

Co-design, social practices and sustainable innovation: involving users in a living lab exploratory study on bathing

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Short Abstract

This paper describes an exploratory study conducted for the Living Lab project, an EU funded program to research the interactions of users with more sustainable and quality-of-life enhancing innovations. An approach is given for applying a user-centered orientation for sustainable design which blends emerging concepts of co-design and co-creation with a 'practice-oriented' approach used in sociological studies of consumption and design. A pilot study used bathing practices as a case topic to explore the approach with a group of participants. The experience gained from the study raised new possibilities, ideas and issues for further research while advancing the approach toward a practice-oriented design methodology.

Key Words

sustainability; consumption; living lab; user participation; user behavior; practice-orientation; eco design; design research; co-design; bathing

Introduction

The design profession has the potential to serve ordinary people ('users') in the process of designing sustainable ways of living. This ambitious aim extends far beyond improving environmental product performance toward shifting lifestyles in more sustainable directions. As Lifset (2008: 134) writes: "It is easy to have a discussion about, say, the environmental challenge of the automobile or the proliferation of electronic devices in everyday life. It is more difficult to pinpoint the sources of changes in our lifestyles that occur 'below the radar.'"

The design research field applies learning and methods from the social sciences for various purposes, from making products work better for people to inspiring innovative ideas and making sustainable designs more effective. Much has been gained in the effort to make certain designs, such as ICT interfaces and physical forms, more user-friendly or ergonomic. However, the effort to understand how consumers, as a whole, behave in response to designed objects has proven to be problematic due to the complex interaction between technologies, users, and societal structures (Oudshoorn & Pinch, 2003).

For sustainability, this area of research is important because technological efficiency improvements made without a clear focus on the user context often result in unintended and unsustainable outcomes. This problem appeared in some early eco-design examples which

over-estimated the environmental motivations of users while under-estimating other factors like compatibility with lifestyles, aesthetics, or rebound effects (Hertwich, 2005). As argued by Bakker et al (2008), many existing design approaches to dealing with user behavior and sustainability thus far fall into two patterns. Some attempt to design around user behavior, including intelligent technologies or functionality matching (Rodriguez & Boks, 2007; Wever et al, 2008). Others try to control the behavior of users using physical and cognitive interventions, including design scripts, affordances, or persuasive technology (Heijs, 2006; Jelsma & Knot, 2002; Fogg, 2003). In turn, these approaches are confounded when users resist being controlled, change their behavior in response to the new design, or hack the design for their own purpose (Heijs, 2006; Oudshoorn & Pinch, 2003).

Such user-centered design approaches fail to address the more fundamental question of why these behaviors exist at all and how they change over time. Largely based in wisdom from cognitive and environmental psychology, these approaches generally focus on specific products, user types and moments in time and are often articulated based on the relation between certain material elements of products and the cognitive reactions of users. The social context is treated as being somewhat hermetic and static, so that behaviors and needs are assumed not to change or interact with other elements of social life (Shove et al, 2008).

Cognitive models are useful in many contexts, such as designing for improved safety (van den Bogaard & Swuste, 2006). However, a higher order of inquiry is needed when addressing the topic of sustainability, which exists at a system level where social and material dynamics play a significant role. Within fast changing socio-technical systems, design approaches that prescribe certain behaviors limit the possibilities for different usages and risk too much investment in one use scheme. A decidedly different approach is necessary. Passively accepting human behavior as a given is faulty because it is clear that designed objects do have an influence and behaviors change over time. At the same time, engineering human behavior is clearly not an option. A more systemic approach requires a reorientation toward working within, rather than fighting against the dynamics of user behavior.

