

## Intoning Compositional Elements of Music (Part 1)

**Abstract.** This text examines the possibilities of applying the principles of communicative speech intonation to the grammar of music composition. The conceptual ingredients for this purpose are pretty well documented: the functionality of spoken communication codes in a musical medium (Cross & Woodruff, 2009), music entrainment (Clayton, 2012) or groove conceptual models (Zbikowski, 2004), but the application of these or similar instruments in composition leaves much room for scientific interpretation. And this, despite the abundance of cognitive musicology to lay down the foundations of a universal listening grammar, could be traced back to the publication of the generative theory of tonal music (Lerdahl & Jackendoff, 1993). This article focuses on practical composition grammar, potentially offering a meter and tonality-based instantaneous form, or sonority-driven solutions for musical communication.

The object of the research presented in the article is limited to the means of composing intonation, applying the principles of spoken communication to the composition of elements of musical language (such as pulse, meter, melody, or harmony base). For this, cognitive research findings were applied to the definitions of entrainment type and communication of the aforementioned musical elements. The research tasks included: 1) formulation of the relationships between speech intonation codes and musical groove; 2) definition of composing levels (sub-systemic, systemic, and supra-systemic) for the complexity of intonation content and its structure; 3) finding and applying appropriate cognitive constants that describe intonation reasonably and comprehensively (such as duration lines versus accents, dynamic attention theory for pulse experience, meter economy, melodic process/reversal archetypes or tonal alphabets).

For the specified tasks, the concept formulated by the author of this paper in his Doctor of Arts thesis was used to unfold three (horizontal, vertical, and spatial) dimensions of intonation on three levels of composition: the sounding result of the creation, style of composing, and essential elements of musical structures. In addition, qualitative attributes are formulated for composing style dimension, listing the taxonomy of eighteen intonational codes; the expression of rhythm duration, to begin with, and the extended articulation of complex counterpoint textures, to finish.

In two articles, the first introduces the concepts of intonation codes and types of groove entrainment. In the second article, the concepts are modeled with the categories of musical practice (basal/developed, solo/ensemble, and closed/open) and based on the most reliable studies of intonation, as well as on music perception and entrainment habits to achieve rhythmic, tonal and spectral intonation in composition.

The methodology's most apparent practical value is related to the open and closed intonation of composing elements (such as closed/open meter, pulse, contour, and timbre). Still, in a more profound sense, it provides an alternative to tonal, dodecaphonic, set, and formulaic concepts in composing by introducing intonation grammar. The latter defines three-dimensional intonation of rhythm, tones, and contours supporting numerous compositional ideas: contrasting mono rhythm and complementary polyrhythm, tonal space and melody in it, or extended articulation of the flow vs. the specifics of the instrument.

**Keywords:** intoning, musical parameters, entrainment, compositional tools, creativity.

### Introduction

In verbal communication, the ability to communicate is: 1) partly innate, 2) partly acquired naturally, reflecting the success of conversations, and 3) partly can be learned (as a component ability of leadership, rhetorical intelligence). Effective communication in music (success or recognizability between the creator's intentions and the audience's perception) is probably highly desirable to be attributed to the characteristic of sound. The sources of such attribution could be elaborated further.

A composer's innate ability to faithfully convey his ideas through music is seen and appreciated in cultural practice (such as the musical dramaturgy of Beethoven or Crumb. However, the reflection of the narrative success of the work is somewhat unreliable, partly because of the analytical approach where we create analogies between the language of music and speech. Therefore, before comparing communication of speech and music, we must briefly discuss the possibilities of learning to communicate via music.

