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Digital history in Finland at the end of the 2010s

Abstract: First projects of digital humanism, although that time no-one knew that term, started in Finland at 1980s already. Another early idea linked to the digital humanism was to digitize the sources of historical research: old documents and newspapers. Next step from digitizing the sources is to analyze them with different kinds of digital tools. Qualitative text materials can be analyzed with digital tools in many ways. One more important part of digital history is using and analyzing the old maps. Now new digital services are taken in use by the administration of the universities and in student services. One of very perspective pedagogical application is AdFontes, developed by the young scholars from the University of Zürich, Austria. Using digital solutions in popularizing and visualizing the past for the public in museums is a very timely trend. Not less important part of «digital revolution» in scientific research is publishing in electronic form. The availability of the knowledge and results of the scientists have recently been a topic of big discussion in the whole Western scientific world and in Finland as well.

Key words: digitalization in history; Finland; digital humanism; digitizing sources; digital pedagogical solutions.

The beginning of the 21st century has seen a rapid penetration of digitalization into the humanistic research. In this paper, my aim is just to take a glimpse over the novelties the digitalization has resulted in the field of historical research. The goal is not to give an exhaustive presentation about the possibilities of digitalization in history but I am trying to bring some order to this vast and fast growing field of study. It is clear that my presentation and the classifications made in this paper may look like old-fashioned in about five years, so fast is this genre of historical studies progressing. However, perhaps I can make some order to this rapidly growing field of science to understand how vast and multi-faced research area digital humanism is in history.

However, how can we define digital humanism or digitalization in historical research? The best definition I have found to this phenomenon this far is that digital humanism combines computer data processing methods with research questions and sources, which are characteristic to the



humanities and historical research.¹ In a way, one could say that digital history is a new view to the existing sources.

Digitizing sources came first

First projects of digital humanism, although that time no-one knew that term, started in Finland at 1980s already. The provincial archives in the town of St. Michels made the initiative to create a database on the parish registers of the so called Ceded Karelia (i.e. territories Finland ceded to Soviet Union after the Second World War). These document series included confirmation books (register of all about 16 years or older family members, registers of married couples, registers of baptized children and registers of died parish members. The result of this very long lasting and still ongoing project was the Karelia database (Karjalatietokanta) including data of 1.2 million people from the years 1700–1947. The database is in internet in open use but only in Finnish language.²

Another early idea linked to the digital humanism was to digitize the sources of historical research: old documents and newspapers. The National Archives of Finland started a massive project of document digitizing at the beginning of the 21st century. The number of the documents to be digitized is enormous. At the end of the year 2018 more than 72 million documents has been digitized and the project will still last for years. Those of the digitized documents, which do not have restrictions of use, are available in internet at the digital archives of the National Archives.³ The service is available in Finnish, Swedish and English. The oldest digitized documents date back to the medieval era. One important collection in the digital archives are the documents considering the history of Finland, which have been digitized from several Russian archives according to the agreement between the Finnish and Russian archival administrations in 2005. The digital archives is equipped with a search engine with which the customer can search for certain archival collections. However, searching with headwords inside the archival collections or documents is not possible. Therefore, the main use of the digital archives is that it brings the archival collections to your computed at your working desk. However, after that the research must be done in traditional historian's methods.

However, some help to this historian's basic work with old handwriting can be awaited. Twelve European universities and the National Archives of Finland are cooperating in a large READ-project (The Recognition and Enrichment of Archival Documents).⁴ The aim of this project is to make the archival material more accessible. One part of the project is to develop the Handwritten Text Recognition technologies (HTR) and one part of this work is the Transkribus-programme. Transkribus «reads» the old handwritten documents and transcribes them to the modern characters in electronic form. However, this does not mean that there will no more be need for the skills to read old handwriting. The program must be «taught» first to read each individual handwriting and still it makes mistakes, which must be corrected by hand. Despite of these weaknesses, Transkribus be a big can help in future in transcribing the old documents to electronic form, which can be then analyzed with digital data tools. Trankribus can be downloaded from the READ-web page free.⁵

¹ Elo, Kimmo, Digitaalisen historiantutkimuksen kenttää louhimassa. In Digitaalinen humanismi ja historiatieteet. Ed. Kimmo Elo. Turun historiallinen yhdistys, Turku 2016. p. 17. Elo cites the definition of Kathleen Fitzpatrick, see Fitzpatrick, Kathleen, The Humanities Done Digitally. In Debates in Digital Humanities. Ed. Matthew K. Gold. Univ. of Minnesota Press, Minnesota 2012.