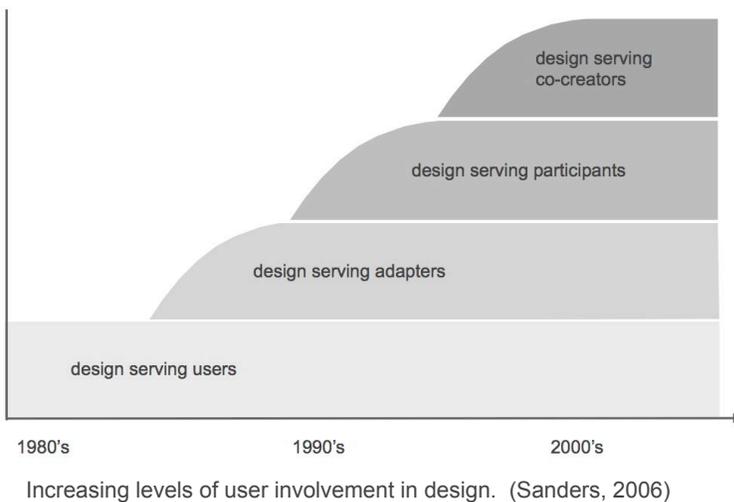
This is the logic behind an exploratory study conducted for the Living Lab project, an EU funded program to research the interactions of users with more sustainable and quality-of-life enhancing innovations. A hybrid approach was developed for the study which merged a 'practice-orientation' with ideas on co-design and co-creation, including concepts of creative communities and open-source concepts. (Scott, 2008) The purpose of this paper is to report on the approach and the learning which resulted from the study. The first two sections of this paper summarize the concepts of co-creation/co-design and practice-orientation. The third section describes the hybrid approach and the two week pilot study conducted to explore the approach with a group of participants, including users, designers and sociologists, and using bathing as a case topic. The fifth section reviews the learning and results from the pilot study, covering learning about the proposed approach, learning about the subject of bathing practices, and final concepts that were generated in the study. The final section makes some general conclusions and discusses lessons for future studies.

1. Co-creation and co-design

To realize the potential of participatory user-centered approaches, design research must evolve beyond conventional methods such as focus groups and contextual interviews. Notions like co-creation and co-design are beginning to turn design on its head by increasingly putting the tools of design into the hands of end-users. Co-creation appears already in emerging trends of social innovation, user-generated content, and open-source design, providing real-life examples from which the design profession is beginning to learn

some valuable lessons (Sanders & Stappers, 2008). Buzzwords like ‘context’ or ‘experience’ economy, distributed innovation, wiki-culture, et cetera, show design thinking that is starting to bring together system and user innovation, reflecting a growing understanding of the complexity of socio-technical systems and the development of new capabilities to work within this complexity.

Co-design can be defined as a cooperative, continuous process bringing everyday people together with design professionals to find new and better ideas for daily life. Companies thus offer a deliberate design role for regular people in which ‘enabling platforms’ (Manzini, 2007) or ‘convivial tools’ (Sanders, 2006) give them the capability to engage with each other in creating new concepts and designs collaboratively and to build upon existing and evolving ideas – ‘mass creativity’ (Leadbetter, 2008).



2. A practice orientation

The idea of a practice-oriented approach in design comes from a discussion happening about the conceptual and practical relevance between practice theory, studies of consumption and product design (Julier, 2007; Shove et al, 2008; Ingram et al, 2007; Fisher & Hielscher, 2008). The most concrete result of this discussion is shown in a colorful ‘manifesto’ of ‘Practice Oriented Product Design,’ the outcome of several workshops involving designers, design researchers, design historians, and sociologists (Shove, 2006). The argument is that practice theory can provide a better framework for understanding issues of consumption (including both purchase and use), and this learning can be applied in design approaches in order to establish more sustainable and effective modes of consumption.

A practice-oriented approach is intended to guide the design process to look more broadly, beyond individual products and users, to the integrated routines, materials, bodies, meanings, functions, and abilities that make up everyday practices. This approach prioritizes the role of conventions, habits, and conceptions of normality in shaping resource intensive behaviours over efforts to make individual technologies or behaviours more efficient (Shove, 2003). This is argued to be a more systemic approach that can help design for sustainability efforts to grapple with the uncertainties of consumption, such as rebound effects and user acceptance issues.

