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Empowerment, destigmatization and sustainability: the co-construction of reusable menstrual technologies in the context of menstrual activism in Argentina

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ABSTRACT

In this essay, I use the domestication framework to explore the integration process in which reusable menstrual management technologies become part of the everyday life of users. Drawing on interviews, focus group discussions and observation in online and offline sites in Argentina, this study sheds light on how technologies and users co-construct each other in the context of an emerging menstrual activism. By listening to the stories of the participants of this study, I show the potential of women's agency in transforming technology. New and not foreseen uses and meanings were assigned to the reusable menstrual technologies, however, this happens while the identities of users are also transformed in the process of domestication, illustrating how the identity of being a menstruating woman and technologies are co-shaping each other.

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Introduction

Since the beginning of the 21st century, movements organizing around sexual and reproductive health and rights (SRHR) in Argentina have accomplished a notable list of achievements, including the approval of a number of laws and policies. For example, the National Program for Sexual Health and Responsible Procreation (NPSHRP) was implemented in 2003, demanding public health agencies to provide free information related to sexually transmitted infections and free contraceptive methods (Rawson, 2012) and in 2007, emergency contraception was accepted into the NPSHRP (Morgan, 2015). The struggle continues for the right to legal, safe, and free abortion (Abortolegal, n.d.). Among these SRHR issues is the newly emerging menstrual activism (MA), which works toward a change on menstrual health issues, beginning with an acknowledgment of menstruation as an everyday issue for all women, one that should not be hidden or stigmatized.

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Discussions about menstruation have gained increasing interest for SRHR issues in Argentina and are slowly becoming part of the political debate around gender, health and rights. MA centered on promoting women's sexual and reproductive health with attention on advancing education about the menstrual cycle and also questioning the safety of available technologies used to manage menstruation (Economía Feminista, n.d.). In this scenario, the technological innovation of reusable menstrual management technologies (RMMT), specifically the menstrual cup and the reusable menstrual pads, have gained visibility. These technologies are designed and promoted not only as technologies to manage menstrual bleeding but also as healthy alternatives for women's bodily health and integrity, as environmentally sustainable, and low-cost options in the long term (Felliti, 2016; Gaybor, 2018). They are commercialized among Argentinean middle class women, as providing such additional benefits in contrast to the earlier technologies of tampons and disposable menstrual pads.

There is a limited body of work focusing on how RMMT acquire these meanings for producers. The Argentinean researcher Karina Felliti (2017) explores the gendered meanings that the local producers of the menstrual cup inscribed to this artifact. She explains that for the producers, the intended use of the cup is not only about managing menstrual bleeding but also about challenging society's menstrual stigma and changing the ways of understanding the relationship between women's menstrual health and femininity. Taking this into account, Felliti (2017) highlights the role that this technology could potentially play in transforming gender identities and in empowering women.

However, as I go on to show, technologies should not be thought of as '[the] irreducible first cause from which social effects automatically follow' (Noble, 1979, p. 374), as this would mean falling into technological deterministic theories of gender and technology. Wajcman (2004, p. 54) has extensively argued that 'the construction of gender identities, like that of technologies is a moving relational process achieved in daily social interactions', further adding that 'such analysis introduces space for women's agency in transforming technology' (ibid).

The idea that the uses and meanings of technologies are exclusively configured in the hands of designers or producers of technology (Woolgar, 1991) has been widely debated (Oudshoorn & Pinch, 2003; Wyatt, 2007). The role of users in influencing the development of technology and how technology affects users, have been of interest to scholars since the 1990s. This literature looks at users, and within this category, women users (Wajcman, 2004) as active agents of technological change, instead that as passive recipients of technology (Oudshoorn, Rommes, & Stienstra, 2004; Oudshoorn & Pinch, 2003; Wyatt, 2007). In this article, my findings show that there are other uses and meanings of technologies in addition to those for which they were designed – ones that are assigned by users in the process of integrating them into their everyday life.

Following these debates, I explore, from the perspective of the users, how RMMT is about a process of co-construction of technology and users in the context of Argentinean MA. I analyze the use of these technologies using the framework of domestication. Domestication (Haddon, 2011) looks beyond the adoption and use of technologies to examine what the technologies mean to users in a given context.

It examines the functional, symbolic and cognitive roles that these technologies can come to play in users' lives and how the values and uses of technologies are shaped while integrating them into their lives (Haddon, 2006). I ask, how are these technologies domesticated and given (new) symbolic and utility values in the hand of users? And, how is the use of these technologies shaping users' identities and experiences of menstruation? For my analysis I conceptualize the user of RMMT as an actor embedded in complex social relations, shaped by different social, cultural, and economic aspects, and not as an isolated individual whose relationship to RMMT is restricted to the technical interactions with the artifact. With this analysis, I seek to contribute to the debates on the role of users in technological development and more specifically, on the potential empowering effect of RMMT in users within a specific context and its potential role in transforming the understanding of menstruation and menstrual bodies, not just of individual women, but of society at large.

