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Understanding and Interpreting Classical Guitar Morphologies within the Sound Sculpting Arena

Abstract. In line with the 2018 underlying conference theme centred on 'audiation', my paper will be an explanation of the meaning behind interpreting morphologies on a six-string classical guitar, especially for sound-based music. Taking groups of similar techniques, I will look into all aspects of expressing guitar music in terms of a spectral and structural approach; in other words, investigating 'guitar morphology'. A better understanding will arise from analysing the musical consequences involved from an audiative perspective.

My main focus will be on the listening experience, comprehending and apprehending the resonance detail of existing and newly discovered classical guitar techniques. The intention is to extend sensibility of sound discernment of these particular morphologies. For instance, can we hear the minute variances of pitch and noise and realise differences, and how do we make sense of them? For a pedagogical approach, it is obvious and necessary to devise a methodology. To this end, I believe in the value of assisting musicians in all stages of development to consider the holistic quality of sounds they produce and encounter.

After a critical look at existing terminology for procedures of producing morphologies that are non-standard and examining their suitability, a section concentrating on hearing the consequences of techniques that produce subtle changes in linear and non-linear trajectories and varied amounts of pitch content will follow. For example, three types of 'snare drum' technique have been identified, *normal, lateral glissando,* and *slide glissando;* all possess three phases, *preparation, resonance,* and *release*. They differ by the direction of spectral contour during the resonance phase. After the preparation phase 'snare drum' normally follows the archetypal attack/decay model, while the others are refracted morphologies.

The point will be to work toward forming a method for aurally recognising small alterations in timbre and emphasising the importance of the whole sound when a single morphology or groups of morphologies occur in various combinations. The aim is to develop a progressive and radical forward-thinking pedagogical audiative system that embraces a storehouse of specially selected techniques as equal in value.

Music educators are expected to teach the complex undertaking of helping pupils to be creative. Therefore, an ever-developing set of tools is essential for future learning outcomes, instructions that will help students to bring out and realise their inner potential. The proof will be musicians who can build a meaningful musical syntax in many genres. This will be accomplished by the ability to fully comprehend what one hears, interpret in the moment, and thus provide a logical and worthy musical discourse.

Keywords: source bonding, extended technique, guitar morphology, spectromorphology, reduced listening, deep listening, inherent and external listening.

Introduction

The musical domain is no longer limited to conventional sounding models. For the guitar, my instrument, there is now a surprising sonic array of sounds ranging from the real to the unreal, and beyond. I believe that there is a need to reevaluate traditional sound-making, as the links are often broken; sometimes sound-shapes and qualities occur from unconventional causes.

There are two key concepts that underpin the research – *morphologies,* and *extended techniques.* Firstly, the notion of morphology is used as an experiential tool. Expressing guitar music in terms of morphologies means a spectral and structural approach. For example, *morphology* may be described as the spectral detail of a sound through time; put it another way, morphologies are sound objects that engender a spectral continuum. These two mutually inclusive aspects, a spectrum and activity through time, provide a framework for understanding and experiencing music's temporal flow. Secondly, the sonic outcome from the extended techniques I am interested in form spectra that avoids the sound convention of attack followed immediately by a stable (though slowly decaying) resonance comprising as much pitch material as possible.

Learning to perform morphologies means engaging with the interrelations of sound components and resonance values during the temporal flux of the music. Improvising involves capturing and manoeuvring the spectral content involving elements of freedom. Composing is the process of depicting the morphologies in order to produce a score, where the composer strives to apply methods of representation that are as precise and simple as possible. These may have ties with traditional notation when relevant, or such methods may involve graphic symbols to capture the entire duration of the sound.

For many contemporary guitar works common articulations as well as stability of notes and intervals are absent. Moreover, reference of metre is often missing. Composers encounter the problem of how to cultivate an aesthetic sensibility and create cohesion in a sound world that is potentially open. Developing appropriate sound-making methodologies is one of my passions.

With the help of a few musicians' research, notably of Denis Smalley, Pauline Oliveros, David Toop, Edwin Gordon, and Gilbert Biberian, we will look at ways of explaining and understanding repertoire that incorporates techniques other than conventional pitch playing. Denis Smalley tells us that when listening to music we find rewarding it is because, "there is some shared experiential basis both inside and behind that music" (Smalley 1997: 1). Discussing our musical experiences is important. Engaging with Pauline Oliveros' *Deep Listening* principle we can learn to "remove cognitive filters in order to experience deeper forms of audition" (Oliveros 2005: 4). We will look at developing tools to describe the features of perceived sounds, and explaining how they work in the context of the music, diagrams will help contextualise interpretation.