An important lesson in a practice orientation is that ‘consumer demand’ is a static interpretation of the dynamic mechanism connecting past and future contexts of practice (consumer behavior). This counters the assumption that consumer demand should be treated as a given factor for designers to respond to, but instead argues that it should be seen as a malleable construct which design is already in the business of influencing (Shove et al, 2008). The focus thus turns to ideas about what is ‘normal,’ how definitions of normality emerge, and how these definitions influence the expectations and behaviors of consumers (Quitza & Ropke, 2008).

Within a practice-orientation, system innovation can be viewed as a social event made up of tiny, distributed, yet inter-related acts of routine, change and design. Thus, system innovation does not depend on system scale interventions but on systems thinking in design. This urges new ways of working for design which enable the evolution of sustainable patterns of consumption through ‘innovations in practice.’

3. The hybrid approach: merging a co-design process with a practice-orientation

While most user-centered methods attempt to fit users into the design process, both co-design and practice-orientation challenge the design process to better fit into users’ lives. For this to happen, design must begin to see users as clients rather than markets; the focus must move away from final products to thinking about design as a starting point or tool, and designers as facilitators in the process (Sanders & Stappers, 2008; Shove et al, 2008). By merging a practice-orientation with the principles of co-creation and co-design, a hybrid approach is meant to explore how everyday people can be cooperatively engaged in the formation of more sustainable, more effective practices, and how the design of products and services can be re-oriented toward enabling these changes.

Shove (2006), Julier (2007) and others have proposed the ideas of “interventions that foster innovation in practice,” and “open scripted” product design which open the possibilities for changes in practice rather than fixing practices in place. Their argument is that design and innovation occur not just in the creation of individual products, but also in the larger, integrated social practices of which those products are a part. Therefore, finished products need not necessarily be the ultimate goal of the design process, but rather stepping stones or building blocks for everyday people to design more sustainable, more effective practices over time.

3.1 Principles for the hybrid approach

The following principles were developed to frame the study. These reflect a cross-section of ideas in the literature on practice-oriented design and co-design.

Dynamic, iterative, longitudinal form: The pilot study is meant to mimic a longer-term research structure in a short-term format, which can be expanded in future studies. This reflects the idea of co-creation as a continuous process of discovery and invention, and the dynamic nature of practices in terms of persistence and change over time.

Focus on the ordinary: A practice orientation suggests that concepts of what is ‘normal’ – the ordinary and routine behaviors of users – have a greater significance for sustainability than the new and extraordinary objects and technologies which design introduces to the market (Shove, 2003).

Creativity in doing + innovations in practice: These are two overlapping and complementary ideas from co-design and practice-orientation. If products exist primarily to enable practices, then innovative sustainable products should be designed to enable innovative sustainable practices, not simply to consume fewer resources. The goal is to help people reinvent ordinary practices to be more sustainable and effective.

Users + designers + sociologists/researchers: The combination of these three participant types reflects a common format in co-design and other user-centered design methods. Sociologists (or design researchers) provide analytical skills to guide the participants. Designers help to envision new practices and products that might support them. Users offer the important practical and contextual view.

Blurring of roles: This reflects an effort toward the ‘democratization’ of co-design and to reduce the distance between participants. Users are treated as equal participants rather than as mere ‘subjects’ (Sanders & Stappers, 2008), and are involved in both analysis and creative functions. Researchers and designers take part in the user roles in their personal practices, to promote design empathy and a recognition of practical consciousness at work in real life. The theoretical background of the study is explicit to all participants and used in simplified form as a tool for exploration, ideation and discussion.

Amplified interaction: This mimics forms of co-creation as seen in creative communities and social innovation. The group provides a social legitimacy and motivation to make changes in what is ‘normal,’ as well as a cross-fertilization of ideas between participants – all important factors in the dynamic social process of practice change.