Knowledge of many definable aspects of music communication is related to the assumptions of music theory or philosophy when non-musical research instruments (such as rhetoric, topics, or geometric/arithmetic statistics) are employed for studies of musical phenomena. Concerning the result of the composition, this means that the meta-definitions of the composer's intentions prevail, usually identifying the work's connections with certain musical styles (e.g., differences in harmonies of classical or serial technique), the success of which again depends on individual composer's ability to communicate sounds. Certainly, there are exceptions to how the sound is contemplated and realized. Still, the result of the composition is either phenomenologically individual (as, for example, the works of Giacinto Scelsi or Gérard Grisey) or incomplete (as Hindemith's

theory of the order of stability of intervals, Narmour's or Huron's implication-realization mechanics, or composition guidelines based on Lehrdahl's Listening Grammar). Finally, learning to compose has traditionally been more institutionalized by focusing on composing tools, i.e., rhythm, harmony, or melody generation algorithms that are known, rather than the evaluation of sound semantics.

In this article, the comparative guidelines of verbal and musical communication are presented based on the fundamental concept of the communicative medium of music by Ian Cross and Ghofur Eliot Woodruff (Cross & Woodruff, 2009), the details of which I invite the reader to familiarize themselves with in the original text. These authors base the medium of musical content on rich anthropological, social, and biological theories and divide it into three dimensions<sup>1</sup>, two of which are essential for the perspectives of the craft of composing.

### 1. Motivational-structural dimension of intonation

Among other concerns of the composer when creating a musical expression, the adequacy and authenticity of the sound images are not in the last place. Adequacy in this context is treated as personal originality of the sound of the composition, i.e., what is it that the composer intended to express, if the listener perceives sufficiently close to the original and if that is precisely the composer's idea of sound. Using Cross and Woodruff's anthropological assumptions of communication, such practices can be transferred to the context of human communication.

A living species seek to survive and thrive. Sound is one of the most effective in this kind of security—a cry for help or suspicious sounds can be heard in advance, as opposed to seen, in both the wild jungle and modern urban concentrations. Research (Owings & Morton, 1998) pointed out that the effectiveness of the warning depends on the so-called **size symbolism**: the individual ability to perceive the sound image's adequacy to the source's size (and its proximity). This faculty is not equally developed in people, though very useful in composing the imaginary; fortunately, it can be designed deliberately, e.g., by studying acoustics and instrumentation. If the question arises in composing whether a new sound is suitable for an already created acoustic environment and whether it has a negative or positive valence (that is, contrasting or unifying), its characteristics ("physical dimensions") must either differ from those already present in the arrangement, intending a solo exclusiveness ("attention!"), or blend with the existing ones if the function of the ensemble is more important ("own").

It is known from instrumental practice, for example, that timbres of double bass and flute are of different "sizes". The initial intentions of using both instruments: the double bass is more characteristic of blending into the ensemble, harmoniously complementing the lower part of the arrangement; the flute distinguishes solos in the highest part of the instrument spectrum, but the purpose can be varied. Cross and Woodruff analyze the power of sound to represent/simulate non-musical phenomena (the so-called mood induction procedure [MIP]), widely used in film music), describing the types of messages music can convey (e.g., mourning or exaltation). But the researchers also point to an essential aspect of such a structural relationship, the honesty of the signal, which reflects the subject of environment/object creation, in the described case, the composer's intentions: it is not enough to match the "size" of the sound and its adequacy to the planned expression; it is essential to ensure that the nature of the imitation of the environment (an extra-musical component of the perception of the content of sounds, such as, for example, the pastoral "shepherd" melody, "storm," and countless other MIP images) meet the expectations of its creator. The listener should accept expectations from this particular artist; otherwise, the sound will be rejected. In the second part of the article, we will see that it is possible to assess the conformity of the objects (timbres) used in the process of composing to the intentions of the work environment (that is, the totality of the sound), and thus to convey the message of why the composer creates in this way. But first, in this chapter, we have to describe the theory of intonation intentions.

<sup>1</sup> The dimensions defined by Cross and Woodruff are motivational-structural, culturally enactive, and socio-intentional. The first relates to rendering non-musical content in music, the second to musical education and experience, and the third to musical intonation. The latter is the most important for the article's context (and scope). The dimension of cultural activation is left aside because of its commonality with traditional musicological disciplines such as music history or theory, and because of its relatively minor influence on intonation decisions. In addition, the article does aim to minimize such influence by creating new knowledge in the field of intonation. Structural motivation communicates honesty of signal, which conveys the sincerity of composing efforts, so the first dimension is included in the further discussion.