Domestication of technologies or how they become entrenched in users' lifestyles

The domestication framework considers the adoption of a technology as a complex negotiation dynamic, where humans and technologies are in constant dialectic exchange, a process sensitive to resistance at individual and collective levels (Silverstone, 2005). The framework explores how individual users, as well as collectives, negotiate the values, symbols and practices of a technology while integrating it into their everyday life practices. In this process, new technologies can remain or can be transformed from 'unfamiliar, exciting, and possible threatening things' into familiar artifacts embedded in the users' culture, practices, and routines (Silverstone, 2005; Lie & Sørensen, 1996).

Initially, the framework developed around empirical studies on ICTs, and through exploring dynamics that occur within the household (Carter, Green, J., & Thorogood, 2013; Handapangoda & Kumara, 2013; Juntunen, 2014), 'given that this [was] the site where some [ICT technologies] were mostly experienced' (Haddon, 2007, p. 28). However, it extended beyond digital technologies and the home, including other artifacts and acknowledging that the activities linked to the domestication process happen in multiple sites that transcend the private (Haddon, 2007; Laegran, 2003). The framework was further developed by Silverstone (1994) and explained as a dynamic process characterized by four interrelated but not successive dimensions: appropriation, objectification, incorporation and conversion. Appropriation refers to the motivations and reasons associated with acquiring technology (Juntunen, 2014), as well as to the moment in which a technology leaves its status of 'merely a commodity' and becomes an object owned by someone who conferred it a particular meaning. This dimension considers the decisions, conflicts and negotiations involved in the acquisition of a technology and in entering into a personal or collective space (Haddon, 2011). Objectification refers to how the technology is placed in both the physical space as well as the mental space of the user. The user ascribes cognitive and esthetic values, so that technology acquires a specific place and meaning in their life. These values are expressed both in the use and in the physical disposition of the technologies. Through its use, the user appropriates the technology assuming that it

contributes to the construction and manifestation of their personal identity, thereby legitimizing their acquisition and use (Ling, 2004). Incorporation refers to the way in which technologies are integrated into the routines of the users according to the cultural values, their needs and preferences. The functions of technology and its symbolic value are not predetermined in their entirety; some may change or disappear, and users may resist certain uses or discover and develop some others not foreseen by the designers. The given meanings, symbolic values and practices shape the ways technology is integrated into social practices of users. During the conversion phase, technology is integrated into the user's identity and is publicly displayed – materially or symbolically – as a way of reaffirming a certain position through its use and competence (Silverstone, 1994). In other words, conversion focuses on how the user's meanings ascribed to a technology are shared with others (Juntunen, 2014). As previously mentioned, these dimensions should not be presumed as successive; as Ling (2004, p. 31) reminds us, 'people seem quite agile in the ability to mentally objectify items long before the actual purchase has taken place'.

This dynamic process seldom takes place without tension, which sometimes can lead to non-adoption of the technology. The analysis of domestication is sensitive to frictions, as well as categories that affect power relations, such as gender, class and age (Laegran, 2003). Besides, the presence of a technology can modify the routine practices of the user but also of the household, which can affect the relationship between its members. Domestication also considers the tensions coming from relationship between global hegemonic codes versus local forms of interpreting and using a technology (Haddon, 2006). What a technology means and how it is used in one place can have a very different significance and use in another.

Reusable menstrual management technologies

The menstrual cup is a small, bell-shaped cup made of medical-grade silicone or Thermoplastic Elastomer. The cup is inserted into the vagina below the cervix to collect menstrual blood, and when full, needs to be removed and cleaned before re-insertion. With proper care, it is reusable for up to a decade. The reusable pads are washable cloth pads made of cotton or Gore-Tex that are designed to attach to the underwear with Velcro or clips. Depending on the brand, the pads are reusable for up to 3 years. RMMT, although cheaper in the long term, demand an initial economic investment, which is often equivalent to what would be spent over 1 year on disposable products. In Argentina, RMMT are locally produced, but are also imported from the USA, the UK and more recently, China.

In Argentina, RMMT are not advertised in mass media as DMMT. Their popularity among middle class Argentinean women has been mainly due to 'word of mouth', the internet and in niches of feminine health and responsible consumption. This has created certain restrictions in terms of the spread of knowledge of RMMT's existence, in terms of discussing their benefits and limitations. Nevertheless, RMMT are starting to be used widely and their popularity continues to grow. What is inducing the Argentinean women to switch to the RMMT? To reply to this question, it is important

to first look into the two main frames behind the promotion of RMMT: menstrual hygiene management (MHM) and MA.

How are RMMT considered tools for empowering women?

RMMT have begun to be related to the idea of empowerment, although from somewhat opposing angles. Here, I discuss two of them: MHM and MA.

