model the processes of modulation as dynamical topologies.
the first part, the melodic lines now ascend isomorphically, as if explaining to the listener, carefully and pedagogically, what is happening in the chord changes and their interrelational whole-tone logic.

Fig. 10. Giant Step whole-tone logic.

There are only four of these tri-tonal ‘Giant Steps’ series, C–E–Ab, D–F#–Bb, F–A–C#, and B–Eb–G (the one used here). But the principle has been followed in many other compositions, including Countdown, a reharmonization of Miles Davis’ Tune Up, and by many jazz musicians, since it appeared in Coltrane’s 1960 creation. In the pianist Bill Evans’ ballad Time Remembered, famous for its rather uncommon but strangely well-sounding chord changes, we may again find the new interrelational principles at work, however in a less schematic form, and mixed with other transition forms, among which the minor cascades mentioned above:

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24. The origin of Coltrane’s idea and invention is allegedly to be found in the B part of Rogers and Hart’s standard Have you met Miss Jones.

25. Bill Evans is known to be inspired by Claude Debussy’s whole-tone chords and changes, adding by his versions a particular ‘dreamy’ flavour to the piano voicings used in modern jazz. Reilly (1993) dedicates an entire chapter of his Evans book to the chord progression and composition of Time Remembered.
How do we, in particular, make sense of Bm9 -> CM7#11, FM7#11 -> Em9? Or, later, Bm9 -> Ebm9 -> Am9 -> Cm9 -> F#m9? Or Bm9 -> Gm9 -> EbM7#11?

The following notes of mine indicate how, by which tone connections, these chord changes could happen and be justified; G.S. indicates a ‘giant step’, or whole tone bridging, even of four tones. Evans also expands the use of G.S. remarkably by allowing whole-tone transitions between minor chords (Bm7 -> Ebm7 -> Am7!). One must also remember the phrases of the melodic theme to be able to fully follow these readings:
This is of course a very unconventional and extended use of tonal dynamics in jazz. One might even call it ‘atonal’. The phrasing of the tune often floats over the satellites, never enters the bases and in particular of course avoids the tonic; this is an important part of the esthetics of this tonal style.26 Surprisingly, whole-tone modulation combined with ‘Pythagorean’ modulation still sounds quite well.

4. Tonal semiosis

Developing these internal analyses of tonal architecture (linking scales, chords, and phrases) and tonal dynamics (fifth and whole-tone based) will lead us to a global view of the inner and outer workings that form the semiotic structure of tonal music.27 The following is a list of semiotic functions28 of which we have touched upon the most elementary; the articulated whole of these functions must be taken into account to get an adequate picture of the semiotic structure of music, or: of tonal semiosis.

1. Expression: Sound sequences signify tones, octaves and tonal intervals (corresponding to “phonetics” in language, where sounds signify phonemes and syllables). This function of signification constitutes the basic tonal signifier.

2. Content: The signified of this tonal signifier is the semiotic function that shapes musical content (corresponding to “semantics” in language). Its signifier, which we have mainly studied in this paper, is the tonal architecture of scales and phrases, modified by chords in some forms of music, but not in all. Its signified

26. Thelonious Monk’s compositions are extremely rich in whole-tone modulations, and his ‘hearing’ influenced bebop and post-bebop jazz deeply on the level of chord changes, as demonstrated in Charles Lloyd’s and Wayne Shorter’s free an very open-minded harmonizing.

27. The tonal architecture and dynamics discussed here constitute the semio-syntactic expression that forms and signifies the emotional meaning of a piece of music, on the immanent level of musical structure. In order to understand the complex phenomenon of performed and situated music, we need to inscribe this immanent structure in a transcendent (higher-level) structure, exactly as, in verbal language, we need to see the immanent grammatical form inscribed in the transcendent, performed and situated text. See Brandt (2014 and 2015) on this point.

28. A semiotic function, or semiosis, is a simple triad of instances: the signifier, the signified, the function of signification itself. It is recursive, in the sense that signifiers and signifieds can themselves be functions. In other words, a function can appear in the signifier or the signified of another function. This view of semiosis was suggested by the linguist Louis Hjelmslev (1961). In Brandt (2014 and 2015), I argue that the Danish linguist introduced semiotic recursivity for the wrong reason, namely to justify a philosophical (logico-positivistic) notion of metalanguage, and not to analyze instances of complex semiosis. Hjelmslev’s form-substance distinction and his use of this distinction in the definition of language likewise, but in a different way, blocked the analysis of complex semiosis. Contemporary structural semiotics generally invokes and reclaims Hjelmslev’s theory without noticing his two major errors, and therefore misses the opportunity to open its theory to the analysis of complex semiosis.
is the embodied emotional semantics that can be further expressed by dance and other rhythmical and mental responses\(^\text{29}\) of participants (listeners and musicians).

