What makes you click? A Case Study of One User's Experience of the Europeana.eu Portal

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ABSTRACT

This study attempts to understand connections between user experience and knowledge change/production by self-reflexively examining the researcher's own experiences using Europeana.eu, a large-scale digital portal that aggregates digitized content across a variety of European cultural heritage institutions. A phenomenological/ auto-ethnographic research approach captured an in-process knowledge map illustrating points at which knowledge and understanding changed through interactions with heritage objects in Europeana, its feeder sites and my personal collections of objects in social media sites. This preliminary study sets the stage for future research on what makes users 'click'" in digital portals in order to uncover "cultures of searching" that can expose the deeply personal nature of knowledge creation as it emerges within users of digital collections.

Keywords
Digital cultural heritage, digital portals, ethnography, phenomenology, Europeana, knowledge creation, knowledge production, self-reflexive user studies

1. INTRODUCTION
The connections between digital cultural heritage and knowledge are often unclear [2, 6]. This poster presents a case study that attempts to identify relationships between user experience and knowledge change/production through the use of the Europeana.eu digital portal (hereafter, Europeana), a resource that aggregates digitized cultural heritage resources from institutions across Europe. As the researcher/user, I hypothesized that my experience of the portal would emerge as a pathway of movement through resources that at certain points would be punctuated by a sense of knowledge change. However, a phenomenological approach to data collection and analysis revealed an in-process knowledge landscape illustrating my understanding of relationships between heritage objects in Europeana, its feeder sites and my own social-media-based collections of these objects. This preliminary study sets the stage for future research that focuses on what makes users "click" in digital portals in order to uncover "cultures of searching" that can expose the deeply personal nature of knowledge creation as it emerges within users of digital collections.

2. LITERATURE REVIEW
Policy rhetoric commonly conflates access to digitized cultural heritage with increased knowledge outcomes. However, such conclusions are often based on assumptions rather than evidence-based studies [9]. Further, within the research literature, there is relatively little consensus on the role and function of digital libraries. They may be thought of "simply" as sophisticated search engines and not as tools for knowledge production [Sieglerschmidt, in 2]. But they are also conceptualized as encouraging new kinds of knowledge production precisely because they allow for direct interaction with heritage materials by amateur as well as expert users [1]. However, user studies tend to rely too heavily on traditional constructions of user roles defined by systems designers [2]. Further, traditional Information Science (IS) approaches posit users of systems in a problem-solving role [8], an approach that tends to limit research findings [2, 8]. Instead, studies of digital libraries and their users should begin with the understanding that knowledge creation and production are highly individualized and personalized processes that are not located in the digital repositories themselves but within actual beings who use the repositories [1, 2, 6].

3. METHODOLOGY/APPROACH
This research project was designed as a self-reflexive case study that posits researcher-as-user, examining this researcher's experience of Europeana for real-life search purposes, an approach that departs radically from the empirical-based approaches commonly applied in IS user studies. It emerges from an ethnographic approach that identifies and applies (often implicitly) categories of same/different to activities used to denote aspects of culture (and often experienced more generally as the phenomenon of "culture shock"). Such an approach emphasizes phenomenological aspects of the user experience that can make explicit often invisible understandings and conceptualizations of search processes.

In particular, this approach attempts to re-frame the notion of user defined solely by level of expertise and/or purpose. For instance, Europeana designers identify five roles (general users; school students; academic users; expert researchers; professional users) and four objectives (entertainment; learn more about cultural or historic subject/person; know whereabouts of cultural heritage materials; engage with a community of interest) for its users [5]. However, when designing this study, it was apparent that these roles and objectives were not distinct within me as I used the portal. For instance, I was primarily an academic user/expert researcher who wanted to learn more about an historical subject and to know the whereabouts of materials relating to my research area. But at the same time, I was also a general user looking to be entertained and who also wanted to share my findings via social media (Pinterest, Tumblr and Zotero). Even though my primary goal was dissertation research, I was still on the lookout for other kinds of materials that might be interesting or fun. In short, when I sat down to explore Europeana, I brought my whole self, comprised of multiple user roles and objectives, with me.

