**Everything that the algorithm cannot contain**
**On period trackers and Chilean women**

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**I.    Presentation of the topic and literature review**


The relationship between women's bodies and mobile apps gets closer every day. Now it is possible to use women-targeted applications to track several routines as food consumption, physical exercise and the menstrual cycle. The latter apps are usually focused on the monitoring of one of the following body processes: fertility, pregnancy, and menstruation.

These apps are massively used by young females around the world; a study in 2016 identified 225 menstrual tracking apps in the Apple Store and positioned those as the second most popular category among adolescent women (Nguyen, 2016). This scenario has caught the attention from scholars worldwide particularly regarding data collection, a problem that is highlighted when considering that among all age groups, higher proportions of the 18-24 year olds have the poorest understanding of privacy policy terms and data selling (Turow, 2012, p. 189), plus the evident problem of digital colonialism when information is moving from the developing world to first-world corporations who collect this data for monetary purposes, perpetuating the notion of personal data as a commodity (Lupton, The Quantified Self, 2016, p. 43).

This essay, however, will concentrate on the discursive level of these apps and their effects on their users, in order to do this, I will address the following research questions:

- Are the body standards conceived by these apps relevant to the realities of women in the global south, particularly Chilean women?
- Which is the impact of this kind of quantification on Chilean women's bodies?

Most period trackers are presented as a tool to monitor menstrual cycles, this means basically to check how regular a woman is, and eventually identify interactions of the cycle with factors as sexual intercourse, diet, mood and general habits that women record daily in the app. A research made by the Tactical Technology Collective (2016) puts the alarm on the unprecedented amount of information that women provide voluntarily but also on the standard that the app promotes, which, in the end, is a portrait of the routines of only the women who bother to use the service (Rizk & Othman, 2016, p. 15). This consideration will be critical at the moment of analysing the effectivity of these apps when used by women of the South.

New gynaecological standards are promoted based on this vision developed in the first world, a medical discourse that has the shelter of the objectivity of numbers. The idea that quantifiable data are more neutral, reliable, intellectual and objective than qualitative data (Lupton, 2016, p. 95). In these apps everything has to be tabulated inside their standards. If the feeling of a particular moment is not on their list then is not possible to trace, in words of David Graeber: things that cannot be quantified are not real (2016, p. 42).
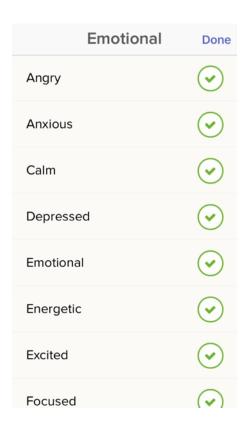
Fig.1: mood options in Glow app

With period trackers, white people is categorizing the menstrual cycles of women worldwide, promoting an official discourse on menstruation and opening a space where intersectional feminism could play an important role, this is a subject raised more than twenty years ago by Donna Haraway in A Cyborg Manifesto: "who controls the interpretation of bodily boundaries in medical hermeneutics is a major feminist issue" (2016, p. 43).

Nowadays is very visible how technological developments have changed our social behaviour, now we accept ideas that in the past would be considered shocking, as being bugged permanently through mobile devices and Internet services (Boghosian, 2013, p. 26). The same thing happens when it is about our bodies and our identities. Communication technologies and biotechnologies are the crucial tools re-crafting our

bodies. These tools embody and enforce new social relations for women worldwide (Haraway, 2016, p. 33) and with products as the period trackers young women are trying to fit into a single vision of what a menstrual cycle should be, a case where the drive for finding an algorithm capable to decipher any female body results in one of the situations that the French anthropologist Marc Augé defines as a technological innovation inside a long-term logic which carries a vision of the world that is global and intellectually totalitarian (Augé, 2013, p. 101).

The eventual effects on users of these apps are going to be analysed in the following pages, I will provide a special focus on identities and on how the structure of these apps is not innocuous, on how the algorithms constructed by software coders bring digital data together in certain ways, which result in algorithmic identities that are configured on behalf of users (Cheney-Lippold, 2011). This research will fill a missing gap around a non-white feminist approach to critical data studies. I will provide a humanistic viewpoint on a subject that is usually covered from a strictly technical perspective.

## II.    Methodology

In order to answer the research questions a workshop was held in Cajón del Maipo, a rural locality near Santiago de Chile. Fifteen young feminist activists attended the activity, they were chosen because of the close work they do with young women in aspects as healthcare, culture and social justice issues, they provide an expert voice on Chilean young women needs.

To facilitate the conversation, the meeting had a low degree of formality and the place, isolated from the city, constituted an environment of reflection away from daily routines. A major advantage of bringing all these women together was to facilitate an exchange of

experiences through the conversation, which delivers a content that is way more rich in discursive terms than having separate interviews.

Belén Roca, feminist researcher, assisted me presenting the functionalities of period trackers, we selected the most popular ones: Glow, Clue, Maya and Eve. After that, I explained the research questions and directed a semi-structured conversation that was analysed using narrative inquiry techniques to generate detailed accounts rather than brief answers or general statements (Riessman, Narrative Methods for the Human Sciences, 2008). A key question to encourage this kind of storytelling was: how do you imagine a young woman you work with using these apps?

