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# Menstrual Stigma Rearticulated as Environmental Pollution in Contemporary Scottish Policy-Making

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## ABSTRACT

Scotland is a global leader in public policy concerning menstrual products. We bring Critical Menstruation Studies concepts and textual analysis methods to a corpus of Scottish reports on menstrual product access and waste, along with interviews with regional experts. Our analysis indicates that while promotion of reusable menstrual products is intended to dismantle menstrual stigma, this stigma can become displaced via environmental concerns to other contexts, retaining key characteristics. The notion that menstrual blood is unhygienic and transgressive leaks into the discourse, which uses the same fundamental concepts to identify disposable menstrual products as environmental hazards affecting waterways and beaches.

## KEYWORDS

Menstrual products; sustainability; pollution theory; embodiment; environment

## Introduction

This article focuses on recent Scottish policy initiatives concerned with access to and disposal of menstrual products. We examine one Act of Parliament and two government-funded reports, along with interviews with three of the experts who delivered them, to understand more about the genesis, findings, and effects of these initiatives. Our analysis suggests that the current promotion of reusable rather than single-use menstrual products can have the unintended effect of reproducing menstrual stigma in new ways. This change arises primarily through a transfer of traditional fears of menstrual *blood* being a pollutant (in the sense of being unhygienic and upsetting order) to a new focus on single-use menstrual *products* being pollutants (in the sense of damaging the natural environment). We used textual analysis of both published reports and interviews with their authors and instigators to identify how menstrual stigma persists and mutates despite the best intentions of policy makers to achieve the exact opposite, namely its eradication.

Reusable menstrual products include menstrual cups made from silicone that can be rinsed, reused, and sterilized and washable pads or underwear made from absorbent fabric. In recent years, environmentalists and menstrual health advocates have increasingly encouraged the uptake of reusable menstrual products and have simultaneously discouraged the use of single-use products. Such efforts are now international: The

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Menstrual Cup Coalition, for example, bundles activities from currently around 50 charities and organizations in more than 40 countries promoting menstrual cup use (Menstrual Cup Coalition, 2021b). This trend is mainly driven by health and environmental concerns.

Environmental concerns center on the plastic pollution caused by disposable menstrual products such as tampons and pads, which contain high levels of non-degradable plastics (Somers, Alfaro & Lewis, 2021), as well as tampon applicators and wrappers usually entirely made of plastics. Single-use disposables are identified as problematic in terms of marine pollution as well as through the volume of waste generated (an estimated annual 427.5 million items in Scotland alone; Zero Waste Scotland, 2019, p. 4). Waste from disposable menstrual products is anticipated to increase exponentially over the coming years, as menstruators<sup>1</sup> in the Global South switch from reusable, often homemade items to disposable, industrially made products (e.g., Fortune Business Insights, 2021). This waste not only accumulates in landfills: Disposable products are often flushed into sewage systems where water companies do not adequately clear them. In some areas, particularly (but not only) in the Global South, disposable menstrual products are also thrown away directly into watercourses. In both cases, discarded disposables end up as sewage-related debris in the marine environment (Cole et al., 2019; European Commission, 2018; Jackson & Tehan, 2019; Marine Conservation Society, 2021). While the problem with disposal of single-use products is expressed primarily in terms of waste and marine pollution, other environmental concerns are the CO<sub>2</sub> emission and use of oil and other finite resources in the production of single-use items.

Menstrual health and rights advocates have combined the promotion of reusable menstrual products with attempts to alleviate menstrual stigma, as such stigma has been identified as a major barrier to taking up reusable products, due to reluctance to touch menstrual blood and thereby to engage directly with used menstrual products (Jackson & Tehan, 2019; Zero Waste Scotland 2019).

What has been largely unresearched, thus far, are ways in which the promotion of reusable rather than disposable menstrual products might have unexpected and unintended negative effects on public attitudes toward menstruation through reproducing menstrual stigma in new ways. Scholars have noted the “stickiness” of menstrual stigma and how it is based in deeply held and long-standing aversion to menstrual blood cross-culturally (e.g., Buckley & Gottlieb, 1998; Owen, 2022a). Indeed, traditional beliefs that menstrual blood is dirty and unhygienic persist in the common understanding that menstrual bleeding needs to be hidden and managed with products in the first place (Bobel, 2018). At the same time, these traditional beliefs are being given a new dimension when, in the description of environmental damage caused by disposable products, fears of menstrual pollution shift focus from the *blood* to the single-use *products* designed to soak up this blood. In other words, menstrual stigma is reproduced in a form that resonates with the widespread contemporary concern with the environment. The point here is not to deny that environmental pollution by menstrual products is a significant issue, which it certainly is, but to show the implications of the growing awareness of this fact, and of how it is communicated, for the proliferation of a mutated kind of menstrual stigma.

## Context

Scotland has passed legislation and funded policy research earlier than other countries globally due to a specific set of political, economic, social, personal, and environmental circumstances, including a left-wing nationalist government keen to develop more progressive legislation than its influential neighbor England (Bildhauer, 2021; Bildhauer et al., n.d.). These policies are nevertheless also part of a global trend, with many countries and organizations beginning to raise similar concerns about the role of menstrual products in social and environmental issues.

## Theory

Our conceptual framework for understanding this most recent iteration of menstrual stigma is developed from concepts of (i) pollution, (ii) the “containment ideal,” and (iii) the “concealment imperative.” These concepts resonate with Critical Menstruation Studies, an emerging research area (Bobel et al., 2020).

### Pollution

The term “pollution” is rarely used with reference to menstruation in everyday discourse, but it is well theorized in anthropology and more recently employed in Critical Menstruation Studies (e.g., Gottlieb, 2020). Douglas’s (1966) theorizing of pollution has remained uniquely useful in Critical Menstruation Studies to understand cultural attitudes to menstruation in the Global North (despite our contemporary awareness of the reductive element in Douglas’s primitivist analyses of pollution beliefs in indigenous and non-European cultures). A pollutant in Douglas’s definition is a form of dirt placed under taboos that prohibit freely showing it or speaking about it and to which people respond with disgust, shame, and embarrassment.

