Tactile resources of musical style, musical instruments and the musician

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Abstract
A musical instrument is a technological resource which the musician adapts for music-making. The (personal) delivery of the musician is in turn always a comment on some historical conventions of how the instrument should be played: musical style, which is primarily felt in contact with the instrument. Given the social nature of music, making music is a way of communicating the personally felt. The musicians' musical expression, the stylistic boundaries with the corresponding motoric practices, and the tacit and sonic features of the instrument meet in the act of playing: the tactile boundary between the musician and the instrument thus unites 1) the musical style as a physiological resource, 2) the musical instrument as a technological resource and 3) the musician's expression as an affective resource. The study of tactility will necessarily involve the inclusion of all the three resources.

Keywords: Tactility, musical instruments, affect, style, corporeality.

Background
The 'Music Industry Census', the annual summary of musical instrument business in the US, tells us that e.g. 2.991.260 new acoustic and electric guitars, 201.966 acoustic and digital pianos, 271.167 drumkits and 997.661 brass, woodwind and stringed instruments were sold in the US in a single year of 2006. These seemingly trivial details from the largest musical instrument market in the world exemplify the general popularity of playing musical instruments. It seems striking that many of us do not want to merely listen to
and think about music, we want to produce music concretely with our bodies, through the movement of our limbs, lungs and fingers, in contact with these objects which are capable of producing sounds. In the light of sales figures such as above, and what we can witness in the amount of time and effort people of all ages invest in mastering the tools of music, it is obvious that with playing musical instruments we are dealing with an important phenomenon in human life. In this there is presented a theoretical framework for a comprehensive study of playing musical instruments, which is utilized in the research project *Tactile Resources of Musical Style, Musical Instruments and the Musician* financed by the Emil Aaltonen Foundation in 2010 – 2012.

**Aims**

Playing music on a musical instrument, and the pleasure musicians get from it, emerges from an extremely intimate dialogue between the personally felt body and the sounding instrument. To a skilful player the instrument can even seem to evolve into an organic extension of the body: in fact, a basic feature distinguishing playing an instrument from singing, the most archaic means of producing music, is the way a musical instrument provides the player a means of transcending the limits of one’s physiological body. The instrument alone is merely a lifeless object with a certain shape and physical features, but it is, however, a *resource* which will come to life when the musician breathes life in it, begins to use it in her or his personal way. What takes place in this discovery process where a technological resource is adapted to a tool of self-expression?

This personal way of the musician is in turn always a comment on some historical conventions of how the instrument should be played. The perception the musician has of the instrument is affected by many aesthetic guidelines evolved within a given musical culture. We may call these principles generically *style*. Even though we may be able to name and conceptualize a number of traits of a given musical style, a noteworthy fact is that a player’s sense of a musical style is primarily *felt* in contact with the instrument, and can not be acquired through discourse. In short, we may learn to play ultimately only
by playing, not by cognitive contemplation. We may not always come to think of how the aesthetic principles of a musical style have to adapt to the limitations of the human body. But when we do start to see music making from a corporeal view, we immediately notice how the limitations of the human body are often not really limitations at all, but a generator of new musical ideas which transcend the limitating features into exploitable resources. How do these limitations actually transcend into Resources?

The musician possesses the motile body, but unlike the musical instrument, the musicians body is not a machine since it amounts to a thinking and feeling human being, whose muscles, bones and nerves are ultimately irreducible from the individuals immaterial thoughts, feelings and attitudes. Given the social nature of music, making music must be thought of as, among other things, a way of communicating the personally felt. What surfaces in the act of playing a musical instrument is the affect. The affective dimensions of music have received a lot of attention when music’s universal popularity has been pondered upon. The emotive experience rises to the fore as reasons for human musical activity in general are being seeked. On the other hand we know, that affects and the human sensori-motor system have a concrete neurological connection. All this makes the musicians musical expression, the act of playing, a resource for powerful affective social communication. In what forms can this emotive resource appear, and what is its’ relation to the instrument and style?

