The ontology of the work: exploring the creative discourse
Professor Roger Redgate

ABSTRACT

How do we understand the ontology of a work from its initial inception in the mind of a composer, to the final realisation in performance? This creative discourse is often more complex than at first appears. What is the nature of the unformed material; is this a specific apprehension of sound, an image or an extra musical reference? To what degree is this material then mediated by its own possibility in notation or even determined by various structural processes? Further, what are the relationships obtaining between notation and interpretation seen as potential form building elements; are there structures inherent in notation, which elicit material beyond a simple representation and if so, how might a composer exploit this as part of the work structure?

This paper will examine the nature of the creative discourse in relation to my own compositional practice, which focuses on the symbiotic relationship between complex pre-compositional processes, notational potential and a more intuitive scanning of the material.

I recently gave a keynote speech at the Principles of Music Composing conference in Vilnius, Lithuania on links between audiation and composing [7]; audiation being the ability to hear music in the mind when no physical sound is present. This clearly relates to the process of becoming involved in the development of a composition from the initial idea, as some kind of apprehension of sound in the mind of the composer, to the final opus in whatever form that might take. However, often, it appears to me, there is an unquestioned link between what exists in the mind of a composer and its final realisation in performance. Briefly, I would like to situate this process within a theoretical context and later discuss how it applies more specifically to my own working processes as a composer. My title, the ontology of the work, seeks to problematize the locus where a composition might be said to exist, whether it is something imagined by a composer, objectified in notation as text, or realized in/through performance. In each case, to some degree, this creative discourse is affected by the intervention of compositional processes and/or notation. The role of notation today, for example, is clearly far more complex than the transcritptive representation of an idea. If we consider the complex scores of a composer such as Brian Ferneyhough, or the more descriptive notation of Helmut Lachenmann, for example, the notion of a work as a graspable invariant entity, which can be directly transmitted, becomes questionable; how do we understand the functionally of notation in such contexts?

One level would be the proposal that notation itself has an inherent structure and potential as material, and is not simply there to service

the representation of a preformed idea, or indeed is separable from the music it notates. In his 1961 article *Vers une musique informelle*, Adorno speaks of music's congealed written state and the fluid state it signifies, «what is fixed in the sign and really is there, appears in terms of its meaning, as process» [1, *296*]. Notation, therefore, inevitably involves a certain degree of entropy through realization in performance, whether this is interpretational latitude or more specific built-in aspects of notational fluidity. Further, to what degree might a musical idea be defined by its own possibility in notation, by inherited concepts? Carl Dalhaus observed how «The composer has the problem of changing the notational system or the reverse, namely, expressing phenomena in a notation which by virtue of the historical meaning it has acquired, contradicts that which is to be conveyed. One would have to be blind to history to see in our notation…a neutral supply of signs, independent of style and capable of doing justice to any style.» [5, *46*]. Often there is a certain habit of thought defined by such historical sedimentation. It would be a mistake to assume that notation simply, or even, fulfils the role of a transcription. Once again Adorno suggested that to notate is already to surrender ones spontaneous reactions to the principles of construction.

Throughout the 20th Century there was also the rise of various complex generative processes, which transcend the limitations of the imagination in the conventional sense, accessing a wider range of potential material, which further gives rise to various complex notational strategies. Adorno, of course, was critical of this, referring to «systems driven music» which, «can only be understood with the

aid of diagrams», suggesting that a quite different mode of apperception was perhaps necessary in the assimilation of such music and the unfolding of material [1, *269*]. Of course, Adorno's article was written nearly 60 years ago, and he was perhaps confronted with the apparent impasse of total serialism. Adorno's *musique informelle*, proposed a type of music, which «discards all forms which are external or abstract, and which constitutes itself in an objectively compelling way, in the musical substance itself, and not in terms of external laws» [1, *272*]. However, we might take moment to consider what constitutes the «musical substance itself»; what forms of manipulation or development might be external or abstract. The intervention of notation itself gives way to inherited external matter, informed by the principles of construction. Adorno's discussion focuses on the contrast between thematic or motivic material with serial structures, where specific connections between pitches are formed to create gestures (Gestalt). He further suggests, however, that complex atonal scores «always eluded a fully adequate formulation in the imagination» [1, *303*].

We don't have time here for a full discussion of the complexities of Adorno's article; however, he addresses important problems relating to issues of form and material, in a post-serial environment, suggesting that an informal music had been a real possibility around 1910, that is too say the free atonal period. We are now as far beyond Adorno's article as he was the Second Viennese School of 1910, except today of course, there is no common language and composers take their inspiration from a very wide range of extra-musical

sources including, maths, astronomy, architecture, fractals, texts, visual images, number sequences and so on.