### The Containment Ideal

Conceptualization of menstruation as a pollutant allows for what we here call a “containment ideal,” in which the ideal body is normatively imagined as a bounded, impermeable entity individually and socially threatened by menstrual leakage. The understanding of the embodied person as a unit separate from its environment, even when taken for granted, is not self-evident and needs work to uphold. The exact boundaries of the body are not a given, neither optically, psychologically, chemically, nor physically on a molecular level, and our perceptions of their limits are learned in culturally specific ways (e.g., Barad, 2017; Tuana, 2009; Butler, 1990; Kristeva, 1982). Traditional Western thought, however, promotes a view of the human subject as radically different from its environment, even on the physical level, with the ideal body seen as an enclosed container. Environment is understood here not just in the narrow sense of a natural environment but broadly as everything that surrounds humans and is distinguished from them symbolically and materially, including air, clothes, artifacts, animals, and land in ways that will be discussed in detail below. In this model, any breach of the external margins of the body—through ingesting or emitting—is cast as a potential crisis. The sense of crisis is particularly pertinent for blood, which in male bodies more usually

flows from a wound and whose loss can mean a threat to life. Bildhauer (2006) observed that when crisis bleeding is successfully managed, this is interpreted as reinstating containment, ultimately confirming the idea of the enclosed human being. Similarly, Ussher (2006) and Ussher and Perz (2020) have evidenced frequent contemporary perceptions of the premenstrual, menstruating, or menopausal body as uncontained, expansive, and unruly and described common attempts at reigning it in.

The containment ideal is fundamentally gendered: Fears of menstrual pollution hold in place not only the containment ideal but also specifically the gender binary. Only male bodies are imagined as being at least theoretically able to be properly contained and indeed to transcend their material bodies into the realm of reason and spirit, in distinction from female bodies (e.g., Jaggar, 1983, p. 46) and, by inference, from transgender and nonbinary bodies.

The containment ideal is also environmentally sensitive, as its roots lie in the separation of human and nature and the consequent projection onto women of the “natural” world, which only men can aspire to transcend (Jaggar, 1983, p. 46). As regards environmental pollution, Nash (2006, pp. 148–151) has pointed out similar containment ideals in which embodied human beings and also the environment are conceived of as bounded entities that should be kept pure and whose borders should not be traversed by material and/or symbolic pollutants.

### ***The Concealment Imperative***

The concealment imperative (Wood, 2020) is the means through which the containment ideal is upheld. This understanding develops the well-established insight in Critical Menstruation Studies of menstruators needing to “pass” as non-menstruators and of a “culture of concealment” (e.g., Bobel, 2018; Grandey et al., 2020; Houppert, 1999; Roberts et al., 2002; Vostral, 2008). The need to make menstruation invisible not only serves to keep women and other menstruators busy with disciplining their bodies in a Foucauldian sense, as Wood emphasizes, but also highlights the subversive nature of menstrual blood. The presence of blood outside the body disrupts our beliefs in a strict separation of the embodied person from an outside. Thus, the need for containment is managed through the concealment imperative: The ideal of containment can only be maintained by making invisible any evidence that the distinction between human and environment is not clear-cut (e.g., Buckley & Gottlieb, 1998; Douglas, 1966; Kristeva, 1982; Laws, 1990; Ussher, 2006; Vostral, 2008). Menstrual products washed up on beaches, as we shall show, likewise fail the concealment imperative in a public space that is literally the border of the nation and thus represent a primal threat that undermines the boundaries of both the individual and the state.

### **Materials and Method**

We carried out a textual analysis of the texts of all three recent noteworthy policy initiatives in Scotland.

- i. A research report on menstrual and other products as marine pollutants: *Mapping Economic, Behavioral and Social Factors Within the Plastic Value*

*Chain That Lead to Marine Litter in Scotland* (Cole et al., 2019), commissioned by Zero Waste Scotland (a not-for-profit environmental organization funded by the Scottish Government and the European Regional Development Fund) and written by Resource Futures (an environmental consultancy firm). This research was commissioned in part because the quantity of menstrual products polluting the marine environment is higher in Scotland than in the rest of the United Kingdom of Great Britain and Northern Ireland (Marine Conservation Society, 2021). We analyze both the text of the report and the transcripts of two interviews (45–90 minutes long) with George Cole, senior consultant at Resource Futures, who led the team writing the report, and with Kate Chambers, also senior consultant, who coauthored the report and was in charge of the menstrual products section.<sup>2</sup>

- ii. A research report on barriers to uptake of reusable menstrual products: *Consumer Attitudes Toward Reusable Menstrual Products in Scotland* (Zero Waste Scotland, 2019), commissioned by Zero Waste Scotland and carried out by Progressive Partnerships (a market research company). The report was a basis for the “Trial Period” campaign aimed at encouraging the uptake of reusable products. We analyze both the text of the report and of a substantial interview with Catherine Bozec, consumer campaigns manager at Zero Waste Scotland, who ran the Trial Period initiative and was closely involved in the relevant focus groups.
- iii. The Period Products (Free Provision) (Scotland) Act 2021. This law, passed unanimously by the Scottish Parliament to much international attention, is the first legislation in the world to make access to menstrual products a universal right (Bildhauer et al., n.d.; McKay, 2021; Scottish Parliament, 2021). We examine the text of the act itself as well as minutes of the parliamentary committee as it debated and developed the legislation, which make specific mention of the politicians’ intention to tackle menstrual stigma more broadly.

These three initiatives together represent a unique constellation of menstrual policy that provides a basis for exploring changes in the stigmatization of menstruation. They reveal contemporary attitudes to reusable and disposable menstrual products in one country in the Global North where menstrual products are currently in the public consciousness and where ideas and practices surrounding them are rapidly changing.

We used the method of textual analysis to study our corpus. Textual analysis is a long-standing practice in literary studies for analyzing the nuanced use of language in fictional texts, often to reveal underlying cultural assumptions (e.g., Herman 2007). Here we pay particular attention to lexis (word choices) and descriptions of bodies, emotions, and nations that reveal underlying attitudes toward menstruation.