² See <https://katiha.xamk.fi/Karjalatk/#>

³ See <http://digi.narc.fi/digi/>

⁴ See <https://eadh.org/projects/read>

⁵ See <https://transkribus.eu/Transkribus/>



About the same time as the digitizing project of National Archives, started the National Library of Finland (Helsinki University Library) to digitize newspapers published in Finland. All newspapers published between the years 1771–1929 are already (in 2018) available and even much more, altogether about 7.5 million pages. More than half of this material (up to the year 1929) is in open use in internet.⁶ From the year 1930, the digitized newspapers must be used for research in university libraries. The service is equipped with a search engine. The customer can search only those newspapers he wants, limit the time range according to his needs and add free headwords to search for the wanted articles. The service is available in Finnish, Swedish and English languages.

Using digital source collections

Next step from digitizing the sources, old documents, newspapers, maps etc.) is to analyze them with different kinds of digital tools. The linguists have used digital tools for analyzing the text corpora for years already. Now this method is coming to the historical research as well. The above-mentioned newspaper collection of the National Library is just one example of text corpora available for research. Finnish Language Bank (Kielipankki) is a web service with several tools for analyzing the qualitative text corpora. One «ready to use» -service is «Korp» concordance tool with which you can analyze several ready text corpora (old newspapers, magazines from the 1990s and 2000s, minutes of the Parliament of Finland etc). Today historians may be interested in born-digital materials as well. Therefore the «Korp» concordance tool includes materials from Finnish discussion web pages. It is possible to load an own text corpus to these tools and make analyses free. This service of language Bank is available free in Finnish, Swedish and English languages. However, one must note that the source material available for free to be analyzed is in Finnish.⁷

Other born digital materials interesting for the historian may already be the web pages, digital newspapers, texts in social media etc. However, when talking about digital methods usually the topic is the «big data». With the concept of «big data», we mean large and complex statistical data, which is analyzed with advanced data mining analysis methods. This kind of statistical material is most often available for the demographical or economic research topics. It may be digitized from the traditional printed sources, however, big part of it has been born-digital since the 1990s. When we are discovering patterns from this kind of large data set we are talking about «data mining». Data mining can be defined as analyzing large data sets with digital tools.

Qualitative text materials can be analyzed with digital tools in many ways. One example is topic modeling. In topic modeling the computer finds and extracts words that occur statistically meaningful way in the text corpus it analyses. This way the researcher can get an understanding about the content of an archival unit without necessarily reading all texts through. This method suits for analyzing big text masses, which are already in digital form. One this kind of tool is Mallet.⁸ Another possibility to present and study different kinds of source materials can be the network analysis. Relations between individuals, families or enterprises are most usual topics of network analysis. However, the network analysis can be used for studying very different source materials, for example, analyzing the relations between photographs of a certain topic. For example, Kimmo Elo and Olli Kleemola have used network analysis in studying a great amount of the wartime photographs of Finnish army. Sorting this kind of material is impossible or at least difficult to manage by hand. However, the content analysis made by the digital network tool brought, for example, clusters of

⁶ See <https://digi.kansalliskirjasto.fi/sanomalehti/search>

⁷ See <https://www.kielipankki.fi/tools/>

⁸ See <https://programminghistorian.org/en/lessons/topic-modeling-and-mallet>



photographs describing the relationship between the Finnish and German armies.⁹ An useful open-source and free network analysis tool for this kind of research is for example «Gephi». With «Gephi» it is possible to find underlying associations between objects, make network visualizations and even high quality printable maps for poster presentations.¹⁰

One important part of digital history is using and analyzing the old maps. Historical cartography can be used as visualization in the scientific presentations, which is nowadays easy because a big part of the historical maps in the National Archives of Finland are digitized and in free use for the researchers in internet. However, the old cartography can be an important source, which can be analyzed with the digital tools. This field of science is called geoinformatics (Geographic Information System, GIS) and the digital tools for analyzing this historical spatial data can be called as GIS-tools. Currently, one of the most used tool in working with the historical cartographic material is ArcGIS¹¹, and a tool to share this geospatial data is Geoserver.¹²

Pedagogical solutions in digital history

The computers entered into the schools in the 1980s already and nowadays using different kind of digital services are an everyday phenomena from the elementary school to the college level. Universities have been more conservative in adopting the pedagogical novelties of the digital world for long. However, now new digital services are taken in use especially in the administration of the universities and in student services. However, still it is very common that university courses are traditional lectures, seasoned perhaps with Power Point slides. Materials can be shared and essays collected via digital learning management systems (like Moodle) but digital pedagogical applications are, at least in history, quite rare.