## 2. Socio-intentional dimension of intonation

In fact, in Cross and Woodruff's original concept, it is the third component of communication, however, we deem it to be more important in musical communication, unlike the **culturally-enactive** dimension, which is originally number two. Cultural communication in the latter is unequivocally associated with scientific knowledge (to understand the cultural message, a prior understanding of the work is required). Such knowledge can only be transmitted verbally using various channels (interviews, annotations, authors' publications, or studies by other researchers) to support the sound of the works. Such an influence of the goals, pre-history of the creation, or features of the process on the final evaluation of the content of the work, is uniquely individual for each listener, influenced, according to Cross and Woodruff (Idem, p. 120), by several social and psychological assumptions, starting from the characteristics of musical culture (both systemic, community-based and random); listener's background (including cultural, formal and personal); its psychological state (determined by preconceived cultural, religious, gender or racial attitudes) or previous (and not even necessarily musical) life experiences of the perceiver. Unlike the communication of intentions, all these performance assumptions are beyond this article's interests.

Social intentions determine why species communicate with each other in specific ways, and music can help people in cases when the accuracy of spoken words is potentially harmful—in situations of social uncertainty. Therefore, from an anthropological point of view (Számádó & Szathmáry, 2006), searching for solutions to personal, communal, or regional dramas requires an honest communication medium that allows the perceivers to believe in the intentions of the information spreader. For example, we suppose a composer undertakes to disseminate the music. In that case, he would expect that regardless of cultural, social, and psychological differences, the listener will recognize his efforts as musical, different from speech and that the dimensions—1) content of non-musical environment or objects and 2) knowledge-based abstractions—will also convey his 3) personal message; that the listener will be able to decipher the intentions of the musical message, the reason why the composer created such particular sound.

The ability to hear “behind” the spoken words was coded in human genes back in the days when the ability to recognize the intonations of words or even phonemes unique to one's tribe (and thereby protect oneself from potential enemies) could guarantee continued survival. Thus, intonation could facilitate the composer's search for the distinctiveness of his sound and contribute to imitating a “safe” listening environment in music. Such goals could be achieved using anthropologically grounded codes of intonation, of which Cross and Woodruff distinguish three.

## 3. Frequency code

The primary of the codes (since the other two depend on the content of the latter) is designated as the pitch of the utterance, low versus high when the stress is high. In spoken language, time is usually productive; it depends on the use of words in a sentence. However, in musical expression, time and pitch are often independent (as in iso-rhythmic or isomelic textures), and the concept of “low rhythm intonation” would not clarify how to interpret it in terms of compositional traditions and techniques. But Cross and Woodruff's intonation frequency is presented as a tool of intentions to dominate or subordinate (e.g., as the habit of threatening in a low, loud voice or a quiet half-tone, related to the already mentioned symbolism of the size of the expression: low is “big and threatening”). Such a treatment of intonation content aligns with the regular assessment of compositional strategies and results (dominant or subordinate rhythm, chords of different harmonic weights). Cross and Woodruff also pointed out that the cultural dimension of communication (such as time-honored traditions of instrument expression, gendered interpretations, or musical style habits) can suppress or partially neutralize the dominant intonation. Although, the same professional knowledge allows you to adjust such an effect (e.g., by slightly changing the arrangement or moving away from the original style).

In summary, let's call the primary intonation intention a **dominance code**, which allows us to predict the symbolic magnitude of expression of compositional elements (articulation of rhythm, tones, or timbre) from dominant (perceived “big”) to subordinate (“small”). In the theory of composition, it is named in various ways, depending on the specifics of the elements of the musical language (accents of rhythm, both duration and strength, the pitch of tones in the contour, modal stability, etc.). First, we will define such contexts by examining the proper intonation method; now, it is time to move up the hierarchy of intonation codes.

