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## RESEARCH ARTICLE

### Making 'shiny' or avoiding 'sticky': a cross-cultural comparison of household bathroom cleaning practices

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This article examines how people's life course and cultural backgrounds impact their consumption practices, particularly in the use, disposal and treatment of water in bathroom cleaning. We explore this through 12 oral histories from Brazilian and English residents, including locals, migrants and cross-national couples. Our findings provide an account of cleaning routines in two cultural contexts, offering insights for those addressing sustainability, consumer behaviour and water governance. Our research suggests that culture, upbringing, expectations of cleanliness, and social and material contexts all shape how people clean bathrooms, and when contexts change, material elements become particularly influential.

Key words bathroom • cleanliness • cross-cultural • household • practices

#### Key messages

- Brazilians and English people achieve cleanliness differently.
- Infrastructure influences, but does not change, the way people would like to achieve cleanliness.
- People's upbringings shape how they perform the practice of bathroom cleaning.
- The symbolic meanings attached to bathroom cleaning are different for the Brazilian and English respondents.

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#### Introduction

Imagine your bathroom. You go in, take a shower and are about to leave the room. Then you notice the floor has dust and hair on it, and you realise it is time to clean. How do you do it? What equipment do you need? What is the procedure? Why do it this way? How do you achieve cleanliness? We do not usually think about the rationale behind our daily household practices, and accept them as normal. Adressing these questions, this article explores the overlap between the theory of practice (Shove et al, 2012), the household environment (Barbosa and Veloso, 2014; Darmon and Warde, 2019; Alda-Vidal et al, 2020) and the consumption of a natural resource: water (Barbosa and Veloso, 2014; Coutard and Shove, 2019; Yates, 2019; Plessz et al, 2022).

The household environment is a personal space where we feel safe and comfortable. To protect ourselves, we must take measures to survive. Unlike our ancestors, we no longer face threats from predators, but instead from biological agents like viruses, bacteria and germs. Thus, it is essential to keep the home clean (Shove, 2003). This environment also has rooms with a strong connection to cleanliness, such as bathrooms. This place has been associated with both degeneration and purification (Santos and Toledo, 2011), making it an interesting topic for studies from multiple disciplinary perspectives, such as sociological (Gregson and Lowe, 1993), biological (Lindberg et al, 2021) and infrastructural (Quitzau and Røpke, 2008), demonstrating the plurality of both research fields and also empirical designs.

In this sense, our opening questions about bathroom cleaning practices reveal that practices are shaped by culture, as different people may clean differently, and indeed consume more or less resources than others to perform household practices (Shove, 2003; Richter, 2011; Barbosa and Veloso, 2014; Jack, 2017). Elsewhere, authors have noted that increasing amounts of resources are needed to achieve socially shared standards (Pullinger et al, 2013; Jack, 2017; Hansen, 2018), influenced by traditions, customs and trajectories of practice (Shove, 2003; Santos and Toledo, 2011; Barbosa and Veloso, 2014; Darmon and Warde, 2019; Aro, 2020; Plessz et al, 2022).

Here we focus on bathroom cleaning practices in the UK and Brazil. In Brazil, people pursue high standards of cleanliness in the home, which requires more resources such as chemical products and water (Neves, 2004; Barbosa and Veloso, 2014). Meanwhile, the English are more permissive with more superficial cleaning practices (Shove, 2003; Berkholz et al, 2010; Knamiller, 2012). Social conventions also influence cleaning practices (Jack, 2013; Kruschwitz et al, 2014; Belke et al, 2019; Miilunpalo and Räisänen, 2019; Plessz et al, 2022), emphasising the importance of this discussion.

Previous research has investigated how practices are organised and how they change over time (Shove, 2003; Shove et al, 2012; Barbosa and Veloso, 2014; Plessz et al, 2022). It has also explored how people from different cultures perform the same practice (Darmon and Warde, 2019) and the overlap of practices in everyday life (Shove et al, 2012; Barbosa and Veloso, 2014; Evans, 2018; Yates, 2019; Evans et al, 2020). This study, however, is unique in exploring current practice dynamics as the result of the life course of adults from different cultural backgrounds. It reveals the evolution of a consumption practice through different circumstances and contexts, as people's choices impact the use, disposal and treatment of a specific natural resource (that is, water).

