

# Hot (water) topics: the formation of an energy issue at home

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## Abstract

Domestic use of hot water has been identified as an urgent energy issue to address. In this paper, results from focus group interviews, with both residents and staff members, are presented. Results show that hot tap water use is differently shaped depending on whether you are a resident or a staff member. One thing in common was that in the focus groups it was difficult to separate hot tap water use from water use in general. Hot tap water use was not distinguished from use of cold tap water. To explore the issue further, the research on hot water was taken to residents' homes and through more in-depth qualitative methods by an artist a formation process was started. Residents started to share more detailed stories about how they lived their everyday life in kitchens and bathrooms. These stories contain childhood memories and how past experience has shaped their water use and consequently their energy use patterns. The formation of this topic continued and in the artist's interpretation of the data, three different artefacts became important: the sink, tub and toilet. These artefacts were placed in a river in the centre of a city as part of an audio walk with voices from the residents talking about their use of water. The exhibition was available during summer 2016 and the audio walk with the voices are planned to be reused and part of an exhibition in 2017.

## Introduction

Users of different energy services, whether electricity, heat, hot tap water, etc., have increasingly attracted the attention of policy makers on different levels (European Environment Agency, 2013). Users are a broad group that includes people of various social, cultural, economic, and educational backgrounds. Different pilot projects, studies, and programs with focus on users have come and gone over the years and a lot can be learnt from different initiatives (Taylor and Janda, 2015). Knowledge about users and their everyday lives has shown how dynamic energy use is and pointed out the great variety of use patterns. System perspectives point out connections to systems of users, physical infrastructure and organisations, referred to as sociotechnical systems perspectives (Ingelstam, 2002). Such perspectives show the complexity of energy issues and provide explanations for why it is difficult to change existing practices. Energy issues can be described as entangled in individual and organisational, social and technical, and private and public aspects. Focus on practices has been suggested as a way to explore and provide more detail about these entangled matters (Shove et al., 2012).

In this paper we build on previous cultural and social science research on energy and water, research that has sociotechnical perspectives and has explored use of such resources as practices. The aim of the paper is to increase our understanding of hot water practices in particular and how communication about these practices could be improved by collaborations between social science research and cultural work through an artist based at the Museum of Work in Sweden.

Sociotechnical research on water use has previously explored a variety of cultural aspects in domestic settings, such as how water systems are expressions of power relations, and how water fittings support certain water use habits and hinder others

(Soufolis, 2005). Soufolis, referring to Shove (2003), questions perspectives that either cluster people to “litres-per-person-per-day” or as an individual solely responsible for integrating environmental awareness into everyday routines. Instead, attention should be drawn to the social and cultural dynamics of current lifestyles and the complexity underlying constantly increasing demands. Common water fittings create a “sublime illusion of endless supply” (Soufolis, 2005: 460), but users are still expected to be responsible consumers with sensible water use habits. This research calls for more social and cultural studies focussing on actual everyday life practices and how they become mundane.

Other practice-oriented research approaches on water use have suggested “practice” to be taken up by water management (Browne, 2015). Such approach would redirect focus from water as such to the demand for services entailing water and responsibility for sustainable use could be at least partly transferred to service providers rather than consumers. Browne (2015) stresses the many uncertainties about future water use patterns. With a shift from thoughts and ideas to practices and actions, these uncertainties might be better managed. The current research builds on this approach and looked for novel ways of communicating about practices and actions, in this case through art.

Materiality has a place in socio-technical system approaches generally and specifically in practice-based approaches (Strengers & Maller, 2012). The material can be viewed as playing an important part in the formation, transformation, and fixing of practices. “Things” therefore simultaneously contribute to both obduracy and dynamics of practices, an interesting tension that could be acknowledged and explored theoretically in the current research project. Strengers (2011) compares how energy and water respectively are materialised in an Australian setting and concludes that water has been materialised as a scarce resource which both providers and consumers have responsibility to manage. Energy, on the other hand, is perceived as “always available for a price” (Strengers & Maller, 2012: 760) and consequently responsibility for energy as a resource lies with the suppliers. In Sweden, the situation is different since water is seldom discussed as a scarce resource in the public debate and in some forms of housing (most rental housing), heating and hot water are included in the rent and are not visible costs for tenants. As a consequence, hot water is likely to be perceived as materialised and manageable by providers.