At a global level, MHM has emerged as an important human rights issue¹ and part of women's rights discourse (OHCHR, 2014). It has been adopted as a concern of the Water, Sanitation, and Hygiene (WASH) sector. MHM renders menstruation as a medicalized problem in need of solutions and stresses the importance of hygiene (Thakre, Thakre, S.B., Reddy, M., & Rathi, 2011; Sommer, 2010). One of the main concerns about medicalizing menstruation is that it is portrayed as 'a universal feminine experience and as strictly a biological condition' (Lahiri-Dutt, 2015, p. 1162), giving greater relevance to scientific knowledge about the anatomy and physiological functions of the female body. Within this framework, the multiple culturally specific interpretations tend to be overlooked and very little attention is placed on other understandings about menstruation that come from family or cultural traditions. On the other hand, managing menstruation with hygiene has been framed as the way to relate to menstruation. Linked with notions of women's emancipation and empowerment but conditioned by the accessibility to MMT (Thakre et al., 2011; Sommer, 2010; Wilson, 2012). MHM's strategy to sanitize the management of menstruation is mostly based on individual interventions through the provision of MMT. The following quote from the website of BeGirl, one of the MHM organizations based in the USA that provides RMMT in different countries in Africa and Asia, is a representation of this claim,

Be Girl is dedicated to meeting the needs of the more than 250 million adolescent girls lacking access to appropriate, high-performance menstrual products necessary to promote autonomy and empowerment while preserving the environment (BeGirl, n.d.).

A similar rhetoric and strategy of empowerment through providing access to MMT is mobilized by corporations that produce DMMT, such as Procter & Gamble (2018),

Lack of access to period products is a problem not just in developing countries, but also here in the U.S. [...]. This donation is just part of our ongoing mission and commitment to help empower girls and women everywhere with access to the products they need to manage their periods so they can focus on reaching their full potential.

At the core of this approach is the notion that women face the problem of unhygienic menstrual management, which has an effect on their personal development. A link is proposed by academic the literature between a lack of access to MMT and missing school (Thakre et al., 2011; Sommer, 2010), however, little empirical research to date concretely substantiates this link, and criticisms of this assumption have begun to emerge (Joshi, Buit, & González-Botero, 2015; Lahiri-Dutt, 2015). Nevertheless, from a MHM approach it is contended that 'the delivery and provision of these sanitation implements will overcome education and empowerment barriers' (Joshi et al., 2015, p. 53). Empowerment in MHM, in short, is about benefiting individual women through a quick-fix technological solution. For Lahiri-Dutt (2015, p. 1170), the underlying argument is of a reductionist nature: 'once poor girls use commercial sanitary pads, all other aspects of a

comfortable life – skilled, highly paid employment and economic power – will follow’. At the core of MHM interventions is the aim to improve women’s access to resources. As Cornwall and Rivas (2015, p. 405) state, the work of these external actors ‘may be conceived not as empowering women but as clearing some of the obstacles from the path and providing sustenance for women as they do empowerment for themselves’.

Globally then, MHM co-exists and mutually shapes a growing movement labeled as MA (Bobel, 2007; 2010). Bobel (2007) locates MA as the ‘granddaughter’ of the women’s health movement of the 1970s and describes it as ‘tactically and ideologically tremendously heterogeneous, manifesting itself in a rich variety of styles, spanning the terrain from the sacred to the ribald and the practical to the abstract’ (Bobel, 2007, p. 150). MA challenges traditional medical and social discourses about menstruation aiming to break menstrual stigma and change the culture of concealment. In other words, it is about changing the menstrual ‘status quo’ (Bobel, 2010) that has medicalized and stigmatized women’s experiences of their menstrual cycle. MA differs from MHM in the sense that it is not about improving women’s capacities to cope with their menstruation through the dotation of MMT, but instead to question what they might have previously considered normal with regards to the menstrual cycle and encourage action in order to make a change.

In Argentina, MA organizes around the promotion of body and menstrual literacy (Felliti, 2016). Menstrual activists focus on menstrual body care and search for ways to ensure that women experience their menstruation in a healthy way. This includes the production and dissemination of information about the female body and the menstrual cycle in collective spaces and in online platforms. This information brings a biological perspective but it is also inspired by the experiences of the women themselves, Eastern medicine and indigenous knowledge. The form of empowerment enacted by MA involves a process of questioning the stigma behind menstrual practices and narratives; knowledge production and dissemination and the creation of spaces for collective reflection of different ways to approach the experience of menstruation. As part of a global wave, activists are also struggling to end tampon tax and demand governments to include discussion on menstruation in sexual education curriculum to reduce stigma. Similar efforts are found in Mexico, where in 2016 the proposal from MA to eliminate this tax was reached the by Senate (2016), and also in Colombia, where the Constitutional Court of the Republic of Colombia (2018) ruled in favor of MA demands to abolish the 5% tampon tax.

I consider empowerment as a process that ‘entails reflection, analysis and assessment of what has hitherto been taken for granted so as to uncover the socially constructed and socially shared basis of apparently individual problems’ (Kabeer, 1994, pp. 245–246). In this process, ‘new forms of consciousness arise out of women’s newly acquired access to the intangible resources of analytical skills, social networks, organizational strength, solidarity and sense of not being alone’ (Kabeer, 1994). Therefore, this study explores the relations built between users and other relevant actors that influenced the domestication of RMMT.

