From Individual Discomfort to Collective Solidarity: Choreographic Exploration of Extractivist Technology

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We invite technology practitioners to join us in the collaborative exploration of *discomfort* associated with technology in the age of surveillance capitalism. With the help of body-based exercises inspired by choreography we will articulate the discomforts of living and designing with extractivist technology. Our studio is aimed at technology practitioners of a broad range of expertise who have experienced discomfort in relation to data-driven extractivist systems. In the first part of the studio participants will share their experiences of resisting such systems both as users and creators of technology. In the second part, participants will engage in an ideation session to propose forms of countering existing technologies. Embodied methods and choreographic approaches will be used for making digital discomfort tangible and for guiding the exploration of the topics at stake. As an outcome, participants will collectively design a toolbox to conceptualise discomfort in a tangible, embodied way, and form a network to continue discuss these matters post-studio in an online community discussion group.

CCS Concepts: • **Human-centered computing** → *Participatory design*; • **Social and professional topics** → **Surveillance**; *Computing profession.*

Additional Key Words and Phrases: embodiment, online tracking algorithms, data extraction, digital discomfort, digital rights, solidarity, surveillance capitalism

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1 DETAILED PROPOSAL DESCRIPTION

The goal of this studio is to facilitate a space in which Human-Computer Interaction (HCI) researchers collectively express 'discomfort' related to the prevalent extractivist technologies that are based on data exploitation, unfair labour conditions, environmental damage, and digital rights violation [6]. We ask: how can bringing attention to experience of *discomfort* guide an alternative future of technology? We assume that discomforts can be easily *felt* individually, yet articulating them together is needed to build solidarity and resistance. We will use embodied design methods inspired by choreography for making discomfort tangible and shared. Body-based exploration will direct our discussion and frame the hands-on session aimed at rethinking the technologies and algorithmic systems prevalent in our personal and professional lives.

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1.1 Studio Methodology

Body-based exercises inspired by choreography will be at the core of the studio. In the field of HCI there has been an increased interest and attention to bodily, felt experiences and tacit knowledge. Established methods include live action role-playing and scenario enactment [15] and bodystorming [10], amidst other examples drawn from performance and theater practices [13]. These methodologies emphasize the generative and creative potential of physical involvement through learn by doing or moving approach [12].

This studio methodology is also inspired by the work of the Brazilian theatre practitioner Augusto Boal, know for the Theatre of the Oppressed developed in the 80's. Boal understood theatre as a rehearsal for everyday life, not an end in of itself but the beginning of social transformation—which was seen as a collective endeavor [2].

This studio methodology will focus on embodiment, felt experience and the integration choreographic approaches [4], such as prompts and materials for participants to engage with and collectively respond to throughout the session.

We will use movements (such as walking in different directions in the room or performing specific gestures) to express feelings of discomfort. These choreographic prompts will be used to articulate participants' experiences of interacting with extractive technology (e.g. the feeling of being surveilled, exploited, or lacking agency), which the participants will be asked to share before the workshop. During the workshop, we will go through an iterative process for generating new prompts with participants, inventing together the choreographic language to explore discomfort. In between each body-based exercise, there will be a moment of discussion followed by a collaborative ideation over the forms of resistance to extractivist technology framed by a general question: how can we move from individual discomfort to collective solidarity.

1.2 Learning Goals

The overall agenda of the studio is two-fold. Body-based exercises will help participants reflect upon and articulate discomforts in relation to data extraction and surveillance, labour exploitation and environmental problems caused by data-driven technologies. This in turn will lay ground for discussing strategies of resistance, which will foster community building among the participants.

Participants will learn:

- mechanisms for growing awareness and articulating discomfort in technological production;
- embodied methods and processes for making discomfort tangible to guide ideation and the design of a toolkit;
- the opportunities and challenges of collective mobilisation, co-operation and solidarity in contrast with individual resistance;
- how discomfort can inform participants' practices in HCI and technological production.

Furthermore, participants will be invited to join an online community discussion group, to contribute to a studio report to be published in the website as well as potential future publications.

