

OVATIONS Project, March 13, 2017, Palais de l'Athénée, Geneva

With the participation of Emmanuel Bigand, linguist, Daniel Groscurin, cellist and Irina Chkourindina, pianist

Transcription of Emmanuel Bigand's comments on excerpts for cello and piano from French music (Fauré: first movement of Sonata op.119) and German music (Brahms first movement Sonata op. 99):

"We all know that there's music in speech, it's sometimes what charms you when you listen to someone, it's that sort of musicality, the fluidity with which they speak, and it's been of great interest to linguists to try and characterize this music in speech, and you'll see that it's a line of thought that's going to take us quite far, perhaps further than you can imagine at the moment.

So how can we characterize music in speech? Linguists have the tools to do this. There are several parameters involved, but the one that comes into play most in the music of speech is... rhythm. Accent is rhythm, the duration of syllables. There are languages where the syllables are fairly regular, like French or Italian, and there are other languages where, on the contrary, the syllables are very short, the vowels are eaten up, and these are what we call "swing" languages, like English or German.

Other parameters also come into play, such as changes in voice pitch, prosody, vowel color (i, a, u...) and intensity. These parameters contribute a little less, but the two that are most important, in any case, for characterizing the music of language are rhythm and pitch intonations in the voice.

Linguists and music specialists (music psychologists) have tried to compare the temporal structure that exists in the different languages of the world with the temporal structure that can be found in music. And you'll see, it's very easy to understand how they do it.

If you analyze languages like French and try to transcribe them musically, you won't need many rhythmic values. To put it simply, you'll need a quarter note, an eighth note, maybe a triplet eighth note, maybe a sixteenth note, but no more. On the other hand, if you move on to other languages, you'll need many more values. And what's relevant is the contrast between these durations in syllables that are adjacent. In French you don't have much contrast, i.e. the durations are very close together, and it's rare to find a very short duration next to a very long one. That's why it's not a swing language. A swing language is one that alternates very short values with longer ones, giving the language a different rhythmicity. (...)

For us, a scale evokes the learning of music: if it evokes the learning of music, as we've seen that music is a bit of a language, learning music is a bit learning a language. And now that we've drawn your attention to the link between the structure of speech and the structure of music, you're not going to listen to pieces of music in the same way anymore, because you're going to be looking for: is it French, is it Italian, is it German, is it Russian? And you're going to listen to all the little durations there are, the little values in this temporal organization. That's an important point, perhaps under another aspect of the question, which is that if you integrate everything we've told you, you'll see that when you listen to music you're talking, you're exercising your linguistic abilities, and that a child who plays music is actually learning to speak at the same time as he plays music. So if he

can speak, that's fine, but if for reasons X or Y he has difficulty speaking, well, that helps him.

I work with children who were deaf from birth and have been fitted with hearing aids, so they can hear again, but they have to relearn everything. So it's very difficult. And what can we do to help these children? We make them play music to learn to speak. It's true for deaf children, but it's true for everyone. If you take people who have had a brain injury as a result of an accident of any kind, they can lose their linguistic abilities if the injury is in the left hemisphere, and so they can no longer speak, they're aphasic. What can we do to help them regain the use of language? Music. Because music stimulates and calls on the same resources as language, but it has its own strategy, and language has its own. So what we're seeing is that, in the end, this "music" activity, which we generally consider to be a pleasurable, cultural, artistic activity, is also much more than that: it shapes our brain, it transforms it, it maintains it, it stimulates it, it develops it. So going to a concert is much more than having a good time, it's also continuing to train the brain, to learn, to engage in intellectual activities that will be indispensable for everyday life.

So music, probably in childhood as well as throughout life, because it has very precise links with language in particular - but it also has links with many other activities - influences the development of children, the development of people, and has a role in our society that is far more important and far more fundamental to our mental and psychological well-being than is usually thought. Much more so than a simple leisure activity, not least because music is so closely linked to language that we no longer know what is music and what is language, and in "tonal" languages (such as Chinese, where syllable pitch height is of paramount importance) it is music that is language.

One of the hypotheses that has emerged is that perhaps the language spoken by a composer influences the music he constructs, i.e. that he composes with the accent of his mother tongue. All studies have shown that this is true, that there is a certain correlation between the temporal structure of speech in the composer's mother tongue and the music he composes. So, if we go to the other group, accented music, whether it's English or German, we'll find something different, it'll be very melodious, the gestures will be just as charming, but composed of time units that are much more contrasted. So there's a much greater variability in the intervals of duration, and that gives a whole other type of expression and rhythmicity."