#### 4. Effort code

If we already envisage a program to gather dominant and subordinate intonation codes in the composing language, it would be helpful to follow the energy differences between both intonations, determining the intensity of expression; this is called the effort code. As noted in the concept of Cross and Woodruff, the intonation of more significant differences requires more energy (both creative and performance). Hence, such a strategy allows the “broad” transmission of the aforementioned motivational-structural communication signal sincerity (and vice versa, the static expression of the dominance code appears “narrow” and nominal). In composing, more efforts need to be concentrated on harmonizing all voices for a harmonious sound, regardless of which element of the musical language is primary in the creative method: rhythmic harmony in popular music, the content of tones/timber heights in the avant-garde, or the totality of harmony in traditional composing. In the theory of composition, such efforts are pretty well known by the principle of complementarity, when one voice is more active while the other is relatively restrained, hints have already appeared in the motet but they are fully exploited in both strict and free counterpoint. According to Cross and Woodruff, this kind of tuning effort is associated with emotionality and the already mentioned sincerity of the creator’s actions (which creates trust and convinces the listener of the author’s aspirations), often called a successful or harmonious result in the practice of sounding.

And when does such a concept of compositional intonations manifest itself as the opposite of wide intonation—an independent leadership (and potential struggle/threat to aesthetics) opposed to sound ecology? It is safe to predict that the nominal intention is best conveyed when the opposite (dominant and subordinate) codes are not combined—in episodes of one flow (single instrument and ensemble solos in—for instance—a choral texture). Thus, the code of intonation energy originating from a speech in composing activity can be named the **solo-ensemble code**, conveying, respectively, sound leadership (provocation against harmonious sound) or complementary ensemble texture (sounding harmonious). Often, in practice, such a difference is called counterpoint (in the broadest sense) and, by the way, quite abstractly in terms of compositional tools (for example, we can apply a whole bunch of elements to rhythmic counterpoint). We will try to concretize this freedom of terminology by formulating the intonation method. Now let us emphasize that 1) the solo/ensemble code is elastically related to the dissonant (separated from the context) or consonant (merged in the context) character of the element, and 2) together with the dominance-subordination intonation forms the prerequisites for the last level of intonation.

#### 5. Production code

In everyday speech, this code refers to the structure of phrases or sentences that indicate interrogative or affirmative intonation. Such distinctions are also used in music, but this work avoids definitions based on analogy primarily because of their inductive unreliability but also because of the complex experience of perceiving music. According to the so-called dimension model of the perceptual moment (Thompson, 2008: 228), in the primary (sensory, ongoing vs. perception) level, rhythm and tones are experienced separately in the first two perceptual dimensions, while contours are experienced in the third, linking intervals of rhythm and tones into a perceived melodic stream. Regrettably, the term *contours* of the compositional structure, just like *streams*, are still exotic in practice, however, it is worth trying to rely on music-specific perception for the definitions of intonation.

The code for the production of vocal intonation is related to the physiological phenomenon of *subglottal* (breathing) pressure: when limited air reserves force to adjust the expression of pitch intentions in sentences (that is, whether the statement is affirmative or interrogative, whether it requires an extension, etc.), by distributing which words are pronounced with a higher or lower intonation and differences in intensity (thus combining both codes of lower intonation levels). The air pressure in the respiratory tract is naturally highest at the beginning of exhalation, as is the highest frequency; also, naturally, the pressure is lowest at the end of exhalation, as is the lowest intonation. Physiological necessity also determines the communication strategy—if the intention of the intonation becomes physical (from high to low), the communication is ordinary, finite reasoning. If the intonation is deliberately reversed (from low to high intonation during one exhalation), the intention to create an expectation of extension (for a question or further explanation) is realized. Since the purpose of dominance/subordination (transmitted by the frequency code in spoken language) is recognized in music not only by pitch, intoning rhythm, tones, and timbre are complicated. Using the clearest example

of a chord sequence so far, if the dominant chord (harmonic accent of high energy charge) is at the end of the contour (i.e., the sequence), a half cadence is perceived, causing an open expectation of resolution to the tonic. If the tonic chord is returned at the end of the harmony outline, the cadence is experienced as closed, final. The limits of the chords' contour are relative to the harmony rhythm, involving pulse beats perception in which and for what time the chords are exhibited. Such involvement is more commonly known as **musical entrainment**.

