Modelling Textuality: A Material Culture Framework

This DiXiT convention was not exception in showcasing how some of us in Digital Humanities might lean towards a preferred interest on tools more than epistemologies (how we come to know) or vice versa. That said, as others have amply stated, the intersection between the two is where the most fruitful prospect for the field lies. This closing keynote departed from some contextual definitions – digital humanities, modelling, material culture, textuality - to reflect on and exemplify a material culture framework to modelling textually. Does it speak to the DiXiT fellows and do they have anything to say?

Modelling

In itself a polysemic word, modelling is considered to be a or the core research methodology in Digital Humanities (McCarty, 2005). In many other research contexts, modelling is understood as a research strategy and, in particular, a process by which researchers make and manipulate external representations to make sense of objects and phenomena (Ciula and Eide, 2015). The iterative experimental cycles of modelling have been theorised extensively within industrial design practices engaged with making things. The widespread use of computers in modelling (in Digital Humanities in particular) tightened up but also freed the constraints of formal modelling. What is interesting to note is that even in very technical settings - such as the one exemplified by the concerns over projects documentation in Alex Czmiel’s paper - formal and informal models co-exist and interact to give sense to our modelling efforts.

Material Culture

While in apparent terms an oxymoron, insightful studies in anthropology and ethnography remind us that “culture is ordinary” (Williams, 2001/1985) and that artifacts are intentional, cultural releasers “animated by their passage through the lives of people” (Graves-Brown, 2000). A material culture approach to doing history translates to an attempt at answering the question of how people have been or are by looking at what they have made. While we can debate on its scholarly value, the swords fight enacted as part of Ben Brumfield’s compelling talk at Stereo Wonderland exemplified this framework in non-digital terms. My own example drew from the work of a somehow atypical researcher, Jacqui Carey who, as part of her in depth study of the embroidered cover of a 15th century folded almanac (Wellcome Library, MS. 8932), analysed the types of silk threads being used and reproduced the spinning process. Her research focuses on the understanding of the what, why and how of past practices by re-enacting some of the making processes revealed by the artefact to her expert eyes of textile craftperson. But what would this have to do with our engagement with digital technologies?

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1 Inspired by a recent article (Kralemann and Lattmann, 2013), recent research co-authored with other colleagues (respectively with Cristina Marras, in print, and, Øyvind Eide, hopefully forthcoming soon) we argue that a semiotic understanding of models as icons and of modelling as creating/interpreting icons to reason with could be helpful to grasp the dynamic relations between models, objects and interpretations. In Ciula and Eide (2014) we gave examples of DH modelling practices in specific contexts where we analyse the representational function of models with respect to the objects they signify as well as the inferential and epistemological processes involved in these efforts. It seems a promising avenue to investigate further.
Digital Materiality

The keynote by Bruno Latour on ‘Rematerializing Humanities Thanks to Digital Traces’ at the DH 2014 conference was a series of rich glosses to the statement that the digital is material. There are at least two ways in which we can grasp this. Recalling the contribution to this convention by Till Grallert around the notion of the digital being a commodity, I referred to the work of the artist Timo Arnall who recently presented his Internet Machine at the Big Bang Data exhibition (Somerset House, London, 2015-16) and showcased the noisy and hulking physical materiality of digital connectivity in a film of the super secure data centre run by Telefonica in Alcalá (Spain). The digital is material also in a more subtle sense as outlined in the conversation between Laura Brake and Jim Mussel (2015). It deals with a physical, cumbersome and expensive but also truculent, resistant materiality with its own constraints.