3. The core semiotic ‘utterance’ function relating Expression and Content: Musical performance consisting in playing or singing, that it, phrasing. This function essentially involves the musicians’ subjectivity and competence, so it constitutes an instance of musicking, corresponding in language to the central function of speaking.\(^\text{30}\)

4. The superimposed semiotic ‘identity’ function signifying the phrasing as framed by a particular composition with a signed theme, a title, a disposition in movements or sections of different kinds — a musical text, so to speak. This function constitutes an instance of enunciation, not as simple and plain playing (musicking) but as now playing this piece to you, as a present act of intentional, performative address of a listener by the artist. The enunciative expression (signifier) takes the core function as it content (signified). This enunciative expression thus includes the fixation of the theme and its structure, of this particular genre and style of the tonal expression, and of this particular personal ‘fingerprint’ in the sounding ‘substance’ of the musical piece. This instance is an essential element in the total musical experience and therefore in the aesthetics of music.

5. Pragmatic semiosis: The musical ‘utterance’, signified by the framing enunciation, signifies in its turn the situation where it is realized. The situation of realization targeted by the music is ‘meant’ by it in terms of a categorized context implying an emotional content: a situational meaning. A particular piece of music, with its characteristic genre and style, signifies its socio-cultural here-and-now frame of realization; the music transforms an event, which can be a punctual moment, into an extended temporal interval filled with the intensity of shared emotion that the event may require and which the music delivers.

6. Musical discourse: In much the same way as language, music, that is, the character of a piece of music, expresses the situation in which it is performed. In this sense, the performative semiosis signifies the pragmatic semiosis. Music for celebration, meditation, mourning, working, locomotion, commerce, dancing, eating, romance — there are as many genres and subgenres as there are genres and subgenres of social and cultural situations. These double genres (situational and musical), and their instrumental and tonal particularities, such as distinct rhythms and tempos, scales, chords, phrasing styles, and timbres, constitute what

\(^{29}\) Emotion is of course both a bodily and a mental response, since we consciously feel it, while also feeling our bodily response. Separately? This is a nice old philosophical problem (James [1950]).

\(^{30}\) Enunciation, French: l’enonciation, subjectivity marking, is an aspect of language whose study was introduced in linguistics by Émile Benveniste (1966). Subjectivity is present in the morphology (personal pronouns, etc.) and the lexicality of language (especially in performative terms); it is further present in the phrasing that form sentences, and it is of course predominant in the vocatives, exclamatives, and other framing signifiers, such as the signature (in writing). The notion of enunciation was introduced in semiotics by A.-J. Greimas. See Courtés (1991).
is sometimes called musical discourse. Concert music, played for its own sake, is a curious special case of tautology: music played in situations of making music, and paying attention to all functions in music-making, and nothing else, in the entire functional complex of musical semiosis, is in fact developing music, in much the same way as language used for literature (including poetic recitals, etc.), develops language. This reflexive form of discourse, in music as in language, and in other complex expressive forms, painting, theatre, ballet, simply develops the expression itself, its capacity to express. Reflexive expressive discourses thus constitute the whole of what we call art, and constitute the precondition of aesthetic discourse.

The complex system of musical semiotic functions that these points describe is the following:

![Diagram of Complex Musical Semiosis](image)

Fig. 13. The complex musical semiosis.

This system corresponds rather directly to the complex semiosis of language (indicated by our grey parentheses). A performed piece of music would correspond to an actual text. Both texts and musical ‘pieces’ display a significant difference between an immanent conceptual meaning and a transcendent situational meaning.\(^{31}\) In language, the difference is easy to demonstrate; “Can you do me a

\(^{31}\) ‘Immanent’ and ‘transcendent’ are terms used in this sense by Hjelmslev (1961); however, Hjelmslevian doctrine excludes the upper functions — enunciation, rhetoric, discourse, and situational meaning — from the scope of his ‘glossematic’ science of language, precisely because they are transcendent.
favor?” is a question concretely regarding the modal competence of the hearer, whereas the standard situational meaning is an address asking for a favor. In music, a piece of funeral music situationally means to be a part of the ritual of a burial ceremony, whereas its conceptual meaning is the emotional manifestation of grief. The music transforms the event into a temporally extended, durative experience of a certain emotional intensity. The hearer’s emotional reaction to such a piece, for instance, Purcell’s Music for the Funeral of Queen Mary, played at a concert in the 21st century, is of course yet another effect, depending on all sorts of personal dispositions; the reader’s emotional reaction to a ‘sad’ poem would equally be an effect distinct from the poem’s staged sadness and dependent on all sorts of personal dispositions. In art – musical as well as poetic –, performed as art, which means separated from any particular situational context, what is conveyed is neither the conceptual nor the situational meaning, but instead an impact based, I would like to suggest, on a trained sensitivity to the intense concentration and tonal shaping of the musicking mind, as manifested by a good performance — an intense attention to an intense attention, creating not only a moment of shared attention but a privileged experience of momentarily shared, mutual intentionality, the experience of beauty.32 Beauty may be in the ear of the beholder, but then in the ear of the ear of the musicking other. Esthetics, in a semiotic perspective, is a domain of shared and mutual experience, neither just of an expressive sound, res extensa, in Descartes’ sense, nor just of a content, res cogitata, but of the very act of ‘meaning it’, of meaning-the-meaning: res intensa.

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32. Musicians worldwide, both in classical and in jazz and other rhythmic music forms, are always playing to and towards each other, and this inter-intentionality determines the sounding result to a very large extent. This mutuality also supports the hypothesis of an intima relation between art, beauty, and love. See Guy Sircello 1989.


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