As Cross and Woodruff point out, although the phenomenon of entrainment appears from time to time in spoken language (as in chants or poetic lines), only in music does the latter acquire primary significance. The structural elements of speech, accents, words, and phrases convey intentions in music only when they are rhythmically synchronized. Although the phenomenon of entrainment (tuning to the rhythm) itself is reasonably well defined, see, e.g., (Clayton, 2012), its application to intonation levels requires additional attributes to distinguish indentation levels and match them with intonation intentions.

### 6. Levels of musical entrainment

Since intonation codes are derived from speech, considerable corrections are necessary for their application to various musical language elements. In contrast, Lawrence Zbikowski (Zbikowski, 2004) derives groove levels from the anthropological assumptions of rhythmicity. The scientist begins with the so-called proprioception, the development of muscle motility during the baby's development. A baby's first movement experience involves the ability to repeat movements, such as raising and lowering a hand, raising it again, and doing it consciously. Zbikowski calls this power regularity. Eventually, the little person notices that regular limb movements are different, e.g., walking and grasping with hands—proprioceptive experience is enriched by differentiation. Finally, the child learns to combine a variety of movements, such as carrying in hands, and to perform action algorithms (such as drawing) or movement cycles.

By formulating conceptual models, Zbikowski applies the proprioception of regularity, differentiation, and cyclicity to the rhythmic groove perception: In an unfamiliar rhythmic flow, one first looks for regularity notices differences in regularity, and finally perceives divisions of cyclic form as complete contours of rhythmic movement. Barsalou's (Barsalou, 1999) mechanism of perceptual symbol allows us to justify such a sequence of experiences: a learned perception of physical activity can be repeated, e.g., skiing again. Because it is a mental image (knowing how to move), an experience of movement without actual physical action is possible (e.g., remembering what it felt like while skiing). If similar imaginary sensations are evoked by a source of a completely different nature, including a rhythmic groove, the reverse process is possible—mental images revive the former physical experience. Although Zbikowski himself does not equate movement (both imaginative and physical) with indentation, one can notice the connections between the origins of both phenomena. According to Clayton (*ibid.*), entrainment ensures synchronization between rhythms of different sources. In Zbikowski's model, both previous physical experience and the nature of the groove are unrelated rhythms that interact with a perceptual symbol. Thus, the listener synchronizes to the musical patterns of regularity, differentiation, and cyclicity, reliving the learned physics of movement.

An essential feature of the described entrainment process is related to the multi-level interconnections between the models. Differentiated entrainment is possible only after experiencing regularity, entirely analogous to physical experience: one cannot turn while skiing without knowing how to slide straight. Cyclicity could be experienced only after noticing the commonalities of differentiated movements, that is, regularities of differences: in the physical world, this is referred to as ability experience, such as an experienced skier not being afraid of the challenges of different slopes. If the variety of rhythmicity is too great, the experience of higher-level regularity becomes incomplete. Zbikowski's idea for such non-fulfillment of entrainment expectations is based on the need for a relationship between conceptual models. After experiencing a regular pulse of entrainment and presenting its alternative, it is necessary to return to a higher-level pulsation (see the skiing analogy above).

