



Can Technologies be Feminist?

How and why to design like a feminist

Zoom housekeeping

- Please make yourself comfortable
- Please feel at home 🏠
- Knit 🧶
- Walk 🚶
- Take breaks 🚽
- **Obs:** my part of the talk will be recorded, so put on/off camera as you feel like.

Dr. Marie Louise Juul Søndergaard

(she/her)

Twitter: @mljuul | insta: @ml_juul
www.mljuul.com

2021-2024 Postdoctoral Researcher
AHO The Oslo School of Architecture and Design, Norway

2018-2020 Postdoctoral Researcher
KTH Royal Institute of Technology, Sweden

2015-2018 Ph.D. in Interaction Design
Aarhus University, Denmark

2010-2015 Cand.IT in Digital Design
Aarhus University, Denmark





Marianele Cioffi Felice



Karey Helms



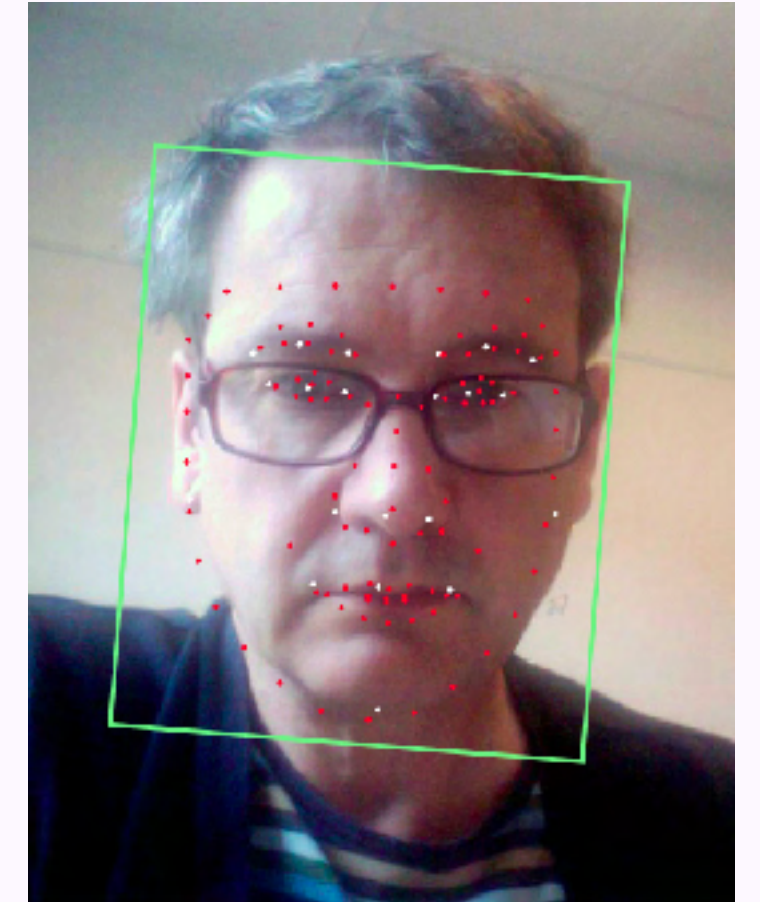
Anna Ståhl



Anuradha Reddy



Lone Koefoed Hansen



Geoff Cox



Madeline Balaam



Nadia Campo Woytuk



Ozgun Kilic Afsar



Iohanna Nicenboim



Kristina Höök



Winnie Soon



Trieuvy Luu

Marie Louise Juul Søndergaard

Can Technologies be Feminist?

Can Technologies be Feminist? YES!

Can Technologies be Feminist?

How and why to design like a feminist

this talk:

What is feminism in design and HCI? Why is it important?

A case for femtech: Menstrual and sexual health technologies

Examples from my own design practice

The feminist practice of “**troubling**”

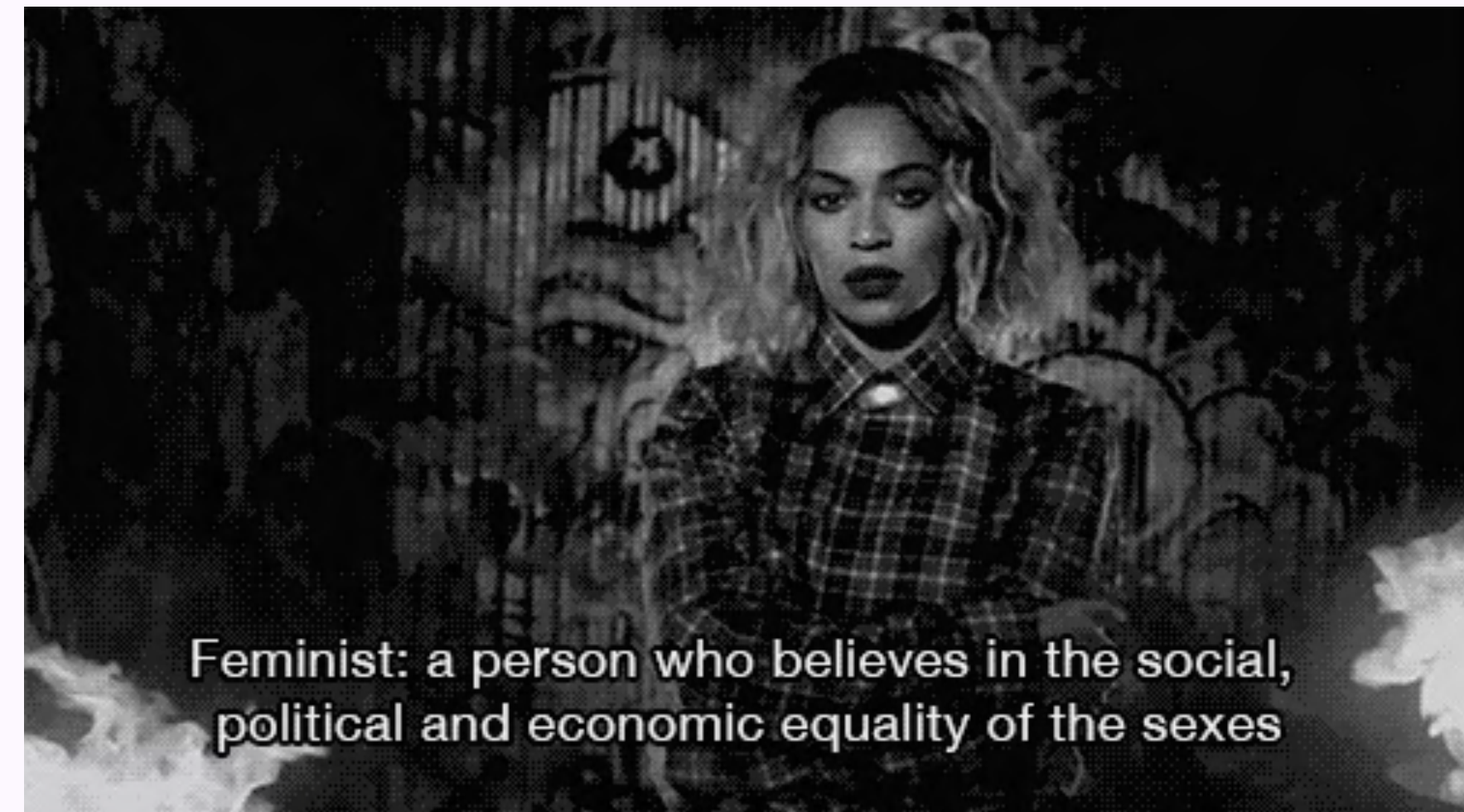
Conversations on feminism(s) in design and HCI

Feminism in Design and HCI

Feminism in Design and HCI

Merriam-Webster Dictionary definition of feminism

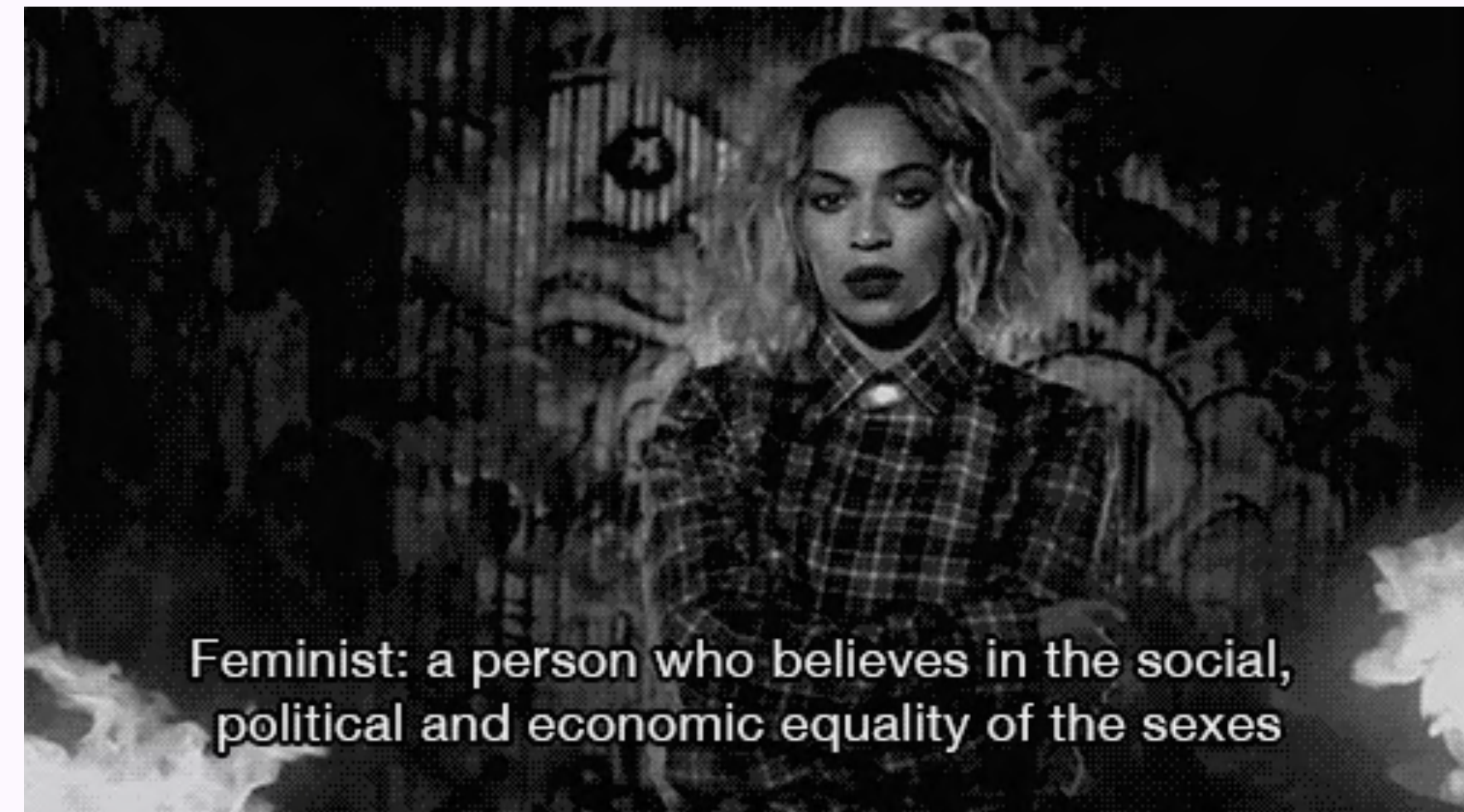
: "belief in and advocacy of the political, economic, and social equality of the sexes expressed especially through organized activity on behalf of women's rights and interests"