## Findings

### ***Concerns About Bloodied Menstrual Products in Contemporary Scotland: Pollution, Waste, Containment, Concealment***

The notion that menstrual blood is a pollutant continues to exist in contemporary Scotland. As we shall show in the following four subsections, this concept is enacted in

Scotland through concern with (i) bloodied menstrual products as “unhygienic” or “unsanitary” and thus a perceived risk to health through germs and pathogens, (ii) bloodied menstrual products as waste (closely related to pollution), (iii) bloodied menstrual products as needing to be contained and separated from other substances, and (iv) bloodied menstrual products as matter that should not be seen and that is placed under a visual taboo. In the second part of our findings, we will show that the same four concerns are expressed about single-use products as plastic pollution.

### ***Bloodied Menstrual Products Are Seen as Unhygienic***

The Scottish reports evidence a perception of menstrual blood and bloodied menstrual products as pollutants in the sense of being unhygienic, that is, unclean and pathogenic. For 96% of users in contemporary Scotland, products being “hygienic” is an “important” factor in choosing them, and “hygiene” a major barrier preventing people from taking up reusable menstrual products (cf. Bobel, 2018; Zero Waste Scotland, 2019, p. 27, p. 51). The emotional reactions of disgust and distaste recorded in the report when facing “unhygienic” bloodied products prevent people from trying reusable pads made from fabric that can be washed in the washing machine: “To consider their use, many first had to overcome an initial distaste for the idea of handling and washing bloodied products with many thinking of this as unhygienic and ‘gross,’ and mentioning concerns about mess and smell” (Zero Waste Scotland, 2019, p. 51). Such perceptions of bloodied products as gross, distasteful, messy, and smelly have less to do with health risks and more with a perception of menstrual blood as somehow impure and dirty and distinct from other blood-based fluids.

### ***Bloodied Menstrual Products Seen as Waste***

The perception of period blood as dirt is closely related to used products being described as “waste” in the evidence from contemporary Scotland. Bloodied single-use menstrual products are primarily conceived of as waste, namely as waste matter that needs to be discarded, in both the *Consumer Attitudes* report, which aims at reducing this waste through reusable alternatives, and the *Marine Litter* report, which explores options for reducing this waste in a marine environment. Users quoted in the *Consumer Attitudes* report also speak of the money “wasted” on period products (Zero Waste Scotland, 2019, pp. 46, 47). Associating menstrual products rather than menstrual blood with waste shifts the older popular view of menstruation as a wasted opportunity for a pregnancy (Martin 1987, pp. 44–53), but it does not eradicate it.

### ***Bloodied Menstrual Products Violate the Containment Ideal***

Contemporary Scottish views of bloodied menstrual products, both single-use and reusable, also aim at their containment. This is evident in the *Consumer Attitudes* report when people speak of their desire to separate menstrual dirt from other, somehow less dirty dirt, and to contain it. Those who have not tried reusable pads imagine that they would have to keep the bloody menstrual pads separate from other washable items: “Perceptions around lack of hygiene were related to period products being in a machine wash with other items. Many women considered items with period blood on them to be



too dirty to mix with others or found this distasteful” (Zero Waste Scotland, 2019, p. 57, cf. p. 40). In one case described in detail, this is tied to religious ideas about physical cleanliness and moral purity ruined by blood-stained items, where even “using a wash bag to keep them separate” would not contain washable products sufficiently for this particular consumer. The *Marine Litter* report mentions similar concerns expressed at the expert workshop around mixing used single-use menstrual products with other waste items: “Some users may not wish to put their [disposable] menstrual products in the bathroom bin as this would contaminate other objects in the bin preventing them from being recycled” (Cole et al., 2019, p. 20). Though this comment couches the issue as an environmental concern for recycling opportunities, the nuanced attention paid to single-use menstrual products touching other waste—or in the previous quotation, to reusables contaminating other laundry—seems disproportionate to the actual potential for dirty washing or for waste to become even dirtier and for that to be environmentally relevant.

These statements instead imagine the need for a new separate container for the bloodied menstrual products, either a wash bag or an exclusively used bin or washing machine drum, and can be considered an attempt to contain that which has escaped the container of the body.

The gendering of the containment ideal is clear in the *Consumer Attitudes* report as well, which surveyed exclusively menstruators who identified as female. That menstruation is also associated more widely with other non-male bodies is evidenced in the careful gender-neutral language of the report and its explicit acknowledgement that researchers had intended but were not able to include “the transgender community” among those surveyed (Zero Waste Scotland, 2019, p. 7).

### ***Bloodied Menstrual Products Must Be Concealed***

Bloodied menstrual products are still perceived in contemporary Scotland as something that falls under the concealment imperative, and this need to conceal even applies to concealing one’s own blood from oneself. “Having to see the menstrual blood” and “concerns about contact with period blood” are listed as a major barrier to trying reusable products in the *Consumer Attitudes* report (Zero Waste Scotland, 2019, pp. 55, 51). Catherine Bozec noted in interview that this taboo against touching blood is the main reason that 21% of those surveyed (Zero Waste Scotland, 2019, pp. 43) are “outright rejectors” of reusable products: “We accept that there is a proportion of menstruators out there who would never even consider a reusable. They don’t want to touch the blood.” One user of single-use menstrual products when asked to consider a menstrual cup says: “The thought of even seeing blood and what comes out. It would be in your hand” (Zero Waste Scotland, 2019, p. 41). This user’s aversion relates particularly to seeing menstrual blood as something that “comes out” of her body back “in” her hand, which suggests an anxiety about crossing the bodily boundary between inside and outside that is quite distinct from, say, having the blood from a cut finger on her hand.