3.1 Operationalizing Knowledge

The operational definition of knowledge employed in this study is one that conceptualizes knowledge as action [7] that is mediated by and through embodied information [3], in this case "clickable" digital heritage objects. Under this definition, if the Europeana digital portal is to spur knowledge change or production, some sort of capacity for action or motion must be present in the system that is encouraged by tangible information products presented in the digital library environment. Here, the measure for knowledge change was the click, representing the moment that I, as the user, was moved to select or follow a particular link or resource.

3.2 Methods

This study documents a series of search sessions between the user and the Europeana digital portal undertaken by one user, a doctoral student in library and information science, who is also the researcher. Data collection took three forms: written journal entries that recorded pre- and post-search expectations/ discoveries; audio recording of the user's narrative as it was spoken aloud during the search sessions; and screenshots that recorded "notable instants" [4] (in this case, clickable moments) related to senses of understanding, confusion, navigation or other visual points of interest during the search experience. Audio recordings were transcribed using NVivo software, where data underwent qualitative analysis/coding using a grounded theory method. This triangulation of data allowed for visual as well as textual data analysis that was used to map the navigational process of research as it happened during the search experiences.

3.3 Research Questions

This case study investigated the following research questions:

[RQ1]: Does the design of this system facilitate a sense of user movement through the online objects and collections? If so, how?

[RQ2]: Does knowledge change and/or knowledge production occur in/for the user? If so, at what points of interaction with the system do they occur?

4. FINDINGS

4.1 User Movement through Collections

Movement through online objects and collections emerged in two ways: through the choice of words I used to describe my interactions with the portal and in the ways in which content within the portal itself changed and moved. The action words that were identified and correlated with points of action/design elements or features within the portal site are shown in Table 1.

Two "meta-actions" – *clicking* and *scrolling* – occurred on all pages throughout the search sessions and were essential to the search experience. *Searching* was the most involved action in that it required me to come up with terms and/or phrases that had the potential to provide productive outcomes without knowing what was in the database. *Reading/scanning* was an equally complex task because it involved deciphering the search results, reading metadata and text-based documents but also looking at images and deciding whether or not they might be useful or relevant for my purposes, given that my research project was in its early stages.

Table 1: Correlation between action words and points of action in the Europeana Portal

User actions:	Related portal parts/areas/targets:
Clicking	Meta-activity (all pages)
Scrolling	Meta-activity (all pages)
Going back	After reading or scanning, need to turn back (not the right pathway)
Reading/ Scanning	Search results and metadata object view
Searching	Homepage – typing queries into the search box
Narrowing	Facets on search results page

Narrowing was equally important though somewhat easier task because options for narrowing in the form of facets were provided based on the search results that helped to guide me (though I could also type in keywords to further narrow the search). Without the option to narrow, I was left to click and scroll sometimes seemingly endlessly through thousands of results, which made for an exhausting reading/scanning action. *Going back* was also crucial in that it allowed me to retreat when a resource was found to be less-relevant, but it often relied on presence of visual surrogate versus just textual metadata present in the record. When a record in the portal had a visual surrogate attached to it, the decision to click through became a low-risk/low effort proposition and I was less worried about "wasting time" clicking through to investigate whether a record might be a good fit.

But it was not only my actions within the portal that provided a sense of movement through resources; movement was also sensed as content in the portal changed as well, as outlined in Table 2.