This article reports on our empirical work with Brazilian and English residents using an oral history method to discuss a household water-consuming practice: bathroom cleaning. We compare the two countries because they have similar water availability and quality. England is classified as having 'sufficient' water (between 2,000 and 10,000 m<sup>3</sup> per capita/year), while Brazil is considered 'rich' (between 10,000 and 100,000 m<sup>3</sup> per capita/year) (Rebouças, 2015). This puts the countries in similar realities. We chose two regions with adequate water availability, so we can observe the cultural influence on water use.

We studied the practice of cleaning bathrooms, a space associated with excretion, intimate and, sometimes, unconfessable actions. We sought to understand the relationship between rational (choosing resources to clean the bathroom) and cultural factors (interpreting the symbolic meanings associated with the bathroom and triggering emotions that direct cleaning decisions). We also compared this practice across cultures, revealing their singularities. Our discussion provides insights into how public policies should target communications to achieve environmentally friendly water-consuming behaviours.

We review the literature on the relationship between practices, the household environment and water consumption, explain our methods, and present results exploring Brazilian and English bathroom cleaning practices from the perspectives of locals and migrants. We conclude by exploring the previously mentioned questions and discussing contributions, implications and potential future research.

# Background and theoretical premises: household practices and water consumption

Academic interest in water-consuming practices has persisted for over two decades (Spaargaren, 1997; Shove, 2003; Browne et al, 2013; Kruschwitz et al, 2014; Belke et al, 2019; Miilunpalo and Räisänen, 2019; Evans et al, 2020). These works focused on the roles of practical consciousness and discursive consciousness on the performance of water-using practices (Spaargaren, 1997), demand management of water consumption in everyday practices (Browne et al, 2013; Kruschwitz et al, 2014; Belke et al, 2019; Miilunpalo and Räisänen, 2019), appropriation of technologies and their interaction with 'local needs, structures, and patterns' (Evans, 2018: 12) and the trajectory of water consumption patterns (Shove, 2003). There is a gap in discussing the cultural associations attached to the consumption of a natural resource in an everyday practice and how these symbolic meanings are culturally constructed through one's life.

Many household cleaning practices share common material elements across modern society, such as water, sponges and chemical products. However, there is variation in how these elements are used in different places. Further, objects and infrastructures (materials), skills and learning processes (competencies) and socially shared understandings (meanings) are essential for performing practices (Shove et al, 2012). The way in which a practice is performed can vary greatly in different societies, depending on the trajectories of development that these practices have had (Shove, 2003; Brahic, 2013; Darmon and Warde, 2019). People's experiences of managing and coping with a particular situation constitute a form of practice memory, inviting exploration of how practice memories are socially and culturally shared (Strengers and Maller, 2017).

Weather is conceptualised as a material element of practice, with remembered ways of handling it resulting in material intertwining (Strengers and Maller, 2017). If we use

this logic in thinking about water-consuming practices, we find that many household practices, such as washing (for example, clothes, dishes), personal hygiene and cleaning, require different amounts of water depending on how they are performed (Knamiller, 2012; Pullinger et al, 2013; Belke et al, 2019). Although similar practices are performed around the world, the elements of practice are organised differently, as are the use of cleaning products (Joshi and Rahman, 2015), infrastructures (Shove, 2003; Alda-Vidal et al, 2020) and expectations of how cleanliness is achieved (Barbosa and Veloso, 2014).

Practices may have different trajectories (Shove, 2003; Santos and Toledo, 2011; Barbosa and Veloso, 2014; Greene and Royston, 2022), highlighting the importance of culture in performance. As Santos and Toledo (2011) showed, the same place (the bathroom) can have different meanings (from impurity to purity-related terms) depending on the practices performed there. This article broadens the scope of cross-cultural comparison to the bathroom and its cleaning practices.

The bathroom itself needs to be cleaned or even purified from the dirt that is disposed of there. However, the way people perform this practice varies, as different social environments share different meanings (Barbosa and Veloso, 2014; Darmon and Warde, 2019; Plessz et al, 2022). This impacts the infrastructure of the place and the knowledge involved in the performance of practices (Shove, 2003; Shove et al, 2012; Cypriano and Pépece, 2016).

Cultural studies demonstrated that culture shapes practices. Family background has been linked to changes in energy consumption in adulthood (Hansen, 2018), so we expect similar impacts on water-consuming practices. There is limited discussion in the literature of how cleaning practices and the use of natural resources vary across cultures. We explore the symbolic meaning associated with the bathroom and cleaning for people of two different nationalities (British and Brazilian) in terms of cleaning the bathroom and the use of water. Cross-national couples may face conflicts in the performance of some practices, as the partners may have learned different competencies and meanings (Darmon and Warde, 2019). This constitutes what these people consider 'normal' in such performances (Evans et al, 2020).

