

Digital Editing of Music – Time to Take a Stand

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In the course of the past decades, digital media have increasingly influenced the methods of musicological research. A look around reveals that developments are taking place also in the international field of music editing, which in some ways may fundamentally change our conception of modern editions and editorial practices. But whereas the publishing industry has long been forced to face digital media as an inevitable fact to be handled somehow, not least for economical reasons, it seems that musicology is largely unaware of the perspectives. Digital music editing is generally regarded as just an option among others, at best as a promising possibility. We, however, would like to argue that it might be useful to put the worries of the publishing industry into perspective and to demand musicology to take a position on the challenges.

The reluctance among musicologists, editors, and publishers to engage in digital music editing may to some extent be simply due to a feeling of uncertainty about what digital media can and cannot do, or due to a scepticism rooted in the incredibility or low status still generally associated with online publications. Some scepticism is of course appropriate, also when assessing digital editions, but our scepticism should as always be a constructive one, aiming not at rejecting the media in general, but at optimizing its benefits. Current projects, some of which were presented at the symposium *Digital Editions of Music – Perspectives for Editors and Users* held at the University of Copenhagen 19 January 2008,¹ appear to us as having the potential to silence discussions on whether digital media are relevant to music edition at all, and instead turn our focus to questions as for instance *how* to use digital media and under which premises.

Basic methods for the preparation, storage, and dissemination of texts in digital media have been in use for many years now. Also, theoretical frameworks for scholarly working with digital representations of texts and objects have been developed.² Digital media may actually prove to be even more promising for the future of music editing than for textual editing due to the complex ontology of the musical work. But before looking at some of the perspectives, we may need to ask what a digital edition is. A traditionally conceived paper edition, converted to the PDF file format

1 See the conference report elsewhere in this issue.

2 For an introduction, see Dino Buzzetti and Jerome McGann, 'Critical Editing in a Digital Horizon', in Katherine O'Brien O'Keefe et al. (eds.), *Electronic Textual Editing* (New York, 2006), 53–73, http://www.tei-c.org/About/Archive_new/EET/Preview/mcgann.xml; Jerome McGann, 'The Rationale of HyperText' (1995), <http://www.iath.virginia.edu/public/jjm2f/rationale.html>.

and published on the Internet certainly is a digital edition, though only in a very limited sense. At best, a PDF edition may overcome some limitations of printed editions as to the production costs and distribution. But valuable information has been lost – or at least made inaccessible – during the process of creating the files. PDF is a file format describing the graphical appearance of text and images, producing a visual output intended to be read and decoded by the human eye and mind. Data structures representing the music in a computable way have no place in it. By choosing the PDF or any other graphic format, users are effectively precluded from further processing the data, thus losing some of the most powerful advantages of digital media.

Various strategies for translating music into structural, computable data have been designed, and certain standards have emerged, some also discarded. Structural representations (encodings) provide a very different approach to digital editions than the one inherent to PDF publications, for instance. They not only make the music computable (i.e. editable, searchable etc.), they may also contain annotations or any other related information about the work or specific parts of the music. Graphical representations like PDF can easily be generated from structural data – even on the fly, i.e. at the moment the user hits the download button. By contrast, the reverse process – converting graphical representations into structural ones – is at best problematic.

Though digital technology may also encourage and facilitate the trend towards purely image-based editions, interesting perspectives are opened by the combination of image-based representations and structural encodings of the same sources: as the encoding can relate each part of the text to its location on digital images of the source, graphical and structural domains can be tied together. In this way, facsimile editions may be turned into critical editions by overlaying editorial and contextual information onto photographic reproductions. In the future, the traditional distinction between facsimile and critical edition thus may blur or even disappear as features from both sides are combined: the greatest possible amount of information on the physical appearance of the source on the one hand and the highest standards of scholarly editing on the other. Some easy switching between or parallel views of the facsimile and a transcription or edition may even help overcome the usual trade-off made in printed facsimiles, where the legibility of modern printed editions is traded for a detailed reproduction of the source.

A highly versatile basis for future scholarly editing is achieved with the concept of hypermedia archives storing various kinds of data on a particular work, including facsimiles, their digitally encoded representations, audio and video recordings, the editor's annotations, contextual information, internal links between sources and external links to related works.³ An edition in printable, modernized notation is just one of many possible outputs that may be generated by a certain combination of the data stored in such a digital archive, others being analytical and statistical studies or searchable music

3 Frans Wiering, Tim Crawford, and David Lewis, 'Digital Critical Editions of Music: A Multidimensional Model' (2006), <http://www.methodsnetwork.ac.uk/redist/pdf/wiering.pdf>. Whether the hypermedia archive itself may be called an edition depends on the definition of the term. In this article, the word edition is reserved for outputs involving a certain degree of critical editorial engagement in the musical matter.

databases. One of the great strengths of a truly digital edition is its dynamic nature, as may be illustrated by the situation where an important source – previously unknown or believed to be lost – turns up too late to be included in the printed edition. In a digital edition based on an archive of encodings of the sources, a situation like this would pose no serious problem. An encoding of the newly discovered source could be added to the archive along with the editor's annotations and decisions on the changes to be made in the edition, resulting in a new, updated edition immediately available.