Gabrys (2014) develops the idea of materialising energy by creative practice projects, which our research project might be categorised as. Her work can be placed in the intersection between social science and design, similar to our own approach. Instead of offering ready solutions to different resource use issues, such an approach would allow for new questions, brainstorming and experimenting with different ideas. In Sweden, the Interactive Institute has developed a range of designs targeting households and their electricity use (Mazé & Redström, 2008). An overarching idea with the designs was to make energy more tangible, with aesthetically appealing designs, to create awareness and potentially influence environmental awareness. The current paper can be said to build on a creative practice approach where art and research were partly interlaced, but also developed as separate processes.

## Research process and methods

The research project started as a university-museum joint proposal to a local foundation. The aim in the proposal was described as an exploration of a possible gap in communication about sustainability between different stakeholders, including users. A suggestion in the proposal was that other forms of communication could be helpful when a variety of stakeholders were involved. The project group behind the proposal consisted of two researchers, Glad and Axelsson, from Linköping University, the research director of the Museum of Work and an artist, Höijer, at the time based at the museum. For most exhibitions, the Museum of Work uses a method called “together with rather than for” which is a dialogue and participatory method, where the content is co-produced with the target audience. Höijer had used this method in an earlier exhibition at this museum and similar participatory methods in former art projects. Höijer had previously worked broadly with visual and performance art.

Representatives from some of the stakeholders were asked to be part of an advisory group and members of the group would act as discussion partners during the research project. During the initial meeting between the project and advisory groups the scope of the project was discussed. Several different ideas were suggested, among them hot tap water as an issue several stakeholders had identified as interesting, since their organisations worked with energy efficiency goals and saving hot tap water would be one of the measures to reach the goals. But hot tap water was perceived as difficult to target since usage was difficult to control. The measures at hand were mostly technologies, for example low-flow fixtures. The users or customers in most organisations lacked economic incentives to save hot tap water since costs were included in the rent and thus an invisible figure (cf. Krantz, 2005). Hot tap water as a possible scope of the research was discussed by the project group and agreed upon since it seemed an interesting topic to explore both from a research and an artistic perspective.

In order to explore a variety of perspectives on hot tap water and different practices related to homes, the research group discussed different approaches. Previous positive experiences from using focus group interviews to collect data was a reason for choosing this method. Focus group interviews can generate qualitative data on attitudes, experiences, knowledge and values related to a specific topic (Wibeck, 2010). In recent research on practices, focus group interviews proved to be a rewarding method to collect data on different social aspects of practices (Brown, 2016). When researchers in Great Britain organised groups to talk about private matters related to water use, discussions that included humour and laughter gave new information in this research area. Our own research did not aim at exploring intimate practices in particular, but more generally water use at home, and we left it up to the focus group participants to decide what practices to dwell on: it could be practices in for example the kitchen, bathroom or common laundry facilities. The focus was on the complexities of practices involving hot tap water and in a focus group this complexity could be developed by members of the groups assisting each other in expressing their practices. Different practices could also be mirrored by the various participants and the discussion would be rewarding for the participants too, not only for the researchers.

Focus group interviews usually generate a rich material. The focus group moderator could use a semi-structured interview guide and stimulus material such as pictures to get the conversation going and direct the discussions so it stays within the scope of the study. After discussing different possible constellations of focus groups, the research group decided to separate staff members and users. Two focus groups were dedicated to staff members and two focus groups to tenants only. Members of the advisory group helped the researchers to identify possible participants. The interviews were both audio and video recorded, for back-up purposes. One researcher (Glad) acted as moderator and the artist (Höijer) took notes during the interviews. An interview guide was prepared and used during the meeting. In addition, pictures (prompts) were used showing situations where hot tap water could be used, for example dish-washing, showering and laundering. The interviews focused on uses indoors and referred mainly to activities that had to do with cooking, personal hygiene and laundering. A reason why these themes emerged was partly due to the prompts and pictures the focus groups were presented with. The prompts showed technologies and situations related to kitchens, bathrooms and common laundry rooms. When the research data collection ended, the arts formation process started and continued to work with tenants to further deepen our understanding of practices related to hot tap water use.

