

# Pee poo period: exploring the intersection between shame, bodily fluids, and sustainable design

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## Abstract

More and more designers are engaged in developing products and services that can accommodate both the urgency of an ecological crisis and the needs of consumers. Although many reusable solutions have reached the market and been brought into our homes, some products are more resilient to change, especially those connected to bodily taboos, sanitation, and hygiene. It is imperative that designers concerned with sustainability are also equipped to recognize how feelings of shame can sustain social practices with a negative environmental impact. This paper aims to describe what can happen when designers use concepts of shame and bodily taboos to navigate the design process and discuss how this applies to sustainability research. The paper is a result of a two-day qualitative workshop in which eight professionals from design, architecture, and art were asked to revise disposable products connected to urination, excretion, and menstruation (e.g., incontinence pads, toilet paper, and sanitary pads/tampons) and create interventions that could make such products undesirable or obsolete. Divided into three groups (pee, poo, and period), the participants were introduced to various prototype design tools to give them a vocabulary to identify and talk about shame and its relevance to design. As a result, the three groups consolidated their ideas into three design concepts which were presented and given feedback. By the end of the workshop, a survey was sent out to the participants, and an open discussion was held to evaluate the course of the workshop and the usefulness of the tools. The outcome of this workshop shows that decoupling sustainability with concepts of shame can be a fruitful way to support design research with new insights and critical perspectives. Having the tools to include such considerations in the design process seems crucial to facilitate consumers' uptake of reusable solutions. However, the workshop also indicated that the provided tools could be further developed to create more concrete and applicable solutions to sustainability issues.

## Author keywords

workshop; sustainable design; reusable products; shame; bodily taboos; design practice

## Introduction

The widespread use of single-use plastics has led to a shift in the perception of plastic as a valuable material to a waste product with a limited usage period (Greenwood et al., 2021). However, nowadays, many consumers are becoming more conscious about their ecological footprint and aspire to a more sustainable lifestyle (Lubowiecki-Vikuk, Dąbrowska, and Machnik, 2021). Along with this increase in environmental awareness, many reusable alternatives to single-use products have reached the market and been brought into our homes. However, some of these products seem more resilient to change. Next to practical, economical, or health-related reasons, the embarrassment of the topic the product connects to can act as an additional threshold to changing behaviors (Peberdy, Jones, and Green., 2019), such as products linked to perceptions of hygiene, the human body (Lamont, Wagner and Incorvati, 2019), and the fluids (Kama and Barak-Brandes, 2013) it produces. There is a significant taboo surrounding reusable hygiene products, especially those connected to urine (e.g., diapers), excrement (e.g., cloth wipes), and menstrual blood (e.g., menstrual cups), which still results in significant negative environmental impacts caused by their disposable counterparts (Hait and Powers, 2019). While the reluctance to adopt these reusable products might be rooted in common perceptions of convenience, cleanliness, and hygiene, it is not always clear whether these perceptions are grounded in scientific data or an outspring of social constructs. For example, multiple studies have found that reusable menstrual products are just as effective at maintaining menstrual hygiene (van Eijk et al., 2019; Van Eijk et al., 2021; Metha et al., 2022).

A few designers have engaged with taboos and bodily fluids such as menstruation blood (Søndergaard, 2020), urine (Helms, 2020), and excretion (Wilde, 2022) through domains of norm-critical and social design. Still, the implications of considering shame and taboos to sustainability seem unexplored, leaving designers unequipped to recognize how taboos and feelings of shame can sustain social practices with a negative environmental impact.

This entanglement between sustainability and taboo also represents the intersection of the two research projects this



paper is connected to. One is concerned with creating long-term usage of reusable alternatives for single-use products, and the other investigates how shame affects behavior and plays a role in design. While shame can be experienced as a social threat and painful momentarily, it can also be a motivational force for prosocial behavior (Scheff, 2003). Shame is a self-conscious emotion that depends on social conditioning and tells us something about right and wrong (Tangney, Stuewig, and Mashek, 2006). It can act as a social control mechanism and a behavioral agent with both positive and negative effects (Trondsen and Boks, 2022). In some cases, shame can nudge us into more socially healthy behaviors (e.g., avoiding littering in public), while in other cases, it can act as a threshold to doing things differently (e.g., swimming naked). Considering the social and moral capacity of shame, it becomes interesting to question how this plays out in the context of sustainable design. In this paper, we aim to discuss how taboos concerning bodily fluids impact sustainability and the acceptability of solutions. We also explore the usefulness of including different shame tools and to what extent this helps designers to identify and work with these taboos to create more effective interventions.

