Trading Zones of Digital History

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As a subfield of the wider digital humanities, digital history is concerned with the incorporation of digital methods in historical research practices. Digital history thus aims to do historical research using methods, concepts, or tools from other disciplines, making it a form of **methodological interdisciplinarity** (Klein, 2014). However, how this interdisciplinarity affects the practices of historians, on the methodological and the epistemological levels, remains underexplored. The PhD research presented in this paper aims to address this question by investigating the interdisciplinary interactions in which historians take part.

Three forms of interaction are of interest for this research, which are not necessarily an exhaustive list of digital history interactions. These forms are not mutually exclusive, but occur interchangeably and simultaneously, or one form could lead to another:

1. Digital history as collaboration with, among others, the computer science discipline.
2. Digital history as end-users of tools.
3. Digital history as building tools independently.
4.

In order to look into such interactions, this PhD research will employ Galison's concept of **trading zones**, described as "an arena in which radically different activities could be locally, but not globally, coordinated" (Galison, 1996, p. 119).

When different groups interact with one another over a period of time in a trading zone, it is likely that the two groups will influence one another through **acculturation**: "the process by which the beliefs and practices of one community diffuse across the boundaries of another and subsequently alter the second community's practices and interpretations" (Barley et al., 1988). At the community level, acculturation involves changes of social structures, institutions, and cultural practices. At the individual level, it involves the behavioural repertoire of a person. By studying the acculturation of practitioners of digital history, as individuals and in groups, we may get a view of the types of trading zones and how these change over time. To model the different types of trading zones, we use three dimensions based on research by Berry (1997, 2005) and Collins et al. (2007):

1. Contact & Participation, i.e., how the two groups meet.
2. Cultural Maintenance (from homogeneous to heterogeneous), i.e., how the two groups define themselves and to what extent they aim to maintain their identity. On this scale, more homogeneous means the two groups become more alike to form a single group, while more heterogeneous means they remain two distinct groups.
3. Coercion (from collaborative to coercive), i.e., what the power relations in the trading zone are. On this scale, more collaborative means the two groups are both acting out of free will, while more coercive means one group is imposing practices upon the other.

The concept of trading zones has been used before to describe the digital humanities field. McCarty (2005) argues that humanities computing should rather be seen as a third space,

neither belonging to one group nor the other, rendering it no longer a trading zone. However, in the terminology of Collins et al. (2007), this would constitute a collaborative-homogeneous trading zone, termed an inter-language. Svensson (2011, 2012a,b) suggests digital humanities is a collaborative-heterogeneous, termed fractioned, trading zone; a meeting place of two groups. Klein (2014) also describes digital humanities as a fractioned trading zone, and, like Svensson, emphasises that this may lead to a shared language, or jargon, between the different communities. Hunter (2014), without employing the concept of trading zones, describes digital humanities as a bridge or translation between two cultures, which we can describe as a collaborative-heterogeneous trading zone, termed interactional expertise. Rieder and Röhle (2012) use the concept to argue however that not the language should be central, but the interactions on the level of methodology, where not the terminology but the method itself is negotiated. In contrast to these authors, Mounier (2015) contends that there is a coercive political dimension underlying the field, which in the terminology of Collins et al. would suggest that digital humanities constitutes a coercive-heterogeneous, termed enforced, trading zone. This is not to say that this is how digital humanities will always be, but Mounier argues this should be better understood before we can move further and perhaps diffuse new digital methods into the wider humanities.

However, what is striking about these discussions of digital humanities as trading zones is that very little research into the **local** practices has been done, with the exception of Hunter (2014) who does not actually employ the concept of trading zones. Instead, digital humanities is discussed as a global phenomenon; this is in contrast with the original use of the concept by Galison as described above. This paper aims to reintroduce the concept of trading zones to describe local phenomena of digital humanities.

To this end, this paper investigates local manifestations of trading zones in digital history using the three dimensions described above. The analysis focuses on the first form of interaction described above, collaboration, and is based on interviews with practitioners of digital history, i.e., historians, computer scientists, and other collaborators, focusing on the diverse aspects of interdisciplinary collaboration. The interviews cover five distinct subjects, which together give an insight into the trading zones from each interviewee's perspective.

The first subject is that of **boundary work**, concerning how practitioners characterise their own discipline. Moreover, it is of interest how practitioners characterise the other disciplines in the collaboration. In previous research involving students of journalism, a lack of understanding what computer science is appeared to result in disinterest and performance anxiety (Cook, 2015). Furthermore, this subject covers the extent to which the practitioners aim to have their digital history research meet their discipline's values. This subject thus not only works towards the Cultural Maintenance dimension, but also already gives hints towards the Coercion dimension regarding how interested practitioners are in the collaboration with the other discipline.

The second subject is the **practice of research**, the research activities. This concerns a description of their research, both within and outside the trading zone, and the tools potentially used at different steps in their process.
The third subject concerns their **incentives** for practising digital history. In previous research on the collaboration between earth scientists and computer scientists, it was found that the

two groups had different incentives for the collaboration (Weedman, 1998). This difference introduced difficulties for the collaboration and impacted the understanding of the other discipline. This subject thus works towards the Coercion dimension.