In order to answer whether we can link the notion of empowerment to the experience of using RMMT, I explore the user-technology dynamic through the domestication framework, taking into account the importance of context and specifically the

role that loose social networks and events play in infusing meaning upon RMMT that link them with women's health, empowerment and environmental protection. I explore the power dynamics in terms of the influence of peers in the adoption of the technology.

Methodology

Data was collected on and offline from March 2015 to May 2018. Field research was conducted in Buenos Aires, Argentina from August 2016 to January 2017.² A total of twenty-four semi-structured interviews were conducted from August 2016 to May 2018 with users³ of RMMT who live in the city of Buenos Aires. The participants' age range was between 20 and 35. Some of the interviews were conducted by phone or Skype. Four FGDs – with eight participants each – were conducted in the city of Buenos Aires in October and November 2016. FGD participants' age range was between 21 and 34. All the participants self-identified as middle class⁴.

Interviews and FGDs were complemented with non-participant observation in a range of ecological fairs and events on menstrual health, natural gynecology and sexuality. I got to know the participants of this study in these events and they introduced me to other users of RMMT. As a secondary source, internet forum-discussions, Facebook groups and blogs were further sites of research⁵. Online platforms helped me understand references made by the participants with regards to tutorials they accessed about using RMMT, as well as allowing me to follow debates and make contacts. Online sites also became key for inviting women to participate in the FGDs and interviews.

The outline of questions and themes for the interviews and the FGDs were divided in two sections. One set of questions set out to explore the domestication framework and covered issues such as the sources through which information on the RMMT was collected; the ways of acquiring the technology; the personal experiences in the early and in the routinized use of RMMT; the motivations/limitations to use RMMT; challenges faced prior to using RMMT and how they were overcome; and the means by which the participants came to use a RMMT. The second section was geared toward understanding the changes RMMT brought about in a user's life. Considering empowerment as described above and as relational (Handapangoda & Kumara, 2013; Cornwall & Rivas, 2015), the question guideline aimed to capture three life stages of the participants – before, during and after domestication – in order to monitor the stages through which the RMMT was domesticated and integrated into their life.

All quotations that appear below were translated by the author from Spanish and pseudonyms are used.

Findings⁶

Appropriation: RMMT are necessary and not luxuries technologies

Users justify the purchase of RMMT by framing them as necessary and not superfluous artifacts in their lives. The possible health risks associated with the use of DMMT stimulated the participants to search for alternatives. One of the most known risks

associated with the use of tampons was toxic shock syndrome (TSS), a potentially deadly disease related to their prolonged use (Tierno, Schlievert, Tripp, & Peterson, 2005). There are other personal health ailments linked to the use of DMMT that place RMMT as necessities, such as urinary tract infections, rashes and allergies, which the participants spoke of as having experienced personally. One FGD participant, who has used reusable pads for 5 years, explained:

[...] I tried all the brands, but I always had a skin rash. My former gynecologist prescribed me creams, but it always came back. I was desperate so I started to search online and I found a website of a woman talking about these issues. She was selling cotton-made reusable pads. I tried them without much hope, and they worked [...]. (Martha, Focus group discussion, Buenos Aires, 28 October 2016).

Participants referred to many different websites⁷, from local or foreign producers of RMMT that provided information about menstrual related issues. While visiting these websites, I noted the vast amount of information on topics related to menstrual health. For instance, information about TSS, recipes of homemade remedies to alleviate menstrual cramps, endometriosis and links to scientific studies on related topics.

In 2015, a team of scientists from an Argentinean university found residues of Glyphosate in DMMT (Marino & Peluso, 2015). Glyphosate is classified as probably being carcinogenic (Guyton, et al., 2015). This finding received extensive local press coverage, which alerted women to the possible health risks of using DMMT (La Nacion, 2015; Telam, 2015). Most of the participants were aware of this and explained that the news encouraged them to look for alternative options:

When I read about the glyphosate in pads, I was shocked. By that time I knew about the menstrual cup. But I was a little suspicious, maybe afraid, I do not know [...]. I am a Biologist, I know what glyphosate can do to my health. Maybe that was the last impulse I needed to make the change (Luisa, Personal interview, Buenos Aires, 07 December 2016).

Environmental concerns were brought up as another important reason for becoming a user of RMMT. Participants consider that following a certain lifestyle (zero-waste, responsible consumption) is a means to foster social change. One interviewee stated:

It's easier to go out on the street on a protest and say I'm with the environmental cause, you know? But it is more challenging to live accordingly [...]. For me it was important to switch to reusables [...] what else can you do if you don't want to produce more waste? [...] Same with diapers, my child always used reusable diapers. I never bought him disposable diapers (Fernanda, Personal Interview, Buenos Aires, 21 October 2016).

