Abstract: - In the search for unusual, original material, twentieth century music had to invent new forms, to find alternative organizing principles, to grow out of obsolete patterns that were too rigid for unpredictable sounds in full motion. Thus, a new concept of form emerges, mainly oriented toward structuralism.

Key-Words: - fugue, form, structure, polyphony, canon, theme, symmetry

1 Introduction
Starting from the appearance of the new tonal and modal languages after the 50s, twentieth century music displays obvious tendencies to renew the formal patterns set in previous centuries, since lacking coherent and original possibilities to organise the discourse. In this context, the reconsideration of the fugue pattern takes place in two main directions: the absolutisation of form by polyphonic means and the removal of discourse organisation rules within the architecture.

2 Absolutisation of Form by Polyphonic Means
In the first category mentioned above fall several works with rare characteristics, which raise complex questions of construction.

2.1 Superimposed Fugue with Multiple Canon
According to Arnold Schönberg, the emergence of form is based on two fundamental principles: identity and non-identity (contrast), which combine by purely musical means in the 18th work of the cycle Pierrot lunaire, Der Mondfleck, where the composer applies these principles at constructive level. Form arises by superimposing a double canon in recurrence – clarinet and piccolo on the one hand and violin and cello on the other hand, superimposed over a three-voice fugue played on the piano. Although Schönberg was a proponent of the atonal language, of renouncing and avoiding the relationships between sounds based on a centre or on hierarchical relationships between pitches, emphasising the emancipation of dissonance from consonance and concentrating the entire colour on increasingly smaller sound intervals, successively or simultaneously, he realises the importance of thematic development in organising the form.

The two canons are developed in parallel up to the half of the 10th measure, where the axis of symmetry is placed between the direct and recurrent stage of the discourse of each canon.

Fig. 1 Arnold Schönberg, Pierrot lunaire – Der Mondfleck, m. 1-4
The differences between the two canonical planes lie in the time space separating the entries of the voices, and especially in the character of each of them, determined by the construction of the interval: the higher plane is composed by juxtaposing various rhythmic-melodic cells, which shows an increasing evolution of the components (the agglomeration leading to a dynamisation of the discourse), the lower plane is composed by combining two related cells, juxtaposed according to the ostinato principle, creating an ostinato canon.

In terms of construction, the architecture contains, along with the exposition, two brief episodes serving as a conclusion, a central half, which repeats the theme in an intonational variant close to the original one, the last entry bringing an incomplete version of the theme (m. 8-12) and a final interval that exploits three different appearances of the theme in a very focused stretto (m. 15-18), followed by a conclusion.

Fig. 2

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2.2 The Canonical Fugue

The fugue from opus 12, Preludiu și fugă pentru pian [Prelude and Fugue for piano] by Liviu Glodeanu, is a remarkable proof of the widening of the traditional tonal framework by adopting a serial sound notion. Composed of three stanzas, as an allusion to the old scheme of the form, The Fugue contains several significant innovations in terms of structural evolution. The main method of sound construction is the inverted canon, upon which the entire work is based.

The exposition begins atypically, the two voices of the discourse representing the theme of the fugue and its imitatively reversed variant, forming right from the start a polyphonic structure with serial and construction implications that will generate in its development moments of the same order. The two reversed variants of the theme are complementary, making together a series of 12 sounds.

Fig. 3 Liviu Glodeanu, Prelude and Fugue for piano

The exposition of the fugue consists of two separate articulations: the exposition of the theme is followed by a reversed canon based on it, temporarily interrupted by segments of interchanging the planes, which creates fragmentations of the imitations. The second segment is an episode characterised by homophonous (and) chordal writing, which creates an area of contrast in the whole polyphonic complex of the discourse. The middle section is a varied repetition of the exposition, which acquires a developing aspect by using novelty elements: the time lag of the voices in canon, inversions of the double counterpoint type plans and their permutations as ways of variation and insertions of new melodic formulas. The third architectural component is similar to the final interval of the traditional fugue form, though varied by reversing the polyphonic relationship between the voices in canon, thus creating symmetry in the overall organisation.

