Do You Hear What I Hear?  
Audiation and the Compositional Process

Abstract. When Igor Stravinsky was asked if he hears music when he composes, he replied it’s sometimes more a question of knowing how it sounds. Alternatively, John Cage commented ‘I don’t hear music when I write it. I write in order to hear something I haven’t yet heard. My writing is almost characterised by having something unusual in the notation. The notation is about something that is not familiar.’ These comments by two leading 20th Century composers would seem to undermine the notion that music is initially ‘heard’ and subsequently transcribed, potentially challenging the popular view of the compositional process. Of course, both these composers employed significantly different compositional strategies. However, in each case there is arguably some kind of apprehension of sound in the mind of the composer to be translated through notation into performance. What is the relationship, therefore, between what is heard and what is written, and how much could notation be said to mediate this process? Further, what is the nature of what is heard and to what degree is this auditory musical image informed by its own possibility in notation, by a habit of thought? Can we imagine music that can’t be notated, for example? If so how would we write it? Can notation itself create a useful distance between what is heard and how a score becomes manifest, with a view to finding new forms of expression?

The dialogue between the auditory and what is notated is clearly more complex than at first appears. The 20th Century saw a decline in a common musical language and an increase in the diversity of compositional techniques and new forms of generative processes/notational strategies, often raising doubt as to the role of audiation in the creative discourse. However, the use of such compositional processes can often lead to the discovery of new musical potential and material, beyond what might in the conventional sense be said to have an auditive origin, but which is nevertheless defined by an internal musical ear – an analytical auditive process.

This paper will examine these issues in relation to my own work as a composer, which seeks to explore the complex relationships obtaining between what might be said to exist in the mind of a composer – an initial apprehension of sound, and the development of meaningful compositional strategies aimed at capturing the reality of an auditory musical image through notation.

Keywords: notation, improvisation, audiation, grammatology, creative discourse, composition.

Do you hear what I hear? I could equally well ask the question do I hear what I originally heard when a work is finally realised. In this paper I want to examine the nature of the creative discourse seen as a complex process between what might be said to exist in the mind of a composer – what we assume is a kind auditive experience – leading to the final realisation in performance. This often involves the intervention of compositional processes and some form of notation.1 Notating is in itself an auditive process, what Edwin Gordon, who coined the term audiation in 1975, called notational audiation (Gordon 1999), and as a work unfolds further auditive potential develops, either through notation, compositional processes or both. Initially I would like to examine the more general aspects of this discussion to situate the complexity of the auditive process, focusing later on my own work and experience as a composer and improviser, where the complex interaction between audiation, compositional processes and notation plays an essential role.

Interestingly, when asked if he could hear music when he composes, Igor Stravinsky suggested it’s not always a question of hearing, but knowing how it sounds. Alternatively, John Cage commented ‘I don’t hear music when I write it. I write in order to hear something I haven’t yet heard. My writing is almost characterised by having something unusual in the notation. The notation is about something that is not familiar’ (Kostelanetz 2003). However, in both cases there is still arguably some kind of auditive impulse or a process relating to more or less specific material in terms of an auditive vision.

So what is the nature of this initial apprehension of sound or musical image in the mind of a composer, and further, to what degree might it be conditioned by its own possibility in notation, as something already given? Each stage of the creative discourse involves some element of audiation, from the initial concept in whatever form, to its setting down in notation and subsequent re-reading by a performer, or as on object of analysis by students and scholars in the form of a score. There is also then a reconstructive element as a listener.

Even the more prescriptive scores of a composer such as Helmut Lachenmann stem from a detailed analysis of sonic criteria through a deconstruction of instrumental possibilities as a reservoir for the creative process of auditive scanning, a term I would like to introduce in addition to the various categories defined by Gordon.

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1 I’m leaving aspects of improvisation aside for the moment and the many areas of composition, which do not require notation per se, such as sonic art. However even in such instances recorded material could also be considered a kind of score.
To be clear, for the purpose of this discussion, I am thinking about notation in scores which bear some kind of representational relationship to a musical image, always assuming that graphic and indeterminate scores intentionally avoid such a direct relationship to the material; such works are realized in performance as opposed to being transmitted through performance. In which case, any examination of the scores would provide little in the way of auditative information for the composer or performer alike. However, they do involve an auditive element in performance, close to improvisation. It’s a moot point perhaps, but I always question whether such scores actually invite improvisation, as opposed to some other kind of performative freedom.