One this kind of pedagogical application, in which I have been involved with, is the teaching and learning application AdFontes for historical documents and learning paleography (old handwriting), developed by the young scholars from the University of Zürich, Austria. In AdFontes you find lots of information and examples of old documents and archives, but training exercises in reading old handwritings from the medieval to the modern era. AdFontes is available in English, German and French languages.¹³

Of course, digital solutions can be used for popularizing and visualizing history in many ways. One interesting visualization, although not a Finnish one, is the Old Bailey -project, which portrays almost 200 000 trials at the central court in London between the years 1674–1913. The court sessions are visualized to a digitally created courtroom and the different parties of each trial have given their lines in the act according to the court protocols. The project gives the «ordinary people» their voice in history.¹⁴

Using digital solutions in popularizing and visualizing the past for the public in museums is a very timely trend. The interactive displays were used in museums in the 1990s and at the beginning of the 21st century. However, a rising trend of today is using the augmented reality (known especially

⁹ Elo, Kimmo & Kleemola, Olli, SA-kuva-arkistoa louhimassa. Digitaaliset menetelmät valokuvatutkimuksen tukena. In Digitaalinen humanismi ja historiatieteet. Ed. Kimmo Elo. Turun historiallinen yhdistys, Turku 2016, p. 151–190.

¹⁰ See <https://gephi.org/>

¹¹ See <https://www.arcgis.com/home/index.html>

¹² See <http://geoserver.org/>

¹³ See <https://www.adfontes.uzh.ch/en>

¹⁴ See <https://www.oldbaileyonline.org/>



from the digital game applications like Pokémon go) as one part of exhibitions. One of the first museums using this technology in Finland is the Luostarinmäki (Cloister hill) Handicrafts Museum in Turku. Although the digital graphics can be sometimes a bit clumsy, the possibilities of the rapidly developing technology are not even visible for us yet.¹⁵

Digital humanism and historical research

One part of «digital revolution» in scientific research is publishing in electronic form. More and more scientific journals, in humanistic field as well as in history, have moved in their publishing policies to the digital form. Many old journals (in Finland like Historiallinen Aikakauskirja [Historical Journal], published since 1903) are published nowadays in hybrid form: in paper as well as in digital issues. The articles published in digital form in the journal have one-year embargo (they can be read without payment one year after the publishing).¹⁶ The old journals have digitized their old volumes and put them to the internet for the research to use. New scientific journals are most often published only in digital form. The difficulty in these digital journals is that they are not easy to find from the vast sea of internet. Therefore the Federation of Finnish Learned Societies has built an open journal and publishing management service «Finnish Scholarly Journals Online» which gathers scientific digital journals to the same place. Just now 75 digital journals are published through this service.¹⁷

The availability of the knowledge and results of the scientists have recently been a topic of big discussion in the whole Western scientific world and in Finland as well. One solution for this are the open access publications as articles in journals and as books in the web as well. Most often the author (or his institution) have to pay for the publisher a special payment for publishing open access. With the publishing houses the hybrid publishing of books sees the digital publication as the main product, if the customer wants to have a paper copy, it can be ordered from the publisher «on demand.»¹⁸

The historical research can take digital forms as well. One example of this kind of work are the semantic and ontological website created by the Semantic Computing Research Group (SeCo) in the Aalto University, Helsinki.¹⁹ The digital world and digital research methods can serve as a research topic as themselves. For example, the methodological research of Antti Härkönen at the University of Eastern Finland examines the possibilities of the digital GIS-tools in analyzing the historical maps. The digitized culture and digital research is developing to an own and independent field of discipline with an own theory building, sources, topics and methods.

¹⁵ See <https://tech.utu.fi/ar/project/luostarinmaki-adventure/>

¹⁶ See <https://www.historiallinenaikakauskirja.fi/historical-journal>

¹⁷ See <https://journal.fi/index/index>

¹⁸ See for example the Norwegian publishing house Cappelen Damm <https://www.cappelendammundervisning.no/cdu/akademisk/noasp/index.action#filter?>

¹⁹ The semantic and ontological websites see <https://seco.cs.aalto.fi/>



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Аннотация: Первые проекты в цифровой гуманитаристике, хотя в то время никто не знал этого термина, начались в Финляндии уже в 1980-х гг. Одна из ранних идей заключалась в том, чтобы оцифровать источники для исторических исследований: старые документы и газеты. Следующим шагом после оцифровки источников является их анализ с помощью цифрового инструментария. Тексты могут быть проанализированы при помощи новых методов многими способами. Ещё одна важная часть цифровой истории — использование старых карт и их анализ. Также новые цифровые сервисы активно используются администрацией университетов и студенческими сообществами. Одним из очень перспективных педагогических приложений является AdFontes, разработанный молодыми учеными из Университета Цюриха (Австрия). Использование цифровых решений для популяризации и визуализации прошлого в музеях — весьма актуальная тенденция. Не менее важной частью «цифровой революции» в науке являются электронные издания. Доступность знаний и результатов интеллектуальных исследований в последнее время явилась предметом большой дискуссии во всем западном научном мире, а также в Финляндии.

Ключевые слова: Финляндия; цифровые методы в истории; цифровой гуманизм; оцифровка источников; электронные издания; актуальные решения в преподавании истории