Our research delves into the rational, cultural and emotional aspects of everyday practices. Changes in the life course, such as moving out of one's parents' home, reveal changes in responsibilities. Greene and Royston (2022) indicate there is a gap in studies designed to make people talk about their past practices, which also shape their current practices. Additionally, practices should be examined in terms of their infrastructural designs and how they relate to cultural habits (Alda-Vidal et al, 2020). These habits have been shaped and reshaped over time (Yates, 2019).

Our research offers the following contributions to the literature: first, a comparison of (water-consuming) practices across two cultures, from the perspective of locals and migrants. We focus on the nature of the practices that British and Brazilian residents engage in when cleaning their bathrooms, to uncover how the elements of the practice relate to each other; second, we discuss water-consuming practices from an environmental perspective. We ask people about the impacts of their bathroom cleaning practices, the procedures involved to achieve cleanliness, and the use of resources in the practice. This offers insights for companies and governments to better target products and interventions in the two nations, in order to save water and sell less polluting cleaning products.

#### Method

We conducted qualitative interviews with two groups of people: Brazilian residents and English residents. We wanted to understand how a household water-consuming practice (bathroom cleaning) was performed in different countries. To do this, we explored both how the practice is currently performed and how the individuals learn it. We used the oral history method (Janesick, 2010) for data construction and analysis (Chaitin, 2008). This is compatible with the theory of practice (Hards, 2011; Browne et al, 2014). We undertook three interviews with each person, usually once a week. Each interview focused on a different aspect of the elements of practice described by Shove et al (2012).

The scripts progressed from general to specific questions (Ritchie, 2003), with follow-on questions (Janesick, 2010) asked over multiple days (Gaffuri, 2016; Thompson and Bornat, 2017). We employed a narrative analysis approach (Janesick, 2010; Thompson and Bornat, 2017) to capture individuals' realities (Barros and Lopes, 2014). As each person has their own history, the interview scripts were minimally structured and designed individually based on their reports. We asked one structured question (the first one, opening every interview) to elicit descriptions of people's routines (Thompson and Bornat, 2017).

The lead author conducted interviews in 2018–2019 as part of a larger research project on household water consumption practices. The authors, an intercultural team, discussed the findings. Interviews were conducted in Portuguese with Brazilian locals, and in English with Brazilian migrants, English locals and English migrants. We have attempted to accurately translate and explain our interviewees' word choice from Portuguese to English, considering the language limitations of translation.

Interviewees were urban residents from three different cities: Maringá, Brazil (in Paraná state); and Leeds and York (both in Yorkshire), England. These regions were chosen due to the lead author's proximity and convenience, as he was a postgraduate researcher living and working in universities in Maringá and Leeds. Additionally, the regions in both countries have similar water availability.

Interviewees came from a range of backgrounds, all adults. Only one (Brazilian, local) still lived with their parents. We searched mainly for adults not living with their parents to ensure they performed most cleaning practices in their households. We found these people through the lead researcher's social network, using a mix of convenience and snowball techniques. All were either acquaintances of the lead researcher (known but not close) or referred by someone known by this researcher, making acceptance for multiple interviews easier. Every interview was held at a time and place chosen by the interviewees, mostly at their homes. We assured confidentiality by referring to them with the code 'I' (from 'interviewee') plus a number (for example, I2, I7, I11).

In total, 12 sets of interviews were analysed: five from Brazilian residents (three Brazilian locals and two English migrants) and seven from English residents (one English, two Brazilians, one English–Brazilian couple and one Irish–Brazilian couple). This resulted in 12 stories of approximately four hours each, representing over 40 hours of data. Table 1 summarises the demographics we had access to.

We used an oral history method (Janesick, 2010; Hards, 2011; Thompson and Bornat, 2017) to examine the narrative of life-course events, with a focus on exploring consumption practices and understanding people's perspectives (Hitchings, 2012; Browne et al, 2013; Browne, 2016; Evans, 2018). This analysis used a method which both zoomed in (discussions of daily-path dynamics) and out (capturing broader events) (Greene and Royston, 2022).