I am thinking here of works such as Earle Brown’s _December 1952_ or Christian Wolff’s _Edges_ (1968) where there is still a strong auditive process when engaging with a score in performance, almost a kind of synesthesia, where graphic images evoke a strong sense of aural perception. I often ask the students in my improvisation class if they can hear a work such as Cornelius Cardew’s _Treatise_ (1963–67), for example, when observing the score.

Gordon initially introduced the term audiation as an alternative to the more familiar concepts such as _aural perception_ or _aural imagery_, the latter being considered as having strong associations with notation. However, as this paper focuses specifically on composition, a notational context is presupposed, which Gordon refers to as _symbolic association_ under the category of ‘discrimination learning’; the ability to determine whether two elements are the same or not the same (Gordon 2007). I will come back to this notion of representational similarity in more detail later. However, Gordon’s research is significantly biased towards familiar tonal and rhythmic patterns as an educational tool, which already presupposes quite specific aspects in terms of material and notational potential – we could even say cliché. The auditive relationship to notation is revealed at a later stage of the learning process, almost like a kind of surprise secret. However, Gordon here is dealing with structures very clearly defined by notation such as familiar tonal sequences or regular pulse. The notion of whether something is ‘the same’ or ‘not the same’ therefore, would seem to suggest a process of transcription where there is a direct relationship between what is heard and what is notated – presumably always allowing for degrees of performative latitude. The composer Ferruccio Busoni also observed that notation relates to some kind of transcripve process: ‘Every notation is, in itself, the transcription of an abstract idea’; significantly, he goes on to say ‘the instant the pen seizes it, the ideas loses its original form’ (Busoni 1911).
already implies that the concept of the same or not the same is questionable in certain contexts. For me as a composer what might be perceived as ‘not the same’ has more potential as material, as a strategic distancing from an initial auditive impulse, which might nevertheless maintain an auditive stimulus – this is the stage when the real process of composition begins. Any attempt to trace an idea back to its fictive auditive origins, therefore, becomes rather speculative and redundant.

Gordon further proposed that audiation is to music what thought is to language or visualizing to imagery, although he was careful to stress that music is not a language, as it has no words or grammar, but rather a syntax. Such syntax today, however, is complex and rather relative since there is no common language as such and each composer arguably defines the functionality of their own syntax, within certain compositional tendencies – this distinctly moves away from Gordon’s processes. The role of audiation might vary quite considerably from one composer to another, depending on how the initial material is conceived. I often ask my composition class what the starting point for a composition would be, for example, if I proposed that we all now start to compose a string quartet. We might take Messiaen’s *Mode de valeurs et d’intensités* (1949) as an example, where all the material, including dynamics, modes of attack and registral distribution, is pre-formed and subject to various manipulations in order to articulate the work structure. What might have been the auditive impulse here? The fact that Messiaen then made various adjustments to the otherwise predetermined compositional design suggests that some degree of auditive scanning played a significant role in the compositional process.

But, of course, the relationship between language and thought is itself very complex, which is further compounded when we start to consider the relationship between thought and language, and speech and writing. The philosopher Jacques Derrida, for example, posited that writing is not simply a representation of speech, but that the process of recording or encoding thoughts in writing strongly affects the nature of knowledge. His adopted term *Grammatology* relates to a critique of the conceptual structure imposed on thought by Western Metaphysics, which identifies the exteriority of speech to writing, and similarly of speech to thought (Derrida 1976). Through grammatology Derrida seeks to articulate a form of writing which no longer functions as a representation of speech, but which subverts the hierarchy of thought, speech and writing. As Gregory Ulmer points out, ‘Grammatology cuts across the old divisions of knowledge, being concerned with all manner of inscription, with the question of how any form of knowledge relates to writing’ (Ulmer 1985). Ultimately writing here influences thought. For me, this has always had a strong resonance in relation to the functionality of notation in music, which draws on the interplay between audiation, structure, notation and performance. What is the actual origin of a musical idea? Notation seeks to capture a certain authenticity, which is mediated by the very act of inscription and any attempt through performance to directly restore that authenticity by a tracing back to some fictive origin defined by notational convention is necessarily impotent. Notation has an inherent structure whose potential evolution is not necessarily dependant on that of ‘material’; rather more the ‘material’ is a condition of its own possibility in notation.

