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Oral historians have long recognised that voice and gesture can communicate information, knowledge, emotion and interpretation in ways that text cannot. Indeed, oral history artefacts can be studied not only for the words they contain but also for features like interjections, gestures and silences that can, among other things, contain clues about an interviewee's emotional state (see, for example, Good 2006). Tebeau has written that "the digital age has changed the field in dramatic ways, in particular by extending the possibilities for using voices both in research and public interpretive projects" (2013) and his Cleveland Historical project is exemplary of this. Nevertheless, it can be argued that this process has not gone as far as is necessary, as Frisch has put it "Everyone knows that the core audio-visual dimension of oral history is notoriously underutilized" (Frisch 2006 p.102)

Technological developments—often based on advances made in the Digital Humanities community involving structured and semantic markup—have opened up a plethora of new ways to process audio-visual materials. As Frisch has written

Oral history audio and video can now be placed in an environment in which rich annotation, cross-referencing codes, and other descriptive or analytic 'meta-data' can be linked to specific passages of audio-visual content ... This will, of course, allow the audio-visual files themselves to be 'searched, browsed, accessed, studied, and selected for use at a high level of specificity' (p.103) ... On this software frontier, audio and video documentation becomes as richly and easily accessible as a well-organized text-based-reference book, and far more easily accessible (op cit, p.104).

This is indeed true, and these methods are and will surely remain important way of making such materials tractable. However, it is notable that these methods continue to privilege largely text-based approaches to Oral History; after all, what is meta-data but natural language codes inserted into a text in order to make explicit its meaning or constituent parts? Methods being developed in other fields that have, as yet, seen relatively little take up in Digital Humanities, for example, image and facial recognition, acoustic approaches to sentiment analysis, 3D imaging and modelling, digital narratology and storytelling etc offer methodologies that could be fruitfully brought to bear on the capture and especially the analysis of such sources. Not only might such approaches offer new interpretative strategies—that are neither founded upon nor predominately focused upon text—for engaging with audio-visual materials, but they could contribute to a more thorough and sustained reassessment of the dominance of the 'written' word in fields like Digital Humanities and Oral history.

This paper will be based on two case studies drawn from the 'Hidden Histories' project, which is undertaking oral history research on the history of Digital Humanities (see, for example, Nyhan, Flinn et al. 2013). The first case study will identify how oral history recordings currently tend to be made available in Digital Humanities fora. Special emphasis will be placed on a critical evaluation of a recent *Digital Humanities Quarterly* special edition of oral history materials that we edited as part of our Hidden Histories research (Nyhan ed. 2012). The second part of this paper will discuss ongoing research into the analysis of the c. 50 oral history recordings that are being made during the course of our project. In this section a 'blue sky'

approach will be taken as we reflect on the new kinds of research on and with the recordings that technologies such as those discussed above could facilitate.

The technologies and methodologies discussed will include:

1. Advances in the area of visual computing where, for example, it has been recognised that emotional changes are often signalled by changes in the colour of a person's skin. Jimenez et al (2010) have published a 'practical appearance model for dynamic facial colour' and have shown that it can easily be integrated with existing and planned animation and rendering projects. Leaving the details of the technical implementation aside, how might techniques such as these be applied to videos of oral history interviews in order to analyse them in new ways? What new kinds of searching of visual records might they support and what kinds of new knowledge about oral history could be created as a result of such applications?
2. Once a rather *recherché* research area, since post 9/11 in particular numerous advances in the area of image mining and facial recognition of actors in photographs and videos can be noticed, though the investigation of the application of these techniques to the Digital Humanities and Cultural Heritage sectors has so far been relatively fragmented. What new kinds of questions might such techniques be able to support? For example, how might advances in this area allow oral history photos and videos to be studied in terms of the gestures, body language and the spatial location of participants?
3. Sentiment analysis and opinion mining combines techniques from NLP, machine learning and statistics and is usually applied to texts of various kinds in order to detect words that give an insight into the attitude of the actor under study. What approaches exist for performing such an analysis on the spoken word and how might they be applied to oral history research?

As stated above this section will be very much 'blue-sky'; to ensure that the possibilities discussed remain grounded in the research questions that they might be applied to reference will be made throughout to the Hidden Histories project and the issues we are pursuing there.

In summary we will aim to identify a number of desiderata for the treatment of digital oral history recordings. It will also be argued that by harnessing methods that are, as yet, underutilised in Digital Humanities, that research on audio-visual materials can open new and as yet little known vistas for Digital Humanities researchers. Indeed, when one considers the wealth of audio-visual information available online one might say that such research has the potential to open a new "grand challenge" for the field. Perhaps this is one of the most fundamental ways that we can set about remedying the problem posed in the call for papers for this workshop, namely "how to overcome the contrast between audiovisual material being a steadily increasing body of data and the fact that it is relatively poorly represented in the field of the Digital Humanities"?

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