Interviewee	Nationality	Situation	lf migrant, years living abroad	Gender	Age	Occupation
11	Brazilian	Local	-	Male	24	Student (postgraduate)
12	Brazilian	Local	-	Male	23	Student (postgraduate)
13	Brazilian	Local	-	Male	22	Artist (freelance)
14	Brazilian	Migrant	5 years	Female	28	Student (postgraduate)
15	Brazilian	Migrant	4 years	Male	29	Student (postgraduate)
16*	Brazilian	Migrant	16 years	Female	51	Portuguese teacher
17**	Brazilian	Migrant	6 years	Female	45	IT position
18	English	Local	-	Female	67	Retired/landlady
19**	Irish	Local	-	Male	44	English teaching trainer
110*	English	Local	-	Male	48	Solicitor
111	English	Migrant	17 years	Male	49	Private English teacher
112	English	Migrant	1 year	Female	25	Private English teacher

Table 1: Interviewees' information

Note: \* and \*\* are couples.

Plessz et al (2022) present a discussion suggesting that life-course and turning points cause people to reconfigure their practices. In their case, they focused on food practices in the household environment, raising the question of whether other practices in this environment undergo similar processes of reconfiguration.

There is a debate about whether people are able to talk about their past practices and consumption, but Greene and Royston (2022) show that narratives about past practices and consumption are scientifically valid. They suggest that 'further research could also usefully explore the potential of biographic methods in investigating consumption practices among individuals who live in differing circumstances and contexts' (Greene and Royston, 2022: 276). We do this here by investigating a household practice performed by people from different cultural backgrounds. These people explain how they came to organise materials, competencies and meanings in this particular way (Shove et al, 2012).

We wanted to explore the relationship between the rational (choosing how and which resources to use to clean the bathroom) and the emotional (symbolism of the bathroom) in a practice involving a natural resource (that is, water) through a cross-cultural comparison. We do not claim to represent Brazilian and British culture, but their stories have common elements that support and expand existing evidence (Shove, 2003; Barbosa and Veloso, 2014; Jack, 2017).

To present our results, we organised two main narratives combining reports from each country. We zoomed in on the daily dynamics and zoomed out to explore broader cultural elements that shaped the facts in such a particular way (Janesick, 2010; Thompson and Bornat, 2017; Greene and Royston, 2022). We considered the realities of locals, migrants and intercultural couples.

#### Cultural differences in water-consuming practices

Existing evidence shows that Brazilian and English residents consume water differently. Brazilians are linked to higher per capita use of water, likely due to a greater emphasis on keeping the home clean and tidy. This requires more water for tasks like washing dishes and clothes. In the UK, there is a focus on convenience, leading to households with more superficial cleaning in visible areas and neglecting areas such as under the beds or couches, for example. Additionally, water-saving technological advances, such as low-flow showerheads and water-efficient washing machines, are more common in the UK than in Brazil (Isboli, 2019). This could be related to the discussion in Neves (2004) and Barbosa and Veloso (2014) about the Brazilian cultural conventions of achieving cleanliness. Our data revealed that those conventions are different from the English ones. It offered new insights into how the various elements of practice are organised in different cultures and the rationales and symbolic meanings associated with them. We characterise the Brazilian and English approaches that we observed to bathroom cleaning in turn.

#### Deixar o banheiro brilhando<sup>1</sup> – making shiny: the Brazilian way

Brazilian and English bathrooms are built differently. In Brazil, they are waterproof, with tiled walls and floor. The floor (outside the shower area) also has a plughole in it that allows cleaning water to be easily drained away. There is a bin to throw toilet paper in, as Brazilian water companies do not recommend flushing anything down the toilet (Alda-Vidal et al, 2020). There is frequently a hygienic douche next to the toilet (explained later in this section). People usually use showers and do not have a bath. When houses do have baths, they are in the main bedroom of the house (en suite) and separate from the shower. Bathrooms in Brazil generally also have a window, and extraction fans are not common. A sink and a mirror complete the room, with shelves or cabinets to store toiletries (Figure 1).

This bathroom configuration – considered here as one of the material elements of toilet cleaning practice – impacts the way in which bathroom cleaning is performed. In Brazil, it is common to use clean water mixed with chemical products to scrub or mop the surfaces of the bathroom, followed by rinsing them with clean water. This cleaning procedure reinforces the discussion of Neves (2004) and Barbosa and Veloso (2014) that for Brazilians, cleaning goes beyond 'cleaning' and turns into 'deep cleaning', as it is performed deeply on a regular basis (in Brazil, our interviewees said they do this weekly).

Our small sample does not allow us to definitively say that all Brazilians have this behaviour, but our evidence confirms the general standard described in the following quote, which is a particular trait among locals. All Brazilian locals reported similar procedures.

Q: How much time do you take to clean the bathroom?