### Arts formation process and product

One purpose of the joint research-art project was to inform each other of possible approaches to explore everyday practices and improve communication between different stakeholders. We framed the art-related activities in these explorations as *formations*. Formation is a translation from the Swedish word “gestaltning” which originates from the German “Gestaltung”. In Sweden “gestaltning” is used broadly in a range of fields, for example architecture, arts, design, literature and technology, and could refer both to processes and products. Thus formations are the shapings of talk, texts, pictures and things, which in this case was part of the art-related activities.

Höijer's previous work, as well as this current project, is based on participatory arts methods (Höijer, 2017). Such methods implicate choices, for example about whom to involve, how to involve, what methods to use to make involvement relevant, and how to make use of the participatory elements in the product. In this case and for the arts formation process, Höijer chose to involve only tenants, since an overarching goal with the project was to make tenants' voices heard and the impression from the tenants focus group interviews was that they generated interesting discussions. With participatory arts methods these discussions could be taken further and in the end included in the product. The idea at this stage was to invite participants that would mirror the general composition of tenants in relation to background, age, gender, etc., in order to have different voices in the formation process (Höijer, 2016). The advisory group assisted in finding tenants to fulfil these criteria, but in the end the people who answered the invitation and showed up to the first meeting were mainly senior citizens.

This part of the formation process was arranged as a series of four meetings with tenants and the artist Höijer. The meetings took place in different locations and had different foci: the

university (similar method as the focus group interviews), the Museum of Work (tenants brought pictures from situations at home), and in the tenants' homes, where Höijer met tenants individually to do a guided home tour and record the tenant's individual stories. These stories would later form the backbone of the formation product. Each meeting contributed different narratives and to a deeper understanding of practices and found inspiration from literature on participatory methods. Pictures have for example been suggested to facilitate conversation and make it easier to talk about sensitive issues, such as hot water use in the bathroom for personal hygiene (cf. Livholts & Tamboukou, 2015). Pictures could also assist in remembering what might be taken for granted, as many of the things we do in everyday life are. In addition, pictures in an art work process could facilitate creativity and reflexivity, something sought after in this case. Using pictures in combination with talk and writing about the pictures and memories provide powerful methods in participatory methodologies as situations could be both more thoroughly expressed and understood by all participants. Still, the artist Höijer reflected on the formation process as a “game of telephone” since she constantly made interpretations of the stories and would be responsible for the product (Höijer, 2016).

Narrative methodology proved to be useful in the process (cf. Livholts & Tamboukou, 2005). By encouraging narrative and storytelling, otherwise less heard voices could be louder and perspectives that otherwise would stay in the background could be in the forefront. Perspectives that are not taken into account because they are not technical and delivered by skilled staff members could be given a new role. In this case knowledge, experiences, habits, thoughts and actions went into a series of interpretations by the participants in the design process. The artist reflected upon this as continuous interpretations which created different layers in the art work: “Formation used both as a means and as an end” (Höijer, 2016), as a process and a product.

Possible arts formation product, location and timing of this was discussed in the project group and together with the advisory group. What formation would be representative of the stories? Where would the formation be mostly accessible for different audiences (tenants, staff members, other citizens)? When would be a suitable time period to show the formation product? The focus on water brought out ideas about using a water tower, a harbour area and a river running through the city. Perhaps the artwork could connect to ongoing urban developments in the city to make the connection to our common future and sustainability? After discussing a range of different alternatives, the decision was with the artist Höijer, who chose an outdoor exhibition format, using the city river, domestic artefacts associated with water, and recorded voices in an app-based audio-guide to connect things and stories in one formation product.

### Results

Results were generated both from focus group interviews and from the art formation process, which came after the focus groups.

#### RESULTS FROM FOCUS GROUP INTERVIEWS

Hot water is seldom used alone, but is mixed with cold water to get the right temperature for different purposes. Consequently, few discussions concerned hot water only, but the main theme

concerned experiences of hot water debiting, which is relatively new in Swedish rental housing (about 10 years for these tenants).