Table 2: Moving/Changing Content in the Europeana Portal

"Moving" content	Frequency/Character of movement:
Homepage – Banner	User must click to change; two options
Homepage – Blog	Feed from Europeana blog site; ranges from every few days to a few weeks
Homepage – Featured item/Featured partner	Updated/changed with each reload of page
Homepage – Latest on Pinterest	When new additions to Pinterest social media site are made (did not change during the course of this study – four week period).
Search results – Facets and results	The search results are essentially "remade" with every search

The movement of content emphasizes Europeana's role as a gateway – by design, it wants to lead users to content in other places and in other forms. For instance, the banner on the Europeana homepage seemed to want immediately to move me to Pinterest to see sets of curated collections from Europeana. This kind of linking provides an entry into the collections that is especially useful for users who might be exploring the site without a formal search project or idea in mind. This also seems at least in part to explain the visual prominence of some content. However, that some elements were so prominent could also be distracting. For instance, I did miss the search box during a preliminary visit
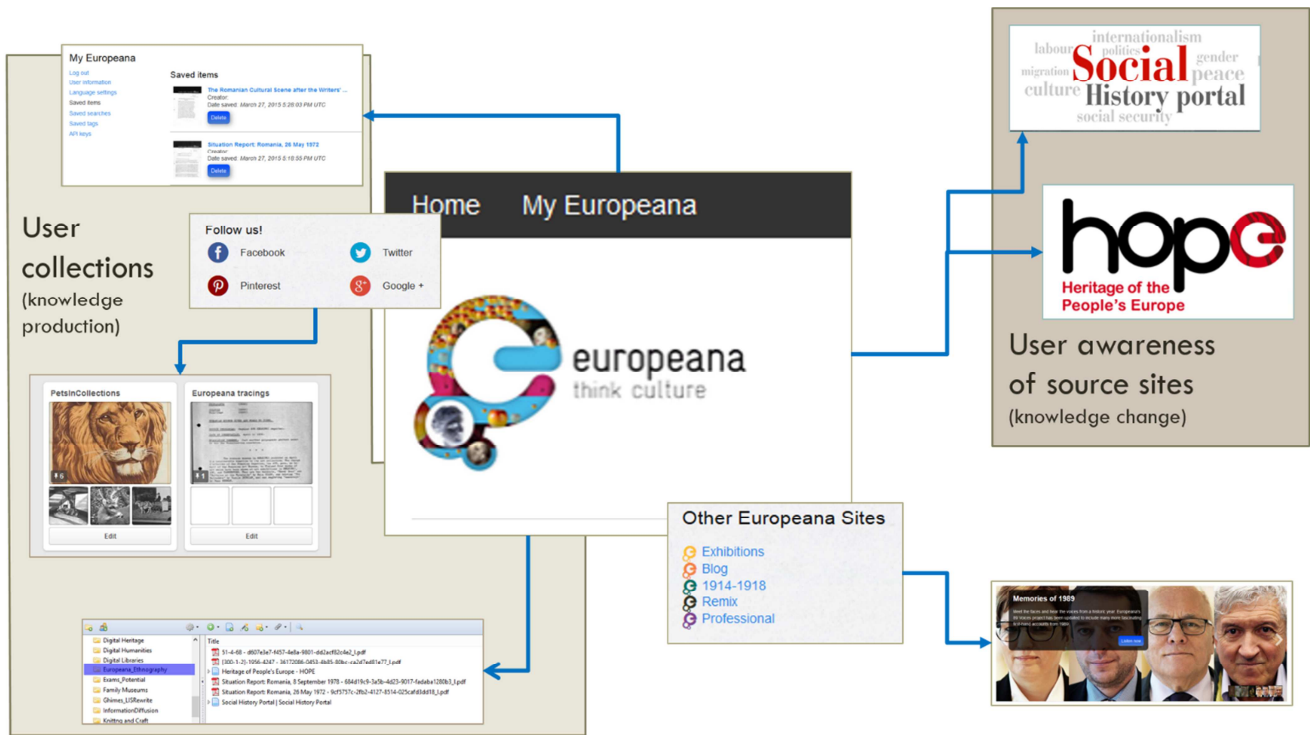
Figure 1: User's in-process knowledge map after using Europeana

because I started scrolling down the page to see the wealth of visual images. It is also important to note that if the user clicks on some of the links, like the banner on the homepage, the link does not open in a new browser tab, but supplants the Europeana site in the open browser window. So in some ways the usefulness of such links seems unclear because they seemed to steer me away from the portal before I had even accessed any content.

