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drkhannanov@gmail.com**A Long Path to Closely Related Key: Modulation in Bach's Allemande BWV 816****ABSTRACT****Background**

Modulation is viewed today mostly as either the aspect of pedagogy of part-writing or as a part of Schenkerian graphic analysis. In the second half of the nineteenth century, in teaching of Hugo Riemann, modulation was considered an element of tonal-functional syntax. All these three conceptual frameworks focus on modulation as something that is happening in the score and neither of them approaches the psychological aspect of modulation as an event of live music.

Aims and repertoire studied

The modulation from tonic to the dominant can be rendered in three or four chords, but in real composition it takes much more time and effort. For example, in Bach's Allemande from the French Suite BWV 816, the composer introduces nine gestures to implement this simple transition to a closely related key. These gestures are: 1) in mm. 1–2 a 10-10-10 progression with complete TSDT cycle; 2) in m. 3 another functional cycle, DD-D; 3) in m. 4 the third TSDT cycle—all just to ascertain the tonic of G major. Then, 4) in measure 5 there is a digression to E minor, followed by 5) descending fifth sequence in mm. 6–7; 6) in m. 8 there is a long-expected cadence in the key of the dominant, but the composer seems not to be satisfied with the result and introduces 7) another loop—motion back to tonic (!); gesture 8) leads to D minor (!) and only then the listener is given the cadence 9) in the new key, D major.

The image displays a musical score for the Allemande BWV 816, consisting of six systems of music. Each system contains two staves: a treble clef staff and a bass clef staff. The score is written in G major and 3/4 time. The first system shows the beginning of the piece. The subsequent systems illustrate various harmonic gestures used for modulation, such as TSDT cycles, digressions, and descending fifth sequences. The score ends with a double bar line and repeat dots.

Ex. 1. Nine gestures used by Bach in modulation from I to V

All these nine harmonic devices are implemented by composer in order to modulate from I to V. A paradox of modulation to closely related key results from simplicity of this key relationship. This modulation may seem the easiest, but it is much more difficult to realise in music than, say, abrupt modulation via enharmonic substitution or dissonant pivot chord. The cognitive mechanism that works here is the opposite of constrain: it is the *excess of cognitive ability* of the listener 'to grab the key,' to "snap to the grid of tonality", that impedes the change of the key from tonic to the dominant. Involuntary retention of the tonic in the short and midterm memory maintains the relationship of the keys of tonic and dominant as simple functional relationship of D and T. It is very difficult to detach the one from the other. The way back from D major to G major, in the second half of the Allemande, proves to be even more complex. There the drive of dominant to immediate resolution is so strong that Bach had to include the digression to C major—the key of subdominant—in order to break free from the syntagmatic dimension. To use the subdominant after the dominant would be a violation of functional logic on the level of harmonic progression. However, on the higher level of key area relationship and large-scale modulation, the composer often retreats to conscious violation of this rule. The nine gestures in the first half of the Allemande include both constructive (full functional cycles, triangles, that establish the key) and deconstructive (various methods of disassembly of the functional triangle with the goal to prepare the room for the next assembly). The aim of this paper is to analyse and describe the cognitive mechanisms that make the modulation to and back from dominant a difficult, yet musically valid, task.

Methods

Following one of the themes of EUROMAC9, it makes sense to shift the focus of study of modulation from the score to the act of musical perception. This paper attempts to apply the scientific apparatus of cognitive musicology to cases of modulation in tonal music, with the goal to conceptualize modulation from the standpoint of perception. A particular use of cognitive analysis here comes in contrast with, say, the approaches of Carol Krumhansl (1990). The object of study is derived from the traditional topics of music theory. Instead of tone-probe method that involves a reference group of untrained musicians, the author relies upon the perception of professional musicians, the traces of which are reflected in the score.

As for the definition of the elements as they appear in the score, the author relies upon Riemann's three tonal-harmonic functions. It is the interplay of these function that generates the sense of key and, by the same token, allows to dismantle the key in order to move to a new one. In order to avoid well-known deficiencies of Riemann's concept, the author refers to two publications that deal with this issue. First of all, the article by Alexander Rehding (1994) allows to separate Riemann's

abstract interpretation of tonal functions from their actual musical use by Beethoven and other composers. Second of all, the interpretation of tonal-harmonic function is revised by Daniel Harrison (1994): in contrast with Riemann's, his idea is related to orientation in space. Harrison uses the metaphor of a position of an aeroplane ('yaw and bank'). The author of this paper relies upon a similar definition: unlike Fred Lerahl's hierarchical and geometric (2001), the tonal space, in this case, is perceived as dimensionless and non-visual, yet having the aspects of directionality. Tonal-harmonic functions in this context may be revised; their definitions can be related not to the numeric proportions (as it has been attempted by Rameau) but rather to the aspect of orientation of the listener in the aural space. Thus, three functions serve as points of reference, akin to the points of triangulation used in aeronautics and astronomy.

The third methodological approach in this paper is auxiliary, but its applications may lead to far-reaching consequences. The analysis of musical form receives here a new interpretation. Instead of marking the limits of a static structure (notation in the score) this method of analysis follows the twists and turns of constantly changing tonal orientation of the listener and unveils the strategies of construction-deconstruction of triangular functional cycles controlled by the composer. Modulation, in this respect, becomes a synonym of musical form as a process, as it has been viewed by the composers of common practice.

Implications

It is a paradox that modulation to a closely related key is more difficult for a composer to accomplish than an abrupt modulation to a remote key. Perhaps, theory of music has been relying too much on abstract structural relationships as seen in geometry of note heads in the score. The new approach to modulation can help understanding the events and the procedures that take place in tonal space—that is, in real tonal space in aural perception and motoric-gestural realization. Such view of modulation can help understanding the event of performance and the actual compositional technique—the technique that a composer uses for the interaction with the listener.

Keywords

Modulation, musical form, musical epistemology, musical cognition, musical praxis.

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