

# Musical Archetypes and Memes – Basic Natural Principles of Musical Work

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**Abstract:** - In previous studies I tried to describe music as a self-regulating and self-organizing system. In other words in the musical work some processes are liable to synergetic principles independently of conscious processes or intention of creators. Memetic and archetypal nature of musical work is based on an assumption that a musical work as a subsystem of system music is liable to the principles of self-regulating and self-organizing system which – we suppose – the system music is. Very interesting explanation of this problem offers the theory of memes based on the theory of genes.

**Key-Words:** - Music, Archetypes, Memes, Synergetics, Self-organizing system

## 1 Introduction

Discoveries on the field of natural sciences have inspired social and human sciences in the last decades. A new scientific discipline – synergetics – was established in order to investigate general principles and rules valid in different systems.

The other scientific theories – as the theories of systems, information and cybernetics, fractals and chaos, attractors, genetics and memetics – give us new scientific tools for studying not only biological organisms but also other systems, e.g. social, psychological or musical systems, their interactions and the way of behaving in their environment. Unlike to classical sciences the fundamental difference of these theories lies in an abolition of the objective observer, who can not exist separately out of an object. We suppose that the basic natural principles of a musical work relate to the musical archetypes and memes.

## 2 Principles of Synergetics and Memetics

Let us verify our hypotheses by principles of synergetics and memetics.

In C. G. Jung theory the contents of the collective **unconscious** are called **archetypes** (Jung also called them dominants, imagos, mythological or primordial images, and a few other names, but archetypes seem to have won out over these). An archetype is an unlearned tendency to experience things in a certain way.

Unlike to this theory we believe that due to the principle of synergetics the archetypal nature of a musical work is not only the result of the *unconscious processes* but also of the *processes in self-regulating and self-organizing systems*.

Synergetics describe two basic geminate forces: *competitive* and *cooperative*. These forces keep the system musical work viable: in music we speak about principle of contrast and principle of similarity. In a musical form we observe two following forces: e.g. the competitive force are represented by the contest of two contrast themes (section of destabilization), the cooperative force is represented by the principle of similarity in repetition and reprise, i.e. in sections of stabilization. These principles are present in each musical work of every time. We can say that **principles of contrast and similarity operate as archetype in a musical work**.

Synergetics also describes the order parameter which plays an important role in self-regulating and self-organising systems. This parameter operates as *regulator* balancing extreme situations in the system. *Order parameter* in the sense of synergetics “tells” the systems how to behave<sup>1</sup>. This parameter is, in our case, a human need causing that the system of music or some of its subsystems is developing towards an objective where it can become stable. The following needs can also operate as order parameters: minimisation of memory effort, of perception, of coding and decoding, optimisation of the state of music or parameters of composition, minimisation of production and reproduction effort as well as need for innovation or confirmation etc. At the same time these needs evoke processes, in physics described as *dynamic attractors*.

More complicated systems such as evolution systems – to which music and its subsystems belong – are characterised by complicated processes conditioned by

<sup>1</sup> Compare: Haken, H.: Synergetics. An introduction. Berlin, Springer 1978.

order parameters at the same time and also characterised by processes resembling to the cyclic and chaotic attractors. From this point of view the creating of musical work is not evoked by the linear dynamic, i.e. deterministic processes and it can not be assumed or derived from the previous development. Attractors and order parameters “tell” the system *musical work* how to behave, what is acceptable and important for remaining alive. Balancing between new and old, long and short, complicated and uncomplicated is dictated through **attractors and order parameters which operate also as archetypes in musical works**: e.g. centralization and decentralization (centripetal and centrifugal forces) in different musical systems (modality, tonality, atonality etc.) or different musical styles.

Recently, the principle of **genetics** and **memetics** are of the great interest. **Memetics** is a theoretical and empirical science that studies the replication, spread and evolution of memes. (Meme is an information pattern, held in an individual's memory, which is capable of being copied to another individual's memory).

Steven Jan (UK) studied hierarchic location of musical memes, both in cultural hierarchies – i.e., the replication of patterning at different strata within a culture – and in structural hierarchies – i.e., the replication of patterning at different strata within a work, including the level of the global structural **archetype**.

After the theory of memes the cultural evolution, including the *evolution of knowledge*, can be modelled through the same *basic principles of variation and selection* that underlie biological evolution. This implies a shift from genes as units of biological information to a new type of units of cultural information (also music information): **memes**.

