

Ethnographic observations of musicologists at the British Library: Implications for MIR

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<http://www.elec.qmul.ac.uk/digitalmusic/m4m/>

Introduction

- MIR techniques have often been designed based on intuitions, without a rich understanding of user behaviours and needs [Cunningham, 2003].
- How to bridge the gap between the research laboratory and real-world situations?
- User-centered studies: include analysis of users' activities in the R&D process.
- Focus of this study: **musicologists**.

Purpose of the research

- (i) Understand some of the processes underlying musicological research (e.g. methods, documents, tools, interactions).
 - (ii) Analyse the relationships with music technologies during musicological research.
 - (iii) Long-term goal: create better tools for computer-assisted musicology.
- Methodological approach: ethnography.

What is ethnography?

- Emerged from anthropology and ethnology (study of people and their cultures): half of the 19th century.
- Later incorporated to sociology and psychology (1920s).
- Definition: **ethnography is the study of people and their cultures based on direct observations.**
- Ethnography tackles the gap between attitudes (what we say) and behaviours (what we do) [La Piere, 1934].

Setting and sample

- **Sound archive** department of the **British Library (London)**.
- **Edison Fellowship**: devoted to the study of the history of recordings of classical music and music in performance.
- **Sample**: focus on a small number of participants (4 Edison Fellows [males, 38 years old on avg.]) to collect rich details; common in qualitative research [Collins, 1988].
- **Musical repertoire**: early music (e.g. vocal and consort music), classical and romantic (e.g. art songs, operas, solo piano), contemporary music (electronic music).

Methods

- **Ethical approval:** QM's Research Ethics Committee (QMREC2010/86).
- **Musicologists observations at the British Library (3 months):**
 - the researcher establishes a direct relationship with the social actors staying in their natural environment (Sound Archive office)
 - with the purpose of observing and describing their behaviour (**field notes**)
 - by interacting with them, and
 - learning their code (or at least parts of it) to understand the meanings of their actions; [Gobo, 2009].
- **Ethnographic interview:**

Spontaneous interviews based on what happens in the field: very useful!
- **Analyses of musicologists' own work notes:**

Helps to understand the scope of their research, the focus of their attention, the methods employed, and their outcomes.

Qualitative data analysis

- **Coding** of the field notes (identifying and naming specific analytic dimensions and categories).
- Analysis by **themes** (reflecting recurrent or underlying patterns of activity) [Emerson, Fretz, & Shaw, 1995].

Recordings and format

- **Recordings held on a physical support vs MP3s:**

Fellow A: « ***There is more context when you have the original, the labels, how it was held for instance. With most MP3s you do lose something. I do wonder whether sometimes you're losing the core product.*** »

Fellow B: « ***I'm interested in the content of the program not in the carrier at all so I don't touch them at all apart from looking at the covers.*** ». Prefers digital recordings because the navigation in recordings is made easier and quicker.

- **Preference linked with the nature of the musicological approach:**

- Physical support: important for the historical/biographical approach.
- Less important for the analytical approach (focus put on the performance).

➤ **To facilitate the historical approach to musicology, music technologies to navigate digital music collections should present the contextual information provided on the carrier of original recordings (e.g. album art covers, CD liner notes).**

Contextual information

- Recordings **metadata** (e.g. online or printed catalogues).
- **Historic** and **bibliographic** (e.g. artists' websites, Wikipedia).
- **Visual** and **iconographic** (e.g. YouTube videos, Google Images).

➤ **Semantic web technologies and Natural Language Processing** offer promising ways to facilitate the access to data from various sources by **linking** them together and generate inferences via automated reasoning.

See e.g. LinkedBrainz project:

<http://linkedbrainz.c4dmpresents.org/content/linkedbrainz-summary>

Listening practices: alternation of closed and multimodal listening

- **Closed listening:**

Careful and focused listening to the recording without using any other source of information.

“After starting the recording in the CD player, he sat back in his chair, closed his eyes, and listened carefully to the music. A moment later, I noticed that he was tapping the beat with his foot.”

- **Multimodal listening:**

Listening accompanied by interactions with musical documents using several modalities (e.g. textual, visual). In line with the concept of “active” listening [Bonardi, 2000].

➤ **Software for musicologists should support both closed and multimodal listening practices.**

Scores and lyrics

- **Scores and lyrics** acted as a reference against which to analyse the musical expression and follow the musical structure: *“Beautifully sung - singing the note values and generally the dynamics written by Samuel Coleridge-Taylor”. / “Quite shrill and shaky on ‘A wind comes and let me be’, and more mellow on ‘said it slow’.”*

➤ **Integration of scores in playback software** (e.g. using online database such as the IMSLP [<http://imslp.org/>]) and **alignment of scores and lyrics to audio**.

➤ **Visualisations of expressive deviations from the score** could help the characterisation of the artistic intentions of conductors/performers.