Fig. 4

2.3 Fugue for Monodic Instruments

Baroque music has manifested a consistent attraction towards the implicit presence of polyphony in a single melodic line. Bach, Telemann and their contemporaries developed the method in works for flute, violin, and cello solo to a high degree of virtuosity. Although forgotten for a while, virtual polyphony makes its come back in twentieth century music. Some might erroneously consider it as one of the manifestations of Baroque nostalgia. However, the composers who use the subtleties of the old method reinvent it at this time by adding new variations of hidden lines, illusions and imitations, which remain within the domain of inaudible, imperceptible voices, projected on a soloist line. The list of works that employ this method as a construction technique is very rich, both in name and in variety [1].

Whereas in the development section, the differentiation of the melodic planes is more accessible in terms of construction and there is no need for stratified individualisation in their importance, the theme entries in the expository section are easier to emphasize in works for string instruments due to their capabilities of harmonic emission, an approach less accessible to air column...
Instruments. In the twentieth century, the technique is facilitated by the growth in importance of the timbre factor and the multiplication of the means of expressive use of the colour tones.

In *Sonata pentru clarinet solo* [The Sonata for Clarinet Solo] by Tiberiu Olah, there are multiple methods to achieve the fugato imitation effect:
- the alternative play on extreme registers, giving the impression of a dialogue;
- alternating tones and contrasting timbres; the echo effect, of spatialisation and relief, with distant planes, is created by register changes related to the intensity contrasts: a *ff* in the acute is followed by a *p subito* in the middle or vice versa;
- disjointed interval chains that create the vertical effect of multiple voices;

Fig. 5 Tiberiu Olah, *The Sonata for Clarinet Solo*

- agogic and rhythmic contrasts between close sections;
- introducing sound effects (percussion, special emission modes), unusual for a wind instrument.

From a structural point of view, the fugue can be delineated in two parts: expository and treatment. The exposition includes three entries of the theme in three different registers, and the succession of the entries is achieved at an ascending second interval. The section is built based on punctualist technique that uses the varied dynamic appearance of the melodic planes: the first expositions uses the *pp* tone due to the singularity of the melodic plane, the second *mf* and the third *f*, to emphasize the plane that bears the theme line, in contrast to the secondary level, characterised by a lower tone.

Fig. 6 Tiberiu Olah, *The Sonata for Clarinet Solo*

A second formal articulation unites the developing qualities of an episode and the expository qualities of the halves in the Baroque fugue. The treatment comes from the rich melodic content, organised according to the same technique of punctualist polyphony on two distinct planes in terms of melody and rhythm. The half character is given by the melodic correspondence between the motifs treated and the theme of the fugue, the second section beginning with the renewal as an ostinato of the second theme motif.

### 2.4 Superimposed Fugues

The Third Study of the *Five Studies for Piano and Orchestra* op. 63 by Darius Milhaud is established on the use of polytonal thought. Here, there are superimposed four fugues, each in a different tone and character. The wooden instruments expose their own theme in *A major*, the brass in *D b major* and the chords in a melodic framework undermined at tonal level, that oscillates between *C* and *F major*. The fourth theme is given to the piano, which provides the soundscape with lively rhythmic initiatives and a cheerful character, while, in terms of melody, it combines the common sounds to the three previous tonalities.

Over all these, the drawing of the *pizzicato* bass is superimposed, adding to this monumental sound construction the almost mechanical insistence of its uniform repetition.

### 3 Eliminating Discourse Organisation Rules within the Architecture

#### 3.1 The Crystal Form

In the attempt to find new organisation patterns, the twentieth century shapes a new conception of form, borrowed from science, architecture or provided by models in nature. In this direction lies the concept according to which the *musical form is the result of a dynamic process* [2], woven from a mobile network of relationships between sound events, representing the perceptible consciousness of a hidden structure that connects the whole, creates cohesion and determines the existence of musical form in time and space. Eliminating the musical terminology, this becomes a description of the properties of the crystal [3]. Edgard Varese is the first composer to apply in practice the
conception of the musical form as a result of a crystallisation process [4]. According to this theory, the possible musical forms are as innumerable as the external forms of the crystals.