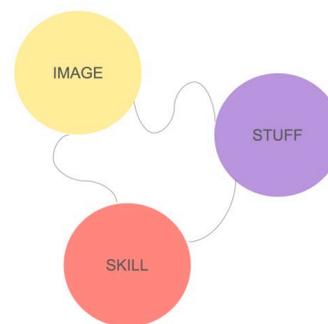
3.2 The pilot study

The exploratory pilot study brought together a group of participants to make a practical sketch of this approach – essentially to simulate what an intentional practice-oriented design community would look like, how it would work, what members would need, and so forth. The study was held in the Netherlands and involved a primarily female group coming from several nationalities, with a majority being European. This section reviews some of the principles considerations in the planning of the study.

Bathing as a case topic: The more ordinary a practice, the more relevant it is for discussions of sustainable system innovation, because it is when ‘normal’ is taken for granted that incremental improvements are favored over innovative system changes. Bathing was chosen as a fantastically ordinary practice.

Participant self-analysis: Several simplified concepts from practice theory were used to frame exercises for participants to ‘deconstruct’ their bathing practices, their idea of ‘needs’ and what is ‘normal.’ Chosen for their accessibility to participants unfamiliar with social theory and their relevance to design thinking, the following concepts were used, based on various literature by Warde (2005), Shove (2003, 2006, 2008), McMeekin & Southerton (2007):

- ‘Image, skill, stuff’ model
- Time and routinization
- Change- disruption, decay, fossilization, innovation



A model of practice
(Shove et al, 2008)

- Histories of practice
- Internal and external rewards
- Having, wanting, and doing
- Innovation in practice: ideas and experimentation

In various user research methods, ‘triggers’ are used to entice participants to think creatively and reveal latent thoughts and ideas (Mattelmaki, 2005). Practice-oriented (‘discursive’) triggers were used in the study to stir up creativity in practice – for example, by using stories of unusual practices to confront ideas of what is normal.

Experiments in practice: To promote creativity in practice, participants undertook experiments in their everyday bathing routines over the course of the study. They reacted on their experiences, imagined and shared potential ways for bathing to become sustainable, and considered what could help them succeed in their practical experiments.

Study structure: The study centred on group sessions, individual workbooks and a blog site used at home. These structures and media meant to adapt and build on the strengths of existing techniques relevant to co-design, including probes, sensitizing tools, context-mapping, and generative sessions from experience design (Mattelmaki, 2005; Sanders, 2006). These techniques are generally aimed at gathering illusive information for analysis and design grist. This study differs because it steers participants analyze their own practices and engages them in a continuous co-design process. The blog site was used, with all participants as authors, to push the co-design concept further into the area of co-creation and social innovation. The interaction was meant to encourage or simulate the kind of activities and effects of creative communities.

The pilot began with an introductory session, in which all participants met to map their existing knowledge, ideas and understandings about bathing and to begin thinking creatively about ways to experiment in their bathing routine.

In the following two weeks the participants documented and analyzed their own bathing practices using the workbooks at home. They created personal practice maps, monitored and explained their own routines, and wrote practice histories from their life and other generations of their family. They planned, implemented and documented an experimental sustainable bathing practice of their choice. On the blog site, participants discussed their experiences, ideas, and knowledge.

The pilot concluded with a workshop aimed at concept development. After sharing the results of the home-based tasks, the participants engaged in creative sessions to develop various concepts for fostering sustainable innovation in practice. This was intended to be a diversion from conventional design processes. The goal was not to create ‘solutions’ to specific needs, which can only be relevant for practices that do not change. Rather, it was



to imagine new platforms or ‘convivial tools’ (Sanders, 2006) for engaging users in co-creating new and sustainable bathing practices, where designers and businesses support and adapt to changing practices and needs. Overall, the design thinking focused on creating an open, dynamic, adaptive idea as outcome – involving users in the creation of demand through the development of more sustainable practices. In other words, the design problem was not how to make bathing practices sustainable, but how to help people make bathing practices sustainable.



Workbooks, left, and a blog, right, were used as participatory tools in the study.

