

Jere Laukkanen February 8, 2020

In Search for the ‘Theory of Sound’

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While developing music education and creating theoretical, practical and pedagogical tools and systems for learning, we have neglected one important area of music: **the sound itself**. With this I mean the *musical quality of sound* – the timbre, contour, intensity, and spatial aspects of sound. Of course, developing one’s sound and voice is one of the most important areas of instrument pedagogy – besides instrumental technique and understanding of musical structures – and it goes without saying that composers think of sound color and dynamics while orchestrating. The spread of teaching of music technology has opened new understanding of music physics and sound synthesis for us, and our vocabulary on musical sound has become more versatile: the sound can be ‘fat’, ‘wet’ or even ‘expensive’!

Despite of the above, our music education lacks a 'historic-aesthetic' framework comparable to (Western) music theory, which could describe and categorize sound as a substantive component of music. Traditional music theory, which we teach in our institutions as such or as applied, is built on the classification of fundamental frequency ratios of musical tones rather than the sounds themselves. Neither can Western musical notation express sound but on a most elementary level. To complement these, we definitely need some kind of a construct which would help us explore musical timbre, envelope, and space as building blocks of music, and which would serve the same purpose as music theory as we now know it: to perceive musical tension and its release in time, but 'sound first'.

I have noticed the lack of this kind of ‘theory of sound’ when encountering talented young musicians who do not create musical structures with traditional building blocks (scales, intervals, and chords), but rather by organizing sounds into sonorously pleasing entities. Joint effects of simultaneous or successive sounds, with or without definitive pitch, may invoke recognizable or even traditional-sounding melodies and harmonies, consonances or dissonances – or may not. Whatever the end result may sound like, I regret that I and these musicians do not seem to share a common language, a fixed terminology with which we could describe and explore the relations of musical events to each other and to time in a music which possibly does not follow conventional guidelines of music-making.

Our understanding of the impact of sound and music on humans has increased vastly over recent years, and with the aid of electronic instruments and digital sound recording our possibilities to explore even the smallest details of sound have multiplied. Much of this information is scattered among the literature, and various areas of research do not necessarily communicate well with each other – let alone we could have processed out of these a construct which would help the writer analyze and discuss music in all its aspects. This kind of edifice would also help people, who approach music in unconventional ways, to understand traditional music theory – which eventually deals with the same fundamentals.

The introduction of the 'theory of sound' could also improve the accessibility of music schools and motivate new kind of talents to take on formal music studies. Moreover, it might even increase the percentage of non-Western students in our institutions in the long run. Popular music and jazz education would definitely benefit from recognizing the need for this kind of a new language. (I am sure that classical music education could use some new tools, too.)

The most important function of music is to convey emotions and induce experiences in the listener, and the way our brain conceives music is largely based on the sounds and rhythms we hear. Would it be about time to expand music theory education, to approach it 'sound first' for a change?

Jere Laukkanen, May 27, 2019.

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Help Needed

- ❖ Having said this, I am curious to find out what my fellow music educators think of the above?
- ❖ Is there a need for such a construct / language / understanding?
- ❖ Or does this **sound** like total nonsense?
- ❖ I have a couple of sources that deal with this issue at some level, but I have not found a comprehensive presentation of such an idea, applicable to **contemporary, sound-driven** popular music and / or jazz.
- ❖ **I would be delighted to hear if somebody knows more about this topic than I do**, and if there is a will to jointly start developing such a construct if no such thing already exists.

Questions

- ❖ Do we need the kind of 'Theory of Sound' as described above? Or is there already one?
- ❖ If 'Yes' and 'No' – What could we build it upon?
- ❖ How should we utilize analytical technology, such as DAW tools, spectrum analyzers & computer graphs in constructing it?
- ❖ How can we involve our students in this?
- ❖ A couple of possible sources, that I know of:
 - ❖ Ferrara, Lawrence. 1991. *Philosophy and the Analysis of Music: Bridges to Musical Sound, Form, and Reference*. New York: Greenwood Press.
 - ❖ LaRue, Jan. 2001. *Guidelines for Style Analysis*. Expanded 2nd ed. Warren, MI: Harmonie Park Press.
 - ❖ Pierce, John R. 1996. *The Science of Musical Sound*. Revised ed. New York: W. H. Freeman & Co.

One Possible Point of Departure

- ❖ Maybe, at first, we need to find out what kind of 'traditional' terminology is still valid in describing the characteristics, structures, and events taking place in sound-driven music? E.g.
 - ❖ Dynamics: **Loud — Soft**
 - ❖ Time: **Fast — Slow**
 - ❖ Register: **High — Low**
 - ❖ 'Vertical' texture: **Rich/Thick — Thin**
 - ❖ 'Horizontal' texture: **Dense — Sparse**
 - ❖ Harmonic / Melodic Tension: **Dissonance — Consonance**
 - ❖ etc.

One Possible Point of Departure

- ❖ Perhaps, secondly, we need applicable terminology *with musical examples* to describe various characteristics of music, when expressed with sounds and timbres rather than sounding notes. E.g.
 - ❖ **Tension — Fusion**
 - ❖ **Suspense — Release**
 - ❖ **Bright — Dark**
 - ❖ **Dissonant — Consonant** (in terms of timbre)
 - ❖ **Deep — Shallow** (texture)
 - ❖ **Fast — Slow** (in terms of attack and decay)
 - ❖ **Animated — Inanimate** (in terms of sound structure)
 - ❖ etc.

???

- ❖ Please tell me what you think.
- ❖ And if you already can point me forward with this.
- ❖ Or if you are interested in sharing your knowledge.
- ❖ Or if you are interested in contributing.

- ❖ Any questions? Remarks?

Thank You!