The visibility of menstrual blood and bloodied menstrual products to others, not just to oneself, is also a concern: “Worst case scenarios in which others may see the used pad were discussed in horror” (Zero Waste Scotland, 2019, p. 40). The most mentioned barrier putting people off trying menstrual cups was, “I would be worried that they



would leak” (cited by 56%), which is at least in part an anxiety about the visibility of menstrual blood to others. The term “leak,” moreover, reveals again the underlying containment ideal: the assumption that menstrual bleeding is an unintentional emerging of fluids that should normally be contained.<sup>3</sup>

The visual taboo extends to menstrual products even when they have not been in contact with blood, as has been observed in other contexts of unused tampons and pads being concealed (Jackson & Tehan, 2019; Roberts et al., 2002). That a product is “discreet,” meaning not obviously visible, was an “important” factor in choosing it for 93% of users (Zero Waste Scotland, 2019, p. 27). The fact that the visual taboo also pertains to the products themselves shows its strength.

An effect of this concealment imperative surrounding menstrual products is that it might function to discourage people from trying reusable products not only because they involve greater contact with and sight of menstrual blood but also because users cannot readily boast about their eco-credentials. The imperative to keep menstruation invisible and unspoken in Kate Chambers’ view prevents people from proudly displaying environmentally friendly behavior: “It isn’t visible that you’re doing a sustainable ‘act’ as such ... it’s a big difference from having sustainable clothes or having a reusable water bottle, things that people can see and you can actively talk about and it comes up in conversation.” This contrasts with a previous finding that uptake of menstrual products among environmentally conscious undergraduate students disrupted the concealment imperative by legitimizing conversation about product use with family and friends (Owen, 2022b).

### **Concerns About Menstrual Products as Marine Litter: Pollution, Waste, Containment, Concealment**

The extension from menstrual blood as pollutant to unbloodied menstrual products as pollutants continues when they are considered not as individual consumer choices but as an environmental issue on a national scale. Disposable menstrual products in contemporary Scotland are now seen as plastic pollution, irrespective of whether they are bloodied. This has the unexpected consequence of freeing menstrual *blood* from its role as a pollutant. For example, although menstrual blood is flushed into sewage water together with the single-use products, it is nowhere in our text corpus mentioned as a pollutant on the national level (see (d) in this section).

Concerns about pollution, however, have not disappeared, but shifted focus from menstrual blood to menstrual products on beaches, which are now equally seen as (a) polluting, (b) waste, (c) disturbing the containment ideal, and (d) falling under the concealment imperative. In the following, we will demonstrate the continuity of menstrual pollution fears in the discussion around tackling marine litter in Scotland evidenced by the choice of the same vocabulary and concepts, this time applied to the nation in relation to menstrual products rather than to individual bodies in relation to menstrual blood. The liminal spaces that are seen as threatened on this macro level are not the bodily boundaries between embodied person and environment but the beaches that function as the nation’s outer boundaries. Much as the body is envisaged as an incompletely contained but ideally enclosed entity, so the nation is imagined as an

incompletely contained but ideally enclosed entity with the beaches as its outer borders. Menstrual products are here understood as leaking out of the nation, similar to the way in which menstrual blood is perceived as leaking out of the individual body. By labeling this as pollution, the ideal of clear-cut borders of the nation is reinstated.

### ***Single-Use Menstrual Products as Environmental Pollutants***

The terminology and cognitive structure of pollution continues in contemporary Scotland with reference to single-use menstrual products on an environmental scale. The *Marine Litter* report speaks of used disposable menstrual products as “pollution,” which is the standard term for emissions of gases, fluids, and solids into the environment. As indicated above, pollution is also the anthropological framework for explaining the disgust, shame, and embarrassment that menstruation elicits in many cultures. Much like the concept of menstrual pollution relies on and enforces an unattainable containment ideal for an embodied human, so the concept of environmental pollution relies on and enforces an unattainable containment ideal for “the environment.” The environment is cast in similar terms to the embodied human: as a pure entity that should remain enclosed and unpolluted. In the logic of menstrual pollution, as mentioned, the human is separated from its environment through classing the emission of blood into the environment as pollution. This emission is here seen from the opposite angle of the environment as likewise a threat to its boundaries.

### ***Single-Use Menstrual Products as Waste***

Similar to the way in which menstrual blood is seen not as a product of the body but as a waste of a potential product (a baby), tampons and pads are in the *Marine Litter* report seen not as new industrial products but at the end of their life cycle as “waste.” In the same way in which the idea of menstrual blood as waste depends on a teleological view of menstruating bodies as designed for reproduction in a genealogical line, considering period products as waste implies a linear view of the “life” of a product from production via use to disposal as a problem rather than as a resource.

The term “litter,” also often found in the *Marine Litter* report, presents single-use products as scattered discarded items, which suggests a need of containment and separation from their marine environment similar to that of menstrual blood in the logic of the containment ideal. When the *Marine Litter* report refers to menstrual products as “‘leakage’ into the marine environment” (Cole et al., 2019, p. 1), this is an unusual choice of words insofar as “leakage” is commonly reserved for fluids rather than solid litter (though it might also be due to the fact that the litter usually arrives in the sea carried by sewage water). It again reveals an underlying containment ideal in continuity with fears of menstrual pollution, this time referring to the marine environment that needs to be kept pure from unintentionally shed litter.

### ***Menstrual Blood and Products Undermine the Containment Ideal on a National Level***

The fact that the site of this visual pollution through menstrual products is the beach betrays again a focus on borders and containment. The *Marine Litter* report evidences

attempts to reestablish the containment ideal and a clear border, this time on a national level. The victims of harm identified in the report are not so much individual people or animals, or even species, but the nation as a whole. Beaches are liminal spaces (Breidenbach et al., 2021, pp. 11–12), in this case sited primarily between the nation envisaged as an enclosed unit and a legally enforced border to its outside, here the 12-mile limit of the Territorial Sea adjacent to the Scottish (UK) coastline. Pollution through single-use menstrual products is perceived as affecting the clarity and pristine nature of this border, and efforts both at marking it out as pollution and at containing it ultimately help to enforce the boundary.