A:

Man ... I think the bathroom ... half an hour? Until I rub everything ... I mean, look ... first I sweep the floor, because of the hairs that are there, and I don't like to get them wet, I think it is disgusting. Then I take out the hair, the dust, I don't know, these things that are in the room ... I sweep the floor and I take them out. Then I throw water over the floor, I splash washing up liquid around, I throw a cleaning product over it, and I scrub it. Then I clean the sink and I rub the sink with a specific sponge, right? It is a sponge that I use just to clean the sink. Then I scrub the toilet with another sponge ... I mean, I clean the toilet, I scrub it and everything. Then I scrub the walls of the shower cubicle, also with



Figure 1: A typical Brazilian bathroom

Source: personal archive

a specific sponge, a mop. Then I rinse everything [shower cubicle and the outside tiled floor/walls areas], I use the squeegee, I wash inside the [shower] cubicle, I scrub the walls inside the cubicle as well ... I take out the excess water [pushing it with the floor squeegee to the drain] and I leave the bathroom drying naturally. I don't dry it with a cloth ... I just leave it. Then, when it is dried, I go there and I put two bath mats, one to get out of the shower and one to get out of the bathroom. Then I put back the toilet roll and I take out the litter. I think half an hour. In half an hour I do everything. (I1, Brazilian local, male, 24 years old)

On the other hand, the English migrants we had access to do not seem to share such cleaning practices: I12 (English, migrant, female, 25 years old) said she does not 'throw water' in her bathrooms, she only mops them. I11 (English, migrant, male, 49 years old) does not clean his bathrooms himself (his family hires a twice-a-week cleaner), but his answer indicated he would do the same as I12.

The presence of water, and its availability in particular technologies, also impacts on conventions of personal cleaning. Many Brazilian bathrooms have a piece of equipment known as a 'hygienic douche', more common since the early 2000s when household layouts became more focused on convenience and things became more compact (products and facilities), so people could save space in their homes (Cypriano and Pépece, 2016). This item is located near the toilet, being a modern/ compact version of a bidet, and constitutes a hose which is used to clean oneself after using the toilet. This reinforces the discussion of reconfigurations of practices (Shove et al, 2012), where the material element changed (from bidets to hygienic douches), but the competencies (how to use a water jet to clean yourself) and the meanings (cleanliness and convenience, for example) remained almost the same. This equipment is also used to help in bathroom cleaning, as it can be used as a hose for the floor.

The 'deep cleaning' procedure was done in every interview with Brazilians living in Brazil. When they migrated to England, however, our interviewees reported a change in their bathroom cleaning habits. The section on 'Avoiding sticky' provides a detailed description, but the main differences were the lack of waterproof walls/floor and a plughole in the floor outside the shower/bath area. In this new environment, our Brazilian migrants could not 'wash' their bathrooms, so they only scrubbed surfaces with a wet cloth and chemicals, and hoovered and mopped the floor.

- A: I use the shower ... I spray everything with these good products, and then I just go inside, as if I am going to shower, and I rinse with the shower. And that is the cubicle. And then I clean the glass with the same kind of products, to get rid of the limescale. Because, you know, it marks a lot.
- Q: And, in the bathroom ... the walls ... the floor. Do you also clean with the products? Do you throw water? How is it? Because ... I don't know if you have a plughole in the floor to THROW water and clean the bathroom. How is it?
- A: No, no, we don't do that. I, literally ... hoover and wipe. Yeah, this thing of throwing water is a very Brazilian thing. This floor here [kitchen, tiled], hoover it very well. And get it a wet cloth ... and just mop. We are the mopping generation. Let's be honest, this is for outside as well, you won't see me throwing water. No, no, no, no, no. It is very much INSIDE the cubicle we will rinse. Then we will clean the tap and clean the sink, and use the tap ... I don't even use a bucket, to be honest, when I clean the bathrooms. And it is always the case, if you really hoover well the house, every surface, then all you have to do is to wipe. You don't HAVE to throw water. (I6, Brazilian migrant, female, 51 years old; capitals indicate emphasis)

Although this different cleaning procedure is directly related to a difference in the material elements of the bathroom configuration (Shove et al, 2012), this is also linked to meanings, as the infrastructure reflects social values and priorities (Shove, 2003; Neves, 2004; Cypriano and Pépece, 2016; Greene and Royston, 2022). For example, in the last 40 years, in Brazilian cities new-build apartments are changing, as inhabitants' preferences for big bedrooms and few bathrooms shifted to small bedrooms, each with a private bathroom (Cypriano and Pépece, 2016). This suggests that for Brazilians, a place of excretion, a place to dispose of dirt from the human body, for intimate actions, is symbolically a dirty place.