The same process is used by György Ligeti in a considerable number of works, which are revealing for his compositional technique. The composer explains the process as: treating polyphony is similar to the crystal form in a supersaturated solution. The crystal is potentially present in the solution, but it becomes visible only at the time of the crystallisation. In the same way, it is possible to say that in music there is a state of supersaturated polyphony, containing all the elements of the crystal, but we are not able to distinguish them [5].

The phenomenon is called micropolyphony, a process both technical and formal, in which the textures that evolve at different speeds form complex sound constructions.

In Ligeti’s Requiem, the process becomes the constructive basis. In Kyrie, a double free fugue evolving up to 20 voices, one can observe the simultaneous onset of identical (or nearly identical) voices, that later evolve in a differentiated manner, as sequences of canonical structures.

Fig. 7 György Ligeti, Requiem-Kyrie, first theme, m 1-4

Ligeti seeks to establish such a unit between succession and simultaneity, between horizontal and vertical. He builds his sound spaces as textures, and the canon slows for the possibility to compose a texture of melodic lines according to well-defined rules of construction. But the emphasis is on the inaudible side.

Thus, Kyrie represents music of great unity, but which based on blurring the canonical structures, and the rules on melodic and rhythmic structure are used to achieve this blurring. The art of counterpoint, that emphasizes the linearity of voices in this work, becomes the means of neutralising their horizontal perception, softening the whole rhythmic articulation by the infinitesimal decalage of the overlapping voices, trying to avoid any time landmark.

Although based on dense canonical and fugato structures, in Kyrie one cannot hear the canon or the fugue. One can only hear an impenetrable texture, the polyphonic structures are not discernible, but remain hidden. However, the counterpoint technique used in Kyrie replaces the thematic development, adapts to the absence of tonal or modal landmarks, allowing the creation of a dense, strictly organised texture, through a sound geometry possible only by permutation of the sound planes. The component sections of the architecture (exposition, bridge and finale) cannot be separated, hence the piece is conceived as a continuum, in which the details are blurred to achieve the final result.

3.2 Free Fugue

Whereas in Baroque music, the free forms of the fugue resulted from a combination of the fugue principle with the concert or from alternating the polyphonic fugato sections with predominantly harmonic ones, in the twentieth century, the same structure overcomes the preset traditional form by architectural extensions and exceptional thematic treatments. This includes a number of works that bear the name “fugue”, but at the level of their formal concept retain only some of the original intentions of the Baroque equivalent.

The quartet No. 1 Anamorphose by Şerban Nichifor starts with a fugue consisting of several distinct sections, which cannot be integrated with the episodes or the middle entry, but remain as landmarks of the form due to specific construction. The composer uses sound emission means as thematic entities, alternated with clearly individualised melodic formulas with folk influences.

The first section of the work is a four-voice fugue exposition on an unusual theme: a sound effect produced by rubbing the bow on the bridge. The development of this white sound is not continuous, but broken by pauses in four unequal segments, carried upwards of the temporal duration. The discontinuous nature of the lines is also maintained after the exposition of the “theme,” so that the entire expository discourse consists of a sequence of acoustic textures, varying in density.

Fig. 8 Şerban Nichifor, Anamorphose
The exposition is followed by a formal treatment segment, similar to the episode in the traditional fugue: each of the two voices performs the same “theme,” diversified by adding timbre effects obtained by articulating the fingers of the left hand on the strings. The acoustic result is similar to the percussion effect, the bar graphs that suggest the two sounds are purely indicative, as they have no exact height. The two sounds are grouped either in binary units, or in various formulas, whose structure is organised on the principle of symmetrical or asymmetrical repetition. The similarity of these microstructures reported at syntax level help create a multi-vocal stratification, an apparently free polyphony.

