Márta Grabócz
Professor Emeritus, University of Strasbourg
ORCID: 0000-0003-4131-5108

Topics in Contemporary Music. Some Archetypal Structural Processes (and TSU) in the Writings and Works of Contemporary Composers[1]

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The aim of this article is firstly to present the surprising convergence in the approaches and theories of the contemporary composers to examine this convergence in relation to temporal semiotic units, or TSUs. My research in the field of electroacoustic music since 1988 has revealed the same broad categories of structuring processes, regardless of the country of origin and the aesthetic concepts of each composer. The composers in question are the following, listed chronologically according to the dates when the theories underpinning their compositional processes were published:

1) François-Bernard Mâche: *Le son et la musique* in 1963, and later in 1997, 2001[2];

2) Trevor Wishart with his seminal book *On Sonic Art*, 1985;

3) Denis Smalley: his article titled *Spectromorphology and Structuring Processes*, 1985;

4) Costin Miereanu: *Fuite et conquête du champ musical*, 1996 (the chapter headed "Vers une nouvelle microstructure"), and the following articles: *Pour une forme musicale accidentée*, "Inharmoniques" N°5, 1992; *Stratégies du discontinu*, 1998;

5) Salvatore Sciarrino: *Le Figure della musica, da Beethoven a oggi*, [Sound forms in music from Beethoven to the present day], Ricordi, 1998;

6) François Bayle: categories noted in the booklet of his CD *La forme du temps et un cercle*, 2002, and his categories presented by Gianfranco Vinay in his article *Métaphore cosmologique et philosophie de la nature dans la musique acousmatique de F. Bayle*, 2004.

Following a lecture that I gave on the theories of composers during a seminar on TSUs held at Panthéon-Sorbonne University, an important issue emerged: *the segmentation and duration of the units under consideration.*

With this difficulty in mind, it would be best to start by quoting the main definition of what TSUs are: "When can it be said that Temporal Semiotic Units occur? They are musical segments that possess, even out of context, a precise temporal signification linked to their morphological organisation".[3]

[1] The text originally appeared in French as *Quelques processus archétypiques – ou unités sémiotiques temporelles – dans les écrits et les œuvres de compositeurs contemporains. (F. Bayle, F.-B. Mâche, C. Miereanu, S. Sciarrino, D. Smalley, T. Wishart)*, [in:] E. Rix et M. Formosa (dir.), *Vers une sémiotique général du temps musical dans les arts*, (Actes du colloque 'Les unités sémiotiques temporelles, UST, – nouvel outils d'analyse musicale: théories et applications', Marseille, 7–9 décembre 2005), Sampzon, Delatour France/IRCAM-Centre Pompidou 2008, pp. 93–112.

[2] Bibliographic references can be found at the end of the article.

[3] *Les Unités sémiotiques temporelles. Eléments nouveaux d'analyse musicale*, éd. M. Formosa, M. Frémiot, F. Delalande et al., Paris 1996, p. 18.

Unlike Pierre Schaeffer's "sound objects"[4], "...with TSUs we seek the minimal segment that corresponds to a well-defined meaning. The dividing up into sound objects and TSUs does not necessarily coincide. For example, a single TSU of the type called "in suspension" can be made up of a set of sound objects, or, conversely, a single fragment of a long sound object can provide an example of TSU types defined as 'falling' or 'moving forward'".[5]

The composers I will mention are in search of *new units of articulation* that are inspired either by working in an electroacoustic studio (as is clearly the case with Denis Smalley), or by morphological analysis of the sound spectrum (as is the case with Trevor Wishart), or by observation of the units of articulation that are perceptible in different periods of musical history (as is the case with Salvatore Sciarrino's work), or by close examination of natural phenomena in electroacoustic works (as is the case with F.-B. Mâche, Costin Miereanu, Trevor Wishart and in part François Bayle).

1. In the 1960s, **François-Bernard Mâche** sought ways to achieve effective musical structuring via the sonogrammatic analysis of natural sounds. In his article *Le son et la musique* (1963), he outlined the following fundamental ideas:

> The true imitation of nature is essentially the imitation of operative patterns, much more than the superficial imitation of perceptible results. To imitate the reality of sound is to uncover some of the secrets of its life and the processes that are specific to it: birth, growth, extinction, association, dissociation, etc. In short, it is to do as nature does, but not to remake what nature does.[6]

In 1997 and 2001, Mâche made an inventory of musical genotypes and archetypes (see Table 1). He lists formal categories, for example *physical models* such as reflux, echo, flow, burst, and call (1997).