However, any form of setting down inevitably references some kind of auditive image; I deliberately continue to use the term *image*, as I would argue, from a composer’s perspective, that there is in fact also a strong, almost visual imagery, associated with audiation. In my own work, for example, I have often spoken of capturing the reality of the musical image, which lies beyond the concept of simple or direct representation in the transcriptive sense, but nevertheless has a strong auditive element. We might agree that notation often falls short as a form of representation. As the composer Brian Ferneyhough commented, no notation ‘of whatever iconically representational status, can presume to record information encompassing all aspects of the sonic phenomenon for which it stands’ (Ferneyhough 2007). What happens when the musical image lies beyond its own immediate possibility in notation, for example? Can an auditive image have its origins in notation – which comes first? Interestingly, the musicologist Peter Kivy has suggested that ‘musical notation is not separable from the music it notates. There is not the music on the one hand and the notation on the other … rather the two interpenetrate one another in such an intimate manner as to make them both parts of the work of art, rather than notation in service, so to speak, to the artwork.’ Kivy then further comments in relation to the work of the musicologist Leo Treitler, that in certain kinds of early music ‘writing down was a kind of performance’, concluding perhaps that all musical notation is a kind of performance and therefore must be part of the musical work (Kivy 2001).

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In his 1961 article *Vers une musique informelle*, Theodor Adorno further commented on how the 'qualitative change' brought about by structural systematization 'abandons the experience which gave rise to it' (Adorno 1998). This seems equally appropriate to the notation of a musical idea, as posited by Busoni. Adorno then further focuses attention on notation's functionality, emphasising the 'contradiction between its concealed written state and the fluid state it signifies,' discussing how recent developments in music 'discard fictive dynamism … to make itself as static in its acoustic form as it always was in its written form.' How might we then reinvest music with that fictive dynamism? He further raises important issues concerning the nature of what could be said to 'exist' in the mind of a composer suggesting that 'Highly complex or twelve note scores presumably always elude a fully adequate formulation in the imagination' (Adorno 1998). According to Gordon, 'A musician who can audiate is able to bring musical meaning to notation. A musician who cannot audiate can only take theoretical meaning from notation' (Gordon 1999). The functionality of such a process, however, is evidently less direct than is often presumed to be the case. Adorno continues 'The element of the unforeseen … must not be allowed to escape. From this point of view musique informelle would be the idea (Vorstellung) of something not fully imagined (vorgestellt). It would be the integration by the composer's subjective ear of what simply cannot be imagined at the level of each individual note…' Perhaps it is notation itself, which forms an important frontier here between what Adorno calls 'a meaningless objectification' and the possibility of 'a composition which fulfils the imagination by transcending it.' As Adorno suggests the recognition of such a frontier implies the possibility of crossing it through a need to 'think beyond its own limitations.'