Beaches and the sea are explicitly cast in national terms in the *Marine Litter* report, insofar as the report is funded by the Scottish government and only concerned with beaches and the sea considering that they are a legal part of and responsibility of Scotland. The act of commissioning a report and gathering data exclusively for Scotland is in itself part of a nation-building effort that performatively enacts a separate identity for Scotland. This includes the work to disaggregate data for the whole of the UK to isolate data for Scotland. In this way, it is particularly the distinction from England to the south and from the rest of the United Kingdom, rather than the distinction between national and international waters, that is relevant for menstrual pollution as presented in this report. Stating how single-use menstrual products are flushed down the toilet or end up on beaches “in Scotland” forces readers to think about period products on a national level and creates the idea of a national beach, a national pollution issue, and a “national menstruation.”

By claiming that the external borders of the nation are polluted through menstrual products, the *Marine Litter* report marks the beach out as the zone of a breach or leakage of an ideally contained entity on a national level. This is not cast as an outside encroaching on the nation, but, like menstrual bleeding, as a leakage from within. The *Marine Litter* report does not mention the national origins of single-use menstrual products washing up in Scotland. It may be the case that international pollution is not a significant issue in Scotland, but a 2018 report on behalf of the European Commission on marine pollution, for example, nonetheless finds it necessary to mention the relative lack of international pollution (European Commission, 2018, part 1, p. 7). Bozec also mentions in interview that “tampons and period products are washed up on our shores from as far flung places as the USA.” Even if the sewage does not come from other countries, the pollution is not of Scottish origin insofar as a high proportion of single-use menstrual products are manufactured outside the UK by multinational companies. Nevertheless, the *Marine Litter* report does not couch pollution in any way as coming from the outside.

The overall concern seems to be less with an encroachment from the outside and more with the lack of a clear distinction between Scotland and the rest of the world. The fact that the national maritime and land borders, like those of individual embodied people, are not given but negotiated was very much in the public consciousness at the time of the report, in the context of the United Kingdom of Great Britain and Northern Ireland’s exit from the European Union and of the Scottish independence movement campaigning for a Scottish separation from the United Kingdom. Access to Scottish coastal waters (including fishing rights), which had been part of the European Union,

was one of the most controversial areas of renegotiation between the UK and the EU, and the land border between Scotland and England was envisaged as an international border in the case of independence.

International boundaries are also renegotiated through menstrual products in the debates around the Period Products (Free Provision) (Scotland) Act 2021, though not in the context of environmental protection (Bildhauer, 2021). This act places a legal duty on Scottish local authorities to make period products freely available to “all persons who need them ... while in Scotland,” as the wording of the law has it (Scottish Parliament, 2021). During the parliamentary work on this bill, the Scottish Government raised concerns about how this would work for commuters and travelers across the Scottish–English border, referred to in the press as a fear of “cross-border raids,” making clear the importance of the demarcation from England (Hall, 2020; Scottish Parliament, 2020). The Scottish nation is through the act envisaged and performed as united by universal access to period products designed to manage and hide menstrual blood (Bildhauer, 2021). This builds on and develops older ideas of the nation as held together by the blood of an extended kinship group and of bloodshed against outside enemies (Anidjar, 2014). This shows a similar transfer of ideas about (menstrual) blood to ideas about menstrual products as we have described in the *Consumer Attitudes* and *Marine Litter* reports.

The concern with environmental pollution—leakage of a pollutant from one ideally enclosed entity, the embodied menstruator, into another ideally enclosed entity, the environment—is thus framed primarily in national terms. Rather than “the environment,” it is specifically Scotland that is polluted and polluting here, which promotes an ideal of a contained nation.

### ***Single-Use Menstrual Products Must Be Concealed in the Marine Environment***

Menstrual blood itself is not identified as a marine pollutant in the *Marine Litter* report. This is in contrast both to arguments made in the Global South about hygiene risks from used disposable menstrual products entering watercourses (Bobel, 2018; Kaur et al., 2018; Vaughn, 2020) and to the disproportionate concern with menstrual blood as a pollutant on an individual consumer level in the *Consumer Attitudes* report. This lack of worry about menstrual blood might have to do with the fact that it is rarely visible on plastic products once it has been washed out by sewage water, and the concealment imperative for blood therefore does not apply. Much like the related pollution fears, however, the concealment imperative has not disappeared but has moved on to period products themselves, irrespective of their degree of bloodiness.

A major concern about menstrual litter in the marine environment raised in the *Marine Litter* report is its visibility, echoing the concern with the visibility of menstrual blood in the *Consumer Attitudes* report. The “visual disamenity” of menstrual litter being seen on beaches is mentioned as a “key impact” on a par with impacts on water quality or on sea life (Cole et al., 2019, p. 5). The data on quantity of single-use menstrual products in the sea, moreover, are based exclusively on reports from beach cleanings carried out by local communities, in other words, on people having seen the products on beaches. George Cole, the report’s main author, also highlights the visual impact of single-use products alongside that on marine animals: “Even if it degrades in

six months the visual presence of that, and the risk of ingestion, is still creating a negative environmental impact.”

This attention to visibility is in part due to the touristic and therefore economic capital associated with a beach perceived as clean. There is good evidence from beach clean reports to support the fact that menstrual waste is a problem on UK beaches, with Scotland being disproportionately affected (cf. European Commission, 2018, part 1, p. 8; Marine Conservation Society, 2021). Harris et al. (2021) argue that such citizen science data relying on visual evidence on beaches to determine the scale of marine pollution is problematic from an academic perspective: Perhaps most significantly, it ignores the exponentially greater volume of marine plastic pollution on a microscopic level not discernible to the unaided human eye (European Commission, 2018, part 1, p. 10). At least in part, the focus on single-use menstrual products visible on the beach echoes the concealment imperative for menstrual products in public spaces as much as more scientifically sound environmental concerns.

## Discussion

In the contemporary Scottish policy reports, menstrual products are framed as environmental pollutants in the same four basic ways as bloodied menstrual products are seen on an individual level: (a) as polluting, (b) as waste and litter, (c) as disturbing the containment ideal, and (d) as needing to be concealed. Though the move from concerns about pollution not through menstrual blood on an individual level, but through menstrual products on a national and environmental level, is merely the latest iteration of menstrual stigma, it allows a rethinking of the notion both of menstrual pollution and of environmental pollution.