Suppose the variety of rhythmicity is too complex. In that case, the experience of higher-level regularity becomes difficult: conceptual rhythmicity patterns become incomplete if, after conveying the regular pulse of the entrainment and presenting its alternative, the original regularity is not restored. The simplest practical example of such intonation fulfillment involves the return of form divisions in a simple three-part form. Still, this content strategy is also possible for other elements of musical language (e.g., the cyclicity of rhythmic

durations, as in dotted rhythm, or the return of tonal register, in the case of tremolo). In addition, suppose the original entrainment content returns even at a higher level of variational development (like the return of the A division of forms in the case of the aforementioned three-part form). In that case, a closure or cadence is implemented. Compositional procedures, such as pauses, changes in rhythmic durations, and changes in the harmony rhythm, produce the opposite, open movement of continuity. They are separating the concept of differentiation from the level of cyclicity, in the case of the simple form, a two-part A–B structure. Again, the strategy applies to all elements of musical language.

It is important to note that not only cyclicity shapes output. Analogous connections are common to the other two pairs of models. Solo-ensemble differentiation is possible only by changing the energy of the primary dominance–subordination code (after all, it is possible to emphasize both low and high tones using the clearest example of pitch yet). Differentiation is not intoned if accents are not projected, e.g., in a trill. Analogously, the dominance of a sound event is possible only concerning other subordinated events, regardless of which parameter the dominant is extracted (duration, pitch, or repetition). The regularity of intonation manifests itself; if there are only similar events in the series (e.g., one low-timbre tone is repeated), they will become subordinated to expectations waiting for changes. Such a concept of intonation responds to the familiar sound situation where a flow without new developments (i.e., dominant over others) is characterized as prolonged and unengaging to the listener.

To conclude the description of entrainment models, it is worth emphasizing that the expanded concept of entrainment allows shaping intonation by rhythm (as in the initial treatment of entrainment) and pitch (both tonal and timbral). Indeed, synchronization to intonation is possible for dominance and solo-ensemble codes, recognizing changes along the perceptual moment dimensions in both time and pitch. Auditory illusions are found when both experiences are fused at the same pre-perceptual level in a contour, as illustrated by an example (Figure 1). Say we have an almost identical set of intervals and durations; only the direction is different:



Figure 1. Dominance degree change in scale illusion due to differences in the direction of the melody; Sigitas Mickis' synthetic example

Figure 1 illustrates the scale illusion, where the major scale pattern (semitone–tone sequence) intonates different dominants in different directions. The unstemmed notes in Figure 2 indicate the pitch accents arising from the beginning and end events of the eight's contours (so-called structural accents) together with the change in melodic direction (in both cases, D5, chosen for the same pitch value). Both bars convey Gmaj7 without a third, but in the first one, filling the gap between D with G4–F#5 upwards, the D scale becomes dominant at the quarter tone, while in the second bar, the dominant Gmaj7 does not change due to the B4–G4–D5 triad (5th and 7th eighth notes and a quarter note in 2nd bar of Figure 1).

The illustrated illusions happen for several reasons, which we will cover in the following section. Still, the main one is related to the average ratings of the key profiles (Krumhansl & Kessler, 1982): degree *V* (D5 in the example) stands for the second from the top rating in the key profile (following degree *I*), and in the first bar this tone is repeated almost immediately, between repetitions having pitches of a narrow interval, up to a third, according to Eugene Narmour (Narmour, 1990). Thus, the dominance of the first-degree changes to the fifth regardless of the initial major pattern. In the second bar, repetitions of D5 are separated in time (and therefore weaker in short-term memory), with a degree of a higher rating—*I* (the last eight in the second bar) intervened between them with the distance in the register of wide interval (fifth). Wide intervals act as a solo (distinctly dissonant) code, confirming the tones of the underlying G triad coinciding with the Gmaj7.

The example is given to illustrate what knowledge may be required to intonate, how the various parameters of pitch and time relate to each other, and what the methodological principle of intonation is. Due to the scope of the article, the method of composing intonation will be revealed in the next issue of this journal. In this one, it remains to summarize the perspectives offered by the presented concept regarding compositional tools and creativity in music in general.