It is perhaps significant that Gordon is also reputed to have likened audiation to music as visualizing to imagery (Azzara 1991). I mentioned earlier that music has a strong sense of an auditive image, and in this respect I have always been struck by the potential similarities between painting and musical composition, in the sense that there is often a potential given, a figurative image, for example. Gilles Deleuze has discussed this at length in his book *Francis Bacon: The Logic of Sensation* in relation to the work of Paul Cézanne and Francis Bacon (Deleuze 2003). Both artists were concerned with the problematic nature of figurative givens perceived as clichés, something already always there as an inherited image, and further redundant after the advent of photography. According to Deleuze, it is here that the process of painting begins. Representation is replaced by *sensation*, which acts on the nervous system in an immediate way, beyond a simple record of fact (cliché). Form related to sensation becomes something different to form related to an object. I have already mentioned the possible connection here with musical givens in the form of notational clichés, material that is necessarily mediated and 'pre-formed' by the gestural (historical) sedimentation of our notational system. Sensation in this respect is what I would call in music the 'reality of the image'. The intervention of notation/compositional systems at a different level, a non-representative level, in the transcriptive sense, introduces traits of sensation – for me this would be Adorno's fictive dynamism. The semiotic structure of the notation, in terms of intention, functions on an altogether different level of signification. The score aims to affect an increased emphasis on the 'often naively unquestioned link' between the performer and the notation, which seeks to stress the 'fictonality' of the work as a graspable invariant entity, as something that can be *directly transmitted* (Ferneyhough 2007). The work therefore, takes less of a tangible form in its representation, but aims to 'connect border areas of representation' and is rather more posited to the degree that an attempt has been made to correlate the topologies of sound and notation. The role of the performer, therefore, becomes one of an important 'secondary encoding' through his own personal engagement with the notation, which in turn is designed to incorporate this possibility. To note is already to surrender one's 'spontaneous reactions' to the 'principles of construction' (Adorno 1998). Material which submits to its condition in notation responds to its own laws and constitutes itself in 'an objectively compelling way, in the musical substance itself', and any possibility of an 'unrevised, unrestricted freedom' will subsequently always be mediated by notation.

I would now like to turn to my own work to illustrate how some of the issues discussed above influence the process of composition in relation to what is heard. First I will examine a short work for solo piano, *Beugs*.

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Dalhaus has also 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. Dalhaus, Carl (1987), *Problems of Rhythm in the New Music*, in *Schoenberg and the New Music* (trans. Derrick Puffett and Alfred Clayton), Cambridge: Cambridge University Press.
Here I was interested in the relationships obtaining between notation and interpretation seen as potential material. The score has various built-in interpretative decisions, whereby the notated material at times appears contradictory, but which are necessary in order to execute a performance. Despite the very precise notation, potentially each performance could vary quite considerably from one performer to another. In one sense this score was seen rather than heard, almost as a graphic image, but with a strong auditive impulse. This was also informed by a clear intention to explore the relationship between notational potential and execution. The main issue here was how to go about writing such a work, which seemed to lie beyond its own possibility in notation. The work unfolded as the compositional process took shape as a generative aspect, which then further led to an auditive scanning of the notational and structural potential. On one level, there is no piece as such, since much of the generative material has been removed, to reveal a skeletal structure beneath the surface of the original structural intentions, which are here frequently defined by rests. Bar 7, for example, has an implied rhythmic structure, which is articulated by grace notes. There are further complexities of performance in the following bar, where arpeggiated chords are registerally spread too wide to fit under the hand or with too many notes, but nevertheless require a precise rhythmic articulation. This intentionally precise impression of the score makes a clear auditive image difficult to formulate as anything other than an approximation. Similarly, any performer faced with preparing a realization of the score has to create their own auditive vision of the work as a product of the gradual learning process, through engaging with the notation.

I would further like to discuss an example from another work, Feu la Cendre for solo cello (1992). The title here, as with a number of my works from this period, derives directly from the writing of Jacques Derrida. I have chosen a section of the work, which developed from a very specific image in my mind. The stimulus for this was the physical nature of the actions executed by the performer. The notation here is rather complex, using two staves. The cellist’s left hand is immobilized and pinned to the fingerboard by the thumb and another
finger, which articulate glissandi, while the remaining fingers are employed with finger percussion. There is also a complex layering of desynchronized rhythmic activity, which separates both the left hand finger actions and the bow movement across the strings. Inevitably there is a certain degree of variation in terms of the audiative result, which again is intentionally built into the notation. There isn’t space here to go into technical detail relating to compositional processes. However, suffice to say, these events come about through a symbiotic relationship between complex parametric layers of information (time signatures, time-lines, rhythmic cycles, pitches, playing techniques), all of which combine to generate potential for audiative scanning.