Our interviewees generally replicated the cleaning method used by their parents, even if they had not been responsible for cleaning during their childhood. This was a shared sentiment among the Brazilian participants. Even if they had never been involved in cleaning at their parents' homes, they still tended to replicate the procedure when they moved out, perceiving it as being the 'proper' way (Evans, 2018). Upon migrating to England, the interviewed Brazilians faced difficulty in performing the practice as they wanted, as the infrastructure demanded that they utilise their skills in a different way. Furthermore, they did not consider the new procedure as 'clean' as what they were used to in Brazil.

- Q: The bathroom here [England] ... you do not clean it throwing water, you just vacuum it. Do you ... [interrupted].
- A: [Interrupts] It is not ideal. It is a cleaning you do with what you have. It is adapted. I think one day, if I could choose, I would choose to have a bathroom with a plughole. (I4, Brazilian, migrant, female, 28 years old)

In this way, it is clear that water is an essential material for our Brazilian interviewees when cleaning the bathroom. This reinforces the cultural discussion by Barbosa and Veloso (2014) on cleaning in general, not just bathrooms. Water is used in abundance in Brazil for washing and rinsing in order to make the bathroom properly clean. Thus, water is not only a material element, but also carries the meaning of 'cleanliness'. The use of other material elements is similar to that of England (see next section). Brazilian migrants were asked about their perceptions about the efficacy of cleaning products in Brazil and in England. All of them reported similar results, regardless of brand. The difference lies in the amount of water used in the cleaning process, which necessitates additional steps such as rinsing and drying. Even when migrating from Brazil, people tend to relate the ideal clean as the 'deep cleaning' mentioned earlier, demonstrating the cultural influence on the practice (Shove et al, 2012; Alda-Vidal et al, 2020; Greene and Royston, 2022; Plessz et al, 2022). The English data we will analyse demonstrate a distinct approach to bathroom cleaning.

#### Avoiding sticky: the English way

English bathrooms differ from those found in Brazil. They often lack waterproofing, and their common construction does not permit the use of water on surfaces. The floor is generally composed of linoleum-based materials, while wall tiles are usually only found in the bath and sink areas; although tiled floors may occasionally be found, they typically lack plugholes.

There is frequently a shower system above the bath with a shower curtain or glass screen (Figure 2). People flush toilet paper down the toilet, although the water companies do not recommend this procedure for the disposal of other items (for example, baby wipes, sanitary protection). For items like these (and other toiletries, like razor blades and packaging) people keep a bin in the room. Also, it is relatively common to find bathrooms without windows, equipped only with an extractor fan to take the odours and the humidity out of the room.

As in Brazil, the way the bathroom is built impacts on the way the cleaning is done. In England, our respondents reported that they do not directly associate the 'cleaning power' with the use of water. They sweep and/or vacuum the floor, then



Figure 2: An English bathroom

Source: Unsplash website

use a cleaning product (sprayed, sometimes diluted with water) over the tiles and scrub them to remove the mould. The sink and toilet are also scrubbed. The floor is usually cleaned with a wet cloth or a mop, drying everything after.

Unlike in Brazil, our respondents in England do not usually have a pre-established periodicity for this cleaning. English locals seem to have a more natural and less prudish relationship with the excretions of the human body than Brazilians and this makes them treat the bathroom as just another space in the house and not as a symbolically dirty space. Therefore, the British respondents are not as concerned about the need for a fixed and intense frequency for cleaning the bathroom. Asking them how they decide when it is time to clean, the answers relied on "we do the basics" (I10, English, local, male, 48 years old) without a defined 'when'. "So … it is … having space in a kind of orderly state is something that, I would say, is something that is desirable" (I10).

This "kind of orderly state" is a situation that appeared when asking the interviewees more broadly about their standards of cleanliness and how to achieve them. Although some might have a routine (I8, English local who hosts short-term students in her home, cleans her bathroom weekly), the remaining interviewees' answers (English locals) reaffirmed I10's quote. The following excerpt, from one of the cross-national couples (the first interview, where we questioned the couples about their performance of the practice, was done with both partners; the later interviews were done individually) shows how having things 'shining' is not particularly desired in England.