4. What was learned

The primary purpose of the pilot study was to simulate a practice-oriented creative community using the approach outlined above. Because of the exploratory nature of the study, many ideas and methods were brought together in a somewhat open format, to see what worked – what ‘floated to the top’ – and what did not. Participants were asked from the beginning to give their input not only on the topic of bathing, but also on the format of the study: what was confusing, useful, useless, fun, aggravating, et cetera, and what they needed to make their experiments work. Therefore, two types of learning resulted from the study which will be described in this section: first, learning based on the content of the study, bathing, followed by learning on the approach for which the study was a trial-run. The final concepts produced at the end of the study will be explained in how they reflect this learning.

4.1 Learning about bathing

Several bathing-related themes arose during the study, included here alongside insights from previous studies on bathing practices that were used to stimulate and augment discussions on the social aspects of bathing. Because the study was not focused on gathering primary data on bathing practices, but on engaging the participants to think critically and creatively about bathing, the inclusion of existing learning was a way to advance the process quickly toward creative activities.

‘Being clean’ versus ‘feeling clean’

Whereas getting clean (washing off) was considered easy and quick, ‘feeling clean’ required more time, more heat, the right setting and products. Importance was put on the emotional as well as physiological aspects of ‘feeling clean’ – the “internal rewards” of bathing. (Warde, 2005) This reflects a definition of clean or dirty that depends more upon the circumstance of having not washed than on any real presence of dirt or smell, as Fisher & Hielscher (2008)

describe, “intangible dirt.” More importance was put on the feel, touch, and smell of products than on the effects or desired results in hair and body besides the simple task of removing body odor. Hot water was more important to relax sore muscles, warm up before bed, and to feel warm in general, than for any functional cleaning purpose. This ‘need for heat’ was expressed and said to be more important than the duration or pressure of the shower.

Participants discussed the relativity of what levels of cleanliness are acceptable: the ‘grey area’ of acceptable smells; the different standards of cleanliness which exist for work, home, vacation, et cetera; the importance of cleanliness for confidence in social situations. Participants were revealing socially constructed conceptions of cleanliness. (Shove, 2003)

Participants reported a tension between the use of bathing to relax, beat stress, prepare for the day, and the need for a fast and convenient method. Hand et al (2003) argue that showering has become the norm because of a general sense of ‘time squeeze’ on bathing practices. According to one participant, showering seemed to contribute to the hurried feeling, whereas baths were associated with relaxation and calm. A correlation was seen between levels of stress and increased resource use in bathing (frequency, duration, heat) to beat stress.

A favorite topic in the group was the overlap between the practices of bathing and exercising as two practices that fill many of the same purposes (relaxing, heating up the body, reducing stress, waking up, physical conditioning). Exercising was seen as more sustainable than showering, because it is healthy and reduces the need for hot water. This posed the design opportunity to integrate exercise into bathing routines.

Are we over-bathing?

After learning about the lower frequency of previous generations’ bathing routines and about the science of bathing for body care, participants discussed whether they were cleaning too much – not only from a perspective of resource use, but also in terms of what is healthy. One participant’s grandmother’s notion that over-bathing removes a ‘protective layer’ from the skin was validated somewhat by learning about the properties of the skin’s oil (sebum). The recognition that products often make up for the effects of other products (shampoo, soap and hot water remove oils, conditioners and lotions put them back) reflected the concepts of ‘ecologies’ of products and constructed needs which fix practices in place (Shove, 2003).

Participants saw their own tendency for ‘autopilot’ bathing and their assumption that the products ‘do the job’ – without understanding the actual physical/chemical processes that entails. This illustrates the concept of ‘distributed competence,’ where the skills of a user can be displaced by the functions embedded in products (Shove et al, 2008).

These controversies remained unresolved by the end of the study for lack of coherent objective information. For producers of personal care products used in bathing, the possible overuse and misuse of products poses a risk and opportunity. It raises a question whether the body care industry has some culpability for promoting systems of use which take a certain amount of shower time and frequency through sales of products like daily shampoos and conditioners. Participants expressed a need for more clarity in the marketing and packaging of these products about how to use them and how much to use, rather than simply to buy more. They also saw a design opportunity for new products and practices based on restoring the body-oil balance.