What does it mean to 'sculpt sound' on a six-string classical guitar? The main issues are concerned with refining listening, questioning terminology, technique, an all-inclusive approach in the field, experiential observations, and learning models. Understanding and definitions will arise from analysing these areas. To explain I will take groupings of similar techniques and look into all the aspects of their sound through time, and take account of the musical consequences involved; in other words 'guitar morphology' (Vishnick 2014: 192).[1]

Refined listening and terminology

My main focus is on comprehending and apprehending the subtle detail of existing and newly discovered classical guitar techniques. Concentrating on particular techniques, the aim is to extend awareness of sound apprehension. For instance, can we hear the minute changes inherent in these sounds through time and chart differences in the spectra?

There are two aspects to guitar morphologies, *inherent* and *external*. I will explain sound events along with their intrinsic relationships within musical pieces. However, Smalley reminds us, "a piece of music is not a closed, autonomous artefact: it does not refer only to itself but relies on relating to a range of experiences outside the context of the work" (Smalley 1997: 4). Therefore, as a cultural construct, a fundamental external basis is necessary so that the inherent can have meaning. The important point is that "the intrinsic and extrinsic are interactive" (Smalley 1997: 4).

As far as I am aware, in music for acoustic instruments there is no term that represents a link between fundamental morphological qualities and external referential sound associations. However, for *acousmatic* music an expression has been invented that describes this connection.[2] Smalley uses the term *source bonding* to represent the activity of morphologies from inside the work to the sounding world outside. His definition relates to the natural tendencies of sounds sources and causes, and the relationships of sounds to each other, as they give the impression to have mutual or associated origins.

My contention is that *source bonding* should be brought into the instrumental music arena. It is present in guitar playing, and may be discovered through the various physical activities that occur in sound-making; put it another way, when human agency is involved source bonding will occur. Through cultivating methods of apprehension unhindered by preconceptions, Oliveros tells us: "One of the Deep Listener's goals is to listen to each and every sound exactly for what it is, nothing more, and nothing less" (Oliveros 2005: 4). See Figure 1. Further aspects will become clearer in the forthcoming sections.

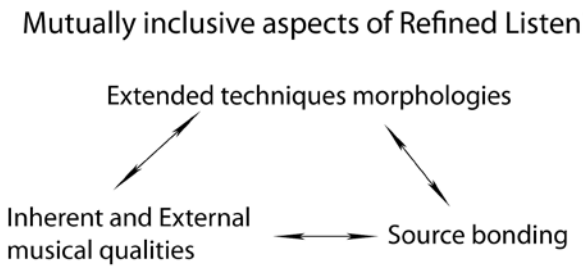

Figure 1. Mutually inclusive aspects of Refined Listening

[1] For more information on Guitar Morphology and Morphological Structuring see Sculpting Sound on the Classical Six-String Guitar Volume 2 by M. L. Vishnick. Published by CreateSpace ISBN-10: 1514652404.

[2] Acousmatic music is a form of electroacoustic music that is specifically composed for presentation using speakers, as opposed to a live performance. It stems from a compositional tradition that dates back to the introduction of *musique concrète* in the late 1940s.

As well as advocating the term *source bonding,* I want to examine another expression, *extended technique.* My definition is designed to identify methods of producing sounds that are non-standard. Bearing in mind all guitar techniques connect to the original source by way of being analysed in respect to the archetype. In 2014 I stated that an *extended technique* is: "An unconventionally played procedure that produces morphologies containing a spectral content alternative to the conventional pitch-biased attack-sustain/decay model". Therefore, music may be developed by examining the spectral possibilities from the selected extended techniques, produced through manipulating the placement of consecutive, merged, and combined morphologies. This is tied to the relationships that occur in shaping phrases, being aware of pitch relations, and exploring dynamic levels.

We can now examine how *source bonding* and *extended technique* can be applied to our diverse and wonderful musical world.

Techniques

Here I would like to start thinking about a pedagogical approach, especially as there is a need for devising and developing methodology that will help educators. Discovering musical links is important for future teacher-performer-composer communication; new shifts in language are created by researchers questioning the musical world in which they live, not in a vacuum. Moreover, for the listener to make sense of new ideas there must be some shared cultural basis.

