

Green Search : Studying Online Environmental Information. A Research Design

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Abstract

Presentation of the design of a research project in its initial stages. The project *Green Search* investigates shaping of environmental information, including information on problems and proposed solutions, through their representation in search engine results, in social media tools, and in mobile applications dedicated to environmentally friendly living and consumption and how this is experienced by people using these tools. The project is situated in a socio-technical framework, which sees technology and society as mutually dependent and co-constructed. The following four research questions, organized in two interlinked parts, guide the study: Part I: Configurations - How are specific environmental issues with bearing on everyday life practices configured through web search and recommendation services and in mobile applications facilitating environmentally friendly living? In which ways do users judge mediated personal recommendations (through social media), search engine results and information from dedicated mobile applications for environmentally friendly living? Part II: Trust - How is trust attributed to the information retrieved/received on environmental issues with bearing on everyday life practices, specifically considering how different sources are seen to relate to each other? Which interests, organizations or link relations are perceived as trustworthy and how is this motivated? This is investigated in relation to two thematic areas: food and the home. The presented project uses a mixed method approach, with qualitative methods (focus group interviews) being supplemented with quantitative elements (web analyses).

Keywords: search engines, information practices, socio-technical, mixed method, environmental information

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1 Background

Design of a research project in its initial stages.

Environmental information in online environments is an ever more important arena for information on environmental issues, which ranges from reports on environmental destruction to advice on how to address it on institutional levels and in individuals' everyday life. The project *Green Search* investigates the shaping of environmental information, including information on problems and proposed solutions, through their representation in search engine results, in social media tools, and in mobile applications dedicated to environmentally friendly living and consumption and how this is experienced by people using these tools.

The research project links together three problem areas of relevance for environmental information online:

- Firstly, environmental problems tend to be controversial and are given meaning in different ways depending on interests, allegiance and context of who presents them (Carvalho, 2007).
- Secondly, the role of information for alleviating environmental problems, specifically on an individual level, is unclear. Specifically studies on everyday life practices have shown that what people report to know about environmental problems on an abstract level is often disconnected from their practices in everyday life (cf. Bartiaux 2008; Haider, 2011; Hobson, 2003; Shove 2005)

and even strong values do not necessarily directly translate into practices in all cases (Nathan, 2012).

- Thirdly, search engines and mobile applications, work ever more with different types of personalization, including location awareness, to increase relevance and utility (cf. Halavais, 2009; Feuz et al., 2011; Hannak et al. 2013). Most social media through their profile-centered approach have personalization as their starting point (boyd & Ellison, 2007; Ellison & boyd, 2013).

The study's interest lies at the intersection of these three problem areas. This is of relevance for the shaping of environmental information in online environments, as it emerges in search engine results and social media feeds, specifically of information with bearing on everyday life practices.

Environmental information online stems from very diverse sources. It includes for instance official campaigns, social marketing and promotional activities by interest organizations and businesses, media reports, reports by lobby organizations or political parties, and not least exchange of personal experiences and opinions in forums or social media. All these disparate sources are united in the search engine result page or are blended with other content in a social media feed when representing an issue of relevance for the environment. Together and with the information spaces they all bring in through their sites' in- and out-links they shape the topic at hand. Furthermore, due to mechanisms of personalization and localization, results and ranking order are not identical between different searchers. In the case of social media, including social network sites, blogs and micro blogs, how an environmental problem appears, including suggestions for how to address it, varies potentially even more from user to user. This, i.e. the way in which different sources are blended as well as personalized and filtered, has bearing on how certain issues are perceived and which ways for addressing them seem motivated and feasible. In addition, people's different life and work situations contribute to how an issue is interpreted and made sense of. Specifically, questions of which sources to trust and how to judge trustworthiness come to the fore.

2 Theoretical framework

The project is situated in a socio-technical framework, which sees technology and society as mutually dependent and co-constructed (cf. van House, 2004; Suchman 2007). Accordingly, the study's interest lies with how search engines and other tools for retrieving/receiving information shape environmental issues and how people perceive this and make sense of in their everyday life and everyday practices. In line with the theoretical framework, the focus is on the very intersection of technical tools, people and the environment as a problem space and as a doing space.

For example, Google is not just a neutral tool for information retrieval, but since its algorithms control most online visibility it structures how we see issues and contributes to shaping what we regard as important. Ultimately how certain issues are presented in and by Google is an important part of the very issues at stake (Eklöf & Mager, 2012) and of how they are perceived. Similarly, social media like Facebook, blogs or Twitter and even dedicated mobile applications afford certain ways of using them while various interests, commercial or otherwise, contribute to how issues are represented through them.