Do hair care products promote increased water and energy use?
 (www.shampooads.com, www.herbalessences.com/us/get_the_look/videos.jsp)

Sustainable bathrooms?

The experiences in the study raised several questions about the appropriateness of current technologies in bathrooms as infrastructures for enabling sustainable bathing practices. Given the current standard bathroom, participants who wanted to reduce their water and energy use found their options limited. Taking shorter, cooler or less frequent showers or using low-flow showerheads all felt like sacrifices of the benefits they were used to getting. In the absence of other types of bathing facilities, long showers were used for the purpose of relaxation. Trying to take faster showers to use less water therefore contradicts the need to relax. Feelings of guilt for using too much water and a responsibility to conserve run counter to the ritualistic aspects of bathing that were so important to many of the participants. A design opportunity was therefore seen – to find other rituals to relax which can replace the time spent using showers for that purpose, thereby removing guilt but not pleasure.

A model of flowing water and heat dominates the bathroom designs on the market and in use today, but participants experiences indicate that this model may be promoting unsustainable patterns of consumption while not necessarily providing the most effective and satisfactory system. Showers are meant to rinse off and warm up the body, but much of the water and heat is lost to the surroundings – the floor, walls, down the drain – thanks to this model.

The abundance of clean water in industrialized countries where the leading bathroom markets developed have helped to shape this model and generations of users have become accustomed to it. However, it is also developing to an extreme, with high-end bathtubs that are designed to overflow and stylish sinks with elegant drains that do not ‘stop up’ to retain water and in some cases even eliminate the basin altogether. The design trend for open, airy bathrooms, which consequently brings cool air into the bathing area, is inconsistent with the ‘need for heat’ that bathers desire. Similarly, bathroom fans, meant to reduce moisture build-up in houses, also pull the warm moist air out while bringing cooler air into the bathroom. Participants with cold bathrooms talked about wanting to take longer, hotter showers to combat the cold, and ‘preheating’ bathrooms by running showers for several minutes before stepping under the shower.

This model equates luxury with the continuous flow (and waste) of water and heat down the drain. Consequently, ‘luxury’ and sustainability are often seen as contradictory terms. However, not only does this flowing water and heat model result in increased impacts, but it is not necessarily the most effective approach for bathing. It conflicts with what people do

and makes it more difficult for people to try more sustainable practices which are also satisfying.

Some participants found ways in their experiments to integrate reduced water and heat into more luxurious, healthy and effective bathing practices, though their bathing facilities often made it difficult to go far with these ideas. For example, a 'slow bathing' experiment in the study showed a model and image of retaining water and heat that could be reshaped as a vision of ritual and relaxation as well. Design ideas in the group show an opportunity to tie these aspects together in new whole bathroom designs, individual bathroom products, and retrofitting products. Ideas already promoted by mainstream trends, such as relaxation, relief, pampering, reward, coziness, wellness and spa-like features, suggests a chance to build on existing trends to promote more efficient, effective and luxurious bathing practices.

The rigidity of existing bathroom structures is a problem for changing bathing practices. With a long replacement cycle, highly specialized bathrooms literally 'cement' structures in place and therefore the conditions for bathing. This can promote a 'lock-in' for certain types of bathing practices. Participants showed that bathing includes many diverse forms and purposes, based on the time of day, the season, the individual, and the practical aspects of the moment, although the facilities were the same. The idea of flexible bathroom structures would allow users to reconfigure the space to facilitate new practices, modelled more like furniture than current installations. Taps and other fixtures would offer more options, greater variability and control.

These lessons and questions suggest that many of today's bathing systems are both unsustainable and ineffective for people, but then how can they be so widespread? Perhaps it is simply because people are 'used to' it – explained in Bijker's concept of 'obduracy' (Hand et al, 2003). Clearly, such changes require a shift, or repositioning, in the norms of bathing. The good news is that there is a double-dividend to motivate such a change: better bathing plus saving water equals guilt-free bliss. This gives users reasons to participate in experimental efforts to redesign bathing practices like this study.