Feminism in Design and HCI

Merriam-Webster Dictionary definition of feminism

*: "belief in and advocacy of the political, economic, and social equality of the **sexes** expressed especially through organized activity on behalf of **women's** rights and interests"*



Feminism in Design and HCI

Intersectional feminism

*"Many years ago, I began to use the term "intersectionality" to deal with the fact that many of our social justice problems like **racism** and **sexism** are often overlapping, creating multiple levels of social injustice".*
- Kimberlé Crenshaw, The urgency of intersectionality, 2016

Feminism in Design and HCI

Intersectional feminism

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- Kimberlé Crenshaw, The urgency of intersectionality, 2016

*"we are actively committed to struggling against **racial**, **sexual**, **heterosexual**, and **class oppression**, and see as our particular task the development of integrated analysis and practice based upon the fact that the major systems of oppression are interlocking. The synthesis of these oppressions creates the conditions of our lives."*

- Combahee River Collective statement (1977)

Feminism in Design and HCI

'Feminist HCI' by Shaowen Bardzell, 2010

- pluralism
- participation
- advocacy
- ecology
- embodiment
- self-disclosure/reflexivity

Feminism in Design and HCI

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Feminisms-through-design by Sai Shruthi Chivukula, 2020

- willfullness
- queerness
- failure

Feminism in Design and HCI

Feminist Future(s), Alexis Hope MIT

“There are many possible feminist futures, but we believe a future that is feminist will be—at its core—an intersectional future where all people thrive, liberated from oppression based on gender, race, class, sexual orientation, disability, citizenship status, and more.”