In his book *Musique au singulier*, he discusses the following archetypes:

– ostinato;
– refrain;
– repetition;
– strophe;
– litany;
– fixed forms.

In the chapter headed *Archetypes*[7], he describes dynamic patterns such as ostinato, acceleration ("speed-up"), response or echo, and later on, "ascent". In the following quotation, he describes what he means by "acceleration":

> The first of these two archetypes [speed-up] is extremely well represented in all the musics of the world. Even if its notation in European music did not become widespread until the 19th century, as it was still handicapped by our rhythmic system, the reality was very common from the beginning. Much music, such as the Cretan *pendozalis*, the gypsy *csardas*, the Berber *Ahwach* of the Atlas mountains, the music of the *Mevlevi* dervishes, most of the classical Indian ragas, or even the *ritual fire dance* of De Falla's *Love*, *The Sorcerer*, include it as a structural feature, that is, as a genotypic programme. *Linked to increasing excitement, the speed-up is often an immediate sonic translation of a concomitant physiological change*. The cases where it is controlled, and more temporary, offer a less obviously primary character, sometimes leading to a very subtle instability of tempo. The Viennese waltz, for example, with its three unequal beats and its own elastic tempo, gives a very controlled, two-tiered picture of this principle. In Buddhist rituals such as the *Koryong-san* (*The Vulture Peak*) in Korea, the control of a vast, accelerated tempo over a very long period of time is a considerable departure from the usual physiological data. That it is, however, the development of an archetype with any acceleration is strongly suggested by its existence in many animal species. *Siamang gibbons, the spotted great horned owl bubo leucostictus*, the Tengmalm's owl *aegolius funereus,* the blackbird's warning call, and many insects, combine acceleration and deceleration, as does the Romantic era's rubato.[8]

Concerning the shift from the archetype (deep level) to the surface structures (the phenotypes), F.-B. Mâche notes the following:

[4] Objects considered as syllabic (morphological) units and not as units of meaning.

[5] *Les Unités sémiotiques temporelles*…, op. cit., p. 19.

[6] F.-B. Mâche, *Le son et la musique*, [in:] idem, *Entre l'observatoire et l'atelier*, Paris 1998, p. 79.

[7] In F.-B. Mâche, *Musique au singulier*, Paris 2001.

[8] Ibidem, pp. 41–42 [emphasis – M.G.].

Table 1. Typologies defined by F.-B. Mâche and used in the music of F.-B. Mâche

I. *Le son et la musique* (1963): 1. birth 2. growth 3. extinction 4. association 5. dissociation
II. *Musique au singulier* (2001): "Dynamic patterns" (in chapter "Archetypes", pp. 41–47) 1. speeding-up/slowing down (with possible ecstasy or paroxysm) 2. response or echo 3. isorhythmic ostinato (pp. 78–79) 4. polyphonic pentaphonic drone 5. patterns of conflict, canon (counterpoint, tiling, fugue, imitation, micro-polyphony) 6. sensory-motor experiences, e.g. the motion of the sea (p. 39) 7. repetition, refrain
III. *Typologies by Márta Grabócz, based on the analysis of F.-B. Mâche's works written up until 1990*: *I. Birth/extinction* 1. anabasis, ascent 2. catabasis, fall, descent 3. music appearing as a "genesis", emerging, hesitant, like an improvisational departure *II. Growth* 1. approaching, arriving from a distance 2. increase, augmentation (of the sound space, of the dynamics, etc.) *III. Different forms of stasis* 1. vegetation 2. vibrating nature 3. gesticulation *IV. Positive or negative climaxes* 1. extreme build-up of tension (explosion of materials) 2. confrontation between different forces or levels 3. adverse expressive space or climate (sea storms, menacing depths, etc.) 4. points of culmination such as ecstasy, ritual parox sm, etc.