### Workshop: Pee, poo period.

A two-day workshop was held on the 13th and 14th of June 2022 in Trondheim, Norway. The workshop was named "Pee, poo, period: an explorative workshop exploring the intersection between shame, bodily fluids, and sustainable design." As indicated by the title, the goal of the workshop aimed to investigate sustainability in a taboo context, focusing on disposable products related to urination, excretion, and menstruation (pee, poo, and period) and the pitfalls of their reusable counterparts. The workshop included eight participants of experienced practitioners and researchers from different areas of design, architecture, and art recruited through a physical and digital poster. A diverse group of people with different cultural backgrounds participated, including two men and six women, with seven different nationalities (from North-American, Asian, and European countries) and ages ranging from the early twenties to mid-fifties. During the workshop, the participants were randomly divided into three groups, each focusing on a different bodily fluid (pee, poo, or period). Each group was asked to "develop and visualize a critical or speculative design concept in which disposable pee, poo, or period products become undesirable or obsolete." We specifically challenged the participants to think more critically and speculative to ensure that they would open their creativity to think beyond what we consider and often take for granted as being normal. To do so, the groups would follow a design process facilitated by a booklet containing information about different exercises and tools. The booklet was based on an earlier workshop done by one of the researchers in Antwerp in February 2022.

The workshop was planned and conducted by the two design researchers, who shared the roles of moderator and notetaker. The first day focused on introduction, group discussion, and gaining insights, and the second on problem framing, ideation, and concept development. Each step of the design process introduced the participants to various shame tools and exercises, giving them a vocabulary to talk about and identify shame, and discuss its relation to norms and social behaviors. These tools were prototypes based on

previous iterations, and a significant part of this workshop's agenda was testing how the participants would use these tools and factor them into their design process. At the end of the workshop, the participants filled out a questionnaire to evaluate the course of the workshop and the tools they used. Finally, we held a discussion to assess the workshop more in-depth together with the participants.

### Activating a sustainability mindset

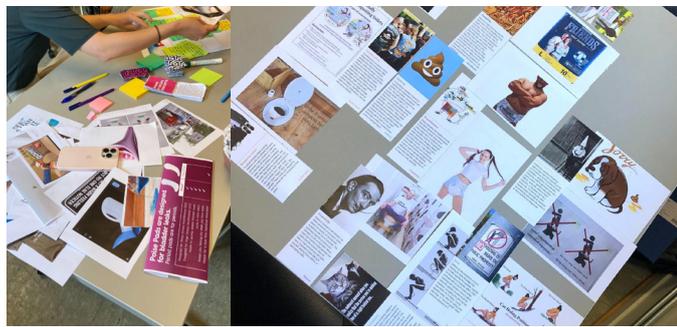
The participants were introduced to a range of sanitary products connected to their topics and asked to start the workshop by doing an exercise to "activate their sustainability mindset." This exercise prompted brainstorming on more environmentally friendly solutions connected to their topic. It could be by redesigning an existing product or creating a new one, or by removing a specific problem or introducing a new one. During this exercise, eager discussions arose within the three groups, including sharing various critical perspectives. They questioned societal expectations and cultural differences, asking why women have to hide their menstruation to be perceived as productive, why it is embarrassing to ask for a toilet break in social settings, or whether it is more sustainable to use water or toilet paper. Although this first exercise focused on sustainability, the group's discussions quickly questioned shamefulness and normality regarding these three bodily fluids. Perhaps due to the overall topic and openness of the workshop challenge (i.e., "make disposable products obsolete"), the participants engaged with cultural extremes, social differences, and historical discourse right from the very start. As a result, most of the proposed solutions following this exercise would attempt to challenge the current norms, create openness towards other social practices and counteract taboos.

### Using a "shame lens."

After giving an introductory lecture on shame, the participants were provided with two tools to help them map out their topic, investigate shame more in-depth, and search for new insights. The first tool prototype, *social concept cards*, is a card deck of 64 different cards divided into 16 categories that provide a vocabulary to discuss and identify how shame takes place through socio-cultural phenomena. Examples could be guilty pleasures, cringe, euphemisms, forbidden fruits, stigma, taboos, softening, and stylizing. However, rather than using all the cards one by one, the participants were free to pick the social concepts they found most relevant, interpret those to their topic, and use them as general inspiration to bring about insights (see figure 2).

