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Luc Perera, Pierre Jouvelot

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TALA SOUND

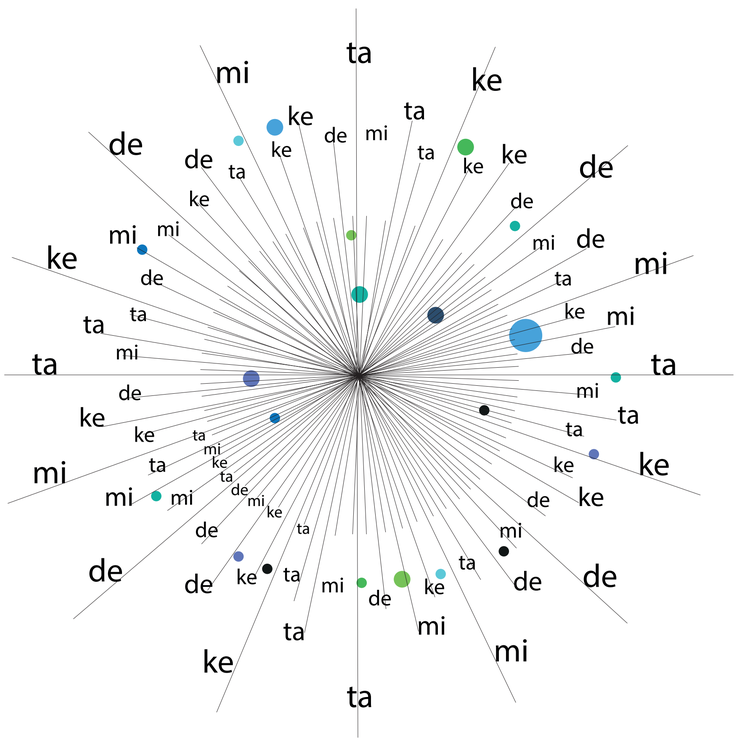
(1) Luc PERERA, PhD student, luc.perera@ensad.fr

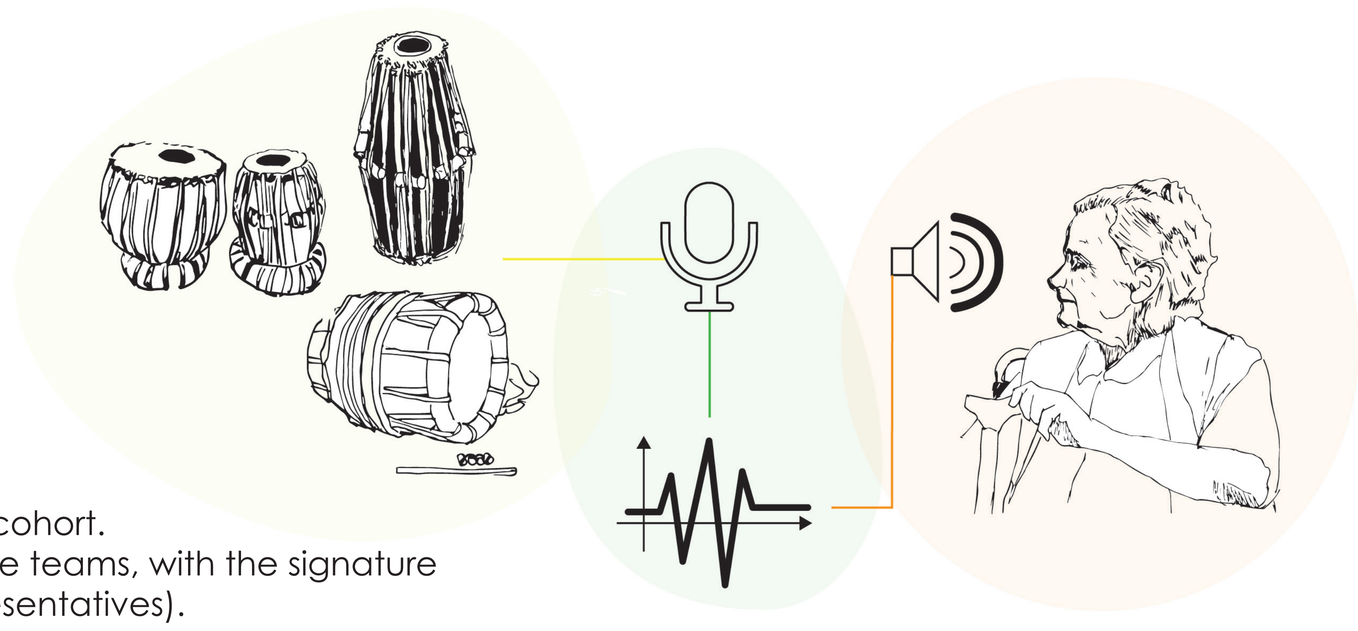
(2) Pierre JOUVELOT, Senior Research Scientist, pierre.jouvelot@mines-paristech.fr