To my way of thinking students need to consider all aspects of the sounds they produce on their instruments. I have identified nine groups of extended techniques. Each classification has its own unique qualities, and they provide a storehouse of sounds especially selected for their particular morphological values; they fit into my vision of 'sound-based' music. They are as follows – Harmonics, Bottleneck, Snap pizzicati, Cross stroke, Snare drum, Fretless, Soundhole resonances, Tapping, Nut side, and Mute.

Focusing on the impact of aural awareness and clarity in a historical musical context, the importance of documenting extended guitar techniques lies not only in reaching contemporary guitarists, composers, and musicologists, but also future generations of musicians. Therefore, Figure 2 has been devised to show the diversity of unconventional sounds used by composers over the last few decades; it is by no means exhaustive.

Extended techniques	Execution
Battuto	Hit the strings with part of a hand.
Behind head-nut	Pluck the string lenght between the head-nut and tuninh rollers to produce a filtered spectrum.
Buzz gliss (strings 6 or 1)	Pull string 6 or string 1 off the neck onto the neck's side, slide along to produce linear or glissandi morphologies.
Cross stroke	Using combinations of the three lower strings, right-hand index fingernails scrape along the string lenght.
Cross stroke (active scordatura)	Using combinations of the three lower strings, right-hand index fingernails scrape along the string lenght. An iterative metallic-sound with a refracted rich spectral content results.
Finger scrape	Rub finger(s) along strings, usually lower ones, to produce noise.
Golpé	Tap the soundboard with a right-hand fingernail or fingertip to produce a percussive sound.
Harmonics, high and soundhole	Harmonics that are located between fret III and the headstock nut, and between the end of the fretboard and bridge.
Half-harmonic	A semi-dampened harmonic, actually an imprecise placement of a natural harmonic to filter the spectrum.
Guiro action	Draw on external implement (plectrum or bottleneck) along the fretboard and catch the frets.
Hand-brushing and rubbing	Move hand(s) across or along the strings to produce noise.
Harmonic tambora	Strike the strings with an outstretched right-hand finger, typically index or thumb, at a natural harmonic node point to produce a resonance.
Nail scrape	Drag a right-hand nail along a lower string to produce noise.
Nail sizzle	Place stopping finger next to a string, allowing adjacent plucked string to rattle against the fingernail.
Nut-side	Pluck the string-length between a stopped left-hand finger and the head-nut; pitch content with compressed nature occurs.
Multiphonic harmonic	Place a finger of one hand lightly on the string exactly over a node point, then attack with the other hand to produce a resonance.
Palm slam	Short percussive sound produced by attacking strings downwards onto wood.
Rapid mute	Resting the left-hand fingers lightly on the string(s), without pressing them to the fretboard, pluck with right hand in a conventional manner; successions of linear or refracted morphologies are used.