## 7. Intermediate summary of intonation in composition

Based on the anthropological, psychological, and social assumptions of human communication, it can be said that intonation in both speech and music is structured, therefore, it can be expressed with compositional instruments. Intonation in both communications is an opportunity to convey why text or music was created, complementing the message of what was said or performed. The main currency of such intentions is related to open (i.e., interrogative) or closed (i.e., affirmative) intonation, which in turn is shaped by the combination of frequency and effort codes in speech. In music, the latter codes correspond to regular and differentiated entrainment and can be attributed to reasonably common attributes of musicianship.

Thus, combining dominant and subordinate intonation effectively produces the regularity of entraining music, as is done creatively when introducing accents (rhythmic, i.e., duration, and loudness or pitch). Suppose the accented-unaccented change is designed to be regular; in that case, it entrains the listener at a specific frequency, usually referred to in music as steady rhythm, stable (“regular”) scale, or recognizable (again, “regular”) instrumentation. Such regularity can be differentiated by giving creative differences to the flow of sound: for example, distinguishing the regularity of fourths against the syncopation of eighths, contrasting unstable diatonic or chromatic scale degrees against stable ones, or distinguishing one timbre in the instrumentation against other harmonious consonances. In general, it is appropriate to differentiate between distinct, solo intonation (as a syncopated batch of dissonant tones and timbres) versus a complementary ensemble of voices as an element of creativity in composition. Such solo-ensemble articulation forms the code for the differentiation of the musical flow.

Both dominance-subordination and solo-ensemble intonations can be combined to create an open or closed direction of expression: the dominant solo adds an open, dissonantly distinguished context, while the subordinate intonation gives the ensemble a harmonious (complementary) sound, possibly defined as a consonant. Such a dissonance-consonance strategy is suggested for both time and pitch domains and will be discussed in the second part of the article. Thus, the possibility is proposed to predict creative (contextually new) intonation with openness or closure, fitting into the time interval of the psychological present (i.e., possibly perceived as an open or closed completed structure within a period of short-term memory).

## References

- Barsalou, Lawrence W. (1999). Perceptual symbol systems. In: *Behavioral and Brain Sciences*, 22(4): 577–660.
- Clayton, Martin (2012). What is Entrainment? Definition and applications in musical research. In *Empirical Musicological Review*, vol. 7, no 1–2.
- Cross, Ian, & Woodruff, Ghofur Eliot (2009). Music as a communicative medium. In Rudolf Botha & Chris Knight (Eds.), In: *The Prehistory of Language* (p. 0). Oxford University Press.
- Krumhansl, Carol L., & Kessler, Edward J. (1982). Tracing the dynamic changes in perceived tonal organization in a spatial representation of musical keys. In: *Psychological Review*, 89: 334–368.
- Lerdahl, Fred, & Jackendoff, Ray S. (1993). *A Generative Theory of Tonal Music*. Cambridge, Mass.: The MIT Press.
- Narmour, Eugene (1990). *The Analysis and Cognition of Basic Melodic Structures: The Implication-Realization Model*. Chicago: University of Chicago Press.
- Owings, Donald H., & Morton, Eugene S. (1998). *Animal Vocal Communication: A New Approach*. Cambridge University Press.
- Számádó, Szabolcs, & Szathmáry, Eörs (2006). Selective scenarios for the emergence of natural language. In: *Trends in Ecology & Evolution*, 21(10): 555–561.
- Thompson, William Forde (2008). *Music, Thought, and Feeling: Understanding the Psychology of Music* (1 edition). Oxford; New York: Oxford University Press.
- Zbikowski, Lawrence M. (2004). Modelling the Groove: Conceptual Structure and Popular Music. In: *Journal of the Royal Musical Association*, 129(2): 272–297.