A meme is a cognitive or behavioural pattern that can be transmitted from one individual to another one. Since the individual who transmitted the meme will continue to carry it, the transmission can be interpreted as a *replication*: a copy of the meme is made in the memory of another individual, making him or her into a *carrier* of the meme. This process of self-reproduction (the memetic life-cycle), leading to spreading over a growing group of individuals, defines the meme as a replicator, similar in that respect to the gene (Dawkins, 1976; Moritz, 1991). In these general characteristics, memes are similar to genes and to other replicators. The genetic metaphor for musical (or cultural) transmission is limited: genes can only be transmitted from parent to child (“vertical transmission”), memes can be transmitted between any two individuals (“horizontal transmission” or “multiple parenting”). In that sense they are more similar to parasites or infections (cf. Cullen, 1998).

In human society, almost any cultural entity can be seen as a meme: religions, language, fashions, music, art,

scientific theories and concepts, conventions, traditions, etc. The defining characteristic of memes as informational patterns is that they can be replicated in unlimited amounts by communication between individuals, independently of any replication at the level of the genes.

Dawkins listed the following three characteristics for any successful replicator:

**Copying-fidelity**: the more faithful the copy, the more will remain of the initial pattern after several rounds of copying. If a painting is reproduced by making photocopies from photocopies, the underlying pattern will quickly become unrecognizable.

**Fecundity**: the faster the rate of copying, the more the replicator will spread. An industrial printing press can churn out many more copies of a text than an office copying machine.

**Longevity**: the longer any instance of the replicating pattern survives, the more copies can be made of it. A drawing made by etching lines in the sand is likely to be erased before anybody could have photographed or otherwise reproduced it.

In musical systems the *copying-fidelity* could be seen in the musical styles (copying of the style of some composer or baroque-style etc.) or in musical performing (fidelity of interpretation – e.g. play old instruments, different styles). *Fecundity* works as dynamic attractors: mode in music, style, musical industry, distribution policy etc.). *Longevity* – natural selection does exist also in music: from hundreds of composers of e.g. baroque period we know and perform music only of some of them, but we can also find more prosaic reasons: as a disappearance or disturbing of scores, etc.

We have seen that both the principles of synergetics and the principles of memetics play an important role by understanding archetypal and memetic nature of musical works (but also of works of art generally). In the history of music or art we can find a lot of examples for archetypes and memes but also of attempts to disturb it. Disturbing of natural principles in some works leads to refusal of such products because our neural system and psychological abilities are not able to accept it. In recent history we can find examples in the period of avant-garde music and art in 20<sup>th</sup> Century which did not respect tradition and main – let us say archetypal or memetic – principles of art creation.

### 3 Archetypal and Memetic Nature of George Crumb's Compositions

Let us try to demonstrate the archetypal and memetic nature of music on some musical example by George Crumb.

Crumb regards his *Five Pieces for Piano* of 1962 as his first "representative" work. Since that all of his compositions give evidence of very close inclination to the principle of ancient music, to something what we can call as archetypal and memetic principles. In his article *Music: Does It Have a Future?* he wrote: "One very important aspect of our contemporary musical culture [...] is its extension in the historical and geographical senses to a degree unknown in the past. [...] The consequences of this enlarged awareness of our own heritage are readily evident in many of our recent composers. [...] Perhaps we have come to think of ourselves as philosophically contemporaneous with all earlier cultures. And it is probable that today there are more people who see culture evolving spirally rather than linearly. Within the concentric circles of the spiral, the points of contact and the points of departure in music can be more readily found. [...] Nonetheless, I sense that it will be the task of the future to somehow synthesize the sheer diversity of our present resources into a more organic and well-ordered procedure."

Crumb was conscious of principles which are similar to the forces described in synergetics. "Two basic types of form, both of which were known to earlier music, seem to have a peculiar attraction for recent composers. These two types are diametric opposites. One is the "nonrepetitive" principle, which implies a progression along a straight line without ever referring back to itself. The other could be called the "minimal" type, which usually consists of a repetition ad infinitum of one idea, whether it be a rhythmic motif, a chord, or a melodic succession of pitches. [...] Of course, both types could more correctly be termed formal procedures rather than conventionally articulated formal structures like the sonata-structure or the rondo-structure. [...] Perhaps many of the perplexing problems of the new music could be put into a new light if we were to reintroduce the ancient idea of music being a reflection of nature. Although technical discussions are interesting to composers, I suspect that the truly **magical and spiritual powers of music** arise from **deeper levels of our psyche.**"

Crumb has a very close relationship to the nature: "the rhythms of nature, large and small – the sounds of wind and water, the sounds of birds and insects – must inevitably find their analogues in music. After all, the

singing of the humpback whale is already a highly developed "artistic" product: one hears phrase structure, climax and anticlimax, and even a sense of large-scale musical form!"