Can we look for archetypes directly in completed forms, in works, as this musicologist seems to do? Should we not rather, by assumption, see in them embryonic impulses, which often do not manifest themselves in a pure state at the level of the complete work, and whose presence can only be spotted indirectly? From the archetype to the surface structures represented by musical statements, should we not at least assume the intermediate stage of the genotype? If the archetype is the voice of pure nature, the genotype already bears the mark of a 'co-evolution' between the innate and the culturally acquired, and it is under the control of the latter that it transmits to the musical consciousness the stimuli of the 'prewired' neuronal circuits.

In the interpretation I am proposing, the archetype is an image floating in the unconscious; the genotypes are the dynamic patterns that mark its passage to consciousness as a programme of action; the phenotypes are the perceptible results of these thought processes.[9]

In terms of our comparative study with TSUs, the following categories suggested by Mâche can be applied: *birth*, *extinction*, *growth*, *association*, *dissociation* and *acceleration*, along with *paroxysm* (or culmination), as well as *ascent* and *descent* according to the chromatic or diatonic scale.

[9] Ibidem, p. 36 [emphasis – M.G.].

2. In the 1980s, **Trevor Wishart** was also engaged in the search for "archetypes which allow us to perceptually classify these complex sounds".[10] He suggests what a few of these might be and that his following discussion of them "refers mainly to sounds, all of whose characteristics evolve in a complex way and does not necessarily apply to typical instrumental tones".[11]

In the chapter *Intrinsic morphology of complex sound-objects* of the book he published in 1985, he introduces the following categories (see Table 2):

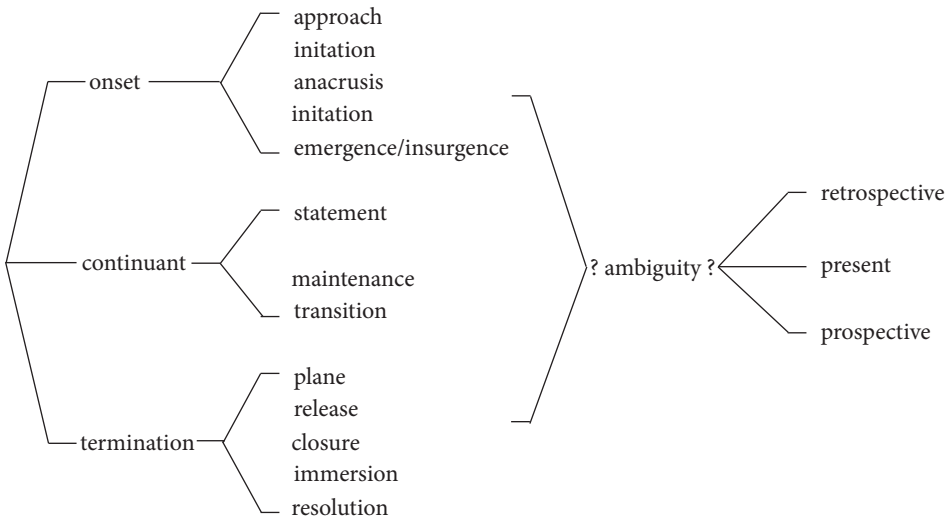
3. In the early to mid-1980s, **Denis Smalley** also started to develop his "spectromorphological" typology. His seminal essay on this subject (first published in French in 1995) is an extensive rewriting of his "Spectromorphology and structuring processes" in *The Language of Electroacoustic Music*[12]. In the essay he outlines the definition of this term as follows:

I have developed the concepts and terminology of *spectromorphology* as tools for describing and analysing listening

Table 2. Typologies as outlined by Trevor Wishart (*On Sonic Art*, 1985, pp. 100–103)