- Q: In the house routine ... the cleaning. Is there any specific day that you do the cleaning of the house?
- I9: No [laughs loudly]. When it gets too dirty to not be able to live in it. I mean ... [interrupted]

- I7: [Interrupts] Well, we have different levels of what dirt we should live with.
- I9: It is not a specific day. If the cooker is particularly dirty, we wash the top of the cooker. And ... sweep the kitchen floor. There is no washing the windows or something like that. It doesn't happen. [...] We just do it ... maybe twice a year? Sometimes three times a year?
- I7: Well, I do some days that I just go "well, this is a disgrace", and I start sweeping [laughs]. Usually when I am working from home. I am already working, and I look around, and I think "well … I gotta to do something about it" … usually, sweep the floor … what else do I do? In the bathroom as well, sometimes, I think "this is a disgrace" [laughs]. (I7, Brazilian, migrant, female, 45 years old; I9, Irish, local, male, 44 years old)

None of the interviewees reported buying eco-labelled products to clean their bathrooms. As this room was highly associated with hygiene, people tended to use strong products such as bleach. This occurred both in Brazil (weekly cleaning) and in England (eventual cleaning).

However, our Brazilians who were living alone in England reported that the cleaning they do does not allow them to maintain the standards they used to keep in their bathrooms in Brazil. They lowered their standards of cleanliness due to the design of English bathrooms (material elements). The different design was the main driver for changing the procedure, and the Brazilians adapted their cleaning on their own (without discussing it with others).

- Q: Ok. I don't know ... did you notice anything different from your activities after our last conversation? If you were going to do something and this made you think ...?
- A: I remembered, sometimes, about the bathroom. About cleaning the bathroom, right? I looked at it and I said: "wow, I wish I could throw A BUCKET of water here", and then I remembered it. Throwing a bucket, sweep, cleaning everything. I only do this vacuuming and a wet cloth, right? It is not as hygienic as in Brazil. I thought about it. (I4, Brazilian migrant, female, 28 years old; capitals indicate emphasis)

As discussed earlier, the household infrastructure reflects what is considered important in that society (Cypriano and Pépece, 2016). In England, the climate is generally colder than in Brazil, which could make hard floors less comfortable and bathing more desirable during wintertime. Consequently, bathroom design reflects these differences and affects the way they are cleaned (Shove, 2003; Shove et al, 2012; Coutard and Shove, 2019; Yates, 2019; Plessz et al, 2022).

In conclusion, the meaning of convenience is more prominent in the practice of cleaning bathrooms in England, while in Brazil greater symbolic importance is attached to cleanliness. This results in distinct design choices for bathrooms that subsequently shape the manner in which cleaning practices are performed.

#### Discussion

Our analysis of bathroom cleaning has revealed cultural patterns and differences between locals and migrants. We can draw some conclusions about the use of water to achieve cleanliness, cultural conventions, and the adjustments made by migrants. This suggests that cross-cultural comparison of practices is a valuable approach to understanding how people clean. Our work also offers insights into how actors might intervene in bathroom cleaning practices to reduce water use, and other environmental impacts.

First, the symbolic meanings attached to bathroom cleaning differ between our Brazilian and English respondents, due to their life-course experiences, which influence the cleaning procedures. Second, neither Brazilian nor English respondents considered the environmental impact of the products and water used for bathroom cleaning. Third, the practices of our cross-national couples to achieve cleanliness tend to meet in the middle of the practices of each individual. These points are discussed in what follows, and Table 2 summarises our findings.

The differences in symbolic meanings, our first insight, are based on the finding that in England, the elements of the practice of cleaning the bathroom seem to be associated with convenience (by relying on superficial procedures), while in Brazil the elements seem to be symbolically linked to cleanliness (by relying on deep-cleaning procedures). These meanings result from life-course experiences and end up influencing the competencies required to perform the practice in a way that is seen as 'proper' in the respondents' minds.

As Brazilians perceive the bathroom as a dirty place, keeping it clean requires heavy and frequent cleaning. Brazilian standards of achieving cleanliness link the use of

Bathroom cleaning	Location	Perspective	Main characteristic(s)			
Periodicity	Brazil	Brazilian local	Weekly (everyone)			
		English migrant	Weekly (everyone)			
	England	English local	No established periodicity			
		Brazilian migrant	No established periodicity			
Materials	Brazil	Brazilian local	Sponges, cloth and/or mop, (non-eco) chemical			
involved		English migrant	products, water			
	England	Brazilian migrant				
		English local				
How is water used?	Brazil	Brazilian local	Plays an active role in the process of achieving cleanliness, rinsing the bathroom at the end of the cleaning process			
		English migrant	Only used if the chemical products require dilution			
	England	English local	Only used if the chemical products require dilution			
		Brazilian migrant	Less apparent from the cleaning process due to limitation imposed by the design of the room			
Expectations	Brazil	Brazilian local	Making shiny			
to achieve cleanliness		Brazilian migrant	Making shiny			
	England	English local	Avoiding sticky			
		English migrant Avoiding sticky				

Table 2: Main results

water closely to this practice, as the activity has the objective of making the bathroom shine (Barbosa and Veloso, 2014), which makes them reliant on a high level of water consumption to achieve cleanliness (compared to English).