4.2 Learning on the approach

Because of the exploratory intention of the study, participants were involved in discussing not only the subject matter of bathing, but also the format and overall approach of the study. The following gives examples of what was learned about the approach.

Self analysis. Exercises using concepts from practice theory asked participants to look critically on their bathing routines. While the participants only had time and information to gain a superficial understanding of these concepts, the simplicity helped to get the ideas across quickly. Some participants reported being confused by the concepts at times, but overall, the analytical exercises did seem to help participants take a more critical look at their routines as the study progressed. The 'Image-Skill-Stuff' model (based on Shove, Warde, and others) gave a semi-structured framework for participants to dissect the social, practical and material factors at play in their bathing routine. Learning about histories of a family member helped to challenge their ideas about what bathing practices and definitions of cleanliness are 'normal' and proper, while the closeness of the subject helped to make them comfortable accepting different standards. These and other analytical exercises proved useful and fun to help participants recognize their own expectations and behavioural norms, and to see the potential for changing everyday taken-for-granted practices.

The experiments. Participants enjoyed their experiments, despite the disruptions they caused in their daily lives. They talked about being inspired, feeling a sense of gaining control over

something they had taken as given or automatic. While participants had very elaborate bathing rituals before the study, they had mostly only added new products in the past, and rarely questioned products and behaviors that they considered normal. They enjoyed breaking their own pattern, and making it more efficient.

Participants were given the choice to change their bathing routine to reduce the environmental impact or to simply make it more effective for them. Even though most of them were recruited without being told that sustainability was part of the study, almost all participants chose to reduce their impact. Even so, several found that the changes made did improve the effectiveness of their routine as well. Those who did not have such an improvement during the two weeks saw it as the start of a learning process rather a failure, and wanted to keep the experiment going.

Legitimacy and comfort. The 'support group' format (of sorts) provided an important legitimizing force for participants to change practices normally governed by strict social norms, including expectations of what is clean and acceptable. The personal contact with the group provided a level of trust while a certain amount of anonymity made it easier to go outside their usual social boundaries. Participants were more willing than expected to try things that are socially uncomfortable, such as using shampoo less often, and after the two weeks, they were more inclined or able to address the social aspects of bathing.

Motivation. Several participants reported difficulty fighting the force of habit and personal expectations when trying to make changes in their routines. According to Giddens's concept of 'practical consciousness,' routine has a power of its own, beyond the logical thought of the person performing it. The peer pressure and accountability from the group motivated many who said that the blog and the knowledge of other participants helped to keep them going. However, the short time period made it difficult to make a lasting change. Additionally, working together toward changing their practices helped to encourage a feeling that one's actions can have an impact greater than simply a direct reduction in water or energy.

Information. The lack of objective information available to the public about the science of bathing was something that bothered several participants. Those who did research to learn about alternative bathing practices found themselves negotiating between marginal information given by fringe experimentalists that had little institutional legitimacy and industry-biased information provided by the companies which sell mainstream products.

Feedback. Some participants found it hard to see what quantifiable progress they had made, in terms of water or energy saving, or in terms of skin and hair care. They could only use their senses and common sense to judge their progress. Beyond the timers, water/heat monitors, and various other eco-feedback products already on the market, participants hoped for feedback systems that were more convenient to use and more dynamic: to make comparisons with ones own practices and others; to track totals by event/day/week/month; to measure not only water use but also energy use and pressure; and to connect with incentives in billing/smart metering.

MailOnline

femail

Could you survive without shampoo?

By DIANA APPELYARD, Daily Mail
Last updated at 23:12 05 July 2006



Stories which confronted social norms of bathing were used as triggers for participants to rethink bathing practices. (Appleyard, 2006)

Ideas and tools. Inventing alternative practices from scratch, which alter well-established configurations, is not easy; it requires creativity, courage, and the ability to envision something entirely new. Participants asked for ideas for experiments at the beginning, and wished at the end that there had been various tools to help them with their experiments. Participants with a design background, trained with such skills, provided the group with many of the new ideas. The design of new, more elaborate tools and methods – ‘practice prototypes’ – would help in the actual implementation of these new ideas.