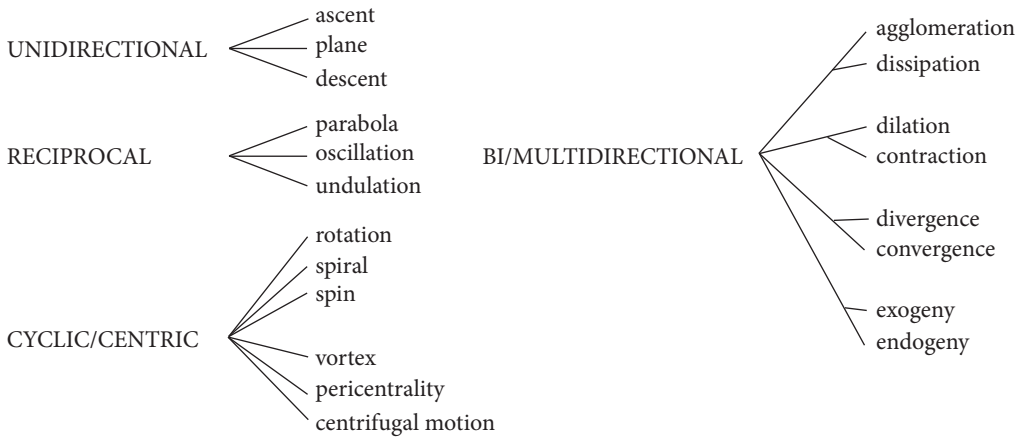
Intrinsic morphology of complex sound objects (pp. 100–102)
1. Turbulence (extreme turbulence → perceived as noise)
2. Wave-break
3. Siren/Wind
4. Creak/Crack
5. Unstable-settling
6. Shatter
7. Explosion
8. Bubble
Natural morphology in group phenomena (pp. 102–103)
1. Alarum (animals or birds disturbed by a predator) – individual loud cry → a whole mass of individual cries is created
2. The dunlin-effect – swirling patterns (as in a swarm → curving and fluctuating patterns)
3. Streaming effects

Table 3. Denis Smalley: Structural functions[13]



[10] T. Wishart, *On Sonic Art*, author's edition, York 1985, p. 100.
[11] Ibidem.
[12] In D. Smalley, *The Language of Electroacoustic Music*, ed. S. Emmerson, London 1986.
[13] Source: chapter by D. Smalley on "Spectromorphology", [in:] idem, *The Language of Electroacoustic Music…*, op. cit., p. 70.

Table 4. Denis Smalley: Motion and growth processes[14]



experience. The two parts of the term refer to the interaction between sound spectra (*spectro-*) and the ways they change and are shaped through time *(-morphology)*. […] Although spectral content and temporal shaping are indissolubly linked, we need conceptually to be able to separatethem for discursive purposes […] A spectromorphological approach sets out spectral and morphological models and processes and provides a framework for understanding structural relations and behaviours as experienced in the temporal flux of the music (see Tables 3 and 4).[15]

4. Costin Miereanu composed his works from the 1970s and 80s onwards by means of various realisations of the *discontinuous*. He drew on the concepts of discursive semiotics[16] as well as the work of Bachelard[17] and Michel Serres[18]. In his article *Stratégies du discontinu* (1998[19]), he explained his approach which, in his words, is based on a "labyrinthine musical strategy".

Table 5. Typologies as outlined by Costin Miereanu (1996–1998)

Formal elementary categories (of an extra-musical nature)	**Semiotic aspectualities**	**Musical aspectualities**
nascent	**inchoactivity** (durativity)	**evolutionary**
crepuscular	**terminativity** (durativity)	**involutive**
zenithal	**pointillism** (spatial aspectuality)	**invariant**
Meteoric	**double aspectuality** (spatial and temporal)	**pulverised** (occasionally diffuse)
enveloping process	**semiotic iteration** (discontinuous durativity)	**transitory** (floating)
Compositional models and modules: 1. Blow-up (under the magnifying glass) 2. polylogues 3. elementary processes (repetition; transition; immobility; opening, closing; cadence; pre-existing objects) 4. diversions (quotation, fragmented techniques; "alterity"; faded reproduction; copy of a copy; "erosion") 5. labyrinths Uneven, dramatised form with "reefs" and "crossings"		

[14] Source: essay by D. Smalley, *Spectromorphology. Explaining Sound-Shapes…*, op. cit., p. 116.

[15] Essay by D. Smalley, *Spectromorphology. Explaining Sound-Shapes*, "Organised Sound" 1997, vol. 2, issue 2, p. 107.

[16] J. Courtés, A. J. Greimas, *Sémiotique. Dictionnaire raisonné des sciences du langage*, Paris 1979.

[17] G. Bachelard, *La Dialectique de la durée*, Paris 1972.

[18] M. Serres, *Genèse*, Paris 1982, pp. 186–187.

[19] *Les Universaux en musique*, éd. C. Miereanu, X. Hascher, Paris 1998, pp. 31–42.

