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Performance and Interpretation by Guerino Mazzola and Stefan Göller

This paper consists of two major parts. The first part gives an overview of the key points in musical performance theory from the authors' viewpoints, and the second part introduces some visual performances of general multimedia databases. As an introduction, Mazzola and Göller discuss general ideas of a performance, providing definitions of performance, and operators in the field of performance, and methods of reconstructing those system parameters for a given performance. Then Mazzola and Göller extend the idea of performance to the case of "multimedia performance knowledge," occurring in the visualization and auralization of musical and other databases, such as scores and libraries.

Mazzola and Göller also discuss the four "globalization factors" of musical performance: (1) instrumental differentiation, (2) splitting the score into voices, periods, and similar groupings, (3) specifying the roles of the musical parameters (e.g. pitch, duration, onset, loudness, etc.) into basic parameters (e.g., onset time), and (4) unfolding the level of detailing and sophistication of a performance as a function of its rehearsal history in the spirit of a genealogical tree. There are three main rationales for performance: emotion, gesture, and ratio. Comparing to the other two rationales, the authors suggest focusing on *ratio* because of its simplicity and explicitness. Rational performance is based on music analysis, measuring the way an artist hit the keys or pluck the strings as an example. The measurement maps the parameters from a space of symbolic gestures to a space of physical gestures, an n -dimensional real vector called *performance vector fields* T_s in RUBATO system. The performance fields T_s can only produce performances if initial performance values are available, which is the reason why every performance is unique, as argued by Schmidt in 1992.

Mazzola and Göller then indicate the dependencies between performance parameters as local hierarchies. One example of local hierarchies is the dependency between duration and onset, using the first deviation of onset curve to model tempo. To reflect the richness of musical context, the representation of tone parameters such as onset and pitch are expended into a description of gestures. The symbolic gesture objects are defined as differentiable curves in the real n -space. In contrast to Sundberg's performance grammars, Mazzola and Göller argue that investigating and eventually controlling the methods and tools for performance is a better approach than unsystematically producing potentially interesting performances. In 1999, Stange-Elbe explored the possibilities to generate interesting performances by using Rubato's PerformanceRUBETTE. With the investigation of metrical and melodic weights for Bach's "Kunst der Fuge," Stange-Elbe found that the *source-driven* approach, expressing the given weights without any

predefined target, worked better than target-driven strategy. Another approach for performance analysis is *inverse performance theory*, which intends to understand the underlying mechanisms which could lead to a performance style. Müller implemented EspressoRUBETTE to calculate all the performance fields of a MIDI-formatted recording with respect to the given score file.

In the concluding part of this paper, Mazzola and Göller introduce a visual performance of music databases. The visual performance generates visual interface of music, and maintains the linear orderings of the parameters in high-dimensional and recursive databases. They show two examples of visual performance, using the Pinocchio puppets as a Satellite object. The first example is for a short piece from Carl Czerny's "Pianoforte Schule," where each note is performed by one pinocchio with onset, pitch, loudness, and duration as horizontal spatial position, vertical position, foreground-background shift, and leg length. The second example is a visual performance of a library of 400 books.

Key ideas in this paper, although seemingly interesting, are poorly explained. The descriptions contain many double-negative sentences as well as strong conceptual disagreement with other's work. The writing style distracts people from grasping the main arguments. Additionally, the writing makes the arguments sound more like a personal statement than an academic article. Another flaw of this paper is the abundance of unexplained terminologies which are merely summarized in few sentences or in references. It appears more like a summary or a review paper of previous works, with too many complicated ideas just assumed but not explained.