Societal Resonance

The theme of this convention encouraged speakers to make an explicit connection across ‘Academia, Cultural Heritage, and Society.’ Models used to extract patterns of significance from complex systems are ubiquitous. An attention to the materiality of our digital world and our engagement with it seems to me of self-evident societal resonance. Only seventy years ago mainframes computers had names like Colossus (actually an electronic valves computer) and required experts operators to function; while nowadays it is not uncommon to see a toddler playing with a computer called Blackberry in her coat. If we agree with Ludmilla Jordanova (2015) on what public history is about, Digital Humanities has an important contribution to make. I presented briefly some of the works exhibited at the Big Bang data exhibition mentioned above which I believe resonate with our concerns as Digital Humanists, when we emphasise the importance of presentation of and interface to data as much as data collection and sampling. The importance of context and interpretation we usually make emerge via the analysis of our digital projects was revealed here through art. The contribution I see Digital Humanities making to the complex world we live in has to do with our engagement - both in teaching and research - in creating and hence also unpacking digital and data models.3

Modelling Textuality

If the scope of material culture and the breadth of societal engagement with modelling widen our horizons with respect to the meaning of cultural artefacts and of modelling, the scope of my talk is still restricted to modelling textuality. I use ‘textuality’ on one hand to imply a specific social theory of texts which recognises texts as open objects to be understood within the dynamic condition of their production and use (a framework articulated extensively by Jerome McGann over the years; e.g. McGann 2014); on the other hand, I use it to appeal to the readability of cultural phenomena at large (texts beyond linguistic

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2 The curators chose the Plan of Brookes Slave Ship by William Elford (1788) to represent what they judged to be one of the first powerful data visualization. This diagram illustrates the capacity of an 18th century ship to stack slaves; at the time it raised awareness of their inhumane treatment and had a crucial role in the abolitionist movement. Other examples taken from the exhibition I emphasised in my talk were the works ‘World Process’ by Ingo Günther (1988-) and ‘Pixellating the War Casualties in Iraq’ by Kamel Makhloifi (2010).

3 A new project ‘Modelling between digital and humanities: thinking in practice’ funded by the Volkswagen Stiftung (2016-2017) and led by myself, Øyvind Eide, Cristina Marras, and Patrick Sahle, aims to reflect further on the kind of cultural literacy we can and want to enable via modelling.
texts). To account for this dynamic and heterogenous view of textuality we need a model of modelling able to grasp the relational aspects of what is fundamentally a meaning-making activity (Marras and Ciula, 2014). Sahle (2006; 2012) drew a very insightful model of ‘what text as reproduction is’ by plotting on a wheel diverse perspectives on textual objects useful to inform modelling efforts and in particular to develop digital editions. While there is no order in this pluralistic model of text, I would argue that an approach informed by a material culture framework would move from the upper left hand side of the wheel anticlockwise, moving from an in depth analysis of the visual object to its semantics. In addition, such approach would also have to consider elements outside the wheel of text, connected to the production, transmission and use both of the textual objects been reproduced and the new texts been produced.

**Material primary sources (level 1)** - The first level of a material culture approach to the modelling of textuality in a digital environment encompasses the materiality of primary sources, whatever our type of interest. The example I provided relates to my own PhD research (e.g. Ciula 2005), where I attempted to date and localise a certain corpus of medieval manuscripts in Caroline minuscule (X-XII centuries) drawing from the computational generation of image-like models of handwritten letters. This modelling process focused on specific features of the manuscript sources and, in particular, the morphology of the letters. However, there could be many other aspects a material culture approach to a textual source could focus on. To a certain extent this is the most obvious level of material engagement which I did not think deserved further explanation.

**Materiality publications (level 2)** - My second analytical level concerning the modelling of the materiality of research publications and collections we produce is possibly less obvious. The DiXiT community is certainly familiar with the notion of interface of a digital edition (Pierazzo, 2015, dedicates a full chapter of her book on related issues). Andreas Speer’s talk provided rich examples of the sophisticated interfaces developed within the print tradition. The example I reflected upon draws on past co-authored research (Ciula and Lopez, 2007) and focuses on the materiality of a hybrid publication resulted from the Henry III Fine Rolls project - in print, a set of volumes and on the web, a thematic research collection (Palmer 2005). Here the focus is not so much on the textual object the project departed from (XIII century royal chancery documents recording fines made to the English king Henry III in exchange for favours and privileges) but on the two new publications produced by the collaborative team involved in the project.