What is clear is that the functionality of material has significantly changed, and the concept of an apperception in the sense of a tradition has been equally redefined. Material might quite conceivably be co-extensive with a work in time, for example, which would require a very different listening process to say the music of Webern. I am thinking here of the generative processes as developed by composers such as Iannis Xenakis or Richard Barrett where the import of any specific pitch articulates a very different functionality to that defined by serial processes or spectral music, for example.

Adorno seemed to suggest that listening should invoke something of a reconstructive participation in the process of composition, however speculative that might be, in order to form an adequate understanding of the music. What Adorno perhaps didn't envisage was the potential for various compositional processes to generate material, what he might have called «contingent matter, external to the composing subject», an aspect of what I would call emergent properties. Emergent properties is a term appropriated from the study of complex systems, where the «interaction among constituents of the system... are of such a nature that the system as a whole cannot be fully understood simply by analysing its components» (4, *2*).[1] This has a strong resonance with the functionality of notation as process on the one hand and material

[1] Cilliers, Paul (1998*) Complexity and Postmodernism: understanding complex systems,* London and New York: Routledge

generated by the complex interaction of various compositional strategies. This might further reinforce in a positive way Adorno's notion that structural systematization brings about a qualitative change, where music potentially abandons aspects of the experience, which gave rise to it. [1, *283*]

The point of this discussion is to emphasize the complexities of the creative discourse, the inception of a musical idea and the process of becoming it initiates, from the intentions of the composer to the reception of the work. How much of a work is 'heard' and how much constructed? How much of it is heard during the process of construction? What is the nature of the preformed material? Generative processes in themselves rarely create an interesting piece. However, to my mind there is a fruitful dialogue, a symbiotic relationship, and at times a tension, between composer intention and generated material, which leads to the discovery of new, previously unimagined material. Sometimes, the material itself, during the process of composition further redefines composer intention. It was the composer Feruccio Busoni who commented how, «the instant the pen seizes it, the idea loses its original form» [3, *84*]. [2]

I would now like to discuss how this process unfolds in my own work with reference to a work in progress, my String Quartet No 4, a projected six-movement string quartet. Unusually for me, the staring point for this work was the music of another composer, Anton Webern. Part of the commission brief was to write a work based on

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[2] Busoni, Ferruccio (1911) *Sketch of a New Esthetic of Music,* in *Three Classics in the Aesthetics of New Music* New York: Dover Publications

the idea of the Bagatelle, referencing the work of another composer, which was a project of the commissioning ensemble, The Kreutzer String Quartet. Webern's *Six Bagatelles for String Quartet Op 9* (1911-13) has always had a special place in my musical development, so it felt appropriate to pay homage to the composer in this way. My own work is a six-movement string quartet, simply called *String Quartet No 4 (6 Bagatelles)*. I should stress at the outset that there is no attempt to write music, which sounds in any way like Webern here. Rather I analyzed the music in terms of what had resonance with my own working processes, using and transforming certain aspects of Webern's material. The compositional process was very much how I usually work with my own gestural material. Interestingly, considering Adorno's view, I have always had a strong interest in the free atonal music of the Second Viennese School and Webern in particular, especially in terms of how it reinvents the functionality of material in a very concise way and it is this approach to the material, which attracted me. In my own Quartet, I wanted to explore discontinuity of material on a local level, from section to section within a movement, and how 'development' might be perceived over a larger scale formal structure divided into related movements. This is a kind of mosaic-like filter form, where materials pass through a formal grid to successive movements. The unfolding of material, therefore, is both within each movement and across the six movements. I was interested here in exploring the functionality of movements beyond the traditional notion of contrast.

I would now like to examine the process by which the Webern material informed my approach to the structure of my fourth String

Quartet. The starting point was to analyse the metric aspects of each of the Webern movements in terms of the number of bars, tempo marks and time signatures. Figure 1 shows how this appears in the first three Webern Bagatelles.