"Snare drum"	Cross adjoining strings, then strike in a conventional manner, three phases occur; preparation, glissando resonance, and release.
Snap pizzicato (long)	Produced in two stages; lift the string away from the soundboard, then initiate a release allowing the string to bounce against the fretboard. The pitch material is left to resonate.
Snap pizzicato	Produced in two stages; lift the string away from the soundboard, then initiate a release allowing the string to bounce against the fretboard. The player intervenes to stop the resonance almost immediately.
Soundhole resonance (palm, fist, or thumb)	From just above the strings, use an appropriate part of the hand to press towards the soundhole quickly; an attack followed by a decaying noise-oriented spectrum occurs.
Tambora	Using a flat part of right hand, attack the strings rapidly just inside the bridge to produce a percussive sound followed by a resonance.
Tapping, bi-tone (long)	Use the fingers to apply a suitable amount of force to push the string(s) against an appropriate fret position. Two sounds emerge, resonances are a composite of lower and upper pitches.
Tapping, bi-tone	An interrupted version of *bi-tone (long)*. Use the fingers to apply a suitable amount of force to push the string(s) against the fretboard. Two sounds emerge, short resonances are a composite of lower and upper pitches.
Tapping, mute (long)	Damped version of bi-tone tapping, lower bi-tones are filtered out by damping action. Consequently, pitch content consists of upper bi-tones only; attack followed by a resonance.
Tapping, mute	An interrupted version of *mute tapping (long)*, lower bi-tones are filtered out by damping action. Consequently, pitch content consists of upper bi-tones only; attack followed by a short interrupted resonance.
Wet finger	Slide a wettened finger lightly across the back of the guitar to produce a noise-based glissandi.
Whistling sound (also called sweep or finger rubs)	Slide along lower string(s), upwards or downwards, using thumb and middle finger or palm to produce a friction-based sound.
External implements	
Beater	Strike strings with the head.
Bottleneck	Using a finger, the player allows the bottleneck to attack with an appropriate amount of force before producing upwards or downwards glissandi.
Bow	Attack the string(s) in arco style using a cello or double bass bow to produce an attack and resonance.
Fan (small, hand held)	Strike the strings or body of the guitar to produce mechanical tremolando.
Mallet	Strike strings with the head or rub guitar body to produce noise.
Mini alligator clip	Attach clip to string(s) to produce a rattling effect.
Paper clip	Attach clip to string(s) to produce a rattling effect.
Paper knife	Insert between the strings, alternately over and under to produce noise.
Pencil	Filter the spectrum by inserting between string combinations, typically under string 6, over string 5, etc.
Rubber wedge (small)	Filter the spectrum by inserting between string combinations, typically strings 6 and 5.
Ruler	Filter the spectrum by inserting between string combinations, typically under string 6, over string 5, etc.
"Snare drum" (matchstick)	Insert between two crossed adjacent strings to filter the spectrum.
Sponge	Slide across or along the strings to produce noise.
Tuning fork	Strike the strings, then apply to the strings and draw across to produce glissandi.
Spoon (table or tea)	Apply to string(s), move along plucked string(s) to produce glissandi.
Thin metal rod	Insert between the strings, alternately over and under to filter the spectrum.
Body sounds and utterances	
Finger snapping	Apply tension by pressing the pad of the thumb firmly against the pad of middle finger – slide thumb towards your index finger while sliding middle finger towards your palm.
Tongue clicks	Produced by rapid movement of human tongue. Place the tip of the tongue directly behind front teeth, them move the tongue along roof of the mouth. Stiffen tongue and apply pressure.
Twine	Tie to string, typically string 6, and wrap over other strings or rest behind the neck to produce noise.
Whistle	Purse lips into an O shape, leaving a small opening for air; gently expel air with the tip creating a vacuum against the roof of your mouth with your tongue. Making sure that the tongue is not flat up against the roof of your mouth, create a hollow space in the middle but completely sealed all the way around the edge of the palette. Lower the jaw and pull tongue free from the vacuum to hear the click.
Electronic devices	
Feedback	Typically, controling a feedback look between the signal from an undersaddle pickup and the speaker of an amplifier.
Looper pedal	Typically, records your guitar as you play, plays it back to you over and over again in a loop.
'Plus' footpedal (by Gamechanger Audio)	Real-time audio sampler; the algorithm lets you capture small bits of the signal and loop it into a seamless sound.

Figure 2. Unconventional sounds used by composers

For this paper I will concentrate on 'Snare drum' techniques as they represent particularly subtle changes in timbre and possess a more-or-less equal amount of pitch and noise content. Moreover, their sonic trajectories are linear and non-linear. See Figure 3.

Taxonomy	Morphology	Notation	Morphological attributes	Dynamic range
'Snare drum' (normal) *Extended*	V		Three phases - textural preparation - percussive noise attack (may be multiple), decaying spectral activity, noise release. 2nd phase duration 2" to 6".	Soft, always subtle loud to soft - soft to very soft.
'Snare drum' (lateral glissando) *Refracted and Extended*	V	gliss.	Three phases - textural preparation, percussive noise attack (may be multiple), refracted decaying spectral activity, noise release. 2nd phase duration 2" to 6".	
'Snare drum' (slide glissando) *Refracted and Extended*	V		Three phases - textural preparation - percussive noise attack (may be multiple), refracted decaying spectral activity, noise release. 2nd phase duration 1" to 4".	

Figure 3. Three 'Snare drum' techniques detail

Music study has tended to concentrate on theory, writing notation, and analysis. There is little research on how human gestural activity impacts on musical performance. This may be because it is customarily expected. For example, a phrase played on the guitar incorporating pitch content may sound like it sings, echoing a vocal presence. This can have a physical and psychological effect on the listener. Interpreting the source-bonding threads and extracting meaning is an eventual goal of this line of thinking, alongside the expressive and emotional significance of inherent and external musical qualities. Describing musical gestures through morphological value will help listeners to identify significant behaviours.