This methodological approach promoted by scholars such as Catherine Riessman and Jane Speedy was chosen since it provides an innovative and necessary perspective on algorithm analysis. It vastly embraces subjectivity, a deeply distrusted dimension in mainstream social science, which values context-free laws and generalized explanations (Riessman, Narrative Analysis, 1993, p. 5). Narrative inquiry also offers a framework that makes explicit my point of view as a feminist researcher leading the conversation, this way, the content gets a shape and by giving account of oneself, a way to authorize the point of view of the work is provided (Riessman, 1993, p. v).

To analyse and evaluate the findings I will use the dialogic mode proposed by Catherine Riessman, recommended for focus groups, community meetings and classrooms (Riessman, Narrative Methods for the Human Sciences, 2008, p. 124). This is an analytical approach hybrid of different traditions that emphasise the interactional nature of social reality, the research should pay attention to questions on who narrates and which are the historical and cultural contexts of the speaker. This is a critical factor for this particular research since it has a deliberate focus on a geographically-specific group: the women of Chile.

Finally, because many of the participants are activists, precautions were taken in order to ensure their privacy. I made a commitment with them to not disclose any information that might carry any kind of political or legal consequences, their names are not revealed in this text and the register of the activity was properly anonymised.


### III.    Findings


Four main topics were identified throughout the discussion, the main indicator was the repetition of words and recurrence of issues. The option of recognise main topics was taken considering Jane Speedy's idea of acknowledging large ideas that are absent but implicit in the conversation (2008, p. 61).


### 1.    The menstrual cycle cannot be quantified


"How do you translate the ineffable into lines of code? Into the rigid, step-by-step instructions of an algorithm?" (Carr, 2014, p. 11). All the participants coincided on how every menstrual cycle is different. M., medical practitioner and education activist pointed out how the cycle is subject to too many influences as environmental alterations, dietary variations, emotional changes.

The group identified a false social construction on the uniformity of the cycle and medical practices that pathologise it, associating the so called pre-menstrual syndrome to an illness that should be cured, M. mentioned how this stage in other cultures is related to creative processes and times of isolation from day-to-day obligations rather than a period where women are supposedly depressed or in a bad mood. S., feminist journalist made an emphasis on how science and now digital technologies try to enforce a mandatory control of emotions in order to diagnose women and evaluate them under a parameter dictated by the owners of the scientific discourse.

Fig. 2 Pre-menstrual stage associated with a cloudy time in the app Clue

Under those parameters many situations are rendered invisible, especially in Global South contexts. The group wondered what would happen in the case of raping. Should a rape be registered in the app as another sexual encounter and use the hearts iconography? Or the case of abortions. An attendant who works closely with young women in need of illegal abortions mentioned the changes on the cycle after such procedure, also raised the concern on registering that kind of information in a country that severely restricts the right of women to interrupt pregnancy[1]. The cases of transgendered people who take hormones were also considered. The group concluded that there are so many

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[1] Abortion in Chile is considered illegal without exception, even in cases of rape or if the life of the pregnant woman is at risk. If a woman gets caught after a procedure she goes to jail. Currently in the Chilean congress there is the project of a bill that intends to change the law but it hasn't been discussed yet (Government of Chile, 2016)

subjectivities around the menstrual cycle that do not fit inside the mainstream, patriarchal and colonialist vision of what a woman should be.

## 2. Bio-political control on women's bodies

A recurrent referent for the group was the concept of bio-politics coined by Michel Foucault. His historical revision reveals that sexuality has been a critical target for disciplinary policies. To Foucault these policies shaped the body and facilitated capitalism since bodies were controllably inserted into the production device through an adjustment of demographical plans for economical processes (1998, p. 139).

As a mechanism of bio-political control, the group mentioned the contraceptive pills. A., feminist broadcaster and D., feminist writer, shared their stories on stop consuming contraceptive pills after realising that they didn't know their bodies without the pills that they have been taking for more than ten years. V., lesbian feminist medical practitioner pointed out the huge business that pharmaceutical corporations have at the expenses of women, sabotaging the promotion of less expensive and less invasive contraceptive methods as the intrauterine device. P., feminist lawyer also mentioned how lesbians benefit from never subject their bodies to such invasive hormonal prescription.

The group agreed on how the period trackers perpetuate the notion of contraceptive pills as the standard for avoiding pregnancy, ignoring other options less convenient for the patriarchal capitalist system that, in words of Foucault, "sets an arbitrary division facilitated by centuries of sexist discourse, centuries of discipline that formed docile bodies: strong for economical purposes but also weak to be obedient to the current political system" (2010, p. 160).