The second tool, *shame stretching*, can be used in combination with the first one and is an exercise in which the participants find various cues or signs of shame (including those extraverbal) and place them on a canvas, stretching between extremes and exploring nuances of shame. These cues (or signs) of shame could be memes, Instagram posts, research articles, forum threads, Wikipedia articles, news headlines, advertisements, etc., that participants found important for their topic (see examples in table 1). While collecting these cues, they were also continuously arranged and rearranged on a shame-stretching spectrum, where implicit-explicit, affirmative-critical, hidden-accessible, private-public, and clean-unclean were some of the extremes or opposites explored. Some of them were suggested, and some were self-conceived.

Combined with printed images and text found online, these two tools were proposed to guide the groups to investigate their topic through a “shame lens,” enabling them to identify and dig into products’ entanglement with social behaviors and norms. Although the tools were prototypes and tested as part of this workshop, the exercise was received positively and sparked exciting discussions. Some of these discussions concerned the meanings and definitions of shame, changing social norms surrounding shame, and the influence of these norms on individual feelings and behaviors. The tools helped the participants spin off each other’s associations, thinking, and ideas, contributing to collective thinking. New social concepts were suggested to be included in the card deck, and the participants’ experimentation with different polarities on the shame-stretching canvas illustrates how these tools engaged them to open their minds and include new perspectives.



**Figure 2.** Left: Pee-group discussing and organizing the cues they have printed out. Right: Some of the cues the Poo-group found and inspired by the social concept cards (pictures taken by the authors).

**Table 1.** Example of some cues the three groups collected

Social concept	Cue description	Source
Euphemism	“Have to go number two”	Dictionary
Stigmatizing	How to smuggle a tampon into the bathroom	Wikihow article
Guilt tripping	“Mistakes you do during your period”	Healthywom-en.org
Closeting	“Urine Gone! Stain and odor eliminator”	YouTube video
Dark humor	Saran wrap toilet prank	Forum thread
Stylizing	“Go Girl”s pink peeing funnel for women	Advertisement

### Making the implicit explicit

The second day of the workshop started with summarizing the previous activities by using a *discourse tool* (right and wrong statements). This exercise was given to help the groups close in on a problem statement by supporting them in expressing norms and conventions in a somewhat absurd yet more explicit manner. To make this a tangible task, it was suggested that the groups could animate a chosen product and give it a voice to make statements about right and wrong. For instance, the poo groups could use the toilet paper as an example and ask themselves, if the toilet paper could speak, what would it say would be acceptable and not.

### Presenting ideas

For the ideation phase, the participants did a group exercise using *forced associations* which is a tool meant to override logical thought processes and support out-of-the-box thinking. In short, this is a creative technique in which the participant uses a card deck of adjectives to develop new ideas based on improvisation and artificially paired words. Afterward, the participants selected their three top ideas and presented them to an external audience consisting of a small group of employees from the design department. Based on this feedback session, each group spent the remaining day developing a final concept and preparing for a presentation.