The musicians musical expression, the stylistic boundaries with the corresponding motoric practices, and the tacit and sonic features of the instrument meet in the act of playing, as the flesh touches the matter: this tactile boundary between the musician and the instrument thus unites 1) the musical style as an affective resource, 2) the musical instrument as a technological resource to be discovered and 3) the musician’s expression as an affective resource. All these resources are united under the heading of tactility, which is defined here as the site where musical ideas and impulses are transformed into gesture and touch on a musical instrument.
Central questions for the study of tactility are: What means and codes are in use in general in affective expression in music? Which of these can be utilized in a given body/instrument combination? What limits do the body and the physical form of the instrument assign to the style? What kind of body motion and corresponding musical feature lends itself to easy execution on a given instrument? How is the instrument meant to be used and how can it be “misused”?

**Theoretical considerations**

*Emotive qualities in musical performance*

Human beings are especially perceptive to movement created by living organisms, that is, *biological movement*. Special to this movement is, that both the receiver and the received share a similar physiological potential. In recent years the so called *mirror neurons* have been thought to make up the physiological basis for social interaction in general. Mirror neurons are believed to afford individuals the possibility to internalize the intentions of fellow individuals in all multimodal interaction. In addition to visuomotoric capabilities mirror neurons also audiomotoric capabilities, so that also sounds may trigger their function. (Hatfield & al. 1994) Manfred Clynes’ (1977) theory of *essentic*
forms deals with specific unimodal dynamic continuums which characterise discrete basic emotions. Impressed by an informal musical performance of Pablo Casals, Clynes arrived at the conclusion that the emotive differences between musical performances are due to minute differences in the dynamic shape of the delivered phrases. The idea of such expressive shapes penetrates most of the research done on communication of emotions in musical performance: these shapes take place e.g. in the domains of tempo, dynamics, articulation and timbre (Juslin 2004: 309-337).

Since the 1990’s, a body of work has accumulated around the performative aspects of emotion in music. These have dealt with the expressive devices used by performers, or in short ‘cues’. The different cues associated with the five basic emotion categories can be summed up roughly in a following manner:

Table 1. Cues associated with the five basic emotion categories can be summed up roughly in a following manner (Juslin 2004: 315)

<table>
<thead>
<tr>
<th>Tenderness</th>
<th>Happiness</th>
<th>Sadness</th>
<th>Fear</th>
<th>Anger</th>
</tr>
</thead>
<tbody>
<tr>
<td>slow tone attacks</td>
<td>staccato</td>
<td>legato articulation</td>
<td>staccato</td>
<td>high sound level</td>
</tr>
<tr>
<td>low sound level</td>
<td>articulation,</td>
<td>small articulation</td>
<td>articulation</td>
<td>and sharp timbre</td>
</tr>
<tr>
<td>small sound level variability</td>
<td>large articulation variability</td>
<td>low sound level variability</td>
<td>very low sound level variability</td>
<td></td>
</tr>
<tr>
<td>legato articulation</td>
<td>legato high sound level</td>
<td>dull timbre</td>
<td>large sound level articulation</td>
<td></td>
</tr>
<tr>
<td>soft timbre variability</td>
<td>bright timbre</td>
<td>slow tone attacks variability</td>
<td>very low sound attacks</td>
<td></td>
</tr>
<tr>
<td>fast tone attacks</td>
<td>rising microintonation</td>
<td>flat microintonation</td>
<td>soft spectrum microintonation</td>
<td></td>
</tr>
</tbody>
</table>

These expressive ‘cues’ are to some extent multisensory. Musicians often make gestures and move their bodies in expressing a musical intention, and it has been noted that some emotional content is communicated by visual cues alone (e.g. Dahl & Friberg 2007). In terms of sound, different instruments allow for different measure of variation within the above given parameters of articulation, intonation, attack, level, dynamics, timbre and modulation; in this sense every
single acoustic instrument is an individual. Musical styles have their conventions of appropriate emotional content in performance, and each individual musician has her or his personal profile of emotive delivery.

Musical style in relation to the body

Corporeality has a central role also in the evolution of a socially shared style. The musician’s expertise of a given musical style cannot be based solely on conceptual knowledge: a style cannot be adopted by acquiring cognitive skills, nor it can be exhaustively described in concepts. Ultimately a musical style can be only mastered in contact with a musical instrument, and it may be argued that musicians have a tacit sense of a musical style rather than a cognitive map. Consequently, a style is not a rigid, mechanical and static set of rules, but rather a corporeal resource through which endless variation is enabled (Feld 1984: 76).