Nevertheless, correlating action words and content changes in Europeana emphasizes the ways in which this portal distributes the work of connecting to cultural heritage resources between users and the interface. I not only discovered objects through my own actions; moving or changing content encouraged me to interact with pre-selected resources based on visual appeal of items that were offered to me. I discovered objects not only within Europeana but also in source institutions' websites and through social media platforms. This movement-on-both-sides emphasizes how portal design can work to catalyze connections between the user and collections. I describe this experience as being drawn in by the "clickability" of content, of their power to entice me to click through to see what particular links had to offer. This notion of "clickability" connects to my findings about knowledge change and production.

4.2 Points of Knowledge Change/Production

In this study, the click became an indicator of knowledge change as it marked a decision to "move" within the system. This included: the desire to see an item (e.g. what is this?) or to learn more about an item (e.g. this looks interesting . . .) in order to decide whether or not it was useful or interesting to me. Making such decisions seems to be a necessary and essential component of my Europeana user experience.

Further, when clicking led to the action of saving an item to one of my personal collections, it represented a form of knowledge production. While not every item that I chose to collect was imminently relevant to my interests, each item represented a point of learning something that I could take away or take with me, which to me has the potential to influence how I might move through the portal going forward.

5. DISCUSSION

Figure 1 depicts my user experience of Europeana in this case study. What emerged was less of a pathway and more a visual capture of the expanding mind or knowledge map of my understanding of the relationship between items in Europeana, the feeder sites and my own personal collections of objects in social media sites. Lines suggest movement through the portal punctuated by points of knowledge change captured as screenshots. These screenshots of notable moments of interaction with the portal indicate moments where objects were clicked on, saved and/or otherwise interacted with (e.g. reading metadata about the object, saving an object, following links to external websites, etc.). Screenshots express a sense of "usefulness" or of something "interesting" that encouraged me as a user to make decisions about how to engage with objects in the portal.

The figure shows how, after interacting with Europeana, I know about two additional portals that may contain relevant materials related to my search: the *Social History Portal and Heritage of the People's Europe*. I was also able to interact with special exhibits and other curated/interpreted sets of collections objects by clicking through to *Other Europeana Sites* (in this case, a special feature on *Memories of 1989*). In this way, Europeana

acted as a catalyst by introducing me to source materials I might not otherwise have found. The problem of too many results seems likely to be one of the more problematic aspects of interacting with digital cultural heritage at scale or as "big data." Therefore, productively moving users out to interact with smaller sets of objects or to engage directly with contributing sites was also a way of mitigating the problem of having too much data to wade through within Europeana itself.

But this knowledge map of course represents only a moment in time because it will change with additional searching. Further searching will, in turn, create new opportunities for objects in these online collections to gain new kinds of notoriety and new user bases, in some ways taking on a life of their own. This is illustrated in the knowledge map where I was able to save objects not just within the sites *My Europeana* feature, but also outside in popular social media sites like Pinterest, Tumblr and Zotero. This not only represents a kind of "consumption" [1] of heritage whereby it is appropriated and shared via social media, but also something of a de-mooring, where the objects then exist outside their home repositories, eschewing a sense of ownership or provenance, essentially freed to find their own pathways and possibilities for future use.

6. CONCLUSIONS AND FUTURE RESEARCH

This project lays the groundwork for future studies of both system users and designers that could focus on the role of the click and the question of "why are you clicking there now?" to discover user motivations and points of knowledge change and knowledge production. A knowledge map created to give form to this user's interactions with Europeana shows knowledge emerging through highly individualized processes within a personal knowledge landscape. The production and analysis of knowledge maps generated by a larger number of users has the potential to reveal something like "cultures of searching."

This approach provides different ways of conceptualizing users beyond traditional roles and purposes. For this reason, the phenomenological and ethnographic methods employed here are recommended for further study of a variety of users to generate more knowledge maps by asking users to talk about "what makes them click?" as they use Europeana or other similar, large-scale digital collections interfaces.

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