**Table 2.** Summary of the pee, poo, and period group’s concepts

	Pee	Poo	Period
<b>Idea</b>	Critique to norms considering urine as a waste product that is dirty and needs to be disposed of.	Critique of modern toilet practices and its lack of attention to the health benefits of other historical practices.	Critique of the cultural belief that periods limit productivity and are something that needs to be “fixed” and hid-den.
<b>Concept #1</b>	A bodysuit that ex-tracts heat from urine and circulates it around the legs and body.	Using water to clean and a reusable towel to wipe afterward.	A retreat room in the workspace/ schools dedicated to someone on their period.
<b>Concept #2</b>	“Free Pee Tivoli”, an amusement park where you can have fun with pee.	“Poop Journal”, an app with the possibility to keep track of toilet routines.	A state regulation that makes a retreat room mandatory in every new building.
<b>Concept #3</b>	A nationwide cam-paign to negatively frame products that hide pee.	A quiet, artistic place where you can poo but also reflect.	Educational infor-mation about men-stru-ation and sustainabil-ity.
<b>Final concepts</b>	<p><b>Pee yourself:</b> A counternar-rative to the embarrassment of peeing one’s pants. It is situa-ted in a bit of sci-fi, and dystopian fu-ture, where there is less electricity and water is acces-sible. It provides people with body wear that allows them to utilize their own pee to warm up their bodies and reuse the fluid to provide drinkable water. Thus, disposables are phased out, warmth is ge-nerated without electricity, and water is saved.</p>	<p><b>Gentle water:</b> A solution that is both sustaina-ble and artistic, providing people with a space of contemplation and retreat. The cleaning mecha-nism is based on using water and takes inspiration from Japanese culture and activities with a ceremonial character and a sense of aesthet-ics. As opposed to the seman-tics of modern toilet paper, this concept allows people to add care and attenti-on to their toilet practice.</p>	<p><b>Retreat space:</b> A safe retreat space in office- and school build-ings dedicated to menstruating people. Some-what inspired by practices from other cultures, the concepts at-tempt to create a public space for menstruation. Instead of trying to normalize the condition by ignoring it, hiding it, or making it a private matter, the concept ma-kes a statement by increasing awareness about the very real needs and bodily reactions of menstruating people.</p>

The results of this are shortly summarized in table 2 and in the following paragraph.

### Questionnaire

An anonymous semi-structured survey was shared among the participants at the end of the workshop. The first block considered a general evaluation of the workshop: whether they enjoyed it and what part they found most memorable. The next block highlighted the shame aspect: how freely they could talk about the topic and what made this easier or more difficult. The following block emphasized the tools: whether they provided some new perspectives, helped complete the workshop goals, and the option to give detailed feedback on each tool separately. In the end, there was an option to give suggestions and general comments. The results were processed mainly qualitatively in Excel, using descriptive statistics for the closed questions and open coding for the open questions.

The results showed that the participants enjoyed the workshop, with group conversations, working in small groups, and using the toolkit indicated as the “most memorable” parts. Many participants found the workshop inspiring and noted that it helped them feel creative and free. One participant found the workshop somewhat limiting, mentioning that the gender gap and the sensitive nature of the topic made it difficult to express themselves fully. However, although most participants did not know each other up front, they felt comfortable discussing the topic as no disclosure of personal information was required when using the different tools. Amongst the tools used in the workshop, *forced association game* was the most popular, as it helped generate new connections and create ideas. However, one participant felt that it dictated the process too much and led to unrealistic solutions, not in the least because of the limited time available, leading to the first associations often being accepted as a starting point for the next discussion. *The shame stretching* exercise was helpful in categorizing materials and identifying tensions, but some participants found it confusing to interpret the results. Another observation was the fact that participants ideally have access to a browser and printer to find and ‘play’ with (and stretch) the found social manifestations of shame. The *discourse tool* with right or wrong statements effectively highlighted social norms and values, but the focus on sustainability was not always clear. In terms of improvements, participants suggested making the topic more specific (e.g., focusing on a single product or product category) and being more explicit about the critical and speculative design part. They also suggested emphasizing the body, prototyping, and using more visual materials. Overall, the workshop provided valuable perspectives and tools, although some participants felt the resulting concepts could have been more realistic.

### Post-workshop discussion

After completing the survey, we had a half an hour discussion with all the participants to evaluate the workshop in-depth and get more detailed feedback. The workshop was well received by participants, who appreciated the opportunity to tap into their creativity and step outside their usual mental frameworks. In particular, the *social concept cards* and *forced association game* received positive feedback, with many participants expressing interest in using them in future

design workshops and assignments. The *forced association game* was especially effective at generating new insights, though some participants noted that such wild ideas sometimes pulled their focus away from sustainability. The direct application of some tools, such as the *shame stretching* and *social concept cards*, was confusing for some, most likely due to the lack of a guide on using them since the participants were free to use them as they saw fit. The hands-on activities, such as printing and making tangible materials to work with, were generally well received. The booklet provided a clear structure for the workshop, and the second day, more focused on the creative process and generating ideas, was the most enjoyable. However, the first day was considered necessary to prepare for the second day, think on a deeper, less generic level, and enable an atmosphere where one could discuss and collaborate more freely.

### Discussion

The workshop provided a platform for exploring the intersection of shame and sustainable design through qualitative data collection. Both researchers analyzed the data together, and the evaluation survey was discussed in-depth with all participants, improving internal validity.