Example 3. *Feu la Cendre* for solo cello (1992)

A certain aspect of this approach to notation derives from my interest in free improvisation. As an improviser myself, I don’t subscribe to the theory that improvised music can be notated, as the complexities of notation create a very different kind of psychological space. However, the kinds of techniques explored and developed by improvisers inform some aspects of my approach to material. A more recent work, my *Concerto for Improvising Soloist and Two Ensembles* (2009)\(^9\) was the first of my works to actually incorporate improvised elements. My concern here was to explore the boundaries of notation in terms of what can and can’t be notated and how this affects the perceptual nature of material. This work explores material on two levels divided between the two ensembles: ensemble one uses various kinds of notation, some very precise, and some with various degrees of performative freedom. The musicians further have a reservoir of notated material from which to choose, or freedom in terms of how execute it. This ensemble consists of six players (flute, clarinet,

Ensemble two consists of four improvisers (any instruments) with no notated material. The material here is formed by various instructions for auditive responses relating to what is heard from the notated materials of ensemble one. The work has an overall mobile form consisting of a series of notated events (ensemble one), the order of which is determined in performance, which are brought in and out of focus as the material melds into freely improvised sections (ensemble two) which separate and join the events. Materials freely developed from the notated events define these improvisations. Finally there is the improvising soloist who is free to navigate a path through the various structures.

I will briefly consider a few examples in the score: Example 4 shows precise notation taken from Event B of the bass clarinet part. The Roman numerals identify individual sub-events the order of which is chosen by the player. Once all of these have been played, the performer can improvise developing any of the notated material.

Example 5 shows flexible notation from Event C3, using all six players from ensemble one. The material here is presented as a series of harmonic fields with instructions for possible textural realization defined by the players themselves. The conductor indicates the change of field, the rhythm of which might be quite fast, slow, or an irregular combination. Players have a choice of sustained notes (ppp), one short attack (sfz), repeated pitches or notes coloured by trills/alternative fingerings. The boxed fields are initially to be played staccato.

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I make a distinction here between musicians who improvise, classically trained to work with new notations, and improvisers, some of whom might not read music or want to engage with notation.
Players also have the option not to play; in such cases a cue might consist of just one or two players or even be silent. The second half of the page starts to further develop this principle allowing the players to combine the above possibilities more freely, the boxed fields now being either staccato or sustained, for example.

Example 6 shows Event E where ensemble one is divided into two trios (wind/piano and strings). In this example the string parts are given. There is no specific notated material here, however the players are instructed to use materials derived from Event D as a source; precise material from the event should not be played. On each repeat, players rotate parts. In this instance ensemble one is also invited to improvise reacting (imitate/develop) to music from other players in the group or the music previously played by ensemble two (the improvisers), who are themselves improvising on what they hear. So there is an intricate network of related materials being developed on many different levels. Once again, changes of section are given by the conductor as indicated by the arrows; the two trios can be combined in any way desired (left/right hand cues). Ensemble two and the soloist are each associated with one of the trios, ensemble two with the wind/piano and the soloist with the strings.

Although each of these sections will intentionally never sound the same, they always sound as I expected, albeit with some creative surprises. The audiative impulse or image, which gave rise to them, is maintained in performance. However the matter of being the same or not the same is here very relative. It can be seen from these examples that that the piece articulates a range of audiative activity: there is the composer's intention
in terms of the notated material and the structure of the various sections; the musicians reading information experience the auditive process of responding to notation, and the improvising musicians are auditively responding to what is heard within certain defined guidelines; the conductor executes a constant process of auditive scanning.

References


Principles of music composing: Links between Audiation and Composing

Santrauka


Šiame straipsnyje tokie klausimai nagrinėjami atsižvelgiant į mano paties kūrybinę veiklą. Siekiama patyrinėti kompleksinius santykius tarp to, kas girdima, ir to, kas užrašoma, yra daug sudėtingesnis, nei iš pradžių gali pasiūdyti. XX a. patyrė tradicines muzikinės kalbos nuosmukį, tačiau išgyveno naujų generatyviųjų procesų formų / notacinių strategijų pakitimą, dažniau abejojant dėl audijavimo svarbą. 

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