As regards fears of menstrual pollution, the shift to the macro level of nations allows the focus to move away from individual menstruators. The fact that there are no concerns raised about menstrual blood as a marine pollutant offers an opportunity to dislodge the perception of menstrual blood as polluting.

The concerns with menstrual products as environmental pollutants could also be exploited to destabilize the concealment imperative for menstrual blood and products. There is positive social capital associated with showing off environmentally friendly behaviors, as mentioned by Chambers. This can override the fear of being associated with menstrual pollution and loosen menstrual stigma. Cole similarly explicitly identifies opportunities for challenging these fears through the esthetic potential of the reusable menstrual cup: “We came across people on social media who were posting photos of their menstrual cup in a sort of Instagram way. Like, this is a beautiful object. And they find pride around owning that object and being associated with that object.” This valuation of menstrual cups as beautiful and environmentally friendly could help to shift some of the notions of menstrual blood and products as abject (Owen, 2022b).

As regards environmental pollution, menstruation could be used to rethink this as a theoretical concept. Scholars from queer, indigenous, and feminist studies especially have observed that the ideal of a pure, contained individual who is separate from an equally pure, contained environment is illusory (e.g., Ah-King and Hayward, 2013; Liboiron, 2021; Tuana, 2009). Indeed, this exceptionalism—seeing human beings as

different from and superior to the environment—is one of the major causes of exploitative environmental behavior, as Liboiron (2021) and others have impressively demonstrated. The impossibility of attaining purity, and the idea that only human beings have the agency to restore this ideal, is also a main contributor to the feeling of helplessness and paralysis in the current climate and environmental crisis. Scholars have offered alternative ways of conceiving of pollution as something other than a binary opposite of purity that undermines the ideally contained human body and environment. Ah-King and Hayward (2013), for example, have shown that pollution by endocrine-disruptive compounds could be understood as part of a dynamic of sexing in which we already live; Tuana (2009) has drawn attention to the ways in which flesh and plastic can be thought of as enmeshed; and Liboiron (2021) has rethought pollution as a colonial taking of land.

Menstruation might likewise offer an alternative way of thinking about pollution that shows that the idea of pollution is not only invested in an ideal of a pure enclosed environment, and of a pure human being who can be separated from an environment, but also of a pure male enclosed gender separated in a binary from women, suppressing or absencing other genders. Pollution in this way is not only colonialism, as Liboiron (2021) puts it so convincingly, but also heteronormative patriarchy. Patriarchal societies in the Global North ensure heteronormativity in part by classing as polluting any emission of fluids from the reproductive organs, such as menstrual blood or to a lesser extent semen, unless it is part of heterosexual sex and/or aimed at heterosexual reproduction (Preciado, 2018). Moreover, only men (who are ideally also White, cisgender, heterosexual, of high social status, and able-bodied) can try to claim an ideal, pure, integral body. Gendering environmental pollution in this way reveals heteronormative gender as another tenet that holds in place patterns of thought and behavior that exploit our material world.

While the common view of menstrual bleeding is that a unit that should be enclosed (the body) leaks into another unit that should be enclosed (the environment), we could see menstrual bleeding instead as a contact and connection between humans and their environment or, even better, as undermining the claim that there is a strict material and semantic border between human and environment in the first place. There is no pure, enclosed, paradigmatically male human who does not need to take in substances from the outside (food, air) and emit them (excrement, breath, menstrual blood) any more than there is a pure, enclosed environment that can be shielded from exchange with humans. Everyone is a leaking, polluting being. More than that, even this distinction separating out humans as a different category from nature is culturally specific and not a given reality.

This move away from paralyzing fears of pollution could benefit ecocritical thought and practical environmental concerns within menstruation advocacy by shifting the focus away from the victims of plastic pollution through single-use menstrual products, be they on an individual scale humans who come into contact with their own or others' bloodied menstrual products or on a macroscopic scale as a whole nation. Instead, the focus can move to the perpetrators of the harm, that is to say, not the individual menstruators but the producers and profiteers of single-use menstrual products. What comes into view instead of individuals when menstrual pollution is seen on a national

and environmental level are the industries and societies profiting from the menstrual concealment imperative. The market for single-use menstrual products, as identified by the *Marine Litter* report, is worth £48 million per annum in the UK (Cole et al., 2019). According to the report, this value would drop by 98% to just £1.1 million if consumers switched to reusable cups that last up to 10 years or by 88% to £5.6 million if menstrual cups were replaced every two years. In other words, there are overwhelming economic benefits to companies if menstruators remain too embarrassed to handle a bloodied cup. Liboiron has suggested disaggregating data on plastic litter not by harmful effect on different species of wildlife or by product category but by producer, which would allow the producers to be held accountable (2021, p. 88). The same could be done for menstrual litter, for example, via extended producer responsibility (EPR; Owen & Chambers, 2021), as the *Marine Litter* report has suggested (though Harris et al., [2021] have raised doubts about the effectiveness of EPR specifically for limiting marine pollution).

More than that, however, the concept of menstrual pollution is not simply perpetrated by individuals or even individual multinational corporations but is part of a political, economic, and intellectual system that divides all humans into two genders, a whole male who can transcend the passive object world and a leaking female who is forever tied to it.

## Conclusion

We have shown that the focus of menstrual pollution fears in contemporary Scotland, though still extant in relation to menstrual blood and bloodied menstrual products, is expanding beyond this to include the ways in which menstrual products are disposed of and where they end up. Where menstrual blood has historically been and continues to be perceived as dirty, polluting, and unhygienic, disposable menstrual products irrespective of their contact with blood are now seen as environmental pollutants. This is in part due to greater environmental awareness surrounding the level of plastic in their composition, as well as their increasing global use. This new environmental awareness about disposable menstrual products is a legitimate and important concern that should be taken seriously. From our findings, we conclude that this concern also appears to be part of a mutation of menstrual stigma from menstrual blood to menstrual products. This represents a recent development in the history of menstrual stigma that may become significant globally.