As the quote above indicates, most of the participants considered that their own actions and commitments in reorienting their consumption practices have the potential to effect change at a broader level. This is of particular importance considering that in Buenos Aires, DMMT waste is the fourth highest component in solid waste and ends up buried in landfill, taking hundreds of years to decompose. Currently there are not post-use treatments designed to deal with this type of waste (Gaybor & Chavez, 2019). RMMT are seen thus as necessary artifacts that enable this change. Participants mentioned that it is worth making the economic investment considering the risks to health and the environmental effects of using DMMT. Note that the participants self-identified as middle class.

Objectification: the place and specific meanings of RMMT in women's lives

Users assume that the usage of RMMT contributes to the construction and manifestation of their personal values and sympathy with certain philosophies, such as responsible consumer, environmentalist, and zero-waste citizen. There are also cognitive aspects particularly related to the use of the menstrual cup, which means it has acquired a very important place in the life of users. The menstrual cup requires (for its use) certain familiarity and knowledge about the anatomy of the female body. In the niches where the RMMT are sold or where discussions about it happen, several informational resources circulate – books, fanzines, references to tutorials on the internet – that provide information on the anatomy of the body, the menstrual cycle, and tips for using the cup. According to the users, through the cup and in learning how to use it, they have learned about their own anatomy. For one FGD participant, '[the cup] is like a bait. You take the hook and you enter a world of further learning'. (Victoria, Focus group discussion, Buenos Aires, 28 October 2016).

The cup is commonly described by users as a tool that enables the self-exploration of the body and 'the loss of fear of knowing your own anatomy' (Carla, Skype interview, 7 May 2018). For one FGD participant it became a bridge toward the use of non-hormonal contraceptives,

I got to know my body through the cup and that helped me take a step forward to use the diaphragm. I never would have imagined using it because when I bought it years ago, it seemed to me too complicated (Clara, Focus group discussion, Buenos Aires, 1 November 2016).

The menstrual cup was considered a tool that enables a better understanding and observation of the body also in other ways. In one FGD, (Vanessa, Focus group discussion, Buenos Aires, 01 November 2016) described the cup as a 'feminine health thermometer' through which she was able to notice and track details of her menstrual blood, such as the color and volume. Other participants also reported that an 'added value' of using the cup is that it allows to track changes in menstrual blood, which is 'beneficial for disease and other body changes' early detection'.

The symbolic and cognitive dimensions expressed above were very common among users but not necessarily overshadowed by the functional dimension. RMMTs are also integrated into the life of users to meet practical needs, as one FGD participant indicated:

I don't share the feeling of being in love with the cup, which all the women here are expressing [this was during the FGD]. I agree that the ecological point is good. But for me it is a matter of practicality [...] I needed something to help me manage my abundant flow [...] (Stephany, Focus group discussion, Buenos Aires, 01 November 2016).

On being asked about the physical disposition/handling RMMT in the house, the participants were of varied opinions. Most users consider that RMMT are not to be kept in secrecy, while they are not fulfilling their specific function. RMMT need to be washed, (sun) dried or disinfected in a pot of boiling water, which makes them, in a sense, visible artifacts inside the household. Taking into account that menstruation is largely stigmatized in Argentina (Pessi, 2010; Felliti, 2017), which limits discussions and thus the possibilities of openly talk about RMMT, handling these technologies inside

the home required numerous conversations. Participants spoke about having to talk about RMMT, answering doubts and curiosities with their family and flatmates. These conversations were reported as having been satisfactory, intimate and bonding. These dynamics altogether break the cycle of fear that the secret of using RMMT could be revealed, basically because there is no more secrecy around them, leading to a process of destigmatization of the RMMT as well.

In one FGD, a participant explained,

I disinfect my cup while chatting with my boyfriend and he is fine with that. There was a lot of conversation between us to reach this point and be able to talk about it. I needed to be informed and free myself from taboos (Victoria, Focus group discussion, Buenos Aires, 02 November 2016).

Another participant mentioned,

Sometimes I forget my pads in the clothesline and my flatmates fold them and bring them to my room. At the beginning they had no idea what they were. So I had to explain to them [...], which was awkward, but now it is fine (Gabriela, Focus group discussion, Buenos Aires, 02 November 2016).

What is interesting to note about these experiences, is that within the home environment, opening the conversation around the subject of menstruation and its multiple subthemes was not easy at the beginning. Conversation was triggered because of the curiosity of the housemates/partner regarding RMMT. RMMT thus somehow became instruments to break the silence around menstruation, and silence, according to Johnston-Robledo & Chrisler (2013) is how, indirectly, the menstrual stigma is continuously perpetuated.

There were also a few divergent opinions that pointed to social rules on privacy and intimacy. The levels of intimacy were constituted in part through discourses around the taboo of menstruation as with notions of hygiene, with remarks like this one,

I wash [the pads] in my bathroom sink and I make sure to get them from the terrace once they dry. My flatmates have no issues with them, but [the pads] are very intimate. It is the same with my underwear, they are intimate (Karina, Skype interview, 18 March 2018).