[tenants look at a picture with water running out of a tap]

Tenant: That would never happen in my house.

Moderator: Why not?

Tenant: Because we have to pay.

Moderator: Can you tell a little bit more about ...?

Tenant: You have to pay for every single drop.

Moderator: And you're saying that you pay and then you think more about how you ...?

Tenant: Absolutely, but I wouldn't have the taps open with running water even if I didn't pay, but ... But now I think about it much more and especially a lot about hot water. When I get my monthly bill it shows how much I have used, the sum [...] and then I'm thinking, well, next month I will try to lower those costs to keep expenses for renting low.

(Focus group 3)

Other tenants expressed concern about the amount of water that had to be run before any hot water came out of the tap. Some tenants had adopted practices to deal with the issue of "a lot of fresh water" (tenant, focus group 3) being wasted under such circumstances.

In summer, I take the watering can and turn on the faucet [...] – to use it for watering outdoors – and I get almost a full can before I get hot water.

(Tenant, focus group 2)

Staff members said that even though costs for hot water use were a significant running expense for property owners, it was seldom discussed in their organisations. Having these discussions in the focus groups was fun and interesting. One of the main themes in the focus groups with staff members was bathing and showering. Discussions concerned both explanations to tenants liking long hot baths or showers: "something that comes from lying in warm water for nine months" (staff member, focus group 4) and solutions to deal with such practices: "remove all bath tubs" (staff member, focus group 1).

Water use for personal hygiene is an example of hot and cold water being mixed in different practices. Personal hygiene and practices related to the bathroom were areas discussed in all focus groups, often with normative values added, for example: how long you can lock yourself in the bathroom, how many baths or showers you could have per day or week, how long the showers are and what water-saving measures to be taken in the shower. Both tenants and staff members shared stories about excessive bathing and showering practices and these stories caught artist Höijer's attention. As she proceeded with her explorations of specifically the tenants' practices she described her work as processes that opened "doors to otherwise closed rooms" (Höijer, 2016). Stories about personal hygiene are of course very private but the focus on creating art work made the stories feel less sensitive for the tenants. This was not a planned strategy by Höijer, but something reflected on during the pro-

cess and part of her field notes. The main concern was to make the tenant stories the core of the art work and raise their voices in relation to a topic that is otherwise mostly the concern of staff members.

## RESULTS FROM THE ARTS FORMATION PROCESS

In the summer of 2016, the audiowalk "Tjöta om vatten"<sup>1</sup> was on display for almost three months. The artwork communicated hot water topics in different ways to the public. The place for the display was the central waterway "Motala ström" (the Motala River), in several ways a symbolic choice. The river is a popular recreational path through the very heart of Norrköping, both the modern centre and the important industrial history with preserved and restored buildings from the days of the viable textile manufacturing industry. The river has of course played an important role as means of transport, source of hydropower, and a convenient place to discharge waste of all kind. Today, there is still a hydropower station in use but otherwise recreational activities have taken over. Besides the place of the display, with all different references to past and present activities, the artwork communicated different senses as artefacts were placed on display in the river. If the audience used their mobile phones they could connect via an app to an audiocast with a guide on where to look for the artefacts, and listen to stories about the river and water use.

The walk started on a bridge over the Motala River. The bridge connects two university buildings and is called the Bridge of Knowledge. From the bridge it is possible to see an old, but still functioning, hydropower station and other old buildings and constructions from this city's industrial past. The audiowalk connected the stories of the residents, the scenic walk along the river and three different artefacts, selected to represent some of the themes from the focus group interviews, the artwork process and individual interviews. The artefacts were donated by one of the participating housing companies and were old bathroom fixtures: a sink, a bathtub and a toilet. On the Bridge of Knowledge, the sink was installed accompanied by a sign introducing the audiowalk and informed the viewer of how to access the audioguide. To access the audioguide you would need a smartphone and download an app: izitravel. If you started the audioguide, the different stories would automatically start when you arrived at certain GPS coordinates. You could also choose to start the different stories whenever you wanted to listen to them. The first story would start if you stood by the sink on the bridge. This story was told by Höijer, who introduced the ideas behind the walk and what the viewers could expect during the walk. This story also included reflections about water in general, for example that the water of Motala River is the same water we have always had on earth and we are only reusing it.