Three types of 'Snare drum' techniques have been identified – *normal, lateral glissando,* and *slide glissando* (Vishnick 2014: 261). However, here I will concentrate on *lateral glissando.* 'Snare drum' morphologies have three phases – *preparation, resonance,* and *release*; preparation that induces a soft and subtle texture, followed by a percussive noise attack (this may be multiple attacks), which is released into the decaying spectral activity, then a noise cessation. Attack, resonance, and termination function in various ways. For example, the preparation phase of 'snare drum' morphology can operate as an anacrusis. Morphologies terminate naturally when the sound reaches silence, or prematurely through performer intervention. The direction of spectral contour during the resonant phase of a *lateral glissando* is refracted.

As time is needed to cross two adjoining strings, a variable preparation period is required. Figure 4 shows the two phases. The crossed strings are secured with an adjacent fingertip; any left-hand finger may be employed. This can be applied between various frets positions. When executed, a mixture of soft noise and pitch content occurs; this is always a subtle slight scuffle of sound.

Figure 4. Two phases of 'Snare drum' technique

The preparation acts as an upbeat to the second phase. The richest spectrum is produced when using the lower wound strings. However, by including the upper nylon strings an added spectral interest arises. Very little use of the upper strings has been found to date in the existing guitar literature.

To play a *lateral glissando,* two strings are crossed using the method described above. However, the string that is being crossed over is pushed a little further before being anchored by a left-hand finger. Then using the gap that is now between the crossed strings, the string that has been pushed a little further is drawn back slowly and deliberately after the right-hand attack. This creates a subtle, but effective, microtonal glissando.

Each player will manipulate the microtonal refractions differently. Therefore, the sonic result will vary; the amount of glissando pitch distance is left to the performer, leading to a certain amount of interpretative freedom. See Figure 5. Rasgueado techniques may be included to produce multiple attacks at the beginning of the resonant phase. Releasing the crossed strings produces a quiet percussive sound that is an integral part of the morphology.

Figure 5. 'Snare drum' (*lateral glissando*) with gap for creating microtonal *glissando*

The notation symbols reflect the three main phases; see Figure 3. A vertical line, variable in length, with an embedded small semi-circle denotes the preparation. This is attached to a graphic representation of the decaying resonance phase, a decreasing set of connected diagonal lines. The length of the resonance indicates the duration of decay. A separate symbol is used to represent release possibilities. Between the second and third phase, a broken horizontal line signifies variable amounts of relative silence. This is seen as part of the third phase – anticipation of the termination. To appreciate morphological value, hearing the sounds in extended passages is invaluable. Therefore, see the 'Snare drum' studies and associated sound files found in my *A Survey of Extended Techniques on the Classical Six-String Guitar with Appended Studies in New Morphological Notation* (Vishnick 2014: 271).

On hearing the sounds, the term 'Snare drum' for this technique may set certain expectations for the listener. In regard to source-bonding, note that various mental images from ones experience of hearing 'loose snares' ratting after the initial attack on the underside of a drum will occur.

Our ears have both entrance and exit. The visible ear is ever vigilant. David Toop tells us: "The question of subjectivity is particularly acute within the domain of listening, sound so elusive in time and space, always the auditory equivalent of invisible". Musical imaginings are stimulated within the mind rather than the external world. Looking at source-bonding from a compositional perspective, for example, the ear hears a sound, an image is conjured up – in this case maybe a stick hitting the snare drum is seen in one's mind – then the resonance forms a contour that becomes an idea for an appropriate notational symbol.

According to Gordon: "Unless one can audiate what is seen in notation before he/she produces sound on an instrument as dictated by the notation, what he(she) is reading will have only theoretical meaning for him/her". The result is academic rather than a musical meaning. My point is that the player will learn a lot more about the music itself by developing a sense of the musical sounds before interpreting the notation.[3]

This raises the point of learning to audiate before learning to read music. I would advocate that teachers use various improvisational methods and help the student to understand creative performance; however, discussing improvisation and creative performance methodologies are for another, maybe future paper.

Music educators are expected to teach the complex undertaking of helping pupils to be creative. Therefore, an ever-developing set of tools is essential for forward-looking pedagogical improvement, instructions that will help students to bring out and realise their inner potential. Knowing the details of a sound from one's mind or inner ear before physically hearing is undoubtedly extremely useful. Teaching students to hear and comprehend music rooted in the imagination is important. Figure 6 draws the elements together.

[3] For further clarification on the meaning of audiation, see Gordon 1989: 5.