Sound visualisation, acoustical analyses and time-stretching

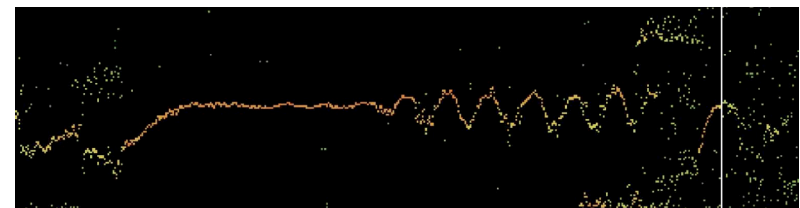
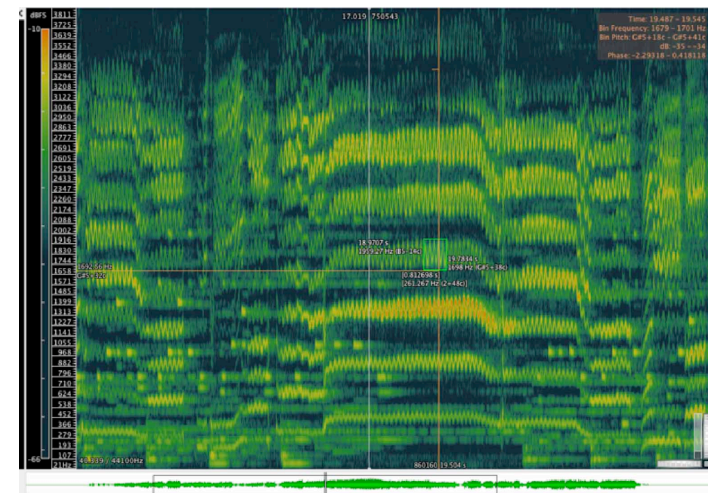
Visualisation and computational methods were used to:

- navigate the recordings;
- prove or nuance aural observations;

« The tools on one hand, I don't need them, I could describe that, on the other hand I can't prove it. This tool [Sonic Visualiser] is allowing me to express that in some way it [the finding] is objective. »

- compare several performances in a systematic way;
- understand expressive techniques.

« I knew something was up through listening but I couldn't tell what was up, and then when I visualised ... when I slowed down, more of it made sense, I realised the vibrato was not consistent, but I couldn't work out that it started without vibrato without the spectrogram. »



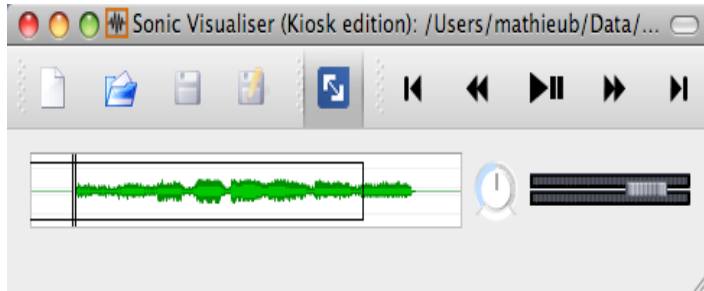
Cross-modal effects between auditory and visual feedback

- New empirical evidence emerges from the cross-modal effects between auditory and visual feedback (increased access to meaning).
- Paradox: visualisation brings an **“increased emphasis on what you can see”**, but concomitantly **“deemphasises what you can’t see”**.

“I completely forgot about the bassoon, it feels like it is unimportant now [after visualising vibrato effect with a spectrogram representation], but I was once struck by it [during closed listening].”

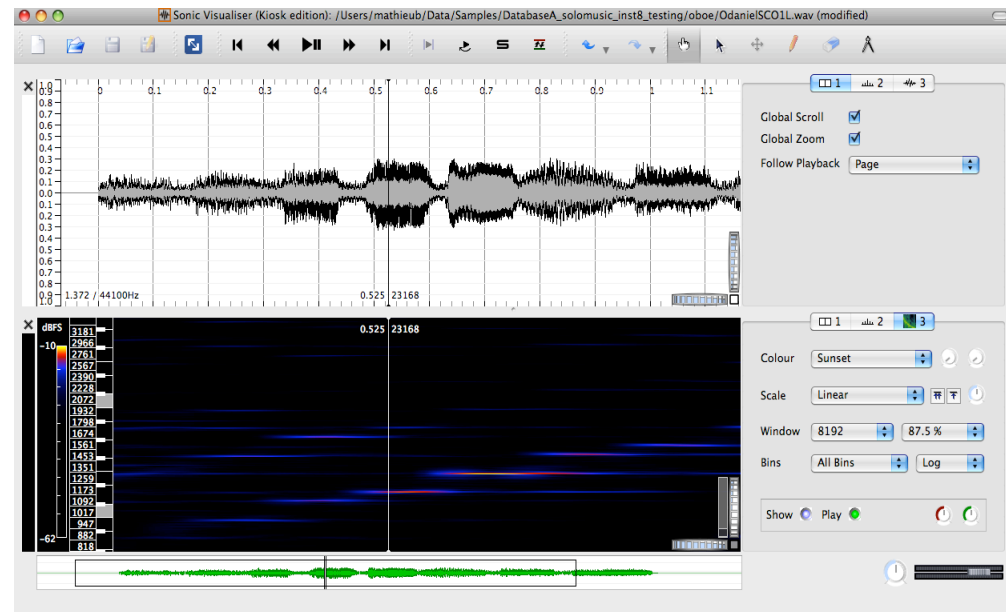
- **Confirms the fact that software for musicologists should support both closed and multimodal listening (with visuals).**

Toggle from closed to multimodal listening in Sonic Visualiser



Minimal mode

<http://www.sonicvisualiser.org/>



Full mode

Conclusions

- Ethnographic observations of musicologists studying classical music recordings:
 - (i) Alternation of closed and multimodal listening practices;
 - (ii) Use of visualisations and computational methods;
 - (iii) Scores and lyrics acting as a reference in performance practice analysis;
 - (iv) Importance of the contextual information for the historical approach.
- Give insights on how to adapt, improve, or create music technologies better fitting the needs of musicologists.

Acknowledgments

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Thanks for your closed listening!

Questions?