Feminism in Design and HCI

Data Feminism's seven principle

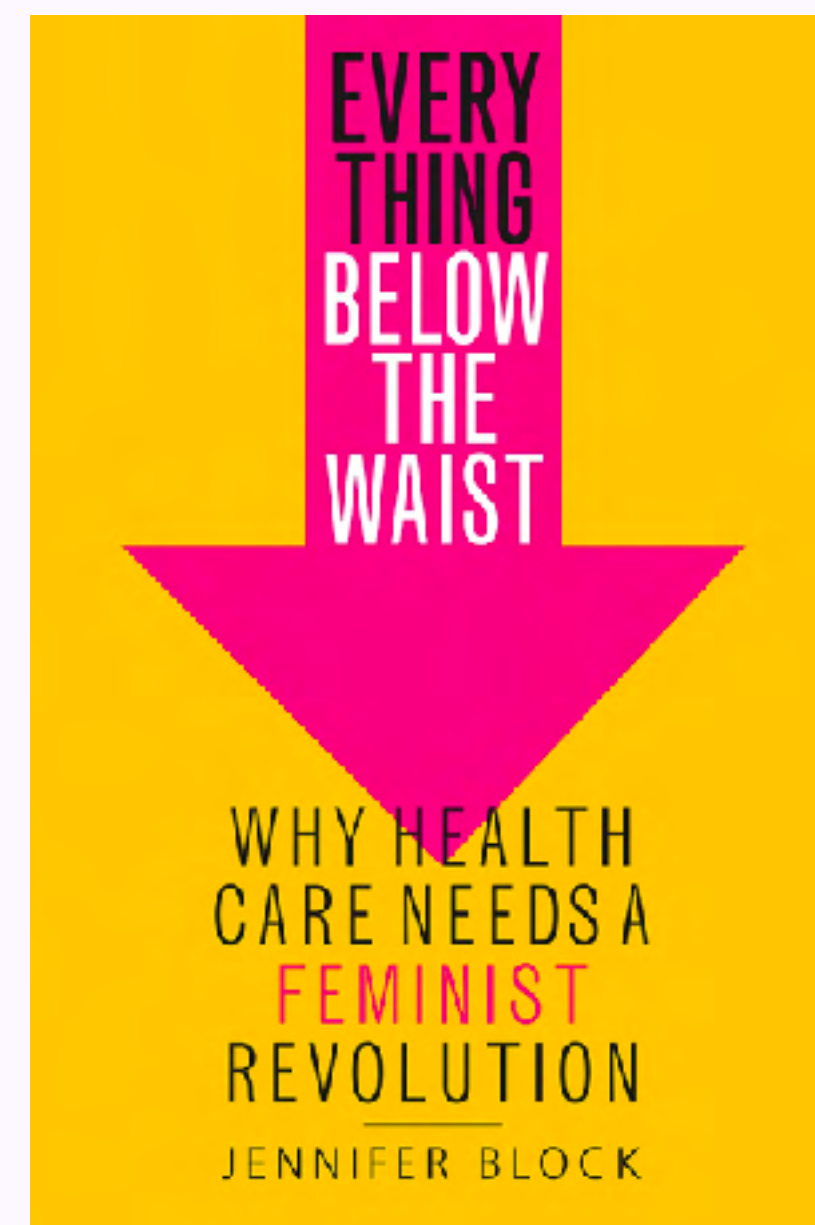
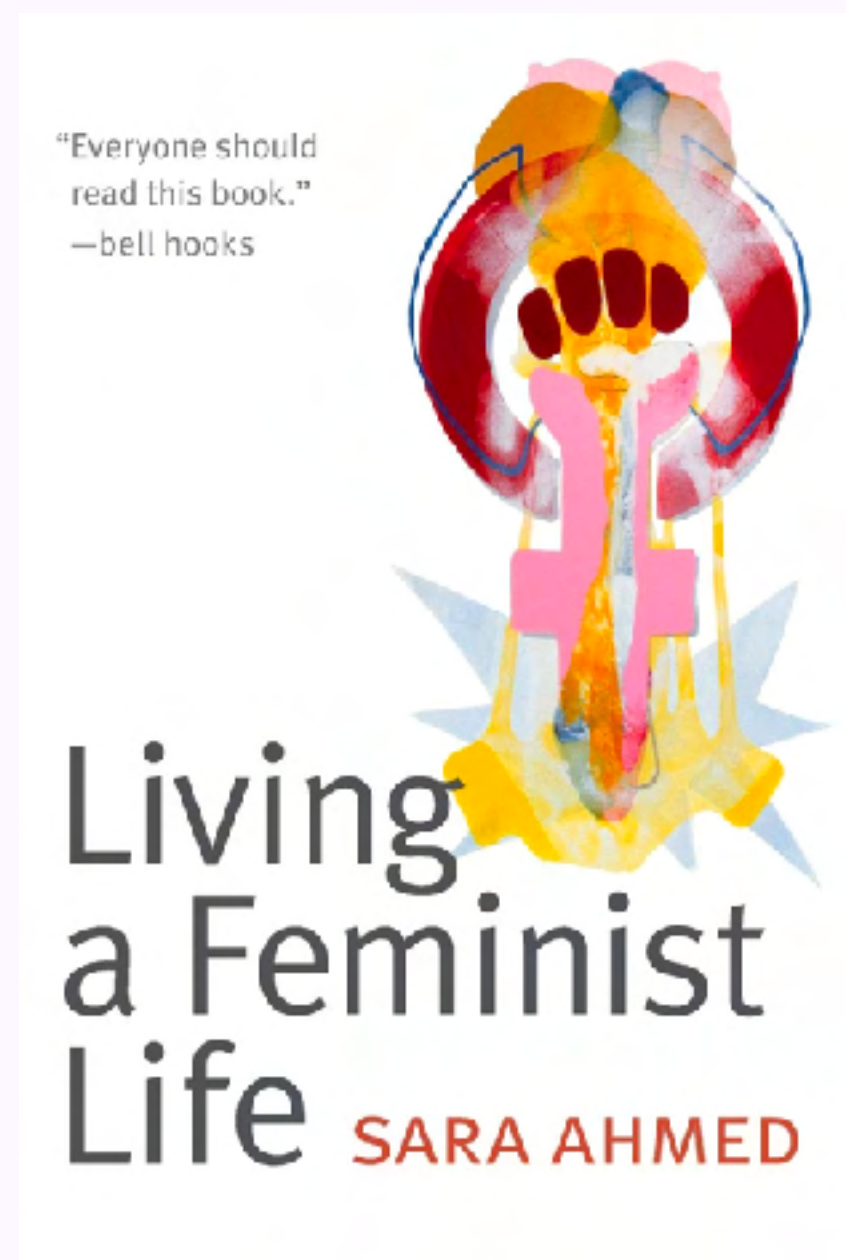
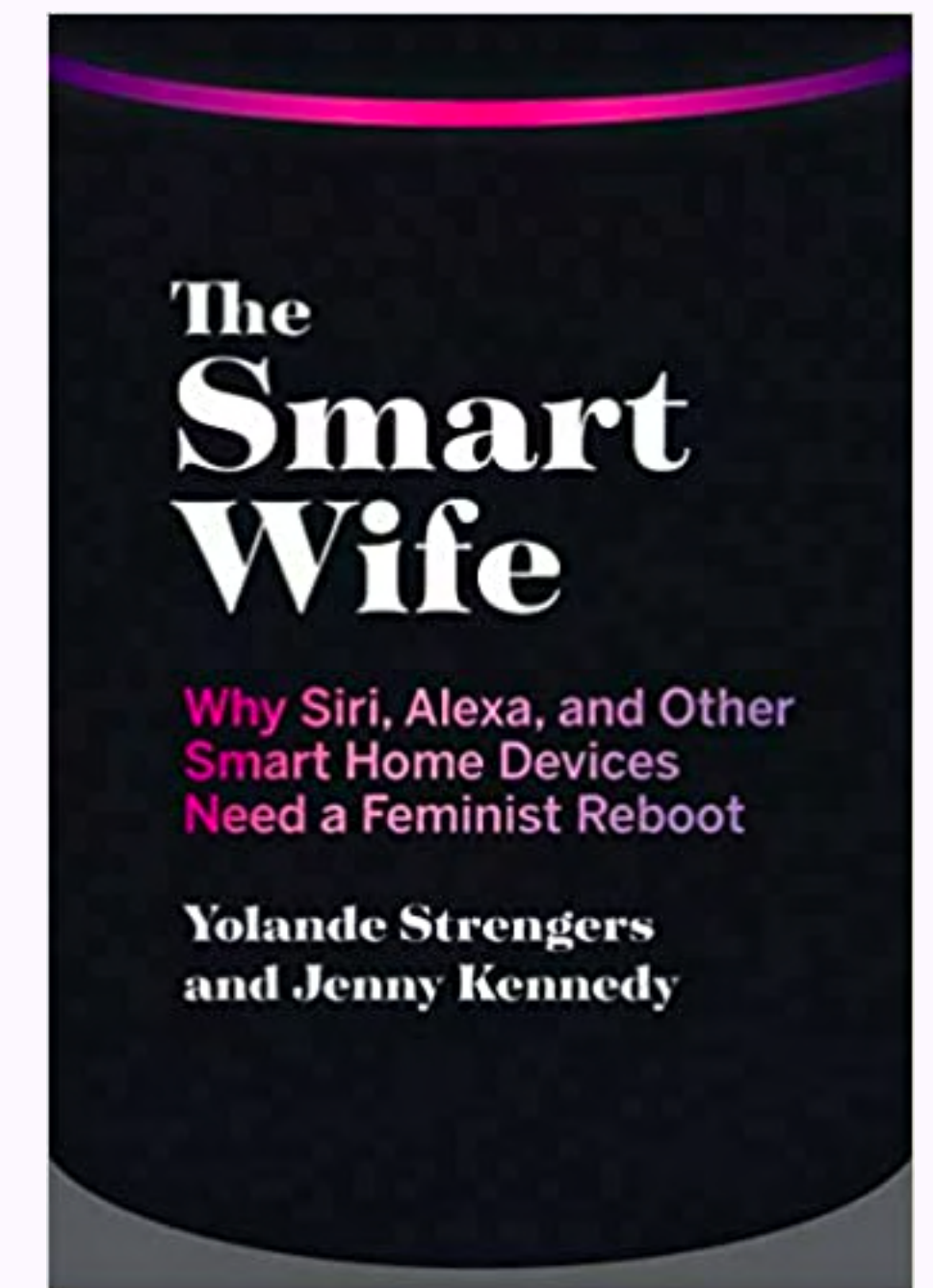
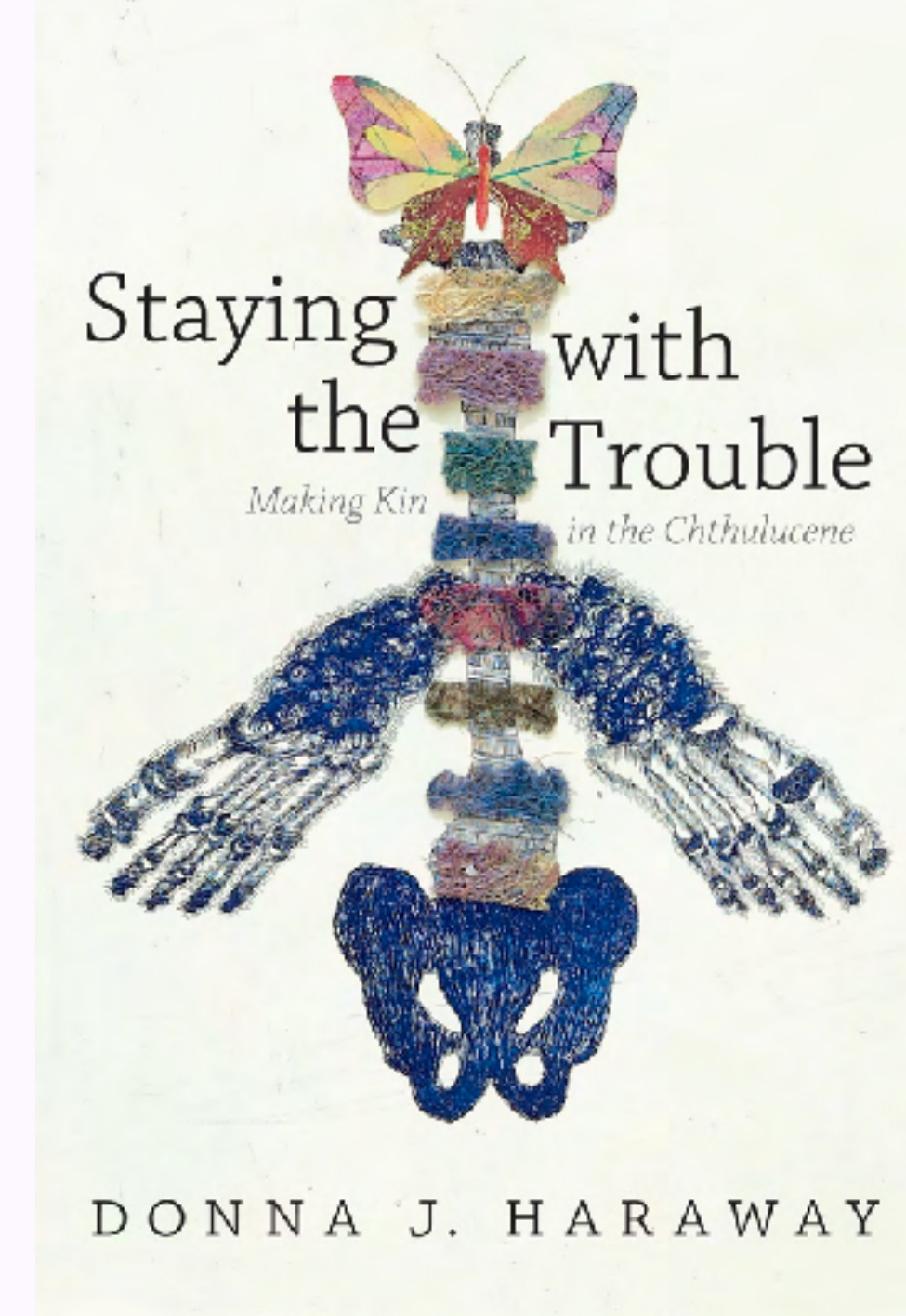
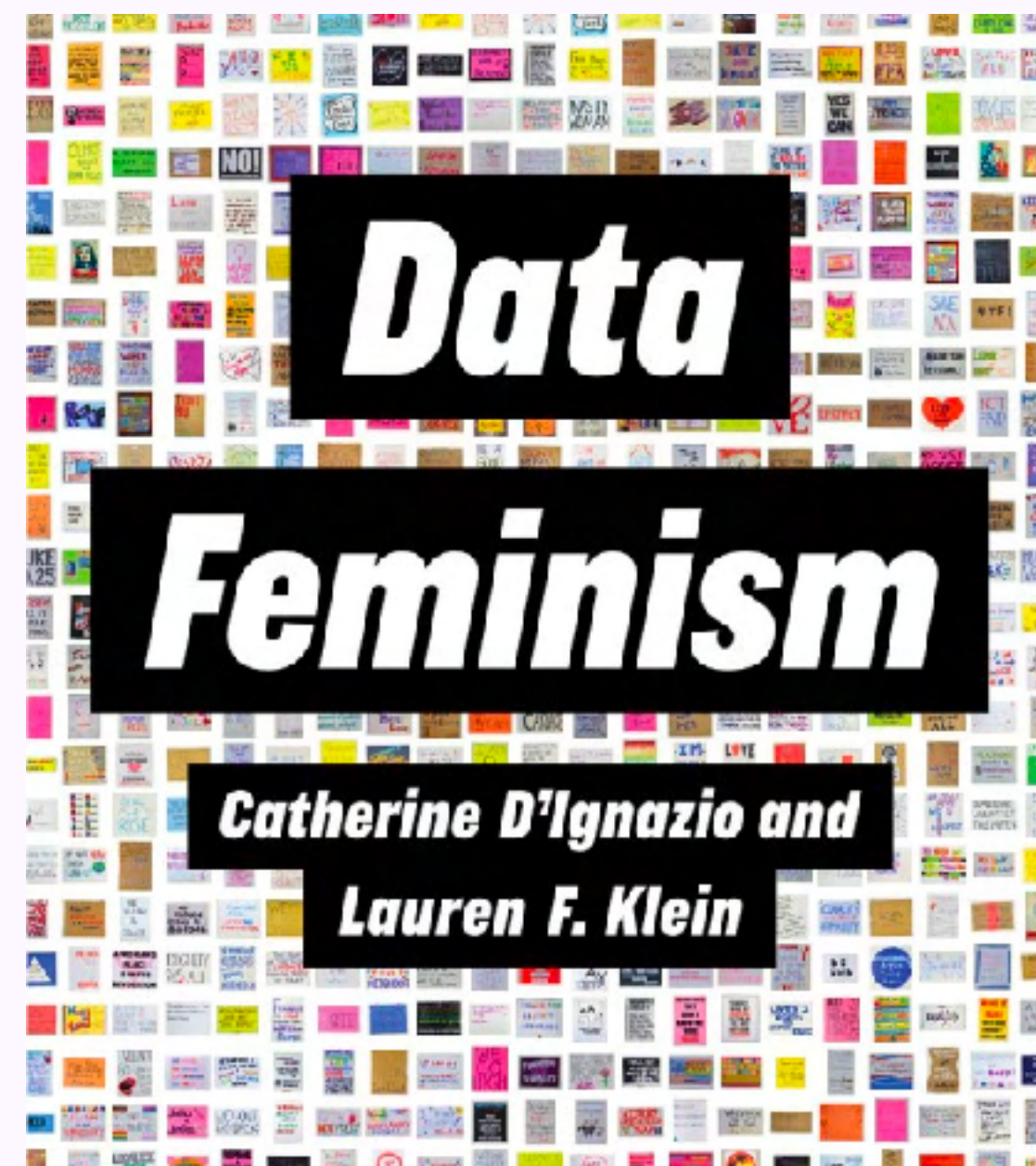
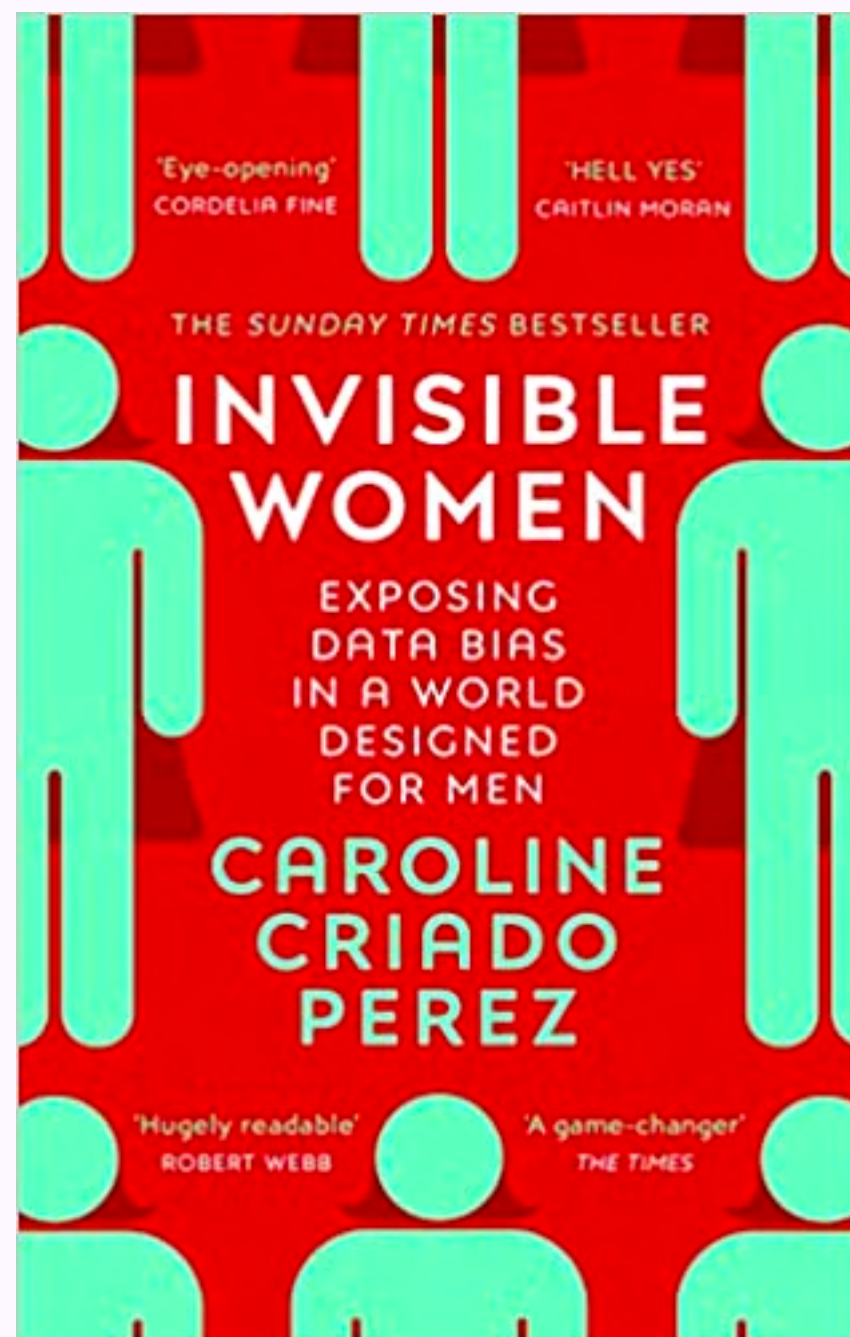
1. Examine power
2. Challenge power
3. Elevate emotions and embodiment
4. Rethink binaries and hierarchies
5. Embrace pluralism
6. Consider context
7. Make labour visible

What makes a project feminist?