In Crumb's compositions we can meet a lot of symbols of nature, ancient patterns, which are of archetypal nature: e.g. *Black Angels* for electric string quartet (Thirteen Images from the Dark Land; 1970), *Ancient Voices of Children* for soprano, boy soprano, oboe, mandolin, harp, electric piano and percussion (1970) to the poetry of García Lorca which has fascinated him for many ears, *Vox Balaenae* ("Voice of the whale") for three masked players (1971), *Makrokosmos I and II* (*Twelve Fantasy-Pieces after Zodiac*) for amplified piano (1972-1973), *Music for a Summer Evening* (*Makrokosmos III*) for 2 amplified pianos and percussion (1974) and many others.

In the composition *Vox Balaenae* Crumb combines audio and visual aspects: under a deep-blue stage lighting each of the three performers is required to wear a black half-mask which are intended to represent, symbolically, the powerful impersonal forces of nature (i.e. nature dehumanized).

The composition has a simple three-part form, consisting of a prologue *Vocalise (...for beginning of time)*, of a set of variations named after the geological eras: *Variations on Sea-Time: Sea Theme, Archeozoic (Var. I), Proterozoic (Var. II), Paleozoic (Var. III), Mesozoic (Var. IV), Cenozoic (Var. V)* and of an epilogue: *Sea-Nocturno (...for the end of time)*. In the *Sea-Nocturno* Crumb wanted "to suggest "a larger rhythm of nature" and a sense of suspension in time."

We can hear Crumb's typical signs of his compositional language: basic tone models with a very precise numeric combination of interval, rhythmical patterns and very rich dynamics, articulation and sonoristic effects and formal structure also with numeric symbolism. He respects the basic primary rules of musical morphology: centralisation and decentralisation, trichordal, tetrachordal, pentatonic, hexachordal tone succession, preference of seconds, fourths and fifths, using of microtones, of tritons as a consequence of 20<sup>th</sup> century and using of basic principles: principle of repetition and reprise, principle of variation, contrast and gradation.

The presence of archetypes and memes in Crumb's music is, perhaps, the reason for a big attractiveness of his compositions which are not only magic and spiritual but also of a grate artistic values and force.

for the New York Camerata

# VOX BALAENAE

## FOR THREE MASKED PLAYERS

(Electric Flute, Electric Cello, and Electric Piano)

George Crumb

**Vocalise (.. for the beginning of time)**  
Wildly fantastic; grotesque [♩ = 64]

N.B. The pianist should keep the Damper pedal depressed throughout the flute solo!

⊛ The flautist sings while playing! The sung tones and flute tones should be perfectly balanced. Notes marked with the symbol ⊛ are to be sung through the flute, i.e. the lips cover mouthpiece so that all tone is projected through the tube. The fingering changes will slightly modify these sung tones, thereby producing a shimmering effect. N.B. If flautist is female, the singing should be one octave higher (i.e. in unison with the flute tones).

⊛⊛ Hold fingering for G<sup>4</sup> while trilling rapidly with the second (lower) D<sup>4</sup> trill key.

⊛⊛⊛ Flzg. = Flutter-tongue

## 4 Conclusion

The testing of many compositions and composers (artists) of different styles and historical periods is desirable.

More adequate explanations of the memetic and archetypal nature of musical work depend on results gained from different scientific disciplines: e.g. quantitative and mathematical methods, psychological investigation of conscious and unconscious processes cooperating by the creation of musical or artistic work, systems theoretical modelling etc.

Traditional evolutionary theory, not taking memes into account, is based on the idea that everything is about improving an organism's chances for reproducing its

genes. Genes for liking music will be out-competed by genes for something more productively related to reproduction. Some scientists propose that music has less to do with genes and more with memes. Musical shapes of archetypal nature (melodic and rhythmical models, harmonic cadences and often used harmonic follows) are mental information patterns: early memes or archetypes.

The research of archetypal and memetic nature of music could bring very important results in the future. The definition of archetypes, memes and basic natural principles of musical work could contribute to better understanding why some of them are more or less attractive and acceptable.

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