A holistic approach

For an all-inclusive approach, a method for aurally recognising small changes in timbre is useful. Here we can tap into existing electroacoustic research, in particular the concept of *reduced listening*.[4] This type of concentration occurs through focused and continual listening. For Smalley: "It is an investigative process whereby detailed spectromorphological attributes and relationships are uncovered" (Smalley 1997: 5). In order to pay full attention on refining the detail and quality of sounds, the listener tries to suppress any distractions. Smalley again, "reduced listening is therefore an abstract, relatively objective process, a microscopic, intrinsic listening" (Smalley 1997: 5). Therefore, concentrating on the characteristics of the sound is essential.

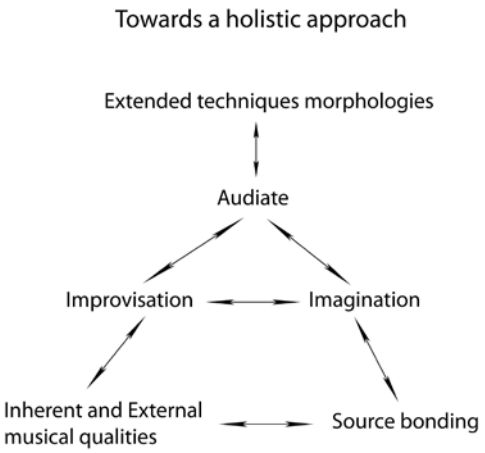

Figure 6. Key elements

Smalley and Oliveros concur, as they focus attention on how listening is an act of cognition; it can shape auditory perception. This form of perceptual scrutiny is generally employed in the creative process. I believe it is important to bring this type of listening into the performer-listener and audience-listener arena. However, care must be taken to teach the importance of maintaining a balance between *reduced listening* and *deep listening* together with *inherent* and *external* threads. For example, being aware that over-analysed morphological listening may lead to detrimental effects on intrinsic-extrinsic aural observations; I sometimes want to allow the music play on my senses and not to think analytically.

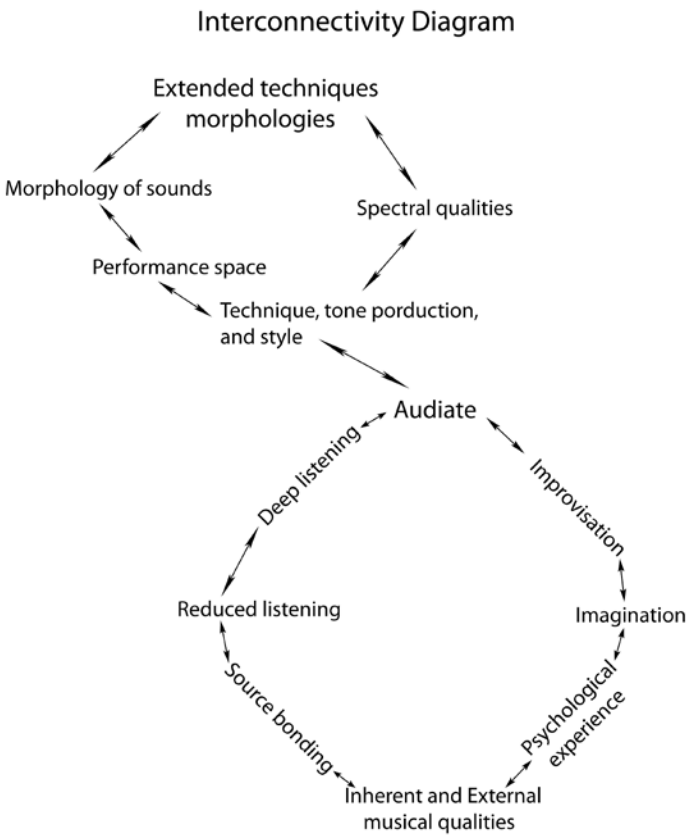

Figure 7. Interconnectedness of the considerations involved

The instrumental music arena

In order for a morphological approach to work, educators will have to notice the importance of the whole sound that is produced. I would advocate a paradigm shift, a move away from pitch emphasis, giving equal emphasis to the morphology of sounds, alongside spectral qualities and other factors such as style, technique, tone production, performance space, and psychological experience. Figure 7 shows the interconnectedness of the considerations involved. The aim is learning to comprehend all aspects of what is heard and understood when a musical sound or gesture occurs. Not only for guitar sounds, can this model be extended to all instruments and audible events in the environment.

It is physical activity that produces sound-making gestures on the guitar, a causal chain linking action to source; morphological consequences through human agency are the result. My sense of touch, whether applying nail, fingertip or an implement becomes the supplier of energy. Smalley adds: "A gesture is therefore an *energy–motion trajectory* which excites the sounding body, creating spectromorphological life" (Smalley 1997: 5). From the perspective of the performer and observing listener three elements occur – the visual, tactile, and aural; processes concerned with muscle pressure and relaxation, exertion and resistance.