This article contributes to our theoretical understanding of the relationship between practice, the household environment and the consumption of a natural resource, by providing a unique insight into how different cultures approach a common practice, and how this reveals very different meanings, competencies and materials. Comparing bathroom cleaning practices across cultures allows us to explore how rational and cultural factors shape how we perform the practice, and how these influences differ when contexts change. This provides an opportunity for public policies to target communications to promote environmentally friendly water-consuming behaviours.

What are the opportunities to shape practices, reducing the amount of water used, and the associated environmental impacts of cleaning, then? Practices are often repeated without conscious thought, and, given the routine nature of household activities, opportunities to change the rationale of a performance exist during major life events. This suggests that moving to a new place could be a moment of intervention to reduce water usage in cleaning, or to promote eco-labelled products. For example, real estate companies could offer training in water-reducing cleaning procedures, and green product brands could offer free samples and explanations to new tenants. However, this needs to be approached in a culturally sensitive way, as locals from one place may not be aware of the practices of another. We anticipate that new intercultural relationships could also transform practices, both in existing and new households.

A more radical suggestion in the Brazilian context would be to build bathrooms without plugholes: to change the materials in order to change cleaning practices. This would prevent people from deep cleaning by throwing water around, thus saving water. To make this successful, marketing efforts would be needed by a range of stakeholders to gradually change people's perception of bathrooms without plugholes.

Given the differences between the two nations, the meaning of bathroom cleaning would lead to different kinds of interventions for sustainability. In Brazil, green product communications should emphasise 'shining' outcomes, without too much water use, due to the cultural meanings of cleanliness and the strong relationship between water and cleanliness. In England, communications should emphasise 'convenience', the effectiveness and ease of using the product.

So what remains to be discovered about cleaning practices? We have demonstrated here that cultural backgrounds affect how people perform a practice. This is particularly evident in cross-national couples, who tend to find a middle ground between their respective cleaning habits. This extends beyond bathroom cleaning, as it is also evident in other household cleaning (Isboli, 2019). Further research could investigate if single migrants and migrant couples, after a longer period in a new social environment, still maintain their former cleaning habits or if they adapt to local standards.

The socially accepted standard of achieving cleanliness in the bathroom often disregards environmental concerns, as people use strong products to disinfect the room, a high amount of water (especially in Brazil), and rarely consider the disposal of these products. It would be interesting to investigate if cleaning other parts of the home is associated with different levels of environmental awareness. Additionally, we need to examine if other water-related practices in the bathroom (for example, showering/bathing) and other rooms (for example, washing the dishes) provide different insights on this topic.

#### Conclusions

We identified several theoretical insights from this research:

- Cultural expectations for cleanliness shape how practices are performed, particularly when water is involved.
- Our reports from Brazilian and English interviewees suggest that these cultures achieve cleanliness in different ways.
- Cross-national couples modify their cleaning practices to find a balance between individual culturally derived practices.
- The physical nature of the bathroom influences how water is used for household cleaning (as we saw with Brazilian migrants in England who lacked a plughole), but it does not change how people would ideally like to perform the practice to achieve cleanliness.

Our findings also have practical implications:

- Brazilian respondents used more water than English respondents to clean their bathrooms.
- Social and structural influences can alter cleaning practices.
- Moving to a new place may provide an opportunity to rethink a routinised household practice, although some may not consider this a 'proper' way.

Our research indicates that upbringing, expectations of cleanliness, and social and material contexts all shape how people clean bathrooms. When contexts change, such as when people migrate to a different culture, material elements become particularly influential, as they come from a different background that may prioritise different infrastructures for performing the practice. Future discussions could investigate how other household practices, such as washing dishes, are affected by material infrastructure, or if meanings and competencies are more important.

#### Note

<sup>1</sup> Expression commonly used by Brazilians when they clean their bathrooms. It could be translated as 'leaving the bathroom shining'.

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#### Conflict of interest

The authors declare that there is no conflict of interest.

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