Bagatelle I

Bar	1	2	3	4	5	6	7	8	9	10
Tempo		60		….rit	tempo	accel	96 rit	60	rit…	44
Time Signature	3 4	3 4	3 4	3 4	2 4	2 4	3 4	3 4	3 4	3 4

Bagatelle II

Bar	1	2	3	4	5	6	7	8
Tempo	120	rit	tempo		rit..tempo		accel…….	192
Time Signature	5 4	5 4	5 4	5 4	5 4	5 4	5 4	3 4
Grouping	2+3	3+2	3+2	2+3	3+2	3+2	2+3	

Bagatelle III

Bar	1	2	3	4	5	6	7	8	9
Tempo	76 rit…	tempo		accel….	…….	84	rit…..	76 molto	
Time Signature	2 4	2 4	2 4	2 4	2 4	2 4	2 4	2 4	2 4

Figure 1 Temporal structure of Webern's *Bagatelles* 1-3

As it stands, this is was not very useful to me, so I initially applied some transformational processes to the time signatures, to generate the kind of structures characteristic of my own music.

Bagatelle I has a typical Webernian symmetry: 10 bars divided into 4-2-4 (4 bars of 3/4, 2 bars of 2/4, 4 bars of 3/4). First of all I halved the values to 3/8 and 2/8 respectively, which is more suited to my own music. I tend to work with smaller note values in order to convey certain aspects gestural focus and semanticity in the notation. I then incrementally subtracted units (32nd notes) from the first

group of 3/8 bars (-4 -3 -2 -1) and then reversed the process for the second group of 3/8 bars, which maintained the original symmetry.

Bagatelle I Original									
3 4	3 4	3 4	3 4	2 4	2 4	3 4	3 4	3 4	3 4
Modification									
-4	-3	-2	-1			-1	-2	-3	-4
2 8	9 32	5 16	11 32	2 8	2 8	11 32	5 16	9 32	2 8

Figure 2: Modification of time signatures in *Bagatelle I*

Bagatelle II again has a regular time signature of 5/4 throughout until the final 3/4 bar. These are grouped, however, 2+3|3+2|3+2|2+3|3+2|3+2|2+3 and 3/4, indicated in the score by dotted bar lines within each bar, again exhibiting a quasi-symmetrical structure. Once more I reduced the values and reflected the symmetry in time signatures alternating 8th and 16th notes.

5 4	5 4	5 4	5 4	5 4	5 4	5 4	3 4
2+3	3+2	3+2	2+3	3+2	3+2	2+3	
Modification							
5 8	5 16	5 16	5 8	5 8	5 16	5 16	3 8

Figure 3: Modification of time signatures in *Bagatelle II*

Bagatelle III has 9 regular bars of 2/4. So I applied a similar +- process used in *Bagatelle I*, but here halving the units and changing every other bar: -1|+1|-2|+2|.

2 8	2 8	2 8	2 8	2 8	2 8	2 8	2 8	2 8
Modification								
	-1		+1		-2		+2	
2 8	7 32	2 8	9 32	2 8	3 16	2 8	5 16	2 8

Figure 4: Modification of time signatures in *Bagatelle III*

I wont explain the process in all 6 movements, as the general principle is clear, I think.

As one might expect in Webern's music the movements are short in terms the number of bars, a structure, which was used to generate specific groupings within movements for my own quartet as will be discussed later.

Numbers of bars in each Bagatelle					
I	II	III	IV	V	VI
10 bars	8 bars	9 bars	8 bars	13 bars	9 bars

Figure 5: Number of bars in each *Bagatelle*

One further factor was the distribution of tempi: across the movements there are a total of 9 tempi ranging from 40 to 192 bpm. *Bagatelle 1* has a range of 3 tempi, in the middle, on a scale of fast to slow. *Bagatelle II* is the fastest using 120/192. *Bagatelle III* is again focused on the faster side of the middle range, where *Bagatelle V* is the slowest with one tempo mark of 40. There are, of course, various

uses of *accelerandi* and *rallentandi* within this, some tempi being absolute and others expressive or arrival points after a transition.

Range of tempi		40	42	44	60	76	84	96	120	192
	Distribution of Tempi (total 9) **Webern *Bagatelles Op9***									
Bagatelle I	3			44	60			96		
Bagatelle II	2								120	192
Bagatelle III	2					76	84			
Bagatelle IV	1				60					
Bagatelle V	1	40								
Bagatelle VI	2		42				84			

Figure 6: Distribution of Tempi across the *Bagatelles*

Having collated all this information I wanted to use it to devise a larger scale formal structure comprising six interrelated movements, where each of the Webern structures (time signatures/tempi) identifies one aspect of my own material - or groups of material. I first examined various combinations of Webern's six movements and chose the following format, where the Roman numerals refer to the Bagatelles.