He also establishes different families of categories and I mention those that are closest to TSUs. Firstly, the elementary formal categories: *nascent*, *crepuscular*, *zenithal*, *meteoric*, *enveloping process*; and secondly, the semiotic aspectualities: *inchoativeness* [beginning], *terminativeness* [closure], pointillism in space, *semiotic iteration* [repetitive flow, in waves].

In a later phase of his thinking, he introduces compositional models and modules (such as blow-ups, polygons, elementary mechanisms, diversions, labyrinths [with "narratives" and "crossings" inside]).

5. Salvatore Sciarrino published his book *Le Figure della musica, da Beethoven a oggi*[20] in 1998, but the starting point for his work was his seminars given in 1992, under the title "Structures perceptives de la musique moderne" (Perceptive Structures of Modern Music).

Table 6. Typology as outlined by Salvatore Sciarrino (1992–2001).[21]

Lesson I	**Processes of accumulation** Introduction. The empty and the full. Heterogeneity and chaos.
Lesson II	**Processes of multiplication** A homogeneous and orderly accumulation. The "canon" exposition; between macro and micro form. Tension and how it builds up.
Lesson III	**The "Little Bang"** Spatialisation of the sound field and its history. Loudness as an illusion of space. Stopping and movement. Musical gestures. Horizontal and vertical.
Lesson IV	**Genetic transformations** Fragmentation and repetition. Modularity. The sound event will transform itself before us.
Lesson V	**Window forms (I)** Discontinuity of the spatio-temporal dimension: the route between the plastic arts and music. The imitation of machines.
Lesson VI	**Window forms (II)** Composing in blocks. When time contracts.

[20] Ricordi, Milano 1998.

[21] Source: G. Giacco, La Notion de "figure" chez Salvatore Sciarrino, Paris 2001, p. 109.

Grazia Giacco provides a remarkable introduction to the meaning of the term "sound forms" as used by Sciarrino, in her book *La notion de «figure» chez Salvatore Sciarrino*.[22] The Italian composer seeks "elementary forms" and, like F.-B. Mâche, he asserts the link between organisational processes and naturalism:

> Naturalism means [...] finding certain archetypes that are common to all via a more direct route [...] and also being able to draw on certain aspects of reality, which can provide ways of organisation, for example. […] In our mind, the aesthetic experience, in all its fullness, is reminiscent of the naturalist approach. In front of any masterpiece, we are moved by what we should call the wonder, the miracle of art: statues come to life, a look is transfixed…[23]

Sciarrino's five main categories are as follows:
1. Processes of accumulation
2. Processes of multiplication
3. The "Little Bang"
4. Genetic transformations
5. Window forms

1. Processes of accumulation

These are typified by a chaotic and non-uniform growth, which most often reaches a saturation or breaking point, and sets the stage for an "explosion" in which the energy is scattered. During the accumulation, time seems to speed up and contract[24].

The processes of accumulation appear before our eyes every day. During his or her life, a person does nothing but accumulate around themselves: waste, things, experiences? Any field of perception gives us an idea of this process: is not the world itself a process of growth? When we finish listening to something, haven't we accumulated signals and stimuli and tensions in our memory? Accumulation is a process so closely linked to our physiology that it can be assumed to be inherent in the way our mind works. It is therefore appropriate to have recourse to circumscribed examples. Coming back to town from the countryside, we can see the random clustering of houses [...]. Another example is atmospheric phenomena, with

[22] L'Harmattan, Paris 2001.

[23] In G. Giacco, *La Notion*…, op. cit., p. 54.

[24] See ibidem, p. 86.

clear skies and sudden cloud formations. It starts to rain, and we look at the floor of our balcony: the drops are very few and separated by dry areas; then the whole surface gets covered.

All positive growth has a corresponding negative one. As the homes cluster together, the vegetation shrinks; so too, when the rain falls, the dry areas shrink. Thus, as with the rain, we have gone from an initial sparse situation to a final saturated situation. The transition from a lower to a higher density is a process of accumulation.[25]

2. Processes of multiplication

These processes are typified by orderly growth, achieved through the use of uniform elements.

