

Supporting Annotation as a Scholarly Tool: Experiences from the *Online Chopin Variorum Edition*

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Members of the Centre for Computing in the Humanities, King's College London, in partnership with researchers at Royal Holloway College, have been investigating the use of some text/image comparison enhancement technologies for the creation of an *Online Chopin Variorum Edition* (*OCVE*). The project's primary research goal is to explore how one might provide improved support for the comparative scholarly analysis of (in this case musical) source materials (manuscripts, first impressions of first editions, and later impressions which often contain variants), using as a basis the music of the famous 19th century composer Frédéric Chopin.

OCVE provides access to images of the music directly, rather than to symbolic representations of that music. In this light, it investigated three kinds of image manipulation:

1. superimposition: *OCVE* looked at the laying of images from two defined filiation chains over top of each other in order to reveal variants,
2. juxtaposition: *OCVE* explored the provision of tools to facilitate the comparison of variants on a bar-by-bar basis, and
3. combination/interpolation: *OCVE* considered the utility of allowing users to create purposeful collations assembled from the variants.

Figures 1 and 2 illustrate superimposition and juxtaposition in the context of the *OCVE* project.

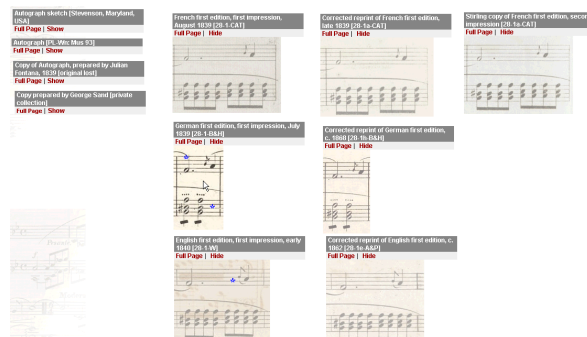


Figure 1: *OCVE* Juxtaposition view

Overlay of E¹ on c.1868 reprint at 50% opacity (both scores visible)



Figure 2: *OCVE* Superimposition

At first glance perhaps *OCVE* looks like another digital archive project, but a part of the goal of the project was to probe the edges of established digital archive practice to see how that model might be extended and made more useful to scholarship.

Digital library and archive research has been underway in information and computing science for more than ten years now, and started full of promise about the expected benefits to scholars. After ten years, however, it would seem that the humanities should be reaping these expected benefits that were set out with such enthusiasm 10 years ago. Indeed, of course there *are* clear tangible benefits from using digital archives and similar resources. Note, for example, a recent report in the *AHDS Newsletter* about the launch of the Early English Books Online (EBO) resource as a cheaply available resource for colleges and universities in the UK. There a reader in History of Early Modern Ideas at Royal Holloway (University of London) is reported as saying

Once you get a taste of what research can be like with EBO you want more. It transforms how you work. I can work at 2am. I can scribble on my printouts. I'm not restricted by library opening times. I've cut my transport costs and time. It's simply more efficient.

(Leon)

Clearly, the potential of simply making rare material more or less instantly accessible on demand is a clear benefit, and one

that one hopes will be available to more and more researchers over time.

At the same time, digital libraries in the 1990s seemed to promise more than improved access alone, and in these other areas they have proven to be somewhat of a disappointment. See the recent analysis of the impact of digital libraries on humanities research from the perspective of several librarians who did some research on their impact:

While digital resources are becoming more visible in the humanities, use of these resources by scholars remains limited. Humanists have come to rely on computers and electronic communication for some of their daily work, but the use of digital information resources has yet to become routine. Digitization projects are bringing texts, data sources, sound, and images to the scholar's desktop; however, the functions on which research in the humanities depend are neither well understood nor well supported by librarians.

(Brockman et al.)

The Brockmann et al. report goes on to examine some aspects of humanities research in general, and proposes some common elements that appear in the work of many scholars, and that perhaps should influence future technical developments in digital libraries. One of the common elements is 'annotation'. Humanists write in their books, they scribble notes on photocopies; they print out material from online sources and write on it as well. The report claims that the process of writing these annotations, and the recording and organising of notes that arise from this work supports the scholarly research process for many researchers. It is interesting to note that the EEBO user mentions this ("scribble[ing] on my printouts") explicitly as one of the benefits of using EEBO as well.

There has been work in computing science developing models of the role of annotation to support reading and research. Much of this has evidently been linked to the development of tablet computers where it is possible for the user to write on a digital copy in the same way that they might want to write on a printed one. Catherine Marshall's article "Towards an Ecology of Hypertext Annotation" reports on a study of annotations in textbooks, and begins the process of developing some models of annotations, based upon the how the annotator intends to use them in the future. In Marshall et al. there is a report on how annotations on tablet computers supported the research aims of a reading group. Bradley, in Bradley 2004, applied and extended some of the models outlined by Marshall in her papers to the task of humanities textual scholarship. This paper will extend some of the issues presented in part there.

There is also some critical literature on the role of annotation-like note taking and organisation, and an analysis of the impact of computing support for these tasks in the social sciences. There is some discussion of this literature, and its possible relevance to humanities text-based scholarship in

Bradley 2003, and this article draws attention to the potential of providing computing support for such materials that goes beyond merely supporting the *representation* (in something like TEI) of notes and annotations to also developing tools to support the *process* of building and organising the annotations, and then using them to support study of the materials they are linked to.

As a response to this work, we created a formal model for annotations, a prototype annotation tool and an annotation presentation environment in *OCVE*. In this paper we shall discuss how we arrived at the model we had for *OCVE*, where it supported (and where it failed to support) the act of analysis, and we will provide some thoughts on how these tools might be improved to better support creation and analysis. In addition, *OCVE* annotations contained in their model some sense of annotations for public and for private use. The paper will also discuss some of the implications we noted in using annotations in a public vs. a private manner, and how public annotations relate to recent developments in public collaboration software such as wikis.

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