The original idea of the workshop was to experiment with a design process combining sustainability with taboos. While the workshop promoted considering both of these elements, the discussions and concepts presented by the participants took much of a norm-critical character. Although sustainability was not lost in the process, it became more focused on social issues such as inequality, stigma, and freedom and less on the environmental dimension. Interestingly, when challenged with designing with both environmental and social concerns in mind, all groups leaned towards problematizing the social conditions. Thus, the three final design concepts concerned bringing social norms and conventions up for discussion, whereas environmental sustainability became a secondary outcome of challenging those norms. While not intentionally planned, this direction did not come unexpectedly, as including shame concepts and tools invited a socially engaged and critical mindset. Furthermore, the participants’ knowledge (mainly researchers) may also have affected the results. Still, we believe that the open interpretation the workshop allowed for, together with guidance from tools, were the main drivers of these speculative design tracks. Especially the last ideation tool could have influenced the design direction, allowing for more wild and speculative ideas and steering away from more pragmatic scenarios. Albeit well received by the participants, the tool could have been added earlier in the process, allowing them to reflect and ground their ideas into a more realistic setting before moving on to a final concept.

Although sustainability concerns could have been more emphasized in the workshop, providing more precise guidelines, the overall theme and setup received tremendous positive feedback. Such a free and open-minded exercise allowed the participants to include different and more critical perspectives than other Design for Sustainability approaches. They participated eagerly in their discussion, showing curiosity, enjoyment, and signs of having fun. Some participants mentioned that the context allowed a safe space for bringing in arguments, and one could question if being able to engage with taboo-prone topics playfully causes attraction in itself. Although the mundanity of the topics can bring about con-

nections to one's personal experience, the participants indicated that the exercises in the workshop facilitated discussion while allowing them to stay on a non-personal level and making it possible to engage with excitement without feeling vulnerable or exposed.

Overall the workshop setup was proven valuable as the tools provided supported the participants in bringing new insights to their topics. Given more time, it could have been interesting to challenge the participants to use these critical ideas as input for designing more realistic concepts, considering how shame acts as a strategy for affording more sustainable behaviors rather than just a narrative for norm critique. As the tools provided during the workshop were seen as helpful in broadening perspectives, this also can act for opposing a more dictated process directly aimed at specific sustainability-focused goals. Limiting to a more specific problem area and product category or emphasizing barriers and enablers of hygiene-related products could have helped to counterbalance this, which is important learning for further research by the authors. Focusing on a particular tool or exercise from the workshop, and in closer connection to one particular sustainability issue and/or combined with other Design for Sustainability tools, could be another approach to investigate the value of the shame tools more in-depth and more explicitly in an environmental context.

Although not mutually exclusive, this workshop's result indicated a spectrum where a sustainable and norm-criticality mindset could appear in an alliance but also position themselves as opposing extremes. This polarity also reflects the meeting point of our research topics, a conflict worth discussing. Despite some discontent that the environmental dimension was less present in the final concepts, making them more speculative than realistic, value also arises when detached from conventional thinking. This was evident among

the participants as they made new connections between culture, behavior, and design and included perspectives that would have been hard to imagine initially. One participant also mentioned that the workshop made them think differently about sustainability, not as a technical checklist to be completed but as a much more complicated system of human factors. Another participant said: "We will not be 'done' even if we can change everything disposable into reusable products." Thus, indicating a value shift from consumerism and productivity to care for the environment by recognizing its entanglement with human relations.

## Conclusion

The workshop provided exciting insights into the usefulness and practicality of shame tools in sustainability design challenges. The results demonstrated that a better vocabulary and awareness of shame could support designers in identifying how this emotion can hinder and promote sustainable practices. Using the tools, the participants could effectively design with shame in mind, resulting in ideas that attempted to challenge and counteract societal norms and taboos. At the same time, the sustainability aspect moved somewhat into the background during the workshop, indicating that further development of the tools is needed to generate more practical and applicable solutions to sustainability issues. It would, for example, be interesting to put more emphasis on the possibilities of using shame to drive consumers towards more sustainable practices and behaviors. However, incorporating shame into design research provided valuable insights and critical perspectives on sustainability. Finally, the workshop reflected a complicated but perhaps non-avoidable entanglement between sustainability, taboos, and social concerns and exemplified how designers can respond to this.

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