## Kompozicinių elementų intonavimas

(I dalis)

### Santrauka

Šiame tekste nagrinėjami šnekos intonacijos (komunikacijos) principai, kuriuos galima taikyti muzikos komponavimo gramatikai. Ją formuluojant buvo remiamasi gana gerai aprašytais koncepcijos dedamosiomis, tokiomis kaip šnekos (komunikacijos) kodai muzikinėje terpėje (Cross, Woodruff 2009), muzikinė įtrauka (Clayton 2012) ir įtraukų koncepciniai modeliai (Zbikowski 2004). Vis dėlto, nepaisant gausybės kognityvinių tyrimų (pavyzdžiui, tokių kaip generatyvinės tonalios muzikos teorija (Lehrdahl, Jackendoff 1983)), atliktų formuojant universalios klausymo ar muzikinės gramatikos pagrindus, šių tyrimo būdų taikymas muzikinio komponavimo sintaksei ir semantikai palieka dar daug galimybių mokslinėms interpretacijoms. Šio straipsnio dėmesio centre – universali intonavimo komponuojant gramatika, kuri muzikinei komunikacijai siūlo tiek ritmu ar tonalumu, tiek momentine forma ar sonorais grįstus sprendimus.

Straipsnyje pristatomo tyrimo objektas apibrėžiamas taikant šnekos (komunikacijos) intonacijos principus muzikinės kalbos elementams, tokiems kaip pulsas, metras, melodija ar harmonijos pagrindas, komponuoti. Siekiant šio tikslo, kognityvinių tyrimų atradimai pritaikomi muzikos elementų įtraukos (angl. *entrainment*) tipo ir komunikacijos intonavimu apibrėžtims. Tyrimo uždaviniai: 1) susieti šnekos intonavimo kodus ir muzikinių įtraukų koncepcinius modelius; 2) išskirti komponavimo lygmenų (posisteminių, sisteminių ir viršsisteminių) intonacinį turinį trimatėje struktūroje; 3) atlikti tinkamų, pagrįstai ir išsamiai intonavimą apibūdinančių kognityvinių konstantų (pavyzdžiui, trukmių linijos ar akcentai, daugybinė pulsų tvinksnų patirtis, metro ekonomija, melodinio kontūro proceso ir (ar) pokyčio archetipai, tonalumo aukščių abėcėlės) paiešką ir jas taikyti.

Nurodytiems uždaviniams įgyvendinti ir trims komponavimo lygmenims (posisteminiam, sisteminiam ir viršsisteminiam) išskirti pasitelkta menų daktaro Sigitio Mickio disertacijos koncepcija, taip pat kiekvienu atveju buvo išskleidžiamos trys dimensijos (horizontali regularumo, vertikali diferenciacijos ir erdvinė cikliškumo). Kiekvienai iš šių dimensijų suformuluotos kokybinės apibrėžtys, realizuojančios pasirinktą intonacinį kodą ir jo sąryšius su kitais intonavimo elementais. Pirmajame iš dviejų straipsnių pristatomos intonavimo kodų ir jų įtraukos tipų koncepcijos. Antrame straipsnyje koncepcija modeliuojama muzikinės praktikos (bazinė / išplėtotą, solo / ansamblio ir uždara / atvira) kategorijomis ir pagrindžiama patikimais intonavimo, muzikos suvokimo ir muzikinių įtraukų tyrimais, pritaikytais komponavimo procese siekiant ritminio, toniško ir spektrinio intonavimo.

Straipsnyje pristatomos metodikos praktinė vertė susijusi su komponavimo elementų atviru ir uždaru intonavimu (pavyzdžiui, uždaras / atviras metras, pulsas, kontūras, tembras ir t. t.), tačiau, formuluojant intonavimo gramatiką, kartu suteikiama alternatyva tonalioms, dodekafoninėms, setų, formulinėms kūrybos koncepcijoms. Minėta gramatika apibrėžia ritmo, tonų ir kontūrų intonavimo sąsajas, taip pat poveikį bendroms kompozicinėms koncepcijoms, tokioms kaip: kontrastingas monoritmas, komplementarus poliritmas, toniškumo erdvė ir melodija joje, išplėsta ir nominali instrumentuotė skambesio tėkmės intonavimui.