Abstract

The Tala Sound research project intends to study how Indian carnatic music can be used for healthcare purposes. We present here the results of the first phase of Tala Sound, which had two main goals: (1) to analyze how such a non-European music is received by an audience of demented elderly patients of European culture and (2), if this reception is positive, to compare the impact of this music on another audience, with no dementia disorders.
In practice, the first part of this study involves offering patients with severe dementia simple listening sessions. Over a 3-month period, we observed, quantified and analyzed the behaviors of these patients when performing passive indoor listening of «talas», which are carnatic rhythms, with additional melodic sounds, used in classical South Indian music. The participation of the medical profession was fundamental during our musical tests for reasons of patient safety, operational facilitation and scientific relevance. Our study was accompanied and directed by a geriatrician from Paul Brousse hospital (France), who also guided us on the pathology of the various patients.
The second test was organized in a Domitys-managed accommodation facility for independent seniors in Villeneuve-le-Roi (France).

Tala rhythmic structure

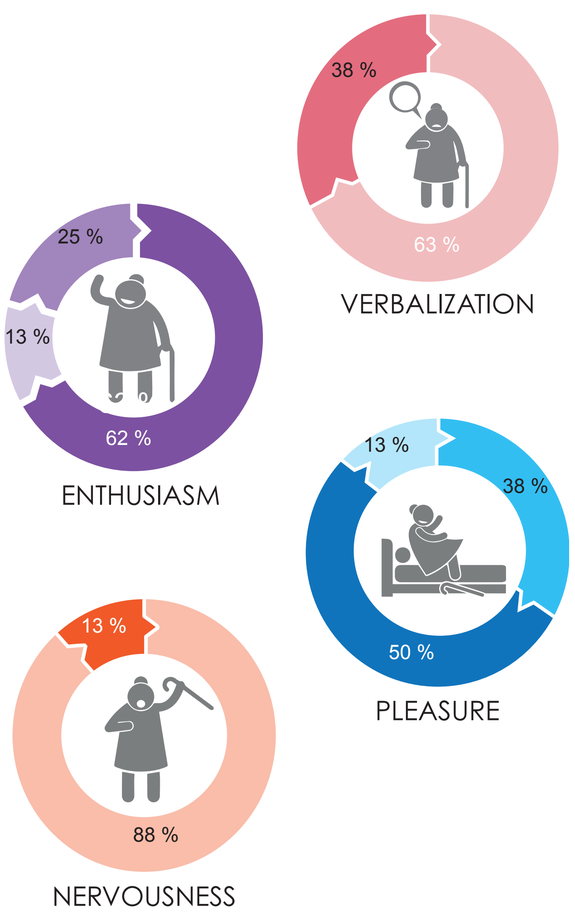




Listening to Indian rhythms

Methodological features of Test 1

- Experimental assessment of music-listening sessions on a cohort.
- Established ethical framework, presented to an healthcare teams, with the signature of informed-consent forms by patients (or their legal representatives).
- Fixed, bright and closed space for listening to music.
- Individual weekly sessions of 10 minutes per a week patient, offered on one or two days of the week, with a fixed schedule.
- Presence during the sessions of Luc Perera (observer) and Dr. Vétillard (geriatrician).
- Upstream measurements via MMSE and/or NPI-ES of the intensity of behavioral disorders (by trained and authorized assessors).
- Creation of data grids for the observation of session content by the physician.
- Production of anonymized data sets, therefore not requiring a *Commission nationale de l'informatique et des libertés* (CNIL) declaration, for analysis by the project leaders.



Results

Test 1: With 6 demented patients tested 24 times, 18 sessions could not use verbal communication, but the doctor was nevertheless able to assess their responses, based on the attitude of the patients before, during and after listening. The state of stress was assessed in relation to physical attitudes, if the patients were excited by listening to the sounds or if the carnatic rhythms soothed them.
- In the entire cohort, only one person fidgeted while listening.
- Two patients expressed their feelings by arm movements, soft and calm, as if they were dancing; this may be due to their origins, as one came from North Africa and the other from an Asian country.
- A patient from a wealthy background, who was himself a musician when he was young, was particularly talkative.

Test 2: Given the presence of relaxed states induced by carnatic sounds in this first part of our study, we carried out a similar experience in Villeneuve-Le-Roi (France). We brought together 20 people, aged 80 to 95, without difficulty speaking but with physical disabilities (linked to old age). There were 15 women and 5 men.
- People stayed very focused during the listening session.
- They were able to fill out our questionnaire.
- At the end, we had a 20-minute question-and-answer session during which people asked us a lot of questions about our choice of rhythmic structures and the comparison with classical Western music.

As for the first part of the study, the results obtained in this second part were very positive, the assistants feeling relaxed and rested. Our study thus suggests that Indian carnatic music has a relaxing impact on the elderly, with or without cognitive impairment.