[4] Reduced listening is a Schaefferian concept. See Schaeffer (1966) and Chion (1983) for a full discussion.

For me, the gesture process is bidirectional. For example, I play a 'Snare Drum' extended technique on my guitar causing a resultant morphology; conversely when I listen to the morphology the human element behind is heard, caused by the gestural activity; intentional acts and emotive elements are present throughout the process, including imagination. Relatedly, Smalley says: "Everyone uses this *spectromorphological referral process* when listening to recordings of instrumental music" (Smalley 1997: 5). We listen to music and also automatically gain a wealth of psycho-physical information by decoding the human activity behind the morphological information.

When thinking of the millions of people who have experienced listening to guitar music, it is obvious that an underlying process of conscious and unconscious visual and aural training has occurred; it may be referred to as a culturally acquired familiarity of sounding gesture. However, in much contemporary guitar music that contains passages of extended techniques, the sound-making becomes remote from the generally recognisable.

The playing of extended techniques can transform the source, the ear becomes dubious about the cause; the morphological nature takes us into the realm of the imagination. On the subject of musicians breathing life into contemporary music, which he calls *animation,* Gilbert Biberian's exploratory book *Liber* is on the vast subject of articulation. He tells us: "a rich and daring imagination (is) of paramount and fundamental importance" (Biberian 2012: 15).

Furthermore, when listening to a recording, or not being close enough to the performer at a concert, the sounds heard may be difficult to decipher. We may be uncertain how the sounds behavior was made. For example, we may be unsure of how the pitch trajectory was accomplished. My hope is that it will become possible for composers to create guitar music where the gestural cause – source relations are even more adventurous and imaginative. For me, this remote order of imagination is a rich area for compositional and improvisational exploration.

Experiential information

The reality of my musical world is about integrating standard and common historical techniques with extended techniques; this may cover many styles and genres. My intention is to connect morphologies from guitar techniques to today's world in a holistic manner; I wish to develop a progressive, radical forward-thinking pedagogical listening system that embraces all techniques as equal in value.

I have carefully nurtured the concept of 'guitar morphology'. Part of its meaning is as a tool for expressing and evaluating holistic listening experience, the mutually dependent interrelationships between the sound spectra emanating from the guitar and how they change through time. Note that in music we sometimes need words that are invented specifically for describing sonic phenomena. A morphological approach can provide a framework for understanding audiative structural relations and behaviour experienced in the temporal flux of music.

Music educators can now embrace the notion of 'sculpting sound' as manipulating the spectral content of morphologies in many ways, always taking into account pitch, spectra, morphology, style, touch, technique, auditorium, psycho-acoustics, and psychology.

Final thoughts: To the future

When we combine my thinking behind guitar morphology with inherent and external listening plus the processes of reduced and deep listening, together with Smalley's writings on spectromorphology, we may form the basis of moving towards a pedagogical audiative system. Meaning is embedded in the musical syntax, which is directly related to the workings of the inner and outer ear, as well as the source bonding aspect. It is our job as educators to really understand these three aspects and teach them to our students, enabling an all-encompassing view of the morphology of sounds in general.

Furthermore, to *audiate* is to use listening in all its facets towards creativity; this will inevitably engage the ability to recognise how the past, present, and future impact the senses. My belief is that studying the aspects arising from audiation will help anyone interested in sound to develop a higher sense of awareness in regard to sonic life experiences from childhood to the present. Moreover, I would encourage music lovers to engage in future personal sound experiments. For example, organise listening trips in various environmental situations.

I would like to put forward the idea that morphological musical thinking is a dynamic activity that involves perceiving spectral energies and configurations in space. Once thought about, it is a straight-forward experiential principle. As we have seen, everyone hears sounds and associates those sounds with experiences from life.

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Klasikinės gitaros morfologijos samprata ir interpretacija garso kokybės formavimo srityje

Santrauka

Pradėti reikėtų nuo to, kaip mes šiais laikais suprantame garso išgavimą, ypač turėdami omenyje, kad daugybė šiandien girdimų morfologinių elementų nėra konvencionalūs. Tyrinėdami įvairias muzikines praktikas galime pradėti kurti tam tikrus teorinius įrankius, kurie padėtų apibūdinti patiriamus garsus ir paaiškintų jų funkcionavimą muzikiniame kontekste. Pagrindinių garso kokybės formavimo problemų analizė suteiks gilesnį pažinimą ir padės sukurti tikslesnius apibrėžimus, o tai leis paaiškinti dėl specifinių gitaros atlikimo technikų kylančio garsyno estetinius padarinius.

