

History of HCI: tools and tales

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Personal Interest

As an organiser of this workshop I clearly have a personal interest in the topic. There are two sides to this. First is my involvement with a number of projects focused on heritage and history and in particular the tools and data linking that underpin this. Second is the realisation that many of the origins of HCI are being lost. Both of these have been brought into focus by conversations with John Tucker founder of the *History of Computing Collection* [12], an official archive of Swansea University Library.

Tools for Heritage and History

I have had a growing interest in the tools and infrastructure that can enable incremental and semi-formal gathering of historical and heritage data. This has been driven by two particular projects as well as some more informal activities. In *Frasan*, a Nesta funded project with An Iodhlann, the heritage centre on the Isle of Tiree [5], we created a mobile application that sought to take the archives into the physical environment of the island. *InConcert* an AHRC funded project was a collaboration working with musicologists to connect different archives of materials relating to concerts in London from the mid 18th century on [6].

The digital side of this work has been driven partly by a long-standing agenda for information systems design that (i) recognises that substantial amount of critical data consist in small repositories – which I call "*the long tail of small data*" [3]; and (ii) privileges the personal fragments of information over the central repository a position which I have referred to as "*the leaves are golden*" [9].

Note that these are partly pragmatic positions: large centralised repositories are

always out of date and subverted, and in the case of multiple parties hard to achieve in a reasonable timescale. However there is also a political or cultural side to this that is about empowerment (especially in the case of community data) and authority (especially important in academia). The structure of information systems both reflects and shapes organisational control.

Looking at history of computing more widely and history of HCI in particular, it is clear that many of the same issues arise. There are clear values to central catalogues and collections, especially when those holding physical copies no longer wish to maintain them, but they will never catch-up with the potential information and artefacts available. Can we create means to work incrementally and in a distributed fashion that is seen as owned by the academic and professional community, and opens itself up to wide spread contribution? This is both about cataloguing who has what, but also about disseminating and visualising, so that this knowledge can be used in education and by those seeking to learn from the past in order to envisage the future.

Gathered Fragments of HCI History

This last point is very pertinent in my own experiences in the role as 'HCI expert' rather than 'tool designer'. Over the years I have often needed to write 'potted histories' of HCI, sometimes fairly vague periods, but sometimes more detailed [4,7,8]. In each case, this has almost always been as part of a future looking paper or book chapter that prospectively seeks to discern future trends and directions, or more proscriptively proposes how the field should develop. Some of these have been about the field in general, some more particular to a topic area, for example the development of formal methods in HCI [10].

As part of my personal response to this workshop I intend to gather these fragments together, both as a personal micro archive (of the type I would hope an HHCI infrastructure should support), and also mine them for critical events, places and periods, and use them to contribute towards a multi-threaded timeline of HCI.

I realise too that I have been informally gathering other materials scattered rather disparately over old hard drives. Some years ago I wanted to get a copy of the first HCI journal paper, Brian Shackel's "*Ergonomics for a Computer*" [11], but found that the journal it had been in had long since disappeared. Happily a Facebook request unearthed several people with PDF scans. Recently I was also seeking an old IBM video about their early usability lab; I discovered that I had a scan of the 1993 (pre-web) workshop proceedings where I originally heard it and then realised that after a massive scan and shred session about 10 years ago I no longer have many of my early paper copies of many older documents (sorry John), but I do have many PDF scans.

Finally, a small vignette of a piece of personal historical detective work. Some years ago [1,2], I dug a little into the development of the scroll bar, and in particular the choice of arrow direction (which had been a point of discussion in early HCI as there is no clear correct direction). I eventually traced this to the Star interface where they initially made an arbitrary decision, but then followed this up by experiments, found their initial choice was wrong and corrected it. Unfortunately, when Xerox passed the Star designs to Apple, they inadvertently got the old version – the scroll arrows we have today are the wrong way round.

References

1. A. Dix (1998). Hands Across the Screen - why scrollbars are on the right and other stories. *Interfaces*, 37 pp. 19-22. Spring 1998. <https://www.alandix.com/academic/papers/scrollbar/>
2. A. Dix (1998). Sinister Scrollbar in the Xerox Star Xplained. *Interfaces*, 38 pp. 11. Summer 1998. (short update to the above article). <https://www.alandix.com/academic/papers/scrollbar/scrollbar2.html>
3. A. Dix (2010). In praise of inconsistency - the long tail of small data. Distinguished Alumnus Seminar, University of York, UK, 26th October 2011. <https://www.alandix.com/academic/talks/York-Alumnus-2011-inconsistency/>
4. A. Dix (2010) Human-Computer Interaction: a stable discipline, a nascent science, and the growth of the long tail. *Interacting with Computers*, 22(1) pp. 13-27. doi: 10.1016/j.intcom.2009.11.007
5. Dix, A. (2013). Mental Geography, Wonky Maps and a Long Way Ahead. *GeoHCI, Workshop on Geography and HCI, CHI 2013*. <http://www.alandix.com/academic/papers/GeoHCI2013/>
6. A. Dix, R. Cowgill, C. Bashford, S. McVeigh and R. Ridgewell (2014). Authority and Judgement in the Digital Archive. In *Proc of DLFM 2014*. <https://inconcert.datatodata.com/>
7. A. Dix (2014). 30 years of HCI, a Personal Reflection. (unpublished manuscript) prepared for 30th anniversary of first Interfaces (BCS HCI Group Newsletter). <http://www.alandix.com/academic/papers/thirty-years-of-HCI-2014/>
8. A. Dix. (2016). Human Computer Interaction, foundations and new paradigms. *Journal of Visual Languages and Computing*, special issue in Honour of Stefano Levialdi, 42:122-134. DOI : 10.1016/j.jvlc.2016.04.001
9. A. Dix. (2016). The Leaves are Golden - putting the periphery at the centre of information design. Keynote at HCI2016, July 2016, Bournemouth, UK. <https://www.alandix.com/academic/talks/HCI2016-the-leaves-are-golden/>
10. A. Dix, B. Weyers, J. Bowen and P. Palanque (2017). Trends and Gaps. Chapter 3 in *The Handbook of Formal Methods in Human-Computer Interaction*, Springer, pp.65-88. DOI: 10.1007/978-3-319-51838-1_3
11. B. Shackel (1959). Ergonomics for a computer, *Design* 120 36-39. <http://www.hcibook.com/e3-images/online/not-all-about-technology/shackel-1959.pdf>
12. J. Tucker and S. Williams (2020). History of Computing Collection. (accessed 30/6/2020). <https://www.swansea.ac.uk/library/archiv e-and-research-collections/hoccc/>