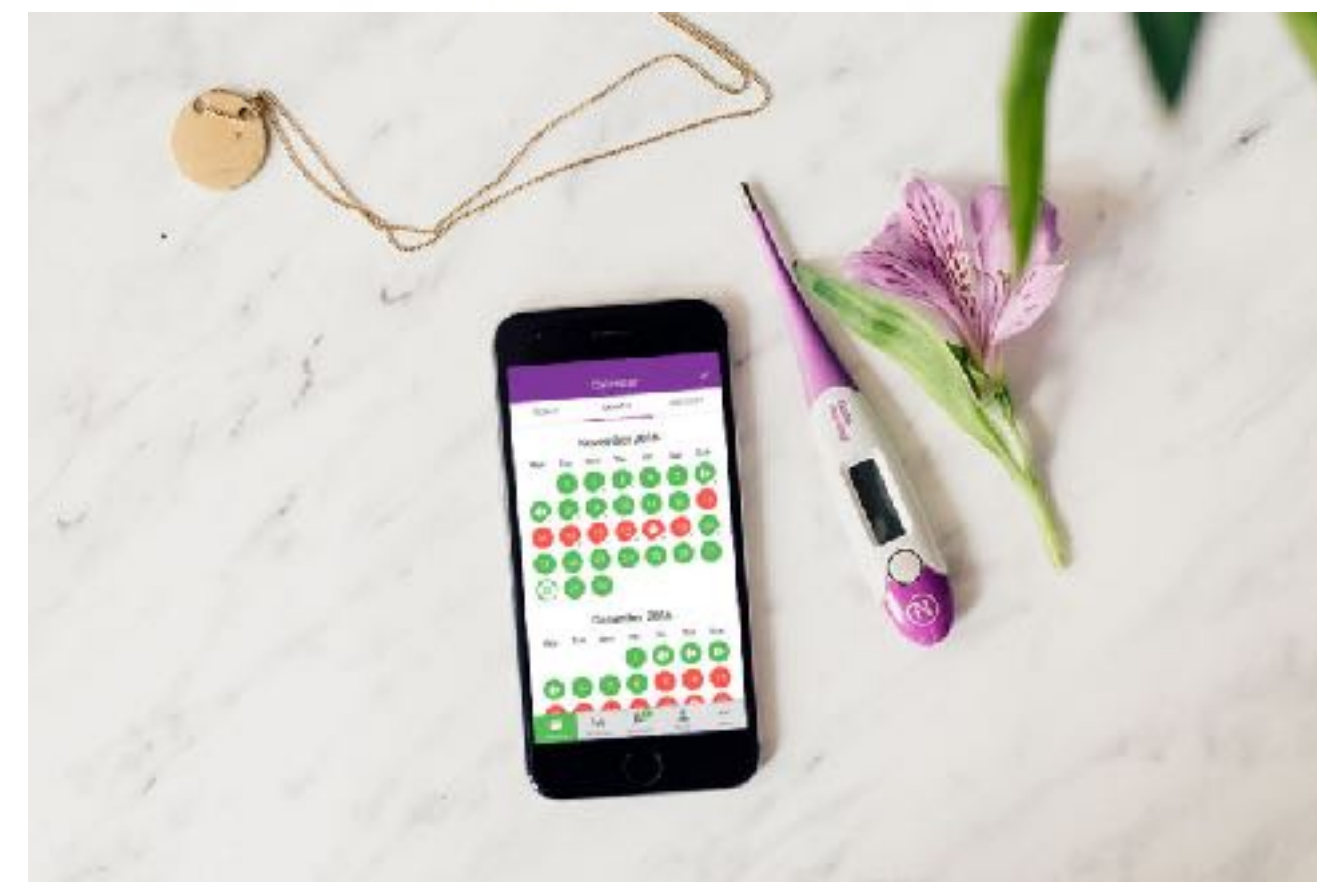
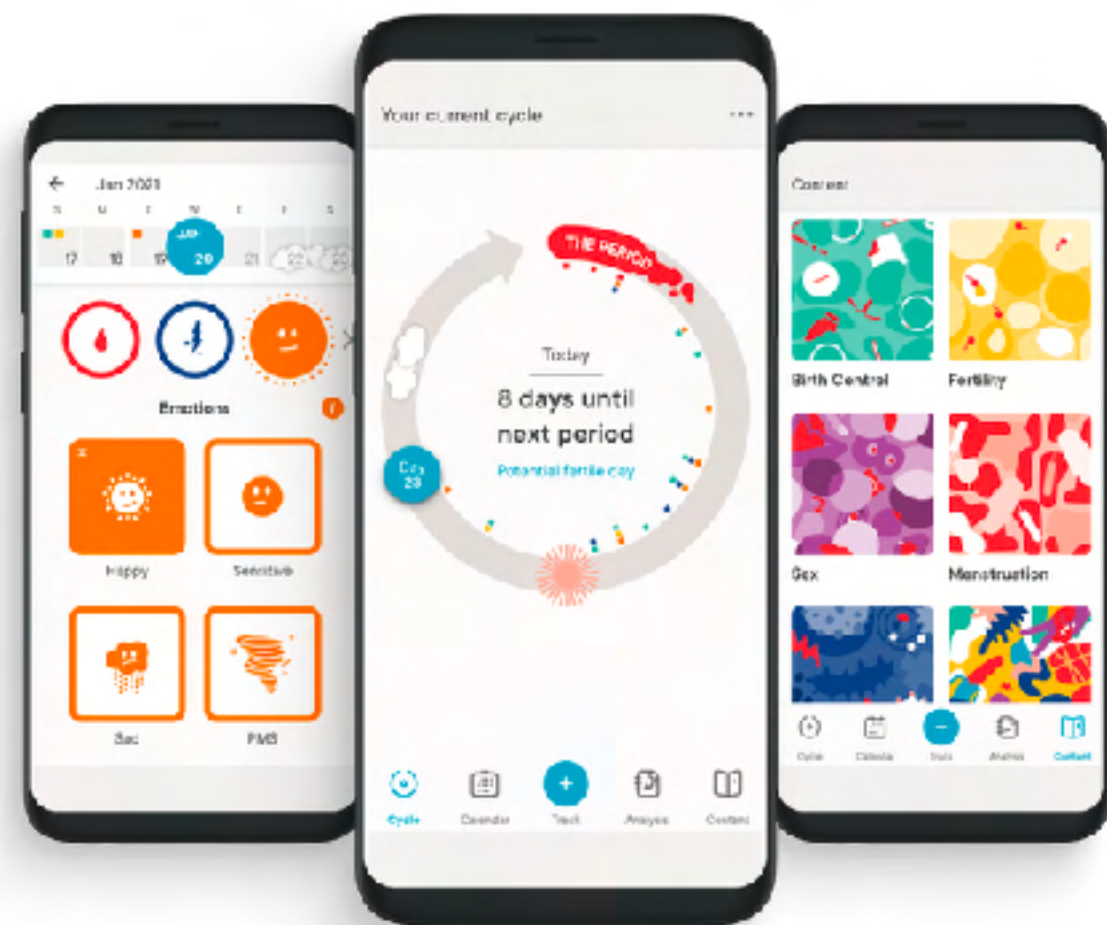
"a project may be feminist in content, in that it challenges power by choice of subject matter; in form, in that it challenges power by shifting the aesthetic and/or sensory registers of data communication; and/or in process, in that it challenges power by building participatory, inclusive processes of knowledge production."

Data Feminism (2020)

Catherine D'Ignazio & Lauren Klein



*“With 50% of the global population as target customers and a market potential of \$50 billion by 2025, Femtech is hailed as the next big phenomenon in the women’s health market”
-Frost & Sullivan, 2018*



Gizmodo on Twitter: "Apple Stu x


twitter.com/Gizmodo/status/13692907...

Update

Tweet

Gizmodo @Gizmodo

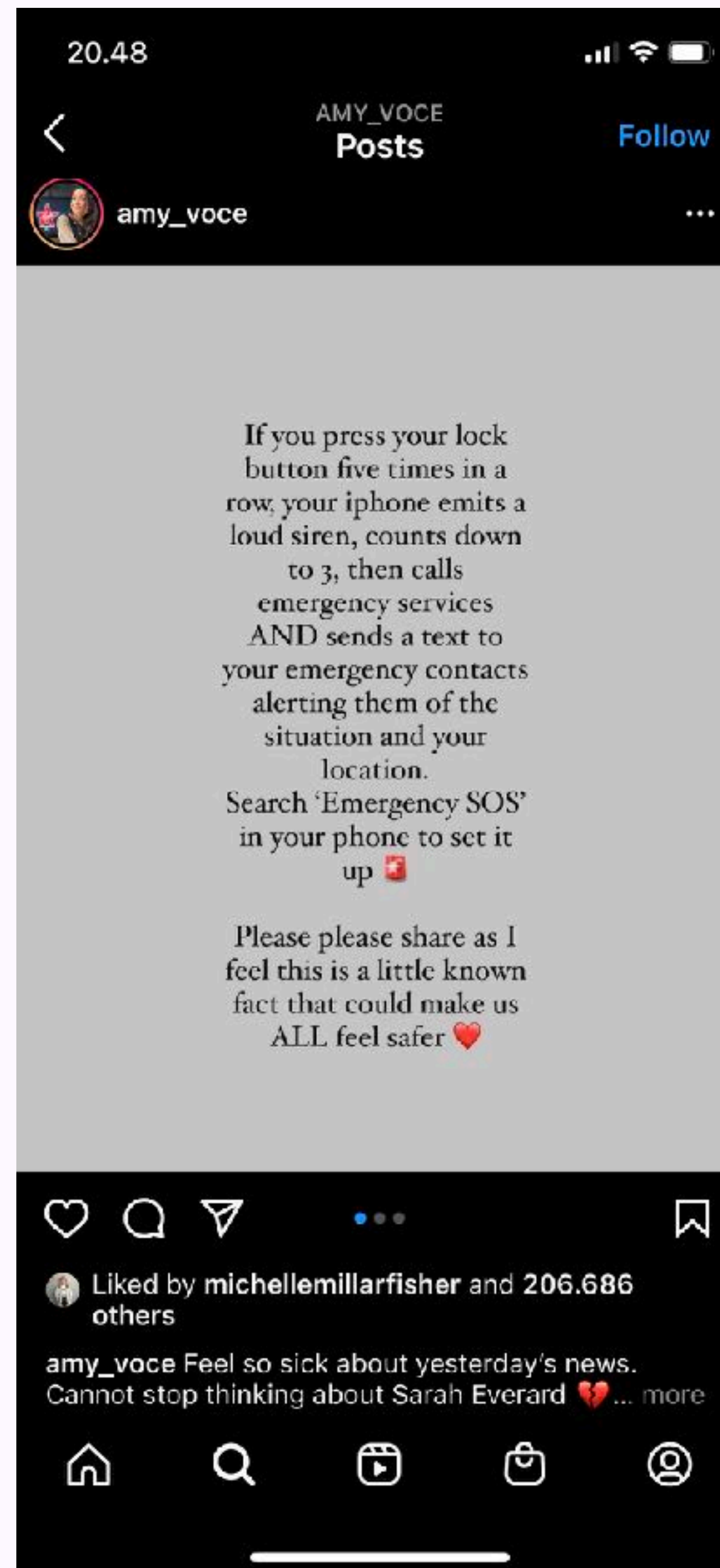
Apple Study Affirms That Women Do in Fact Have Cramps During Their Periods dlvr.it/RvH65v