Straipsnio tikslas yra padidinti sąmoningumo lygį šioje srityje pasitelkiant subtilių morfologinių elementų racionalų supratimą ir subjektyvų pajautimą, taip pat vidinių bei išorinių ryšių tarp garsinių įvykių nagrinėjimą. Ypač svarbu susieti pagrindines morfologines ypatybes su išorinėmis referencinėmis garso asociacijomis, įtraukti į tyrimų lauką tokius aspektus, kaip išplėstinės atlikimo technikos, sąsajos su garso šaltiniu (angl. *source bonding*) ir giluminis klausymasis (angl. *deep listening*).

Labai svarbu atkreipti dėmesį į pedagoginius metodus, padedančius suformuoti metodologines sąsajas tarp ateities mokytojo, atlikėjo ir kompozitoriaus; manytume, kad būtina atsižvelgti į absoliučiai visas instrumento garso savybes, klasifikuoti atlikimo technikas pagal jų skambesio specifines savybes. Straipsnyje gitaros išplėstinės atlikimo technikos tyrinėjamos koncentruojantis į jų suvokimą klausa, aptariama jų dokumentavimo problematika ir muzikos istorija. Čia paaiškinamos morfologijoje slypinčios susikoncentravimo į *„snare drum"* ir lateralinio *glissando* technikas priežastys, atskleidžiama žmogaus gestų inkorporavimo į garso funkcionavimo atpažinimą svarba.

Tarp kitų straipsnyje gvildenamų temų pateikiami notacijos simbolių paaiškinimai morfologiniame kontekste, nagrinėjamos sąsajos su vaizduote, aptariami sąsajų su garso šaltiniu (angl. *source bonding*) lūkesčių padariniai klausytojui, improvizacinių metodų ir kūrybinių atlikimo technikų svarba. Aptariant šias problemas, akivaizdžiai atsiskleidžia pedagoginių įrankių, skirtų vidinio potencialo išlaisvinimui bei mokinių vaizduotės lavinimui, poreikis.

Iš čia kyla diskusija apie holistinę metodiką, skirtą smulkių tembro kaitos niuansų suvokimui lavinti, ir jos sąsają su elektroakustiniuose kognityviniuose tyrimuose analizuojamu nuo konteksto atriboto garso savybių klausymu (angl. *reduced listening*). Aptariamas atlikėjo (kaip klausytojo) ir publikos (kaip klausytojo) klausinės percepcijos kūrimas.

Siekdami suprasti visus girdimus skambančio garso ar muzikinio gesto aspektus, inicijuojame diskusiją; išreiškiame palaikymą paradigminiam poslinkiui tolyn nuo tono aukščio, kaip prioritetinio muzikinio garso aspekto, link lygiaverčio garsų morfologinių elementų, spektrinių savybių ir tokių veiksnių kaip stilius, technika, išgavimo būdas, atlikimo erdvė ar fiziologiniai potyriai traktavimo. Šią diskusiją papildo temos apie garsinius gestus formuojančius fizinius veiksmus, dvikrypčius procesus, psichofizinę informaciją, įgytą kultūrinį pažinimą ir kt.

Šiandienos muzikoje labai dažnai naudojamos mišrios, standartinės grojimo technikos ir nekonvencionalūs morfologiniai elementai. Straipsnyje stengiamasi integruoti ir sujungti morfologinius elementus iš visų šiuolaikinėje muzikoje taikomų gitaros atlikimo technikų į vieną progresyvią, radikalią pedagoginę klausymo sistemą. Sąvoka „morfologiniai gitaros elementai" siekiama apibrėžti tam tikrą sisteminę konstrukciją, kuri palengvintų laiko tėkmėje vykstančius audiacijos struktūrinius ryšius ir jų funkcionavimą. Ši sąvoka mus atveda prie kitos, „garso kokybės formavimo", sąvokos, atspindinčios spektrinio morfologinių elementų turinio manipuliacijas.

Posūkio link pedagoginės audiacijos sistemos tikslas – audiacija ir visi jos aspektai turi skatinti kūrybiškumą. Morfologinis muzikinis mąstymas yra eksperimentinis procesas, dinamiška veikla, kurioje tarpsta spektrinių energijų percepcija ir jų erdvinės konfigūracijos.