The fourth subject concerns the **organisation** of the collaboration. This concerns how often the groups meet, and where they are located, e.g., is it a collaboration between different departments at different places (or in different countries), or a sharing of office space. This subject thus works towards the Contact & Participation dimension.

Finally, the fifth subject concerns the **epistemological positions**. A criticism in the digital humanities debate is the incorporation of different epistemological positions such as positivism or objectivism in humanities scholarship (Drucker, 2011, 2013). It is therefore of interest whether practitioners in the trading zone (unconsciously) shift their epistemological position. A first question concerns their practice of reasoning; do they reason in a research question-driven deductive way, a more data-driven inductive way, or an abductive way to try to discover patterns (Dixon, 2012)? Other questions are related to epistemological positions. Roth and Roychoudhury (1994) developed a short qualitative questionnaire which allows to describe interviewees as more objectivist or more constructivist. Thus, this subject provides insight into the acculturation of practitioners, and works towards the Cultural Maintenance and Coercion dimensions on the epistemological level.

This paper will present preliminary findings of interviews held for this PhD research, focusing on the aspects of **incentives** and **organisation**. We will present a preliminary taxonomy of collaborations on the Contact & Participation dimension, and describe several digital history interactions on the Cultural Maintenance and Coercion dimensions. With these results, we aim to gain a better understanding of how digital history works as an interdisciplinary interaction, and how this impacts the practices of the involved groups and individuals.

References

Barley, S. R., Gordon, W. M. and Gash, D. C. (1988). Cultures of Culture: Academics, Practitioners and the Pragmatics of Normative Control. *Administrative Science Quarterly*, **33**(1): 24–60.

Berry, J. W. (1997). Immigration, Acculturation, and Adaptation. *Applied Psychology*, **46**(1): 5–34 doi:10.1111/j.1464-0597.1997.tb01087.x.

Berry, J. W. (2005). Acculturation: Living successfully in two cultures. *International Journal of Intercultural Relations*, **29**: 697–712 doi:10.1016/j.ijintrel.2005.07.013.

Collins, H., Evans, R. and Gorman, M. (2007). Trading zones and interactional expertise. *Studies in History and Philosophy of Science Part A*, **38**(4): 657–66 doi:10.1016/j.shpsa.2007.09.003.

Cook, L. (2015). *Why Journalism Students Don't Learn CS*. https://source.opennews.org/en-US/learning/journalism-students-and-cs/ (accessed 27 October 2015).

Dixon, D. (2012). Analysis tool or research methodology? Is there an epistemology for patterns?. In Berry, D. M. (ed), *Understanding Digital Humanities*. Palgrave Macmillan http://eprints.uwe.ac.uk/16572/.

Drucker, J. (2011). Humanities approaches to graphical display. *Digital Humanities Quarterly*, **5**(1): 1–21.

Drucker, J. (2013). Performative Materiality and Theoretical Approaches to Interface. *DHQ: Digital Humanities Quarterly*, **7**(1) http://www.digitalhumanities.org/dhq/vol/7/1/000143/000143.html.
Galison, P. (1996). Computer simulations and the trading zone. *The Disunity of Science: Boundaries, Contexts, And Power*. Stanford University Press, pp. 118–57.
Hunter, A. (2014). Digital humanities as third culture. *MedieKultur: Journal of Media and Communication Research*, **30**(57): 18–33.
Klein, J. T. (2014). *Interdisciplining Digital Humanities: Boundary Work in an Emerging Field*. online. University of Michigan Press http://hdl.handle.net/2027/spo.12869322.0001.001.
McCarty, W. (2005). *Humanities Computing*. Palgrave Macmillan.
Mounier, P. (2015). Une « utopie politique » pour les humanités numériques ?. *Socio*, **4**: 97–112 doi:10.4000/socio.1338.
Rieder, B. and Röhle, T. (2012). Digital Methods: Five Challenges. In Berry, D. (ed), *Understanding Digital Humanities*. Palgrave Macmillan, pp. 67–84.
Roth, W.-M. and Roychoudhury, A. (1994). Physics students' epistemologies and views about knowing and learning. *Journal of Research in Science Teaching*, **31**(1): 5–30 doi:10.1002/tea.3660310104.
Svensson, P. (2011). The digital humanities as a humanities project. *Arts and Humanities in Higher Education*, **11**(1-2): 42–60 doi:10.1177/1474022211427367.
Svensson, P. (2012a). Beyond the Big Tent. In Gold, M. K. (ed), *Debates in the Digital Humanities*. online. University of Minnesota Press http://dhdebates.gc.cuny.edu/debates/text/22.
Svensson, P. (2012b). Envisioning the Digital Humanities. *DHQ: Digital Humanities Quarterly*, **6**(1) http://www.digitalhumanities.org/dhq/vol/6/1/000112/000112.html#.
Weedman, J. (1998). The Structure of Incentive: Design and Client Roles in Application-Oriented Research. *Science, Technology & Human Values*, **23**(3): 315–45 doi:10.1177/016224399802300303.