3 Research questions

The following four research questions, organized in two interlinked parts, guide the study:

Part I: Configurations

- How are specific environmental issues with bearing on everyday life practices configured through web search and recommendation services and in mobile applications facilitating environmentally friendly living?

- In which ways do users judge mediated personal recommendations (through social media), search engine results and information from dedicated mobile applications for environmentally friendly living?

Part II: Trust

- How is trust attributed to the information retrieved/received on environmental issues with bearing on everyday life practices, specifically considering how different sources are seen to relate to each other?
- Which interests, organizations or link relations are perceived as trustworthy and how is this motivated?

4 Thematic areas & empirical delimitations

The project is organized around two empirically focused areas. Both take up thematic areas, which are central for the discursive and socio-material organization of environmentally friendly living in Western consumer societies as a site of contestation (Humphery 2011; Lewis & Potter, 2012) and where the role of information is potentially significant.

- Food
- Home/housing

These areas are indicative of the increasingly individualized character that has come to structure environmentally friendly living as a site of engagement. At the same time, they are noticeably situated within a larger problem space involving socio-economic structures of production and consumption, including use of resources and energy. Furthermore, both thematic areas, food and the home, are connected to various kinds of materials and material practices, which are relevant for environmentally friendly everyday living (cf. Hobson 2006; Shove 2005). Taken together, this makes these areas particularly suitable for studying aspects of information on environmental issues with bearing on everyday life practices.

5 Method

The project uses a mixed method approach, with qualitative methods being supplemented with quantitative elements.

5.1 Qualitative focus groups interviews:

Interviews are carried out with four focus groups consisting of 6 to 8 informants each. The small groups size is motivated by the fact that the group members are supposed to use digital technology and reflect on their use. The focus groups are selected to represent a young to middle age (25-40 years) population of both sexes in Sweden; i.e. people born in the 1970s and 1980s who grew up in today's consumer society with increased consumption levels as well as environmental awareness becoming common. Sweden is a suitable place for this study since it is country where IT literacy and Internet penetration are high (Findahl, 2012) at the same time as a certain environmental discourse is considered mainstream (Isenhour, 2013.).

Settings where people meet in already existing small groups independent of the research at hand are used as focus groups: (1) a parenting group, (2) a book club, (3) a discussion group of master level university students, (4) a group of expats in Sweden meeting through a social networking platform. By using already existing groups as focus groups a conducive atmosphere can more easily ensue; furthermore this suits the purpose of making visible socially structured interpretative frameworks (Jenkins et al. 2010), which is an advantage of using focus group based research.

In order to provide a starting point, akin to a talking stimulus in vignette-based interviewing (Jenkins et al. 2010), the informants are presented with a real-life blog posts and a mainstream media report (Salazar & Orobítg, 2012) available online on (a) the role of food for environmentally friendly living and

(b) the practicalities of low energy housing. The informants are asked to use their mobile phones or other devices (e.g. laptop computers, ipad etc.), which they are encouraged to bring with them prior to the meeting to support their discussions. They are asked to comment their searches and search results and also compare those with each other's. They are also encouraged to draw on their own personal social networks. They are furthermore presented with a list of relevant mobile phone applications to install and test if they wish.

Each group meets twice. At the second meeting the informants are presented with the results of a number of quantitative web analyses carried out on some of the material searched on and discussed in the first meeting. These visualizations and underlying lists work then as mediators for the ensuing discussions.

5.2 Web analysis on search results (Google)

Web analyses are carried out using digital tools developed and maintained by the *Digital Methods Initiative*: <https://wiki.digitalmethods.net/Dmi/>

A selection of 5-7 search results from each focus group meeting is saved and cleaned using Digital Methods Initiative *Harvester* to retain cleaned URLs from Google results. These are then analyzed further in order to establish which organizations/actors and issues dominate the search results at hand and how the information space is structured regarding direct links and co-links. This is achieved by using the *IssueCrawler* tool for establishing and drawing networks of direct links and of co-links in two iterations. It is furthermore supplemented by applying the Issue Discovery tool, which produces lists of the most relevant terms and phrases in submitted set of URLs. This will be visualized in the form of a tag cloud.

The results in the form of ordered lists, as well as networks, tag clouds and other visualizations have two purposes. Firstly, they are the basis for establishing which actors dominate certain information spaces and hence for investigating how specific environmental issues are configured through web search, recommendation services and in mobile applications. Secondly, they provide a starting point for follow up discussion with the focus groups as outlined above and contribute thus to investigating issues of judgment and trustworthiness regarding online environmental information.

6 References

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