Unlike accumulation processes, in processes of multiplication 'regularity is more apparent'. This is a function of modularity, i.e. 'the repetition of recognisable elements […] against which any variation becomes perceptible.' Sciarrino identifies the emergence of multiplication processes ('...they were small sections of short pieces…') more specifically in contrapuntal techniques. Indeed, counterpoint was 'still linked to the faster (i.e. shorter) proportions of verbal expression in early music. The interest in the process of multiplication is thus similar to the fugal processes, to the idea of 'that mixture between theme and non-hierarchical interweaving, […], to the appearance and recognition of the theme against a changing and varied background'.[26]

3. The "Little Bang"

Sciarrino, still in reference to the phenomena of nature and our physiology, was inspired here by the theory at the beginning of the 20th century to identify patterns that could resemble the initial expansion of the universe. However, he is not concerned with the validity of the theory, but rather 'with the conceptual image associated with the theory'.

In other words, for him it was important to identify in a piece *the moment when a triggering element produces a change from one situation to another* (from a situation of stagnation, of standstill, to a situation of movement, for example). The belief that it is 'indispensable to link the macro and the microcosm, the general aspects with those that are particular and vice versa' once again prompts Sciarrino to start from an 'elementary combination' to explain to us more wide-ranging processes.[27]

Sciarrino identifies two types of *Little Bang*: one is "an unforeseen element that occurs in a static musical situation not without consequence", as in the second movement of Franz Schubert's String Quartet op. 161 (1826), during the pizzicato passage in bar 154; the other can be the trigger for the origin of the piece itself, a loud bang, a generative chord, as in the case of the beginning of Pierre Boulez's *Pli selon pli* (1967). The *ppp* dynamics assigned to part of the strings ensures the perception of a sound (the trace) that emerges from a loud chord, but which in reality already exists. The bang is certainly at the perceptual level and not only at the notational level[28].

4. Window forms

The figure referred to as *windowed form* is the expression of the *discontinuity of the temporal dimension* that Sciarrino identifies in music.

His thinking does not stop at musical discourse and his research extends to other artistic fields: the freezing of the moment – as in the case of photography – and the discontinuity of spatial and temporal planes are expressions of the discontinuity that permeates all our modern sensibilities[29].

Nowadays time no longer flows as it once did: it has become discontinuous, relative, variable.

Variable: by moving from one end of the world to the other, we compress and expand time.

Relative: we can communicate with the most distant countries, where, at the same time, our watches indicate a different time.

Discontinuous: we can stop time, interrupt it. All we have to do is take a photo. When we look at it afterwards, we insert a rectangle from the past into the present we are currently inhabiting.[30]

[25] Ibidem, pp. 86–87 [emphasis – M.G.].
[26] Ibidem, p. 89.
[27] Ibidem, pp. 97–98.
[28] Ibidem, p. 99.
[29] Ibidem, p. 62.
[30] Ibidem, p. 63.

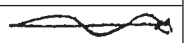
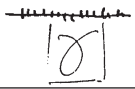
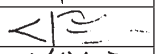
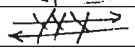
In music, creating a discontinuity means projecting the break, as 'the choice of where the interruption will occur becomes very important for the aesthetic result'. As Sciarrino points out, the effect of the interruption is to trick our expectations, which is why it 'must not be predictable, it must appear fortuitous.'

We are dealing with a formal approach that Sciarrino himself defines as 'anti-rhetorical form'. The idea is indeed to play on the element of surprise, to 'deceive the listener without upsetting him', by avoiding any predictable approach.[31]

6. François Bayle makes use of the following categories of acousmatic music:

- Figures of concrescence[33] (three types of activity [or "continuant"]: simple, flow, figural):
  1) continuity or spatial openness;
  2) iterative flow;
  3) kinematic trajectories.