The objectification of RMMT can be thought of as an ongoing process where personal values and identity are expressed both in the use and in the physical disposition of the technologies. A few users felt more comfortable keeping them private, while most felt there was no need for that. However, in both situations they continued using the RMMT.

Incorporation: fitting RMMT in the routine of users

A successful closure of the incorporation process implies that the challenges associated with the technology's use have been overcome. An important factor for this to happen according to all the participants was access to information either through the advice from peers that already used RMMT or through media. One of the most cited YouTube channels was Precious Stars Pads⁸, an English-speaking channel which deals

with the broad topic of menstruation, including how to use RMMT, puberty, and living a zero-waste life. Such media was reported as a didactical tool and most importantly an online environment that facilitates discussion around RMMT, the benefits, challenges, etc. One FGD participant mentioned,

There is this British girl's YouTube channel, she is a genius. Without her guidance I would have never managed to correctly use the cup (Micaela, Focus group discussion, in Buenos Aires, 01 November 2016).

Participants expressed various 'considerations' they had prior to becoming users of RMMT. Some recounted that initially they were afraid that RMMT would not successfully prevent leakages. Most of the participants first tested the RMMT inside their home and when they felt comfortable they started using them in public environments. The considerations also included the need to have access to running water to clean and sanitize the cup and wash the pads. The safe use of the RMMT in terms of sanitation was constantly mentioned by participants as an essential need. One FGD participant explained,

The only time when I don't use the cup is when I go camping [...] I need to have water to clean it, wash my hands and feel comfortable to empty and reinsert it (Victoria, Focus group discussion, Buenos Aires, 02 November 2016).

Another issue that emerged in the incorporation process refers to the influencing role of flatmates or family members who judge the decision of using RMMT. One 23-year-old FGD participant was accompanied by her mother. The mother wanted to be in the FGD to learn more about the topic, being concerned in particular about the safety of the menstrual cup:

I would like to know if there are any health impacts from its use. That is still unknown [...]. My gynecologist did not even know about the existence of the cup. I am afraid that after 15 years there would be a wave of sick women because of using it. So I suggested to [my daughter] not to use it all the time and to alternate it with DMMT (Sofia, Focus group discussion, Buenos Aires, 01 November 2016).

The influence of the family environment in the incorporation process became clear through this example, as the participant, the user of the cup, mentioned that she follows her mother's advice to use the cup in an interchanging way. The mother expressed a legitimate doubt, which resonated with other participants of the FGD: there is indeed limited scientific research about RMMT that proves the safety of the cup for women's long-term health (Shihata & Brody, 2014). One study confirms one case of TSS associated with its use (Mitchell, Bisch, Arntfield, & Hosseini-Moghaddam, 2015) and another study reports a case of renal colic derived from its use (Nunes-Carneiro, Couto, & Cavadas, 2018).

However, the influence of the family became more evident in another interview when a participant recalled receiving negative comments from her husband and mother with regards to the cup. Some of the comments reported during the interview were: 'It can make you sick', and 'looks odd, first ask the doctor'. These comments sowed doubts, created tensions within the family and pushed her to stop using the cup for 2 years. However, she started to do online research, participating in online forums; that process encouraged her to continue using it.

Attempts to incorporate the RMMT into the participants' routines met with a number of practical but also symbolic challenges that reflect the taboos and silence around menstruation but also the unfamiliarity with RMMT. Overcoming these symbolic and practical challenges seem to have an effect on incorporating the RMMT in the routines of users.

Conversion: carrying symbolic values to the outside world

Participants spoke about how they have become advisers to their families and friends in encouraging to change to RMMT based on their own experience:

All my thoughts and conversations began running on one track. My experience has been so good with the reusable pads that I wanted other women to feel the same. Especially those who suffer from allergies to disposables, as I did (Elena, Personal Interview, Buenos Aires, 09 November 2016).

Elena's testimony was not unique. Several participants spoke of having become 'ambassadors of RMMT'. As described in the quote below:

I feel I am part of a sisterhood with other women that probably went through the same things as me: allergies, infections and despair. [...] This conversation is growing quickly, from mouth to mouth, because we want other women to have better and healthier experiences with their menstruation (Graciela, Personal Interview, Buenos Aires, 02 September 2016).

Interpreting the RMMT as a medium enabling change in the ways menstruation is managed, becomes even more evident in one Facebook group on women's health. There, women share their personal experiences around sexuality, information about events and reading materials. With regards to RMMT, one member asked: 'Hello girls I wanted to know about the menstrual cup. Is someone using it? What is your experience? [...].' (Elisa, Facebook group wall post, 16 December 2016. Accessed 14 July 2018). One, among many responses was,

Hi, yes. If you buy it you will not regret it. I love it and I'm literally happy when the moon goes down [referring to the menstrual flow] and I can see how [menstrual blood] really is. Above all, it's a privilege not to use disposable pads that are horrible. You do not feel that you are wearing it, the comfort is absolute. Obviously, the first times can be uncomfortable until you learn to insert it and remove it (Carolina, Facebook group comment, 17 December 2016. Accessed 14 July 2018).