This cultural division is also translated on the amount of time that women are expected to dedicate to the cycle and its cultural consequences. M. mentions the biological correlation between the menarche and the stress caused by the early sexualisation of young girls'

bodies who get their first period even at the age of ten, enabling the idea of "becoming a woman" and start having different obligations that a male counterpart. V. also adds the impression on the enormous amount of time that women dedicate to the interpretation of the cycle, associating that as one of the reasons of why men are the "owners of the world" since they have more time to spend in their personal development. A similar vision provides the scholar Evgeny Morozov on the progressive increase of time dedication to quantify bodily and social processes, stating that we are in a time where we are quantifying instead of enjoying life (2014, p. 259)

### 3.  The standardisation of the menstrual cycle is coherent with capitalism

"My mobile phone is domesticating me", said C., feminist publisher. A statement which was concurred by the rest of the group. They imagined a Latin American young girl using a period tracker and realised how she would be subject to a cultural domestication that imposes a standardised aesthetic (pink colours, curved iconography) but also a taming on the biological dimension, since according to the algorithm of the app, this Latin American young girl should receive a hormonal prescription to pair her cycle to the ones of the women who use this app: white bourgeois women with access to mobile Internet. Deborah Lupton also mentions the idea of how these apps seek to impose order on otherwise disorderly or chaotic female bodies, using data to do so (Lupton, Quantified sex: a critical analysis of sexual and reproductive self - tracking using apps, 2014, p. 14). All the participants evoke the practice of comparing cycles within the actual social surroundings of a woman (family, friends), M. expresses that this is a kind of log much more pertinent since incorporates factors as genetic composition and similar environmental influences.

C. made a point on how this way of standardising the cycle opposes the self knowledge of women's bodies and the conversation moved to decipher which is the interest behind these endeavours of the tech companies who develop the period trackers. B., feminist anthropologist mentions the concept of "gamification" evidencing the obvious structure

of rewards that these apps have to stimulate the logging of data. D. remarks how Internet services are offered as "free" but have a business model sustained by the selling of advertising or the commercialisation of personal data.

It became evident the colonialist flow of data gathered by apps developed in the first world and used in the third, where all this information voluntarily uploaded by millions of customers is used for business purposes at the expense of perpetuating old-fashioned notions of what a menstrual cycle should be.

4. **The need for taking back the Internet**

At the end of the workshop, the whole group agreed on how the Internet is a space that needs to be disputed by the feminists. K., graphic designer and T., feminist digital artist and digital security trainer, mention examples on how today patriarchy and sexism is in good health in digital environments. A generational comment also emerges since all the attendants recognised how Internet promised so much possibilities for abject identities providing access to so many different cultural realities difficult to access in an isolated and conservative country like Chile. "Without Internet I might even be heterosexual", said S.

The group acknowledged how Internet is no longer the way it used to be, a vision coherent to the one of Hito Steyerl who states that "in the past few years many people – basically everybody – have noticed that the Internet feels awkward. It is obviously completely surveilled, monopolised, and sanitised by common sense, copyright, control, and conformism" (2015, p. 16).

A. lamented the situation of a young girl who has her first menstruations and starts to understand the cycle only within apps. The day finished with a revision of feminist Internet services presented by T., focusing on the options for feminist content development through the construction of websites, apps or transmedia platforms.

## IV.    Conclusions

With the compilation of the findings it is possible to conclude that an algorithm will hardly predict such a variable phenomenon as the menstrual cycle, that apps parameters are intensely biased by what they register on a very particular social group so it is not possible to extend this model to every woman in the global south.

An important issue to address is if the control of the menstrual cycle is actually a problem to be solved. Morozov states that quantified society problems rarely exist (2014, p. 259), which is in line with the recurrent mention of the practice of comparing cycles within the immediate community, a practice way more accurate for exploring the own body rather than an app. These developments could be categorised as solutionist approaches which deliberately close spaces for reflection of the original problem (Morozov, 2014, p. 202). Solutionism is an issue that could be related to the choice of every digital service available nowadays, where we choose a tool because it's new or it's cool or it's fast, not because it brings us more fully into the world and expands the ground of our experiences and perceptions (Carr, 2014, p. 219).

A feminist perspective is critical at the analysis of health and technology since women have long been defined as sick as a means of subjecting them to social control (Wolf, 2015, p. 67). This control is possible through what Deborah Lupton calls medicalisation (2014, p. 19) because the use and acceptance of these technologies is leading to new business opportunities for the pharmaceutical industry.

In these apps it is evident how the realities of women of different contexts than the Western countries are not considered. This allows us to conclude that we are in another situation where, in the words of Luce Irigaray, a woman finds herself and all women

"being spoken by men" so it is urgent to deconstruct the ways on how that phenomenon happens (1993, p. 172). In the particular cases analysed for this text, the geopolitical factor is fundamental and any feminist approximation to the topic of women and technology must take into account and incorporate the women from the Global South and their conditions of ethnicity, race, class, and sexual identity. That will be the only way where digital disobedience will be relevant for Latin American women.

Finally, this work is a part of an effort to incorporate a humanistic perspective to the analysis of technology, this particular object of research were period trackers but narrative inquiry techniques concentrated on the use of digital technologies must be included in data studies in order to provide a critical perspective that take the ineffable into consideration.

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