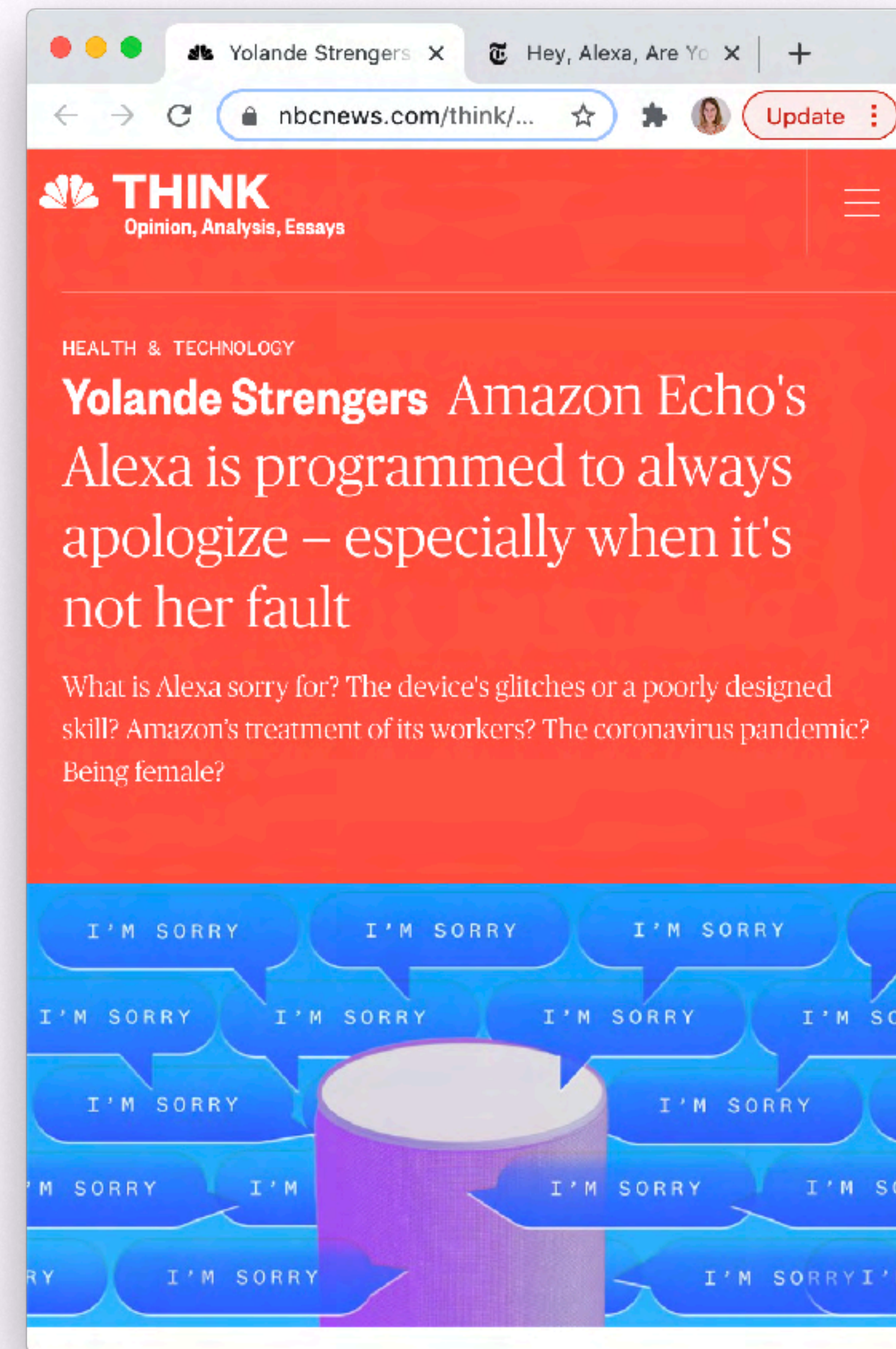
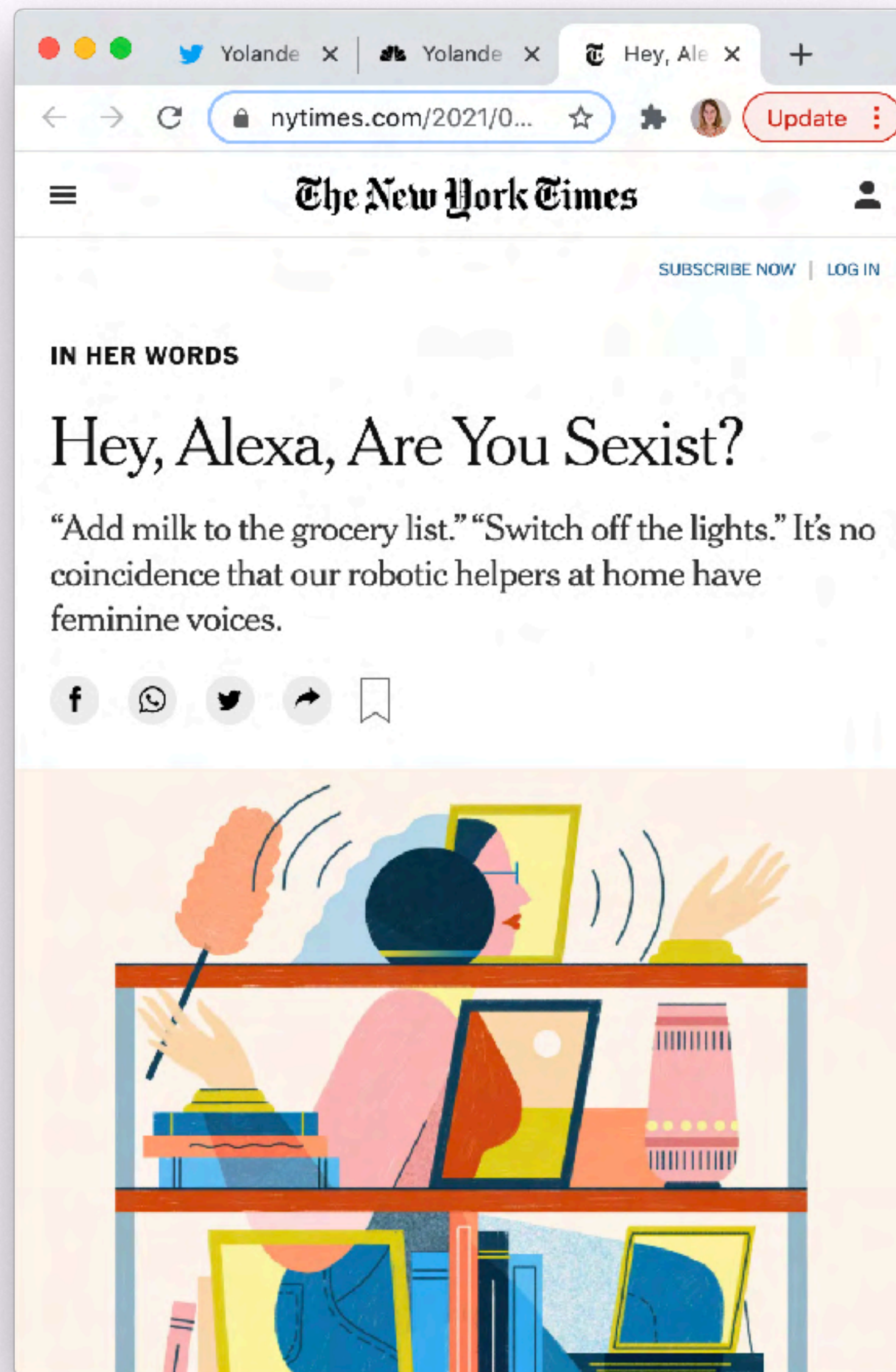
3:15 PM · Mar 9, 2021 · dlvr.it