An argument often held against digital editions is their transient nature. Printed editions or any other representations of a work of course also have a limited life-span, but the life expectancy of a digital edition appears to be considerably shorter, or at least uncertain due to ever changing technologies and the inescapable need of electronic devices to translate digital data into representations comprehensible by humans. The preservation of digital media is indeed a serious issue still calling for long-term technical solutions. On the other hand, the apparent volatility emphasizes that digital editions are renewable. They allow for changes and improvements. Editorial practice may be changed over time, yielding updated editions without having to start all over each time. A change in an edition's guidelines may in principle be reflected instantly in an online edition, keeping the works published updated in accordance with the guidelines and ensuring a homogeneous editorial practice across all the works presented at all times, something that could be difficult in long-term edition projects like the *Neue Mozart Ausgabe*, spanning more than half a century. From this point of view, the digital edition's volatility is also its strength.

Perspectives for the use of digital archives go far beyond producing editions. The potential range of applications and analytical tasks is overwhelming, provided the data are freely accessible. The encoding of the sources certainly requires a great amount of time, but once done, the data may be used to perform countless analytical tasks with a minimum of additional effort – or to generate editions, whether printed or digital, now and in the future. Thus, archives of digitized sources of music could be just as valuable to the public – or to scholars at least – as the edition produced from them. Under no circumstances should they be regarded as just an internal working database for a board of editors.

As digital editions can be generated at runtime – that is, at the user's request – the user may be given authority over certain aspects of the edition. By giving the user the opportunity to choose from a range of notational standards, levels of modernization or different page layouts, the edition may be customized to meet the user's requirements without compromising the edition's scholarly quality. In a model less restricted, the user may in principle also be allowed to choose the 'reading path' through the material, thus deciding not only on certain preferences of presentation, but also on the sources to be used and by which criteria. The user may ultimately create his own edition without any restrictions. But the user's freedom, or the empowerment of the user – which of course also may have ideological undertones – seems to have its price: with unlimited control given to the user, the scholarly standard of the edition generated can no longer be guaranteed. Yet such non-scholarly activity is not fundamentally different from the

unlearned copying by hand that has always been an option in the era of written music. Nevertheless, it is a matter to be taken into consideration in a digital edition's design.

Even though the editor's working processes do change in order to integrate new media, scholarly standards can be maintained. With appropriate technical set-ups and editorial principles, neither the transient nature nor the apparently low status of digital editions threatens the quality of the editions produced. What needs to change most is therefore perhaps the attitude towards digital editing as a potential scholarly tool. For instance, digital media allow the editor to present primary sources, transcriptions or editions as well as editorial remarks in an interactive device and may thus encourage a more open-minded, cooperative attitude towards editing music than has been prevalent; an attitude that may very well improve the final edition. By making available online preliminary editions and inviting comments from the public during the process of editing, one may potentially have the entire community of scholars reviewing and proof-reading one's work (for free!).

The perspectives for such work-in-progress editions involving user discussions are auspicious, albeit they require the editors' readiness to change their working habits and methods. Some editing processes seem to be dependent on the edition's mediation: as the media changes from printed to digital, the editor needs to rethink his own position. The challenge for the editor is to keep focus on the scholarly standards when adapting his work to new technologies. A worst-case scenario would be the agenda of technological development replacing the one of the editor. For present-day editors at the edge of digital development such scenarios are fortunately long gone and replaced by fruitful exchanges between the disciplines of computing and humanities, but this is not a matter-of-course. Humanities, or musicology in our case, needs an agenda of its own to make the standards of digital edition in compliance with the object to be edited. By realizing that digital editing is not emerging because of new technology, but by means of it, we are able to put music in focus of the development. Waiting for computer experts to develop music editing or publishing software first just to realize that it was made without the sufficient expertise in music editing would be an unsatisfactory position. Success or failure in software development is highly dependent on the dialogue between users (i.e. editors in this case) and developers. Editors are the ones in the position to judge what is or is not helpful. Why not turn things around, challenging software engineers with ideas for future music editing?

Numerous questions are raised by the issues addressed here, the answers to which cannot be provided by editors alone, but only by an interdisciplinary network of professionals, cooperating on establishing models and standards for digital editing tools. This network should – like networks involved in publishing books – also consider the supporting foundations which often provide the financial basis of music editions. These foundations do not always seem to favour projects involving open-access publication or similar approaches, making the development of public, large-scale, high-impact digital publishing projects difficult. To change this, musicologists in the first place need to put forward a re-evaluated agenda that brings digital editing into the light of scholarly awareness.