4.3 Final concepts

Participant groups produced three concepts in the final workshop which clustered together many of the ideas and bathing themes generated during the two week study, such as incorporating exercise into bathing, reducing dependence on body care products, and forming ‘slow bathing’ routines which promoted reduced water use in a more relaxing experience. More significantly, the final concepts reflected many of the lessons learned about what elements would be necessary in practice-oriented co-design groups. For many participants, the concept development phase was used as a way to build on the strengths and shortcomings of the study format to envision more complete and long term formats. In this and other ways, the concept development was a co-design exercise on the structure of the study itself.

The aspects of motivation and legitimacy were addressed in each of the concepts through the combination of social networking websites with real world activities, including online profiles, workshops, meetings, camps, competitions, et cetera. Multi-function websites provided a portal for participants to share ideas, advice, and information. Real-time interactive feedback mechanisms for water and energy consumption were imagined as integrated into the functions of the websites. Tools for facilitating bathing experiments were considered in the formats of ‘start-up’ toolboxes, do-it-yourself bathing products, and ‘products that make you think’ such as a ‘once-per-week shampoo.’ Services were proposed to connect participants with professional, objective bathing-related experts (dermatologists, chemists, et cetera) who could help inform the experiments. Informational campaigns were also imagined to recruit participants and inform the public about sustainable bathing practices. Product development cycles were integrated to use the ideas and information of participants in developing and testing new products for new types of bathing.

5. Conclusions and discussion

As an exploratory study, a number of important lessons have been learned, new questions have been raised, and many kinks remain to be ironed-out in the techniques. However, the experience of the first pilot generated considerable optimism for the primary principles of this approach and formed a starting point for developing a practice-oriented design methodology. The study demonstrated in a small way the viability of the idea that practice-oriented co-design groups can speed up the process of social-practices evolution. Participants were able to see not only the social norms which pushed them to engage in certain practices, but to understand how these norms are created, recreated, and undone in the course of their own performance of those practices. Such groups can begin to challenge the norms and structures, including material structures, which promote unsustainable practices.

The idea of practice-oriented co-design presents a potential to empower users to influence change in their designed context for living more sustainably and to empower designers to think about sustainability at a system level in a practical and integrated way. If this study is any indication, people are willing and interested to change their routines – to be involved in shaping sustainable future practices – and are rewarded by it. It is not about sacrifice, but about taking back control of practices and being creative. Designers are not charged with a task to invent a more sustainable system, but rather to provide the tools to help regular people and industry to work together to co-evolve practices and products toward a more sustainable system. Products are part of the design process, not the outcome of it; design is a dialogue, not a performance.

In addition to this ideological discussion, some practical lessons and ideas were generated for the Living Lab and other design studies of this kind. For example:

- It is important that these studies use a dynamic platform that operates in real world, rather than studying in hermetic lab environment only. Social networking capabilities (web 2.0) have a real potential to get many people involved in being creative around practices, and must be combined with real-life interaction and learning in-context.
- Depending too heavily on participants at computers takes away from the reality of actual practices, so more action-oriented methods for information collection would be useful. Interactive technologies, such as domotics, using two-way and interactive feedback systems can enable an easy and on-demand way for participants to give important contextual information, remarks, and ideas to researchers and other participants.
- Practice prototypes can be designed and tested in real life environments, such as participants' homes. A prototyping lab would allow for more elaborate prototypes to be experienced and tested by participants.

Finally, a bit of controversy was raised earlier in this paper. A practice orientation sends a warning that not only can design enable people to do things they could not do before, it can also disable people by reducing their options for practical behavior, making them passive users and locking them into patterns of consumption which they might be more happy to change. Industry therefore has an interest in pursuing a practice-oriented approach. While current environmental assessment methods measure quantifiable direct impacts, might future methods integrate behavior-based impact assessments? As society's approach to sustainability evolves: will industry be held accountable for promoting unsustainable behaviors?

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