String Quartet No 4 Movement Structure						
Movement 1	I	II	III			
Movement 2	I		III		V	
Movement 3		II	III	IV	V	
Movement 4		II		IV		VI
Movement 5				IV	V	VI
Movement 6	I	II	III	IV	V	VI

Figure 7: Distribution of materials in String Quartet No 4

It can be seen there is gradual transition of materials from Movement 1 (I - II and III) to Movement 5 (IV - V and VI) until the final movement, which recapitulates all six materials. Movements 1-5 have a symmetrical structure centered around movement 3, the only one with four materials. Each movement introduces a new material, but also loses one. Movement one, for example, has three distinct aspects of material (I–II-III); Movement 2 also has three, but loses material II and adds material V. Movement 3 adds Material IV but loses I. The final Movement 6 recalls material from all the previous movements.

It might be useful at this point to consider what I mean by material in this context. There are probably as many ideas of material as there are composers. In the clearest sense the term would usually relate to pitches, rhythms, themes, motives, gestures. I mentioned earlier the notion of a trace in my music. If we examine the material in bar 1 of the first movement: we have the rhythmic structure (mainly defined here by septuplets), the micro-tonally defined dyads (quarter-tones) in each instrument (pitch, texture, tessitura) and the dynamic profile (local dynamics within an overall crescendo). The relationship between the parts is also a feature in that they are unified texturally. The strings are also playing *ordinario* as opposed to *sul pont*, *sul tasto*, *pizzicato* etc. (again Webern frequently used playing techniques to articulate and define his materials). There is the time signature and the transitional *accelerando* over the first bar to the following bar of silence, an aspect of material III; the division of the bar is also a consideration here, as the two violins are divided into three and the viola and cello into two, effectively splitting the quartet temporally in two.

Figure 8: Material I in String Quartet No 4, Movement 1, bars 1-2.

It's been a feature of my compositional techniques for sometime that as a work unfolds, there is always a subcutaneous trace of other material. On the one hand there is the surface gesture, on the other, there are various layers of information, which might influence that surface. The notion of a trace here is quite important in understanding how and why the material is formed. When we listen to music we absorb a great deal of information, but how do we assimilate it? Certain aspects of musical structure can be immediately assimilated and others are beneath the surface, but nevertheless fulfill a vital role in defining the material. It's this multi-layered aspect of the material, which interests me.

We can now look at the overall structure of the first movement, which comprises materials I, II and III, as we have seen. However, these materials are further interlocked to create a dynamic formal narrative with a dialogue between the three materials.

Material	I	III	II	I	III	II	I	II	III	I	III	II	III
Number	1			2			3			4			
of bars			2			2		2				2	
		1			1				2		2		3

Figure 9: String Quartet no 4:
Distribution of material in movement 1.

It can be seen that there is a gradual increase in the predominance of Material I (1-2-3-4 bars), a similar, though slightly lesser, increase in Material 3 (1-1-2-2-3 bars), and a constant, but irregular, return of Material II (4 x 2 bars); 10 bars, 9 bars, 8 bars respectively, corresponding to the first three of Webern's *Bagatelles.* The information to articulate this structure comprises time signatures and tempo marks. Figure 10 shows the distribution of time signatures defined by associated materials.

I	3/8				3/8	3/8				3/8	2/8	2/8					3/8	3/8	3/8	3/8							
II			5/8	5/16				5/16	5/8				5/8	5/16									5/8	3/8			
III		2/8					7/32								2/8	9/32					2/8	3/16			2/8	5/16	2/8

Figure 10: String Quartet No 4:

Distribution of time signatures in movement 1

I intentionally explored various combinations of such groupings in each movement with a view to devising what seemed like a useful interchange in the prominence and function of each material in terms of primary and secondary roles. A subsequent layer was then added to this process to form potential 'secondary groupings' defined by the

retrograde of the main divisions of associated materials, which might also support a hierarchy of function within certain textures. In practice there is sometimes a blurring of these boundaries where materials hang over from one section to the next:

I – II – III (27 bars) Structural phrase length   7 – 13 – 7

Material	I	III	II		I	III	II	I					II		III		I				III	II		III			
Tempo	60	76	120		60	76	120	60					120		76		96…60…………44				76	120		76			
Secondary groupings	III		II		III		I			III		II		I		II		III		I	II		III			I	
Time signatures	3/8	2/8	5/8	5/16	3/8	3/8	7/32	5/16	5/8	3/8	2/8	2/8	5/8	5/16	2/8	9/32	3/8	3/8	3/8	3/8	2/8	3/16	5/8	3/8	2/8	5/16	2/8
Bars	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27

Figure 11 String Quartet no 4:

Overall structure and distribution of materials with secondary groupings[3]

Figure 12 shows the first 7 bars of the score with the distribution of materials indicated. We have already discussed bars 1-2 in terms of characteristics. Two aspects of material III are silence (bar 2) and the first appearance of pizzicato (bar 7). Material 2 (bars 3-4) is defined by the density of texture and gesture, each instrument having its own specific material, and the violent unison chords marked *sfz*. Bar 5 introduces a new element of material I, sustained harmonics and the *col legno tratto* counterpoint, ending with chords reminiscent of bar one in the viola and cello and articulated as a *tremolo* in the two violins. The pitches, rhythmic profiles, dynamics, articulations in each case are also specific aspects of the material.

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[3] In this movement unmodified time signatures from Material I were used.

Figure 12: String Quartet No 4 bars 1-7

The structures thus far examined generate the lager scale formal aspects of the work. There are further potential ramifications of these as more local level structures:

Time signatures, for example, can be converted to rhythmic lines:

2	7	2	9	2	3	2	5	2
8	32	8	32	8	16	8	16	8

Figure 13: Conversion of time signatures to rhythmic line

This process is used to create *time-lines*, which are then projected onto other time signature sequences. In Figure 13 below, the time signatures from movement one have been subdivided by the time-line from movement VI, which is used to further define the distribution of rhythmic materials.

Figure 14: Creation of time-line layering two time signature sequences.

The same time signatures may then also be used to define rhythmic profiles:

Figure 15: Rhythmic profiles generated from time signatures

and below, further rhythmic generation defined by the projection of unit values (32nd notes: 8-7-8-9-8-6-8-10-8) onto another rhythmic line:
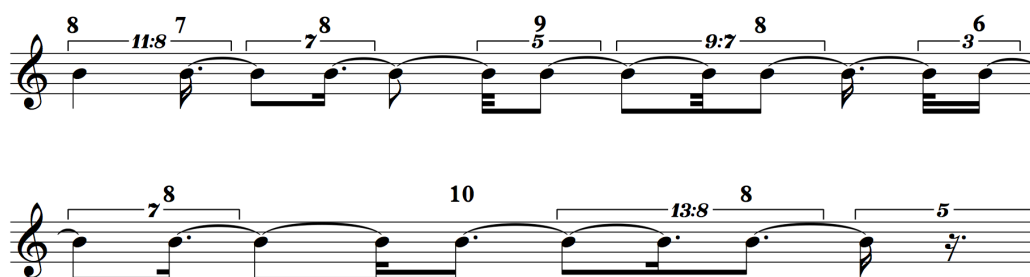

Figure 16: rhythmic profiles generated by unit values projected onto a new rhythmic line

This discussion would seem to suggest that the music here is totally preformed and determined by pre-compositional processes. However, what interests me in this approach to form and material, is finding a middle ground in relation to Adorno's double bind between structural systematization and more informal, spontaneous and subjective, aspects of the compositional process. Such processes do not dictate the musical surface, but rather provide a framework within which to operate, a set of criteria to which I can react at any given juncture in the work. I recently started to use the term audiative scanning, which is a spontaneous and constant mental processing of generated materials, similar to the process of unconscious scanning a painter might use when reviewing a painting[4] [6, *32*]. The idea that structure, material and form are in some way detached from more subjective, spontaneous instincts is a

[4] See Unconscious Scanning, in Ehrenzwieg, Anton (1967) *The Hidden Order of Art,* Berkley, Los Angeles and London: University of California Press.

fiction and highlights more the degree to which either end of this axis might take predominance. There are many aspects we have not discussed, for example, which are beyond the scope of this article. In one sense what we have examined above is not yet the material, but a framework used to articulate the structural surface. As a work unfolds there is an accretion of information and parameters - traces (pitch, rhythm, articulation etc), which adds to the complexity, richness and potential of material. How such information is then interpreted and manipulated draws on the more intuitive aspects of the process with a view to creating the 'heard' musical surface. Indeed the organization of such structures is informed by the initial defining concept of the work and functionality of material, rather than abstract external matter. One intention of this process is to move away from the historical sedimentation of inherited ideas, the *cliché* of gesture. I have always thought there is a resonance with Gaston Bachelard's notion of «dialectical surrationalism» here; the state in which the scientific mind dreams, allowing the formulation of theoretically precise questions with regard to totally unknown phenomena [Bachelard 2, *32*]. There is fascinating speculative aspect to the generation of material, beyond what can be fully imagined, which fulfils the imagination by transcending it.

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