The third articulation of the form is a fugue that preserves the principle of successive imitative entries of the voices and the individual profile of each plane from the traditional model. The exceptional nature of the fugue is not in the idea of mono-thematism (poly-thematism, in case of fugues with several subjects), and replacing it with the exposition of seven songs with different modal, rhythmic and intonational structure.

The common element of these incisions with thematic role is inspired by folk culture (Burzucan, Hora Caprei [The Goat Song] and Cântec din Bihor [Song from Bihor]) or religious (Lumină liniă [Soft Light], Axion [Axion], Slavă [Glory], Laude [Praises]), a factor that preserves at least as intention the principle of a thematic unity in the fugue exposition. Also, the characteristic sonority requires a delineation of the exposition into two distinct phases.

The presentation of the last four songs with thematic role evolves in the spirit of an episodic treatment of these incisions, marked by frequent free, imitative moments, highlighted graphically and sonorously by introducing breaks in the development of the individual lines. The last section of the form is done in the spirit of final interval, by reiterating the original theme of the first fugue superimposed over the song Burzucan in the second fugue.

Fig. 9 Şerban Nichifor, Anamorphose, first three themes

3.3 The Geographical Fugue

In 1930, Ernst Toch composed Gesprochene Musik for the Festival of Contemporary Music in Berlin. With this work, he creates the so-called talking chorus, which is entirely new in the era of innovations across European music, but represents a genre firmly anchored in German music, taking into account the powerful impact Singspiel had in its heydays.

Gesprochene Musik is a suite in three parts: the first two, O-a and Ta-Tam, use a text based only on syllables without meaning. In an interview for the The Threepenny Review (December 2003), the composer’s grandson, Lawrence Weschler, called the style of this work “Weimar rap” [6]. The last part of the suite, The Geographical Fugue, became the best known work by Ernst Toch. The work is constructed as a form of fugue, in which the four voices list a series of names of towns, countries and geographical areas in a clever counterpoint manner.
The finale is represented by a trill lengthened on the consonant “r” in the word *Ratibor*, the first in the composition of the fugue subject. The work has two versions of the text, the original German one and the English translation made by John Cage.

The fundamental element of this work is the rhythmic side, around which the entire drama of the work is built. The evolution of the rhythmic plane is carried out by rhythmic diminution, causing an agglomeration of values parallel with the acceleration of speech.

**Fig. 11 Ernst Toch, Fuga geografica**

In the counterpoint planes secondary to the theme a steady pulse is maintained, shown in the ostinato of some asymmetrical rhythms on the lines *Tibet, Nagasaki, Yokohama*, which changes in complexity with the progressive rhythmic agglomerations. The superimposition of the cells creates a rhythmic complementarity and a discourse based on micro-imitations.

**Fig. 12 Ernst Toch, Fuga geografica**

From a structural point of view, one can find the three sections of the Baroque model of the fugue form, but constructed according to other landmarks. If the exposition has four theme entries corresponding to the number of voices, the developing character of the mid-section is given not by the development of the theme, but by the rhythmic elements in the composition of the counterpoint lines accompanying it. In the same passage area, two types of thematic halves are also found: identical to the original version and augmented, in successive and simultaneous presentation. The thematic variation in the development will determine the complex structure of the final half, the variational passage of the original motif giving rise initially to three different variants of the original idea, superimposed in a large *stretto*.

**Fig. 13 Ernst Toch, Fuga geografica, the main theme and two variations**

4 Conclusion

In the twentieth century, the perpetual search for novelty in sound expression has led to radical changes in formal patterns, deeply rooted in previous musical tradition. Thus, the fugue form undergoes transformations of its inner organisation that will result in the emergence of structures fundamentally different from the initial Baroque concept and sometimes becomes the pretext for complex polyphonic works with structuralist tendencies.

References:


[3] The author explains the qualities of the crystal: the geometric shape and the brightness of natural crystals represent an example of order and symmetry in nature, but they are the result of the arrangement of atoms at the invisible level of the substance. Crystallisation is the process of modifying the internal structure, whereas the essence of this phenomenon does not reside in the outward form, but in regular geometric relations at the level of the deep, hidden organization of the crystal molecules.