The walk continued along the river and close to the university building on the southern side and across one of the main city streets. Kungsgatan. As the walk continued on the other side of the road and as the audience approached an old textile manufacturing building that now hosts the Museum of Work, attention was drawn to a bathtub in the river and tied with a rope to this yellow building. The audience was then asked

1. "Tjöta" is local slang for "talk", and a translation in English would read "Talk about water".



to walk to the museum, which is free to the public, and enter the building and the exhibition Land of the Future. The artist's voice in the app guided the audience to a particular part of the exhibition showing a residential building and focussing on energy consumption. The voice in the audio guide was now the voice of one of the tenants, reflecting on his own energy use. The audience was then guided out of the museum and back to the path running along the river.

After a few hundred metres the audience could find the third and last artefact of the exhibition in the river: a toilet on a float. The toilet was also visible from another of the main roads, the adjacent foot path and bicycle lane, but the audio guide asked the audience to walk down the gentle grass slope and have a seat. Here the sound in the audioguide was a flushing toilet and voices of other tenants, a couple who reflected on their use of water.

The audio walk continued along the shores of the Motala River and more stories were told as the walk continued and crossed another major city street (Drottninggatan) and more bridges. At the bridge (Hamnbron) the audio guide finished the stories as the audience was asked to look toward a construction site where a new city district was being planned. This was a look into the future. What might the future hold in terms of sustainability and use of resources such as energy and hot water? the audio guide voice asked rhetorically.

## Discussion

The research topic on domestic hot water use transformed during the research process to water use in general. This transformation happened in the first stage of data collection, during the focus group interviews, when both tenants and staff members in the respective discussions did not distinguish between hot and cold water, even though the topic for the focus groups was introduced as "hot tap water". In Sweden both hot and cold water is normally included in the rent and are invisible expenses for most tenants. Debiting of hot water can increase awareness and provides economic incentives to lower costs for tenants, but discussions about hot water use are not a common topic in the organisations included in this research. The exercises used in the focus groups were appreciated by staff members and could perhaps be used to initiate discussions with a broader groups in these organisations.

Both tenants and staff members had opinions on the practices of tenants, their water use and some shared stories from their own water use. Staff members' stories based on their own experience might influence decisions that affect tenants, but are biased since staff members are not likely representative of tenants in general. How could organisations foster learning cultures that include knowledge about people and practices in private situations?

In this research private water use became a public matter – a concrete public exhibition with personal stories told by tenants. The exploration of private practices started in the focus groups by the researcher Glad, and was taken further by the artist Höijer in both group activities and individual interviews in the tenants' homes before becoming material for the exhibition. Starting with group interviews and activities hopefully gave all participants new perspectives on their own water use and perhaps triggered discussions that would otherwise not

have occurred. The individual interviews became more personal and deepened the understanding about different practices. The step from these in-depth talks in a safe environment to tenants' voices being accessible anywhere via the app is of course big. When listeners used headphones it made the voices more intimate and created an interesting tension between private and public.

To make tenants' voices "heard" was one of the main drivers for the artist who made the exhibition, but how to make them heard was not decided on beforehand. The ideas for the exhibition developed in a process that was partly interlaced with the research project and partly parallel to it. In both the research and art processes tenants' voices became key to increasing our understanding of hot water use in rented flats. What the voices expressed guided the development of the processes and of course formed the results. The voices were put in a new context, where water is present in our society, in this case along a river that is running through a city. Both in history and today, the river has served several purposes and when forming the audiowalk, Höijer connected to two of the current purposes: the scenic accessible walk along the river and the river being used to generate hydropower. This water is visible. The water tenants are accessing in their homes runs through pump stations, cleaning stations, pipes, some gets heated before it becomes visible and flows out of our taps or toilets or is used in some of our home appliances, like washing machine or dishwasher. Connecting the visible and public water with the in many ways invisible private water created an interesting tension in the artwork. Such tensions could be further explored in future research and artwork which is planned in another exhibition in 2017.

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