212 Retweets 4,296 Quote Tweets 808 Likes

Reply Retweet Like Share







A design journal from 2015-2021

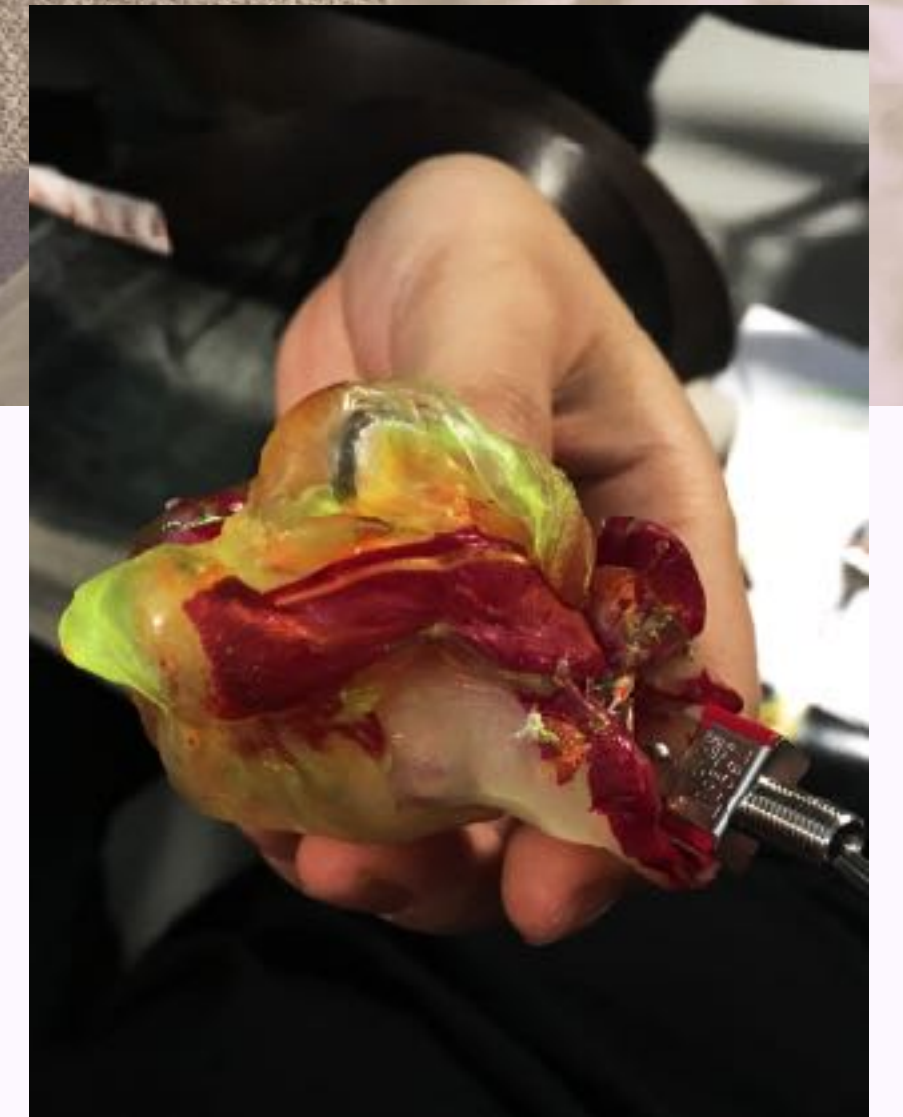
2015-2016



Marcelle



PeriodShare



2017-2018



AYA

U

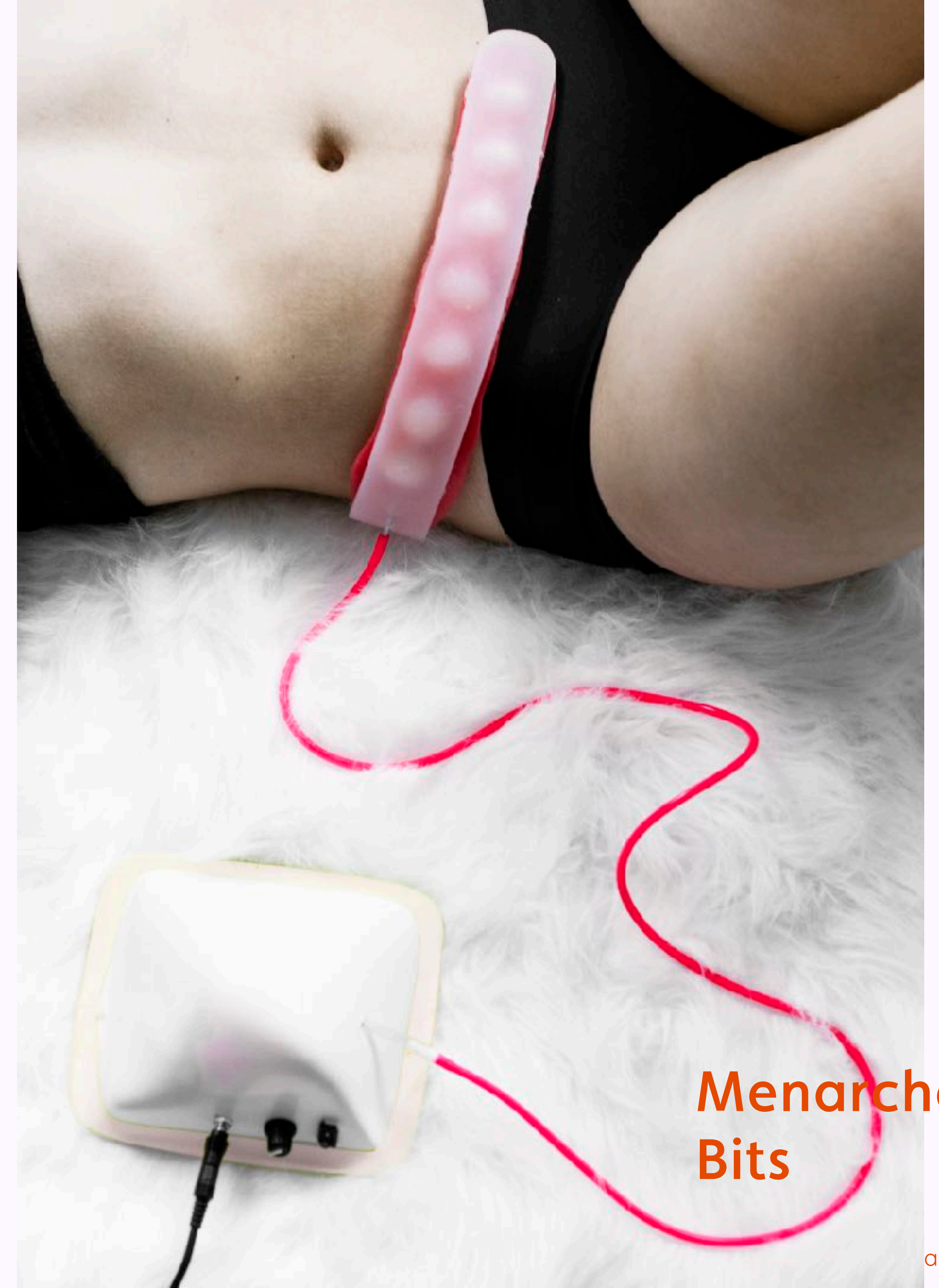
2019-2021



Curious Cycles



Bodily fluids
for utopian
fabulations



Menarche
Bits

**And diving into two current projects
that are zooming in and zooming out
on menstrual health**



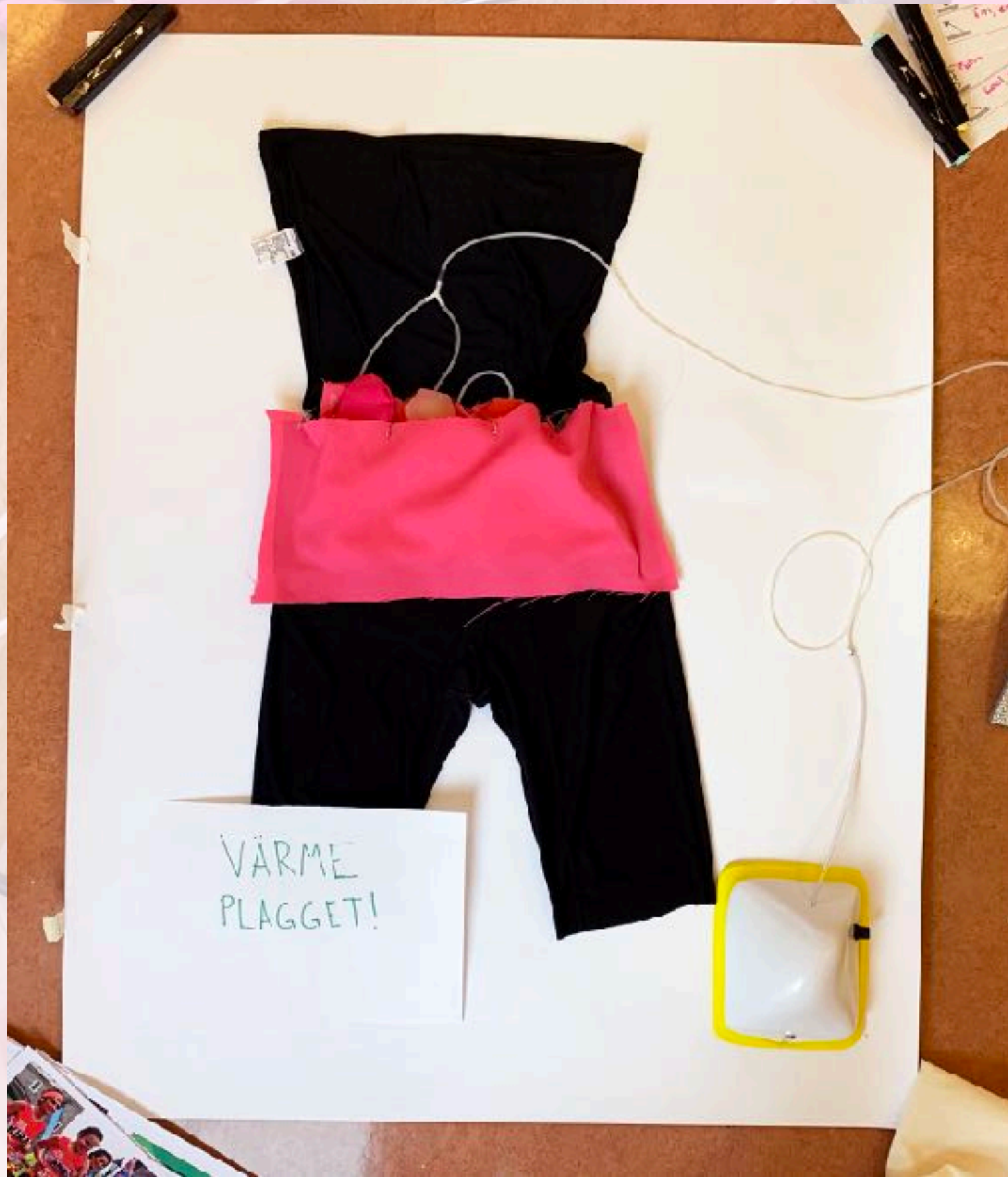
#1 Menarche Bits

Marie Louise Juul Søndergaard, Mariana Ciolfi Felice, and Madeline Balaam. 2021. Designing Menstrual Technologies with Adolescents. In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21). Association for Computing Machinery, New York, NY, USA. DOI:<https://doi.org/10.1145/3411764.3445471>. **(Best Paper Award)**

Marie Louise Juul Søndergaard, Ozgun Kilic Afsar, Mariana Ciolfi Felice, Nadia Campo Woytuk, and Madeline Balaam. 2020. Designing with Intimate Materials and Movements: Making “Menarche Bits”. In Proceedings of the 2020 Designing Interactive Systems Conference (DIS '20). Association for Computing Machinery, New York, NY, USA. DOI:<https://doi.org/10.1145/3357236.3395592>. **(Best Paper Award)**







Intimate Touch

Madeline Balaam, KTH Royal Institute of Technology, Nadia Campo Woytuk, KTH Royal Institute of Technology, Marianela Ciolfi Felice, KTH Royal Institute of Technology, Ozgun Kilic Afsar, KTH Royal Institute of Technology, Anna Ståhl, RISE (Research Institutes of Sweden), Marie Louise Juul Søndergaard, KTH Royal Institute of Technology

Intimate touch is a provocative concept within which we ground our feminist critical health design work. Intimate touch follows a feminist epistemological underpinning that emphasizes *intra-actions* between materials as a

Intimate touch is a willful push away from our field's norms of understanding the body as abstracted data.

source of knowing and acting [1]. We are making new apparatuses and discursive practices for intimate touch that through intra-action with the body can produce new bodily knowledge, new understandings, and new matter (e.g., [2]). These intra-actions could also break norms in order to deconstruct problematic knowledge. Intimate touch is a willful push away [3] from our field's norms of understanding the body as abstracted data.

Soma design [4] has been our guide, since it emphasizes the body as a fundamental part of how we come to know. And through

making and breaking, we develop knowledge on how to create intimate touch with and through technology, understanding what intimate touch is, what it is not, and how we can work with materials to produce it.

