Analizējot atonālo mūziku ar skaņkopu teorijas palīdzību, nemeklēsim nekādus matemātiskus pierādījumus. Šīs teorijas izmantojums tikai palīdz izprast dažādu harmonijas elementu saiknes un likumsakarības. Līdzīgi kā klasiskā harmonija atklāj strukturālo karkasu, bet neskaidro mūziku visos tās aspektos, skaņkopu teorija ir tikai harmonisko attiecību skaidrojums. Atonālā mūzika nav tonalitātes paplašinājums līdz funkcionalitātes izzušanai. Tā ir jauna mūzikas valoda ar jaunām, dažkārt ļoti smalkām un tikko manāmām saitēm. Protams, arī vēsturiska kontekstualizēšana var būt noderīga, lai izprastu noteikta tipa harmoniju lietojuma evolūciju; tomēr tā diez vai palīdzēs apjaust atonālās mūzikas saskaņu savstarpējo saikni, motīvu likumsakarības utt.

Rezumējot izklāstīto, jāatzīst, ka skaņkopu teorija nav pazīstama mūsu vidē, bet pasaulē tiek visai plaši izmantota. Tai pievēršas daudzi 20. gadsimta mūzikas analītisko pētījumu autori. Tāpēc arī šķita būtiski iepazīstināt ar skaņkopu teorijas pamatprincipiem un parādīt, kā tie izpaužas dažādu 20. gadsimta sākuma un beigu posma mūzikas piemēru kontekstā.

THE MAIN PRINCIPLES OF THE SET THEORY

Rolands Kronlaks

Summary

The musical set theory is a concept used for the characterization of the musical objects and their relationships. Not only is the set theory popular as a whole but also its separate elements, aspects and terms. Many of the basic axioms – sound set, intervallic vector, etc. – have been rooted in the western music theory so fundamentally, that are being used without special explanations and references to sound set theory as the first source.

In the course of the article the historical development of the theory and its main developer Allen Forte is mentioned, whose work *The Structures of Atonal Music* (1977) is the most famous research of musical set theory. Today the set theory is used not only as a concept of musical analysis but also as an instrument for composing music. Several leading contemporary music composers – Magnus Lindberg, Hanspeter Kyburz and others – use the principles of the set theory in order to organize the parameters of harmony of their compositions.

The first chapter is dedicated to the exposition of the essence of the musical set theory, the inner construction of the sets, and different axioms – e.g., the equality of octaves, pitch-classes, classes of intervals, intervallic vector and others.

It is basic knowledge without which it is impossible to understand the analyses carried out with the help of the set theory. The second chapter is dedicated to relations between the sets – transposition, inversion, Z-relations, invariants and other. It is followed by example from Five Movements for String Quartet op. 5 by Anton Webern. In the first subject from the first composition of this cycle, the second subject and stages of development, three pitch-class sets are dominating and defining the harmonic identity. In the example from the composition *Cells* by Hanspeter Kyburz a different attitude can be heard/seen as the harmonic material is deliberately created basing on usage of two pitch-class sets, which secure the connections of inner motifs of the sound field (usually 10, 11 sounds) worked out by the composer.

Summing it all, we come to the conclusion that usage of this theory helps to comprehend the connection and regularity of different harmonic elements. Similarly to the way how the classical harmony gives structural framework but does not explain music in all its aspects, also the musical set theory basically gives the idea of harmonic construction of the compositions. The idea of the musical set theory and the application of this theory in analysis of atonal music reveal the essence of organization of the sound pitch much better than traditional harmonic analysis.

Literatūra

Forte, Allen. *The Atonal Music of Anton Webern*. New Haven and London: Yale University Press, 1998

Forte, Allen. *The Structure of Atonal Music*. New Haven and London: Yale University Press, 1977

Hanson, Howard. *Harmonic Materials of Modern Music: Resources of Tempered Scale*. New York: Appleton-Century-Crofts, 1960

Lewin, David. *Generalized Musical Intervals and Transformations*. New Haven: Yale University Press, 1987. Reprinted, New York: Oxford University Press, 2007