PROPOSAL FOR A PAPER TO BE PRESENTED AT THE MEI CONFERENCE 2019

TITLE:

The MEI Neume Module and its Interoperability Across Chant Notations

ABSTRACT

(word count: 995)

The MEI Neume Module represents the community's attempt to create a standardized set of rules that encapsulate in a logical, systematic, and unequivocal way the musical information represented and conveyed by Western European neumatic notations (beginning with the late ninth century and continuing to the printed books of the twentieth). This paper has a threefold objective: 1) to describe the current MEI Neume Module (MEI Guidelines, version 4.0); 2) to outline the musical and palaeographical reasons that prompted us to flesh out some of its most debated rules; and 3) to discuss the interoperability of the current MEI Neume Module across the various styles of Western European early notations.

There are four main challenges in encoding Western European early music. The first relates to the fact that early notation was just a mnemonic aid that helped the readers to recall the music they already knew by heart and, as such, it conveys only partial musical information (Bain, Behrendt, & Helsen 2014; Helsen, Behrendt, & Bain 2017). Indeed, it is only with the invention of staff lines in the eleventh century that the system of musical transmission gradually changed, relying more on the written record rather than on orality. The second challenge refers to the existence of different regional styles of early notation; early-music manuscripts display a great graphical variety of musical signs, which include both neumes and extra-notational elements conveying musical information. Thirdly, some of those regional notational styles occasionally share graphically similar shapes; these similar shapes within the different notational styles are understood by modern scholars to represent the same, a similar or even a *different* musical meaning. Finally, while on occasion the neume shapes appear to mirror graphically the musical characteristics of the sound being represented (e.g., pen-stroke going up = rising melody), in many instances it is generally understood that the meaning attached to the neumes (or the extra-notational elements) may not be so straight-

forward, but instead was ruled by conventions shared by the people who knew orally the musical repertory being fixed in written form by means of notation.

What do these challenges entail for modern encoders?

Firstly, sometimes we have to deal with written signs whose meaning is obscure to us and, while we can infer the meaning of some of those signs from the study of later manuscripts with the same melodies and a more precise notation, in other cases we need to turn to music palaeographers who examine the recurrence of those written signs and the context where they were used; by analysing scribal hands in particular manuscripts, palaeographers can often work out if a written sign is a meaningless scribal variant or a graphical feature conveying musical meaning to the medieval reader. Secondly, since a neume shape could either mirror on the page the aural event or bear some other musical meaning attached by convention, the encoding sometimes relies on the visual level (when the shape graphically represents the sound) or on the semantic level, and this distinction has to be made on a case-by-case basis. Moreover, since the same written sign could have multiple interpretations according to the style of notation where it was employed, it is crucial to be aware of the conventions of each regional notational alphabet in order to capture the musical information conveyed by that sign in the contexts where it is found. A further complication is that while the music encoding aims to narrow down and capture the meaning of the neumes in a logical and coherent system, occasionally the significance of some neumes is under debate (e.g., quilisma) and, despite its aim for accuracy, the encoding must remain open for future interpretations.

From all these challenges has arisen the need for an early music encoding standardisation, that is, a set of rules that work for the description of any neume across all early notations regardless of the different methodologies applied to the study of individual notations and their idiosyncrasies. Within the current MEI Neume Module we propose to focus our attention on the <nc> neume component. Among the attributes currently used to describe a <nc>, we will tackle some of the most controversial descriptive parameters adopted: 1) the relative length (@rel_len); and 2) the relationship among connection (@con), curve (@curve), and s-shape (@s-shape).

In the final part of this paper, we will demonstrate the viability of the current MEI Neume Module across different styles of notation. The current Neume Module has been tested only on Western European notations. However, Byzantine and other Eastern notations pose similar methodological challenges and share many neume shapes with the Western set of neumatic

signs. Hence, if we manage to work out an efficient and methodologically consistent way of describing Western early music, the chances are that the same system can be extended and adapted to the encoding of Eastern notations.

Broadly speaking, Western early notations belong to two categories. On one side we have notations where two or more notes were represented by a single pen-stroke, while on the other side there are notations where the notes are graphically separated by means of discrete dots or short pen-strokes; these distinctions have been described even within single notational styles as interrupted neumes <ineume> or uninterrupted <uneume> (Morent & Schräder 2008; Morent 2011; MEI Guidelines, 6: Neume Notation, version 3.0), and now as gapped or not gapped (Behrendt, Bain, & Helsen 2017; MEI Guidelines, 6: Neume Notation, version 4.0). To date, the MEI Neume Module has been tested mainly on stroke notations (St. Gall, Old Hispanic, etc.), but also on Aquitanian point-notation. We will present some of the most difficult signs we have encountered in these notations and extend the MEI Neume Module further by testing it with other regional styles that have not yet been examined.

This paper will contribute to the general discussion around MEI by highlighting the challenges and the methodological issues of encoding Western European early notations and by providing some insights into the analytical process of testing the rules already established.

BIBLIOGRAPHIC REFERENCES

Bain, Jennifer, Inga Behrendt, and Kate Helsen. 2014. "Linienlose Neumen und ihre Repräsentation mit MEI Schema, Herausforderungen in der Arbeit im Optical Neume Recognition Project (ONRP)." *Digitale Rekonstruktionen mittelalterlicher Bibliotheken*. Edited by Sabine Philippi and Philipp Vanscheidt. *Trierer Beiträge zu den historischen Kulturwissenschaften* 12: 119–132.

Behrendt, Inga, Jennifer Bain, and Kate Helsen. 2017. "MEI Kodierung der frühesten Notation in linienlosen Neumen." *Kodikologie und Paläographie im Digitalen Zeitalter* 4 / *Codicology and Palaeography in the Digital Age*. Vol. 4. Edited by Hannah Busch, Franz Fischer, and Patrick Sahle, with the cooperation of Philip Hegel and Celiz Krause, Norderstedt 2016. Köln: Institut für Dokumentologie und Editorik e.V, 2017, 281–296.

Helsen, Kate, Inga Behrendt, and Jennifer Bain. 2017. "A Morphology of Medieval Notations in the Optical Neume Recognition Project." *Arti musices: Croatian Musicological Review* 48/2: 241–266. https://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=284211

MEI Guidelines, 6: Neume Notation (Guidelines for MEI 3.0.0), available from https://music-encoding.org/guidelines/v3/content/neumes.html.

MEI Guidelines, 6: Neume Notation (Guidelines for MEI 4.0.0) introducing “nc” as “neume component,” available from https://music-encoding.org/guidelines/v4/content/neumes.html.

Morent, Stefan and Gregor Schräder. 2008. *Demo: MEI Neumes Viewer Hildegard*. http://www.dimused.uni-tuebingen.de/hildegard/?SCREEN=1560x686

Morent, Stefan. 2011. “Digitalisierungskonzepte für Neumen-Notationen - die Projekte TüBingen und e-sequence.” *Perspektiven Digitaler Musikedition*. *Die Tonkunst* 3: 277–283.

==========

ADDITIONAL INFO TO BE PROVIDED ALONG WITH THE ANONYMIZED PDF:

SHORT STATEMENT REGARDING YOUR CURRENT INTERESTS RELATED TO MUSIC ENCODING:

We are interested in encoding neumatic notations. Being able to represent the melodic content contained in chant manuscripts is challenging, and requires a uniquely-constructed system in order to approach machine-readability.