In the same group, another member posted her feelings toward the menstrual cup,

Hi ladies. I wanted to tell you that if you have not yet tried the menstrual cup or are evaluating it or you are not sure, I assure you that you will not regret it. It is blessedly great. It is a very good investment for your vaginal health. It really exceed my expectations. Do not hesitate. It also lasts 10 years [...] (Diana, Facebook group wall post, 23 October 2016. Accessed 02 May 2018).

This post was followed by more than 120 replies of women supporting it or also sharing their personal bodily experiences with the technologies. In the same conversation there were other questions raised by members of the group:

What is the cup? (Ana, Facebook group comment, 23 October 2016. Accessed 02 May 2018).

It is a silicone vessel that fulfills the function of a tampon but does not leave waste in your intimate area and does not pollute. It has been very comfortable for me and it does not make me itchy as tampons and industrial pads did (Marcela, Facebook group comment, 24 October 2016. Accessed 02 May 2018).

Another important personal meaning attached to RMMT which is commonly communicated to 'the external world', is that of protecting the environment by not producing waste. On this regard, one FGD participant explained,

It takes a big effort to speak about these topics, because it is not only about menstruation, it is about health, education, environment. We are not used to thinking of menstruation and linking it with waste, right? This may be obvious for you and for me, but not for most of the people. I feel I have an ethical obligation to contribute to this and talk to people about it [...] (Monica, Focus group discussion, Buenos Aires, 02 November 2016).

This quote shows how a sustainable solution for menstrual management starts by addressing the ideological problem of stigma, a factor that influences the lack of discussion and makes it difficult to connect topics such as menstruation and waste production.

Discussion and conclusion

The findings of this study present how RMMT are integrated into a user's life. They show that this is not an immediate event, on the contrary, it is a gradual process that reveals changing motivations and practices, that is susceptible to tensions and is guided by multiple sources of information that build up a holistic perspective of menstruation. The findings show that besides being a process that takes time, it is also context dependent. The meanings and uses attributed to RMMT by their users occur in a particular set of circumstances marked by an increasingly popular MA, which focuses on the promotion of body literacy, the advancement of women's health and the development of sustainable menstrual practices. In this context, users justify the purchase of RMMT by framing them as necessary rather than superfluous artifacts in their lives. Users considered RMMT useful to satisfy personal as well as collective needs. Personal needs include the health and economic benefits of using RMMT, while collective needs include the protection of the environment and hence the wellbeing of future generations. Likewise, users' understanding of RMMT as a necessity comes from a comparison between disposable and reusable MMT, where disposables are described as more expensive in the long term and as harmful to the body and the environment. The finding of glyphosate in DMMT commercialized in Argentina had a significant importance for the participants because it documented a local reality to which they felt directly connected, but also because the findings were made by a local university, namely an institution of 'experts'. For Carter et al. (2013, p. 352) '[the] sanctioning from an expert does useful moral work of rendering [a] device "necessary" for health, rather than as a potentially superficial consumer good'. For users of RMMT, this gave it the status of valid information and spurred them to search for alternative options.

The use of RMMT was functionally and socially motivated. Functionally: RMMT served to comfortably and inexpensively manage menstrual bleeding – even in cases of heavy flow. Similarly, RMMT served as environmentally harmless and zero-waste options for those who upheld those values. Besides, new functional uses were attributed to RMMT. The menstrual cup was described as a tool to self-explore the body, learn about one's anatomy and observe the consistency of menstrual blood for health purposes. These 'non-predefined' uses, were ascribed by the participants during the process of incorporating the technologies into their lives. On the other hand, the socially driven uses refer to how RMMT help represent participants' social and ideological positions. This relates to the networks they belong to – environmentalists, feminists, responsible consumers – where the usage of RMMT contributes to the manifestation of their identity. RMMT symbolic uses help forge coherence between their lifestyles and their ideologies, such as living a zero-waste life or the commitment to fight menstrual stigma. Incorporating RMMT in the routines of users depended on access to information, mostly through online sources, workshops and discussing with others; but it was also a process of self-discovery guided by the curious engagement of users in learning about their bodies and sexuality and the possibilities of accessing information to satisfy that curiosity. Finally, the personal values and new uses that participants have attached to RMMT – based on their own experiences – were shared with a larger audience in online and offline spaces, enabling a process of education and discussion of the environmental and health dimensions of menstruation and the resignification of the functions of RMMT. In this process, it becomes clear that social networking websites such as Facebook and YouTube challenge 'the monopoly of education and knowledge provided primarily by institutions and elites by bringing learning to the grassroots' (Alhayek, 2016, p. 335). Social media seems to be a tool to connect across borders and languages and to facilitate learning.