Table 7. Categories and works as defined by François Bayle.[32]

MORPHODYNAMICS OF PROJECTED SOUNDS					
Three types of "concrescence" Piece					
1. Simple (continuant)	Fabula	1990	31"	Continuity or spatial openness	
2. Flow	Grande Polyphonie	1974	21"	Iterative flow	I---I----I----I-----I---I----I---
3. Figural	Cercles (The shape of time is a circle)	2001	54"	Kinematic trajectories	
New paradigms					
4. Deployment/run-off	Espaces inhabitables	1967	17"		
5. Invasion/clouds	Tempi	1999	10"		
6. Translation/resistance	L'infini du bruit	1979	51"		
7. Percussion/resonance and inversion	Grande Polyphonie	1974	20"		
Metaforms					
8. Schemas of elements	Onoma (Fabula)	1990	45"		
9. Behaviour schemas Invasion/ prominence, influence	Ombres blanches (Théâtre d'ombres)	1988	146"		
10. Descriptional schemas Translation/resistance Compression/dilatation	Tremblement de terre très doux	1978	142"		
Morphological concepts or image-of-sounds (i-sounds): temporal objects/oriented signs (im-son, di-son, mé-son)					
11. Iconic (im-son)	Onoma (la balançoire)	1990	48"		
12. Diagrammatic (di-son)	Si loin, si proche (La forme du temps est un cercle)	1999	46"		
13. Metaphorical (mé-son)	Onoma (rebondissement)	1990	123"		

[31] Ibidem, p. 74.

[32] Source: G. Vinay, *Métaphore cosmologique et philosophie de la nature dans la musique acousmatique de François Bayle*, [in:] *Le Son et la Nature. Composition et théorie musicale en France, 1950–2000*, ed. G. Borio, P. Michel, revue "Musicalia" n° 1, Pisa-Roma 2004, p. 152.

[33] A term used by the philosopher A. N. Whitehead, meaning "to grow together", to agglomerate, to aggregate. This term, in the philosopher's view of nature, refers to the idea of the flow of processes in perpetual becoming/perishing. For more on this idea, see F. Bayle, *Komposition und Musikwissenschaft im Dialog IV*, Münster 2003, p. 186.

- Metaforms:
  1) schemas of elements;
  2) behaviour schemas;
  3) descriptional schemas.

- Morphological concepts or image-of-sounds/ i-sounds (oriented signs):
  1) the iconic *im-son*, referential;
  2) the diagrammatic *di-son*, indicial;
  3) the *mé-son*, metaphorical.

- New paradigms:
  1) deployment/run-off;
  2) invasion/clouds;
  3) translation/resistance;
  4) percussion/resonance and inversion.

If we begin to think about the typologies of these six composers, we can see that references to a tripartite temporal form (*beginning*; *middle or continuant*; *end*) are common, as well as aquatic references (*run-off*, *breaking waves*, *flow*, *floating*, *rippling*). There are also many references to a high point in the unfolding of the musical discourse, a culmination (see, for example, the wide range of terms used such as: *accelerated and paroxysmal*; *explosion*; *arrival*; *zenithal*; *"reef"*; *"Little Bang"*; *"percussion/resonance"*). Forms of stasis, of the stationary or of the discontinuous are also recurrent (*drone*; *cracking-creaking*; *breaking-fraction*; *reciprocal movement: oscillation*; *cyclical movements: spinning and spiralling*; *meteoric/pulver ised form*; *semiotic iteration: discontinuity*; *windowed forms*; *iterative flow*; *invasion/prominence-influence*; *compression/dilatation*).

Based on this observation, I have drawn up four summary tables according to four common and fundamental categories:

1. emergence or beginning;
2. extinction or collapse;
3. culmination, explosion, or zenithal form;
4. the different cases of "stasis" and stillness, repetitive and discontinuous.

The following is the result, supplementing these four main categories with the corresponding TSUs (Tables 8, 9, 10 and 11).

Table 8. Typologies – Summary 1: Emergence or beginning.

TSU (1996)	**MÂCHE (1963, …)**	**WISHART 1985**	**SMALLEY 1986**	**MIEREANU 1996**	**SCIARRINO 1998**	**BAYLE 2001**
No. 13 "Wanting to start" No. 11 "Moving forwards" No. 4 "Propulsion"	"Birth" Also see: "anabasis" "approach"	"Alarum" (individual cry → Mass of cries)	Structural functions: onsets: – approach – initiation – anacrusis – emergence/ insurgence Unidirectional motion: "Ascent"	Elementary formal categories: "Birth" Semiotic aspectuality: "inchoactivity "	Processes of accumulation (processes of multiplication)	Concrescence