**Socio-cultural agencies (level 3)** - Besides the sources we are interested on and the publications we produce, what we model is more than often a whole world around those sources and our own understanding of them. Often we call this ‘data’. In the case of the project mentioned above, examples of data the historians were interested to analyse were the intersection between individuals (men and women), locations and themes or subjects. Typically, to support such analysis, it is not only the occurrence of a name in a document that needs to be recorded or encoded, but also a whole set of other information and inferences (e.g. the fact that the name refers to a person of a certain gender, engaged in a relationship of marriage with another person at a certain period as witnessed by another document etc.). The way we decided to represent such world around the historical sources was via the development of a conceptual model or ontology (Ciula, Spence, Vieira 2008). At a quick glance the graph of this ontology is evidently a model which goes beyond the boundaries of the historical documents themselves to account for, for

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4 In Ciula and Eide (2015), we discuss more specifically how this type of image-like models come to be and what generalisations can be made with respect to inferential power and creation of new meaning.
instance, a geopolitical division of England in the 13th century, the definition of what a person
is, how time can be expressed etc. While one of the main purposes of creating such models might
be the quantitative analysis or the compelling visualisation of certain historical information, the
modelling behind it is what interests me here. Whose knowledge is embedded in this model and
how? What assumptions are made about the material conditions of production and use of the
sources as well as of the historians’ and modellers’ interpretative frameworks of the same
sources? These are the past and present socio-cultural agencies, some of which we model
explicitly, some not.

Questionnaire to DiXiT Fellows

The rest of my talk presented the results and analysis of an online questionnaire circulated to all DiXiT
fellows (13 replied i.e. ca. 86.7%). The aim of the questionnaire was to find out whether the topic I
wanted to present was relevant for their research but also to challenge my own understanding and gain
insights for my own ongoing research. I summarise below some of the main findings:

- There are cases where ‘digital things’ are by default not perceived as material in themselves.
- The majority of the fellows recognize they are engaged in heterogeneous modelling processes of
some kind - mainly associated to the level 1 outlined above. Heterogeneous are also objects being
modelled (and not limited to linguistic texts).
- With respect to the work with texts, the materiality connected to the document level as well as
production, transmission and use are prominent foci; however the distribution across various
perspectives on text is spread out more or less equally across other levels too (including
semantics). When asked to exemplify these levels, some uncertainty emerged, but again, a very
rich variety of levels of attention towards the source texts was revealed.
- A surprising 38.5% of respondents do not seem to follow any specific theory of texts in their
work. Yet the theories being adopted resonate with the focus of my talk.
- While the concept ‘modelling textuality’ might be of uncertain meaning to some (30.8%), the
articulation of definitions in the responses is rich, encompassing formal and conceptual modelling
as well as modelling for production.
- The research plans of the DiXiT fellowships include alternative ‘products’ (e.g. models and
digital objects) as well as more predictable outputs (e.g. articles and monographs); the
expectations of use seem to lean more towards the latter (especially articles); however the
expected wide use of models is worth noticing. Whatever the expectations about use, a good
54.5% is not sure about having engaged with any foreseen uses of these products (including
traditional publications).
- The examples of models being produced is very diverse ranging from informal to formal models,
from prototypes to data models; same is valid for digital objects ranging from blogs to tools and
digital editions (interestingly, only two of the latter are been produced as results of the
fellows though).

Some of the more extensive comments in the questionnaire were insightful in themselves; we need to
think more about modelling and how we do and teach it. The analysis will certainly help me sharper
further my own research focus. I concluded summarising a research agenda for a material culture
approach to modelling textuality engaged in parallel on all the three levels of modelling mentioned above. Those are the bridges we have to mutually relate materiality and semantics.

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