Musical instrument in relation to the body

As some musical procedures or effects are hard to accomplish on a given instrument, some other musical feature become effortlessly executed: this is what we call instrument idiomacy. In has long been noted by some writers that there exists a direct link between any given musical style and the musical instruments involved in the production of that style. Ethnomusicologist John Blacking (e.g. 1955), in his studies on the Nsenga kalimba and the Butembo flute, suggested that the shape of the music was influenced by the spatial properties of the instrument. Curt Sachs (1962: 110) wrote: “The instrumental impulse is not a melody in a ‘melodious’ sense, but an agile movement of the hands (→)”. A more recent is the notion that even the most traditional instruments are not completed during their design and manufacture, but only after musicians have started to use them in some manner. Illustrative cases of example are the washboard used in 1950’s skiffle music, the steel pans of Trinidad, or the musical saw; all three musical instruments which are borne out of an objects intended not for musical
purposes at all. Musical instruments, scales and tuning systems provide only a starting point and a conceptual framework on which musical styles, generic and individual, are built upon: to simplify, they define the notes to be played but not the way they are played (Theberge 1997: 199). A cultural twist may be found in the way how every unwanted feature of a musical instrument stays unwanted only until someone, like Jimi Hendrix who ultimately defined the electric guitar, breaks the cultural code and transcends the inherent “flaws” of the instrument into artistically effective means of expression (Aho 2010).

Methods

A study of a style and performance on musical instruments necessarily requires competence in performance. The basic approach for the study of an idiomatic musical style and instrument by first mastering the object of study in practice, then analyzing and finally translating the tacit knowledge into research prose. There is in principle no limit to the depth of detail one may enter in scientific communication. In reporting a study on the execution of a given musical style may make note of the strategies employed in (non-scientific) playing tutorials, as they aim to such cognitive changes in the reader which will help the evolving of a tactile competence in a given style on a given instrument. However, if we consider that tacit knowledge will never be absolutely exhausted in concepts, one must turn also to several strategies of illustrating and communicating results of analysis, such accompanying photographs, graphically enhanced standard notation, sound and video. Even live performances can be considered as means of communicating scientific knowledge.

To sum up, a profound knowledge of the relevant style and their history, together with playing competence, are a starting point for the investigation. To this is added the analysis and explication of the instrument-idiomatic features (inherent possibilities and limitations) of the relevant instrument. As a third methodical stage, empirical experiments need to be made and the results
evaluated against previous studies of emotional content in musical performances: this will clarify which parameters of affective communication are used in the stylistically idiomatic playing of the instruments involved in the project. All this is united in the overall aim of the project **Tactile Resources of Musical Style, Musical Instruments and the Musician** financed by the Aaltonen Foundation for years 2010 – 2012: the central idea is to work towards a general theory of the tactile resources of musical style, musical instrument and the musician: the tactility in playing musical instruments.

**Expected research results**
The research will most of all produce conceptual tools and a conceptual framework to tackle the problems of tactility; the field of tactility is by large unmapped territory in this sense. The individual case-studies, focusing on instrument and style combinations such as violin/jazz, folk music/kantele, new music/kantele, and new music/piano, will individually tackle the stylistic, tactile and expressive details each instrument/style combination, but will also serve together as an illustration for the underlying theoretical assumptions.

**Bibliographic references**
Aho, Marko (2010) “‘Almost like the real thing’: Will the digital simulation of musical instruments also leave us losses?” Music Performance Research vol. 3.

Author’s biography
Marko Aho accomplished his PhD in 2002. In 2003 – 2006 he held the position of research director at the Dpt. of Music Anthropology, University of Tampere. In 2007 – 2011 worked as the Director of Folk Music Institute in Kaustinen, Finland. Currently he is working on the project Tactile Resources of Musical Style, Musical Instrument and the Musician financed by the Emil Aaltonen Foundation in 2010 – 2012.