Table 9. Typologies – Summary 2: Extinction or collapse

UST 1996	MÂCHE 1963, 2001	WISHART 1985	SMALLEY 1986	MIEREANU 1996	SCIARRINO 1998	BAYLE 2001
No. 1 "Falling" No. 19 ["Inertia"] No. 9 "Braking"	"Extinction" (←) also see: "catabase" "falling"	"Shatter"	Structural functions: termination, closure – release – immersion – resolution Unidirectional motion: descent	Elementary formal categories: "Crepuscular" Semiotic aspectuality: "terminativity"	[Reversed accumulation]	—

Table 10. Typologies – Summary 3: Climax or explosion

UST 1996	MÂCHE 1963, 2001	WISHART 1985	SMALLEY 1986	MIEREANU 1996	SCIARRINO 1998	BAYLE 2001
No. 10 "Obsession"	Speed up and growth (with possible ecstasy or paroxysm)	Explosion	Structural functions: "Continuants": – statement – prolongation Multidirectional motion: – accumulation – contraction – agglomeration	Elementary formal categories: "Zenithal" Semiotic aspectuality: "Pointillism" Labyrinth morphology: "reefs – isolated icebergs – glass bells – multiple splinters	"Little Bang" – a triggering event in the middle of a static situation	"Circles" runoff weather vortex

Table 11. Typologies – Summary 4: Different cases of "stasis" and discontinuity

UST 1996	MÂCHE 1963, 2001	WISHART 1985	SMALLEY 1986	MIEREANU 1996	SCIARRINO 1998	BAYLE 2001
No. 6 "Floating" No. 12 "Turning " No. 17 "Moving in waves" No. 18 "Stillness"	"Isorhythmic ostinato" "Polyphonic drone" [2001] Forms of stasis: – vegetation – vibration – nature's gesticulation [1990] Physical models: – reflux – echo – run-off [1997]	"Streaming effect"	Structural functions: "Continuum ": – stationary – maintenance "Reciprocal motion": – oscillation – undulation – parabole Cyclic/centric motion": – centrifugal – vortex – spiral, etc.	Elementary formal categories: 1) "Enveloping processes" 2) "Meteoric" Semiotic aspectuality: – semiotic iteration – spatial and temporal Labyrinth morphology: "crossings" – perforated mesh – soft islands – elastic surfaces, etc.	"Window forms I and II" – discontinuity of the spatio-temporal dimension – composing in blocks	"Fragmentation ... internal time"

We believe that this view of the convergences of current compositional tools and temporal semiotic units allows us to establish a hierarchy within the nineteen TSUs, and to supplement and expand the list using the terms of the composers discussed in this article.

Translation (from French): Philip Clarke

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SUMMARY

Márta Grabócz

Topics in Contemporary Music. Some Archetypal Structural Processes (and TSU) in the Writings and Works of Contemporary Composers

The purpose of this article is to present an astonishing convergence in the creative processes and theories of some contemporary composers on the one hand, and to confront this convergence with TSU theory

(Temporal Semiotic Units) on the other. My analyses carried out in the field of electroacoustic music since 1988 have revealed the same broad categories of structuring processes, regardless of the country of origin and the aesthetic conceptions of each creator.

The composers in question are the following, according to the chronological order of theorizing their compositional process: F.-B. Mâche, T. Wishart, D. Smalley, C. Miereanu, S. Sciarrino, F. Bayle.

After having examined their structural processes, I have drawn up the four main summarizing categories according to their approaches:

1) emergence or beginning; 2) extinction or collapse; 3) culmination point, explosion, or zenithal form; 4) the different cases of "stasis" and stillness, repetitive and discontinuous forms.

The archetypal processes of the six composers will be compared to the 19 Temporal Semiotic Units (TSU) established by the composers of Marseille studio of electroacoustic music (GMEM) and of the GRM composers (Paris). This theory has been published in different books and articles in France since 1996.

We believe that this view on the convergences of current compositional theories and "temporal semiotic units" provides us with new analytical tools for a better understanding of contemporary musical works.

Keywords

F. Bayle, F.-B. Mâche, C. Miereanu, S. Sciarrino, D. Smalley, T. Wishart, spectromorphology and structuring processes, temporal semiotic units, or TSUs, "elementary forms" and sonorous naturalism, morphodynamics of projected sounds, archetypes of complex sounds, accidental forms, beginning, continuity (prolongation), culmination, stasis, extinction.