Our theoretical analysis of fears of menstrual pollution as upholding the containment ideal shows that such fears do essential work to bolster our view of human subjectivity and of a hierarchical gender binary. This suggests that a lasting dislodging of anxiety about menstrual pollution may be dependent upon changes in our investment in the idea of human subjects as semantically and materially opposed to and separate from an environment and of gender being either male and superior or female and inferior. Understanding the role of the containment ideal for individual human bodies also allows us to rethink theories of environmental pollution.



## Notes

1. We use the term “menstruators” as an inclusive term for menstruating women, girls, trans men, nonbinary people, and others.
2. The interviews were conducted via videocall in early 2021. Interviews were semi-structured, using open-ended questions, and transcribed verbatim. Participants were offered anonymity but as professionals in the field chose to be identified. These interviews gave us more personal insights into the data in the reports and also of the motivations and observations of key figures involved.
3. In practice, the *Consumer Attitudes* report and the Trial Period campaign found that users had less concern with their blood as a pollutant when they actually used reusable menstrual products versus the anticipation of doing so. Bozec mentions in interview: “Menstrual cup users were also effective in normalizing the idea of the cup and providing examples of how non-users’ concerns were overcome in practice. For example, explaining that removing the cup was not generally very messy, or saying that they took a bottle of water with them so they could rinse the cup in a toilet cubicle if they needed to change it during the course of the day when not at home.” This suggests that, over time, this aspect of menstrual stigma can diminish through familiarity and may have been exacerbated by the normative use of disposables.

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## Ethical approval

Ethical approval was granted by the School of Modern Languages Ethics Committee at the University of St Andrews; approval number ML15239.

## Disclosure statement

The authors report there are no competing interests to declare. Bettina Bildhauer was one of the members of the focus group for Cole et al. (2019).

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## References

- Ah-King, M., & Hayward, E. (2013). Toxic sexes: Perverting pollution and queering hormone disruption. *O-Zone: A Journal of Object-Oriented Studies*, 1(2013), n.p.
- Anidjar, G. (2014). *Blood: A critique of Christianity*. Columbia University Press.
- Barad, K. (2017). *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Duke University Press.
- Bildhauer, B. (2006). *Medieval blood*. University of Wales Press.
- Bildhauer, B. (2021). Uniting the nation through transcending menstrual blood: The Period Products Act in historical perspective. *Open Library of the Humanities*, 7(2), 1–30. <https://doi.org/10.16995/olh.6339>
- Bildhauer, B., Røstvik, C. & Vostral, S. (Eds.). (n.d.). *The politics and history of menstruation: Contextualising the Scottish campaign to End Period Poverty*. Special Issue, *Open Library of the Humanities*, 8(1). <https://doi.org/10.16995/olh.6338>
- Bobel, C. (2018). *The managed body: Developing girls and menstrual health in the Global South*. Springer Nature/Palgrave MacMillan.
- Bobel, C., Winkler, I., Fahs, B., Hasson, K. A., Kissling, E. A., & Roberts, T.-A. (Eds.). (2020). *The Palgrave handbook of critical menstruation studies*. Palgrave MacMillan.
- Breidenbach, C., Fröhler, T., Pensel, D., Simon, K., Telsnig, F., & Wittmann, M. (Eds.). (2021). *Narrating and constructing the beach: An interdisciplinary approach*. De Gruyter.
- Buckley, T. & Gottlieb, A. (Eds.). (1998). *Blood magic: The anthropology of menstruation*. University of California Press.
- Butler, J. (1990). *Gender trouble: Feminism and the subversion of identity*. Routledge.
- Cole, G., Thomas, B., Jones, B., Hargreaves, S., Chambers, K., Powell, K., & Walker, H. (2019). *Mapping economic, behavioural and social factors within the plastic value chain that lead to marine litter in Scotland*. Report prepared for The Scottish Government by Resource Futures. <https://www.gov.scot/binaries/content/documents/govscot/publications/research-and-analysis/2020/02/mapping-economic-behavioural-social-factors-within-marine-plastic-value-chain-scotland/documents/menstrual-products/menstrual-products/govscot%253Adocument/menstrual-products.pdf>
- Critchley, H. O. D., Babayev, E., Bulun, S. E., Clark, S., Garcia-Grau, I., Gregersen, P. K., Kilcoyne, A., Kim, J.-Y. J., Lavender, M., Marsh, E. E., Matteson, K. A., Maybin, J. A., Metz, C. N., Moreno, I., Silk, K., Sommer, M., Simon, C., Tariyal, R., Taylor, H. S., Wagner, G. P., & Griffith, L. G. (2020). Menstruation: Science and society. *American Journal of Obstetrics and Gynecology*, 223(5), 624–664. July. <https://doi.org/10.1016/j.ajog.2020.06.004>
- Davidson, A. (2012). Narratives of menstrual product consumption: Convenience, culture, or commoditization? *Bulletin of Science, Technology & Society*, 32(1), 56–70.
- Douglas, M. (1966). *Purity and danger: An analysis of the concepts of pollution and taboo*. Routledge.
- Elliott, D. (1998). *Fallen bodies: Pollution, sexuality and demonology*. University of Pennsylvania Press.
- European Commission. (2018). *Reducing marine litter: Action on single use plastics and fishing gear, Commission staff working document impact assessment 3 parts*, SWD(2018) 254 final, Brussels, May.
- Fortune Business Insights. (2021). *The feminine hygiene products market is projected to grow from \$38.18 billion in 2021 to \$54.52 billion in 2028 at a CAGR of 5.22% during 2021–2028*. <https://www.fortunebusinessinsights.com/feminine-hygiene-products-market-103530>
- Gottlieb, A. (2020). Menstrual taboos: Moving beyond the curse. In C. Bobel (Ed.), *The Palgrave handbook of critical menstruation studies* (pp. 143–162). Springer Nature.
- Grandey, A. A., Gabriel, A. S., & King, E. B. (2020). Tackling taboo topics: A review of the three Ms in working women's lives. *Journal of Management*, 46(1), 7–35. <https://doi.org/10.1177/0149206319857144>