Here, we present two of our current projects: Menarche Bits and the Pelvic Chair.

MENARCHE BITS: MAKING A MOVEMENT

Premenstrual changes, cramps, and social norms around menstrual cycles can constrain the movements of young menstruators: One might massage the lower back or curl up in bed, be

scared of leaking through clothes, stick a menstrual product in a sleeve while searching for a toilet, or even stay home. Sometimes, starting to menstruate leads adolescents to drop out of their sport practices. Menarche Bits seek to challenge these constrained movements. This responds to one of soma design's core principles: widening our repertoire of movements to live better lives.

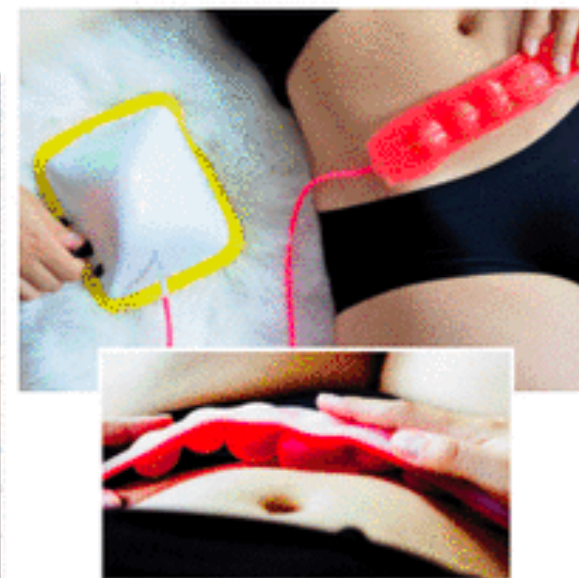
Menarche Bits was created through a soma design process, where we tuned in to our own menstruating bodies and evoked our lived experiences of menarche [5]. We collected, tracked, and touched our menstrual blood,



→ Through an embodied ideation workshop, we explored materials and interactions that could speak to experiences of menarche. We started by following a Feldenkrais lesson on touching and feeling the hip bones, to sensitize ourselves to this evocative area of the body. We were then inspired to design a "tilting pelvis": a flat surface attached to the top of a soft ball, encouraging subtle but perceptible circular (cyclical) body movements.



→ In the embodied ideation workshop, we also made fabric heat pads filled with rice, which can be heated in a microwave oven. The pads are to be placed on parts of the body that might be painful. The rice can be moved around within the pad, by the wearer or a significant other. We later included these "cushions" in the Menarche Bits kit.



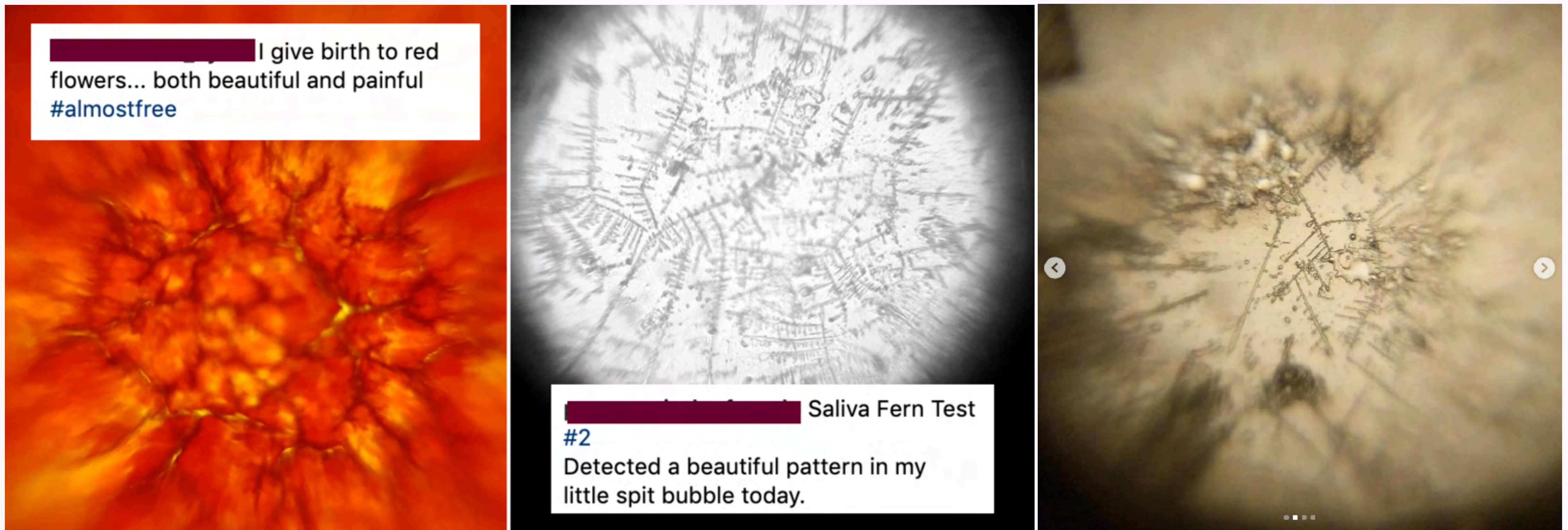
→ Menarche Bits is an open-ended prototyping kit to support the creation of wearable, shape-changing technologies for young menstruators. The kit has soft silicone shapes in different sizes and textures that touch the body. The shapes can be worn directly on the skin or embedded in garments. They can be inflated and deflated with an electrical pump, and respond to the wearer's pressure. The air chambers are controlled sequentially to simulate bidirectional haptic feedback.

Madeline Balaam, Nadia Campo Woytuk, Marianela Ciolfi Felice, Ozgun Kilic Afsar, Anna Ståhl, and **Marie Louise Juul Søndergaard**. 2020. Intimate touch. interactions 27, 6 (November - December 2020), 14–17. DOI:<https://doi.org/10.1145/3427781>

#2 Bodily fluids for utopian fabulations



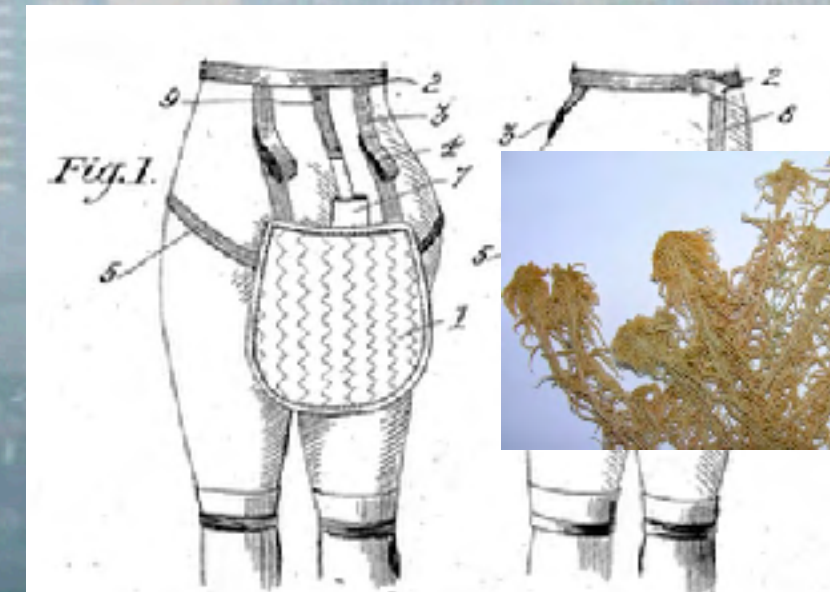
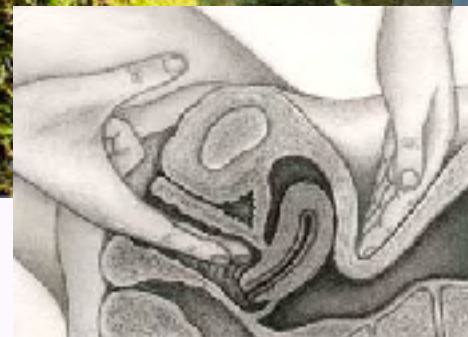
Marie Louise Juul Søndergaard, Ozgun Kilic Afsar and Madeline Balaam. 2021. Material Experiences of Menstruation and Symbiotic Technologies. Forthcoming in "Materials Experience 2: Expanding Territories of Materials and Design". Elsevier, June 2021.



Nadia Campo Woytuk, **Marie Louise Juul Søndergaard**, Marianela Ciolfi Felice, and Madeline Balaam. 2020. Touching and Being in Touch with the Menstruating Body. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20). Association for Computing Machinery, New York, NY, USA, 1–14. DOI:<https://doi.org/10.1145/3313831.3376471> (**Best Paper Award**)

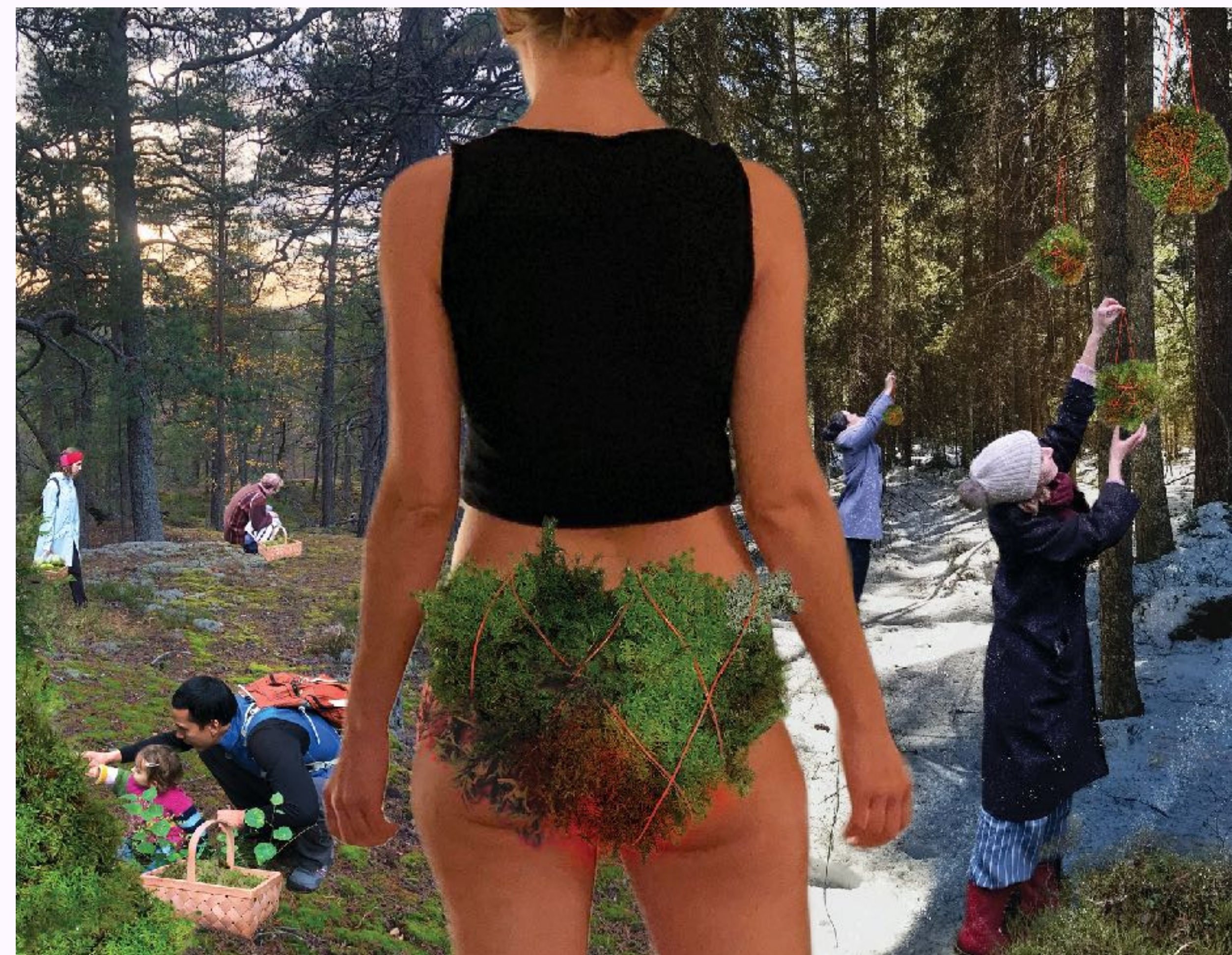


“Air pollution can influence women’s reproductive health, specifically menstrual cycle characteristics, oocyte quality, and risk of miscarriage... Specifically by the toxicants released by fossil fuel combustion PM10 and SO2.”



