NeoMI

# A new environment for the organization of musical instruments

PROJECT DESCRIPTION

In the context of the knowledge-based globalized society, the time has come to completely revise the way musical instruments are classified. Hornbostel-Sachs' (H-S), the current system, is conceptually and practically outdated. It implicitly maintains research(ers) in a 19th century framework – whereas the needs and challenges of the 21th century are increasing.

NeoMI aims at laying the bases for a new environment organizing and structuring musical instruments. It will tackle the main issue of the H-S system: its reducing effect, induced by the need to select one and only one trait of the instrument. Musical instruments are more than one of its many aspects; therefore, the development of a new environment, comprising the ontological polysemy of instruments, is needed. NeoMI will take into consideration various types of data. It will be built on the possibility of creating temporary groupings according to user-defined criteria (and not through a unique predefined route anymore).

It aims to provide a flexible and pertinent tool for managing museum collections, as well as a fruitful and innovative conceptual framework for research.

The aim is to develop an environment consisting in an integrated, un-hierarchical and flexible tool to organize the musical instruments. Without reducing the complexity and the richness of these multifaceted objects, it will include the manifold aspects of musical instruments into a unique environment. To that end, the system will be based on temporary grouping of instruments among their "peers", according to user-based criteria. This will allow an important variability in the precision level: it could be used to group instruments according to a single-criterion (such as the presence on the instrument of an anthropomorphic decoration), or to constitute a corpus of very specific instruments (for example, instruments equipped with devices contributing to provide buzzing sounds), or, on the contrary, to constitute a group of similar instruments made by the same maker, at the same place, over time.
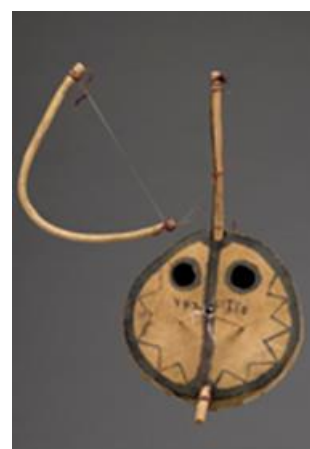
In order to realize such a complex environment, NeoMI will be based on the research corpus brought together in the Action I project The Formalized Fiddle (currently conducted at the Musical Instruments Museum, funded by Belspo): chordophones bowed with a bow from all over the world. Not only does this provide NeoMI with a large collection of data to start with, focusing on only fiddles will also prevent a bias toward an organization based on morphological traits.

Two work packages (WP) have been defined, which are in close collaboration with each other. WP 1 focuses on the contextual and musical data, along three axes:

1. the instrument as an artefact, comprising information regarding production time and place, maker, and morphological features;
2. the instrument in its context, comprising information regarding the general social/cultural context of the instrument;
3. the instrument as a tool for music, comprising information related to playing techniques and musical pieces.

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WP 2 focuses on conceiving the outline of the computer environment. Based on the data provided by WP 1, a pioneer lead will be explored: graph theory. At the boundaries of mathematics and computer science, graph theory develops mathematical structures aiming to model the relations between pair objects in a given collection.

At the dawn of the 21st century, the persistent use of a conceptual framework designed in the 19th century is a problem. Indeed, classificatory systems are not a mere way to sort objects: they are also (and often implicitly) a conceptual ground and a basis for research. The NeoMI project aims therefore to induce an important change of scientific paradigm: from a linear thought to a truly multidimensional one, in which the relative importance of features is adjusted according to the needs of the research.
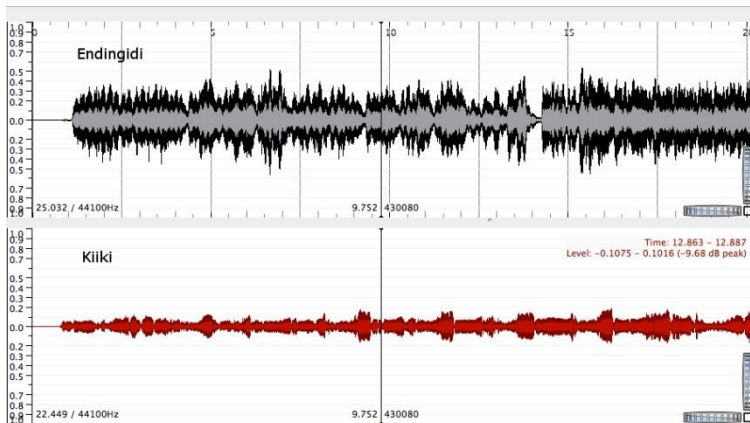
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