- Hall, A. (2020, November 25). How Scotland led the world to make period products free for women. *The Telegraph*. <https://www.telegraph.co.uk/women/life/scotland-led-world-make-period-products-free-women/>.
- Harris, L., Liboiron, M., Charron, L., & Mather, C. (2021). Using citizen science to evaluate extended producer responsibility policy to reduce marine plastic debris shows no reduction in pollution levels. *Marine Policy*, 123, 104319. <https://doi.org/10.1016/j.marpol.2020.104319>
- Herman, D. (Ed.). (2007). *The Cambridge companion to narrative*. Cambridge University Press.
- Houppert, K. (1999). *The curse: Confronting the last unmentionable taboo: menstruation*. Profile.
- Jackson, L., & Tehan, R. (2019). Understanding behaviours causing blockages: Research with United Utilities to identify flushing habits in the North West of England. *Journal of Litter and Environmental Quality*, 3(1), 5–23.
- Jaggar, A. M. (1983). *Feminist politics and human nature*. Rowman and Littlefield.
- Kaur, R., Kaur, K., & Kaur, R. (2018). Menstrual hygiene, management, and waste disposal: Practices and challenges faced by girls/women of developing countries. *Journal of Environmental and Public Health*, 2018, 1730964. <https://doi.org/10.1155/2018/1730964>
- Kristeva, J. (1982). *Powers of horror: An essay on abjection* (Leon S. Roudiez, Trans.). Columbia University Press.
- Laws, S. (1990). *Issues of blood: The politics of menstruation*. Macmillan.
- Liboiron, M. (2021). *Pollution is colonialism*. Duke University Press.
- Marine Conservation Society. (2021). *Beachwatch Litter Dataset 1994–2021*. Supplied to author on request. Cf. [www.mcsuk.org/beachwatch/](http://www.mcsuk.org/beachwatch/).
- Martin, E. (1987). *The woman in the body: A cultural analysis of reproduction*. Beacon Press.
- McKay, F. (2021). Scotland and period poverty: A case study of activists' media and political agenda setting. In J. Morrison, J. Birks, & M. Berry (Eds.), *Routledge companion to political journalism*. Routledge.
- Menstrual Cup Coalition. (2021a). *Frequently asked questions*. [menstrualcupcoalition.org/frequently-asked-questions-about-menstrual-cups/](http://menstrualcupcoalition.org/frequently-asked-questions-about-menstrual-cups/)
- Menstrual Cup Coalition. (2021b). *Menstrual cup coalition members*. [menstrualcupcoalition.org/members/](http://menstrualcupcoalition.org/members/)
- Nash, L. L. (2006). *Inescapable ecologies: A history of environment, disease, and knowledge*. University of California Press.
- Owen, L. (2022a). Researching the researchers: The impact of menstrual stigma on the study of menstruation. *Open Library of the Humanities*, 8(1), 1–25. <https://doi.org/10.15664/10023.24206>
- Owen, L. (2022b). Stigma, sustainability, and the reorganization of menstruation: A case study on the menstrual cup. *Gender, Work & Organization*, 29(4), 1095–1112. <https://doi.org/10.1111/gwao.12808>
- Owen, L., & Chambers, K. (2021). *Tackling single-use and social stigma in period management*. Circular. <https://www.circularonline.co.uk/features/tackling-single-use-and-social-stigma-in-period-management/>
- Preciado, P. B. (2018). *Countersexual manifesto* (K. G. Dunn, Trans.). Columbia University Press.
- Roberts, T.-A., Goldenberg, J. L., Power, C., & Pyszczynski, T. (2002). 'Feminine protection': The effects of menstruation on attitudes towards women. *Psychology of Women Quarterly*, 26(2), 131–139. <https://doi.org/10.1111/1471-6402.00051>
- Scottish Parliament. (2020). *Local Government and Communities Committee. Papers for 1st Meeting (Session 5) (LG/S5/20/1/A)*. [https://archive2021.parliament.scot/S5\\_Local\\_Gov/20200108PUBLICpapers.pdf](https://archive2021.parliament.scot/S5_Local_Gov/20200108PUBLICpapers.pdf).
- Scottish Parliament. (2021). *Period Products (Free Provision) (Scotland) Act 2021*. <https://www.legislation.gov.uk/asp/2021/1/contents>
- Somers, M. J., Alfaro, J. F., & Lewis, G. M. (2021). Feasibility of superabsorbent polymer recycling and reuse in disposable absorbent hygiene products. *Journal of Cleaner Production*, 313, 127686. <https://doi.org/10.1016/j.jclepro.2021.127686>
- Tuana, N. (2009). Viscous porosity: Witnessing Katrina. In S. Alaimo & S. Hekman (Eds.), *Material feminisms* (pp. 188–213). Indiana University Press.

- Ussher, J. M. (2006). *Managing the monstrous feminine: Regulating the reproductive body*. Routledge.
- Ussher, J. M., & Perz, J. (2020). Resisting the mantle of the monstrous feminine: Women's construction and experience of premenstrual embodiment. In C. Bobel (Ed.), *The Palgrave handbook of critical menstruation studies* (pp. 215–231). Springer Nature.
- Vaughn, R. (2020). Compost and menstrual blood: Women waste pickers and the work of waste futurity. *Catalyst: Feminism, Theory, Technoscience*, 6(1), 1–28. <https://doi.org/10.28968/cftt.v6i1.32379>
- Vostral, S. (2008). *Under wraps: A history of menstrual hygiene technology*. Lexington Books.
- Wood, J. M. (2020). (In)visible bleeding: The menstrual concealment imperative. In C. Bobel (Ed.), *The Palgrave handbook of critical menstruation studies* (pp. 319–336). Springer Nature.
- Zero Waste Scotland. (2019). *Consumer attitudes towards reusable menstrual products in Scotland*. Research undertaken by Progressive Partnership. <https://www.zerowastescotland.org.uk/sites/default/files/Reusable%20Menstrual%20Products%20Research%20Report%20.pdf>