“A common type of bog moss found throughout medieval England, sphagnum cymbifolium, is remarkably absorbent. It was used as stuffing for menstrual pads, as toilet paper, and as a battlefield dressing for wartime wounds. The popular name for this moss is blood moss.”

Images: National Museums NI, Jen Lewis, Sfog-Na-Kins, Helen E. Scott, Nelson Soucasaux, Reuters/Kham, own. Quotes: Merklinger-Gruchala et al. 2017, On the Tudor Trail 2015.



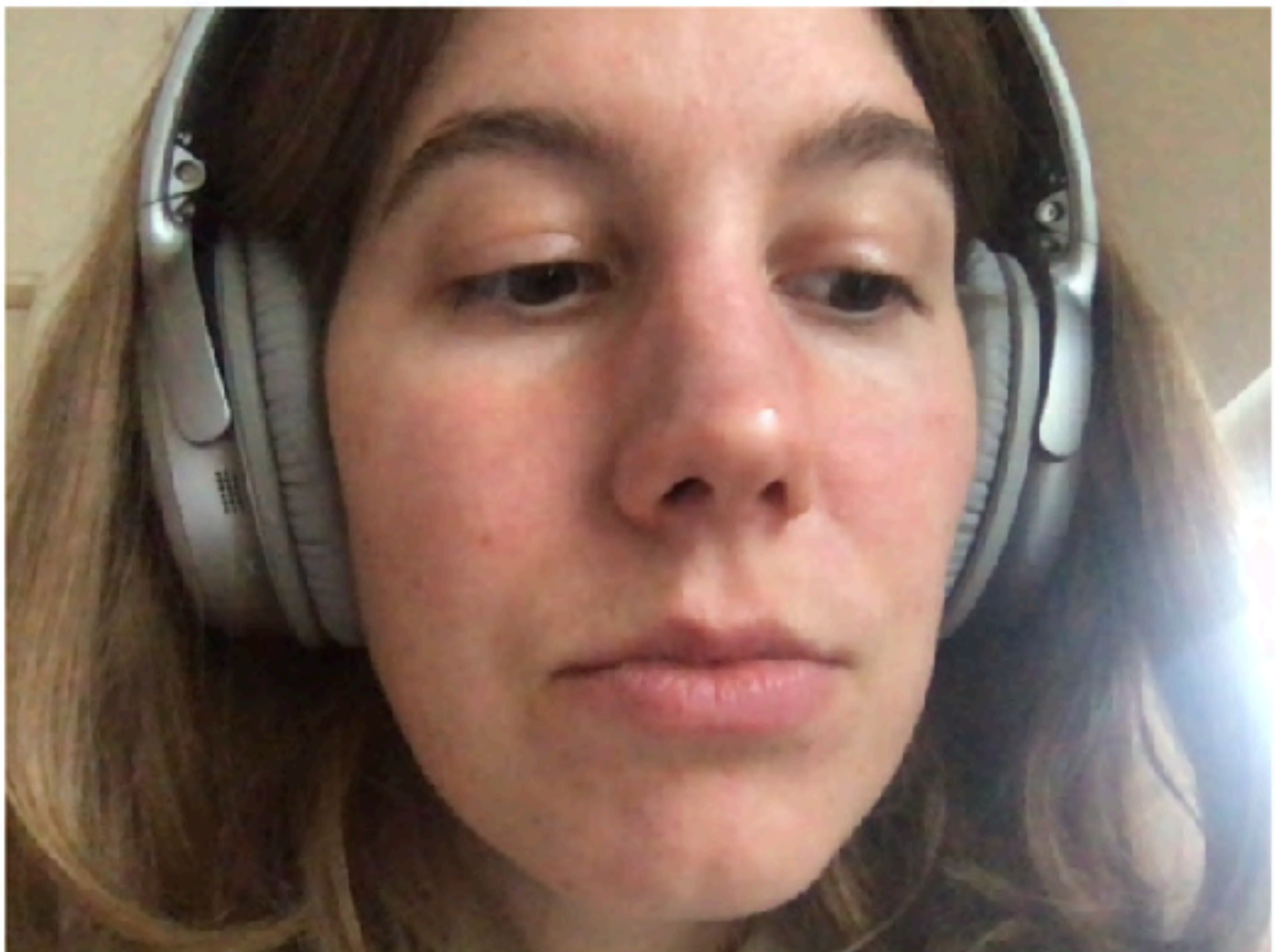
@ Marie Louise Juul Søndergaard, Nadia Camp Woytuk, and Karey Helms. 2021.
Scaling Bodily Fluids for Utopian Fabulations.
Ongoing work and under review.



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Ongoing work and under review.



miniskirt, mini



cellular telephone, cellular phone, cellphon

WANEI x ImageC x Getting x A Begin x ml5.js: x Get x ml5-lib x +

localhost:8000/p5/empty-example/

top 1 hidden

unlabeled.com/ajax/tfjs/p2.js/1.0.0/addons/p5.sound.min.js.map: HTTP error: status code 404, net::ERR_HTTP_RESPONSE_CODE_F
AILURE

webgl tf-core.esm.js:17 backend was already registered. Reusing existing backend factory.

cpu tf-core.esm.js:17 backend was already registered. Reusing existing backend factory.

Platform tf-core.esm.js:17 browser has already been set. Overwriting the platform with [object Object].

community.js:4
🌈🌈🌈🌈🌈🌈🌈🌈🌈🌈🌈🌈🌈🌈🌈🌈
🌟 Thank you for using ml5.js v0.6.1 🌟

Please read our community statement to ensure that the use of this software reflects the values of the ml5.js community:
📄 <https://ml5js.org/about>

Reporting:
📄 <https://github.com/ml5js/ml5-library/issues>
📄 Email: info@ml5js.org
🌈🌈🌈🌈🌈🌈🌈🌈🌈🌈🌈🌈🌈🌈🌈🌈

ml5 version: (index):18 0.6.1

DevTools failed to load SourceMap: Could not load content for chrome-extension://lkijhlcipnbgeokmfnpogjfflqfbfhga/injectiframe.js.map: HTTP error: status code 404, net::ERR_UNKNOWN_URL_SCHEME

[WCER: injectiframe.js:46 Connected to Chrome Extension Hot Reloader]

Model is ready!!! sketch.js:11

breastplate, aegis, egis

sketch.js — empty-example

sketch.js x index.html x

```
1 let mobilenet;
2 let video;
3 let label = '';
4 let myFont;
5
6 function preload() {
7   myFont = loadFont('Comic Sans MS.ttf');
8 }
9
10 function modelReady() {
11   console.log('Model is ready!!!')
12   mobilenet.predict(gotResults);
13 }
14
15 function gotResults(error, results){
16   if (error){
17     console.error(error);
18   } else {
19     //console.log(results);
20     label = results[0].label;
21     //let prob = results[0].confidence;
22     //createP(label);
23     //createP(prob);
24     mobilenet.predict(gotResults);
25   }
26 }
27
28 // function imageReady(){
29 //   image(moss, 0, 0, width, height);
30 // }
31
32
33
34 function setup() {
35   // put setup code here
36   createCanvas(640, 550);
37   //moss = createImg('images/mossOnStone.jpg', image
38   video = createCapture(VIDEO);
39   video.hide();
40   background(0);
41
42   mobilenet = ml5.imageClassifier('MobileNet', video
43 }
44
45
46 function draw() {
47   // put drawing code here
48   background(255, 209, 220);
49   image(video, 0, 0);
50   fill(255, 0, 255);
51   textSize(32);
52   textFont(myFont);
53   text(label, 10, height - 20);
54
55 }
```

Tab Size: 4



jigsaw puzzle

jigsaw puzzle

0.40522298216819763



wool, woolen, woollen

wool, woolen, woollen

0.22817166149616241

Can Technologies be Feminist?

How and why to design like a feminist

Can Technologies be Feminist?

How and why to design like a feminist

 **Designing from where?** Bring one's own positionally and lived experience into design.

 **Designing with what?** Use your body and its materiality and entanglement with tech and the environment.

 **Designing for/with who?** Invite socially marginalized people, communities and non-human agents into your practice.

 **Designing for what?** Use your design to rewrite the past, question the present, and radically reimagine the future.

some of my writings:

Marie Louise Juul Søndergaard, Marianela Ciolfi Felice, and Madeline Balaam. 2021. Designing Menstrual Technologies with Adolescents. In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21). Association for Computing Machinery, New York, NY, USA. DOI:<https://doi.org/10.1145/3411764.3445471>. **(Best Paper Award)**

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Marie Louise Juul Søndergaard. 2020. Troubling Design: A Design Program for Designing with Women’s Health. ACM Trans. Comput.-Hum. Interact. 27, 4, Article 24 (August 2020), 36 pages. DOI:<https://doi.org/10.1145/3397199>

Madeline Balaam, Nadia Campo Woytuk, Marianela Ciolfi Felice, Ozgun Kilic Afsar, Anna Ståhl, and **Marie Louise Juul Søndergaard**. 2020. Intimate touch. interactions 27, 6 (November - December 2020), 14–17. DOI:<https://doi.org/10.1145/3427781>

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Check out for more on feminism in HCI and design:

Gopinaath Kannabiran — “Your sexuality does not matter!” & “Ignored intersections” (2021)

Kristina Höök — “The day I am a researcher---: not my gender” (2019)

Ann Light — HCI as heterodoxy: Technologies of identity and the queering of interaction with computers (2011)

Shaowen Bardzell — “Feminist HCI: taking stock and outlining an agenda for design” (2010)

Sai Shruthi Chivukula — Feminisms-through-design (2020)

Catherine D’Ignazio & Lauren Klein — Data Feminism (2020)

Kimberlé Crenshaw — The urgency of intersectionality <https://www.youtube.com/watch?v=akOe5-UsQ2o>

The Combahee River Collective Statement (1977) — <https://www.blackpast.org/african-american-history/combahee-river-collective-statement-1977/>