The four dimensions of domestication described above enabled me to understand the process of continued use of RMMT and how, in this process, RMMT pertain to the co-construction of technology and users in the context of Argentinean MA. Placing the domestication of RMMT in the context of MA allows to see them as part of a 'gendered system of social relations' (Oudshoorn & Pinch, 2003, p. 17), as part of a network of people, institutions, relationships, and interconnections (Johnson & Wetmore, 2009, p. 205), where the values they embody and propagate can be grasped. The findings reveal four main points. One, RMMT are reinterpreted and gain different symbolic and utility values in the process by which users integrate them into their lives. Two, these different symbolic and utility values relate to the expression of the (ideal) identities of users. Three, the material and symbolic uses of the RMMT depend not only on the personal experience with the technologies but also on the networks to which the user belongs and on access to information, especially through the internet; all of these factors are highly dependent on their middle-class status.

The study has been limited to specific data an expansion of which could provide opportunities for future research. The user-RMMT relations yield only a limited sense of the ongoing process of construction of a different culture of menstruation in Argentina. Future research could look further at social media usage and how it could contribute to creating a different menstrual culture across national borders. Also, it

could address questions such as, how are women – individually or collectively – organizing/acting to battle menstrual stigma? How empowerment associated with the use of RMMT might look (or be achieved) for women from less privileged socio-economic groups?

The first main finding of this paper is that RMMT are subject to a continuous construction of meanings and uses while they are in the hands of users. The finding shows the potential of women's agency in transforming technology (Wajcman, 2004). New and not foreseen uses and meanings were assigned to the technologies, however, this happens while the identities of users are also transformed in the process of domestication, illustrating how the identity of being a menstruating woman and technologies are co-shaping each other. In the process of domestication, women question the social norms that create a stigma around menstruation and that hamper the possibilities of discussion about this complex topic and its multiple health, environmental and economic dimensions.

The second main finding of this paper is that it is evident that women's domestication process of RMMT in the context of a proliferating MA has enabled an environment that allows users to be open about their concerns and experiences with regards to the broad topic of menstruation. This includes questioning and reflecting – individually and collectively – on historically normalized practices and narratives of menstruation as well as voicing new ones. This is not created by the use of RMMT alone but is triggered by the women's willingness to use them and do so routinely. In that sense, on the one hand, it is partly about the empowering effect of the use of the technology, in the sense that has led to self-exploration and learning about the functioning of the body and its anatomy, resulting in a process of resignification of the menstrual body. This process is opening the door to revert deeply patriarchal notions by which the menstrual body is perceived as something to be hidden, unspoken and unknown. The menstrual body is resignified as a body that exists and that can be spoken of without shame or stigma. A body whose anatomy can be explored and known to who inhabits it. A body that bleeds in each cycle and this bleeding has more day to day benefits than what our educational system and the medicalized views of menstruation have taught us: women in this study considered that their menstrual blood is a natural indicator of whether their body is healthy or not. On the other hand, it is also due to the momentum with which MA is gaining in force, publicly questioning the menstrual status quo and opening the space for complex conversations to emerge. It is in this process of sharing experiences, fears, knowledge, and explanations that new forms of awareness about the broad topic of menstruation arise. Empowerment, then, translates into a more general process of making menstrual bodily experiences relevant to be shared and discussed; a process of gaining body literacy and confidence about the menstrual bodies, broadening the possibilities of making informed decisions about women's SRHR. It is a much more complex understanding of empowerment which requires exploring and learning about how our bodies work and a lot of conversation; a vision that contrasts with that promoted on the framework of MHM, for which the MMT endowment is in itself an act of empowerment. When well-informed and confident, a different narrative and information about menstruation start to circulate, having the potential of increasing as well the overall well-being of other women. This

could be the basis for the construction of a different culture of menstruation and the ways to manage it, which incorporates notions of confidence, self-care, care for the environment and, particularly, challenges the idea of the menstrual body as a problem in need of hygiene and technical solutions.

Notes

1. Sustainable Development Goal 6 "Ensure availability and sustainable management of water and sanitation for all" (DESA, 2018)
2. This study is part of a broader PhD research project on the process of constructing a new menstrual culture in Argentina and presents partial results of this investigation.
3. Which means that all the participants of this study had domesticated the use of RMMT.
4. This study subscribed to Visacovsky's (2012) definition of the Argentina middle class, for whom it is a completely heterogeneous category – not only delimited by income, but also by lifestyles, ways of speaking and dressing, the place where one resides, works, goes for recreation, the goods and services desired and acquired, and the tastes.
5. Sources for Facebook posts and comments that are presented in this paper are not provided for security and privacy reasons.
6. Of the 56 women who agreed to be interviewed or participated in the FGD, 42 were users of the menstrual cup at the time of the study and 14 of the reusable pads. This is evidenced in the results presented below.
7. <https://www.preciousstars.co.uk/>; <https://www.recibetuluna.com.ar/>; <https://www.mooncup.co.uk/blog/>
8. <https://www.youtube.com/user/preciousstarspads>

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No potential conflict of interest was reported by the author.

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