The studio is planned to be an open-ended exploration of discomfort with a primary goal of fostering community building among technology practitioners, who are interested in the potential of movement and providing a space to share discomfort. As more concrete outcomes, we are expecting to create *a map of discomforts* surrounding data-driven extractivist technology.

Alongside the map, *the choreographic prompts* co-created during the workshop and *the forms of resistance* generated with our participants will be documented in the form of a toolkit. After the studio session, facilitators and participants

are invited to publish the methodological notes from the workshop and the toolkit to inspire anyone curious to explore the use of choreographic prompts to generate their own forms of resistance.

2 GROUNDING IN THEORY

Our interest in discomfort comes from feminist theories and feminist interest to the body as source of knowledge [1, 3, 8]. By discomfort we understand not-yet-specified sensations of unease, dissatisfaction, a vague feeling of something not being quite right—a sensation that is purposefully open. Discomfort is a pointer to something that has to be attended to and explored, to the injustice for which we may yet not have a conceptual language to claim that it is indeed an ethical issue and/or political injustice. Discomfort related to the moment of 'affective dissonance' [9]—the embodied understanding of injustice, a moment of opportunity, when solidarity and shift towards new values becomes possible. Discomfort is a visceral experience that is lived in the body, perhaps without yet being articulated conceptually.

Cochior et al. [5] look at discomfort in relation to contemporary computational practices, in particular extractivist technologies and techno-solutionism. They describe digital discomfort as the potential to confront, resist, pay attention to, and intervene in the subtle moments of innovation driven by techno-capitalism, the overly simplistic approach to problem-solving, and the seemingly seamless functioning of digital systems. Similar to physical discomfort, digital discomfort can arise from a politicized reorganization of an environment—a deliberate effort to challenge established structures to pave the way for alternative ones to emerge.

As technology creators, we often believe we carry individual responsibility for building ethical technology [14], which implies tackling high scale societal issues, such as data extractivism [6]. Yet we are limited in the ability to resist because we have to rely on existing infrastructure that may have data extraction and oppression embedded in it. We often have to work with technology whose production relies on supply chains that have embedded histories of oppression and colonialism. Our individual potential to act is limited, when there is no solidarity and organisation. Developing awareness and the feeling of responsibility without means of action can lead to the feeling of isolation and helplessness [14, 16].

Yet it can be difficult to organise because technology can resist solidarity by isolating people from each other. The personal computer creates individual users, and corporate structure separates technology creators from one another [7]. Additionally, we have to work with issues that are often intangible: the effects of online tracking, for example, are not directly observable. The problems of extractivism or environmental costs of technology are outsourced to territories outside the global north [11].

In order to counteract this isolation and promote solidarity, we will create a space where technology practitioners can articulate and share the experience of discomfort as a base for building solidarity and collective action. Our intention during the workshop will be to come up with the ways to articulate and describe those not-yet-articulated sensations of discomfort, which we see as the first step in promoting solidarity. Secondly, we will explore the possibilities of collective resistance and engage in the exercise to collaboratively explore alternative futures of technology.

3 MATERIALS TO BE EXPLORED

Following an introduction, we will use choreographic methods and embodied experiences to explore the following:

(1) Group mapping exploration: studio participants will share outcomes of a pre-workshop task, which consists of examples of discomfort and their experiences of resisting extractivist techonologies, as well as organisational practices that stimulate the development of such technologies, both as users and creators of technologies.

(2) Group design ideation and intervention: with the help of choreographic prompts and body-based exercises, participants will propose forms of countering extractivist technologies, which will inform the design of a toolkit.
(3) Reflective discussion, summary and conclusion: participants will reflect on their proposals and how these can inform alternative modes of co-operation, solidarity and digital equity rather than technological production driven by extraction and infinite growth.

4 SCHEDULE

The workshop schedule is 09:00 - 13:00 with a 30 min break.

- 09h00 Introduction;
- 09h30 Group mapping exploration;
- 10h30 Break;
- 11h00 Group ideation and intervention;
- 12h30 Reflective discussion;
- 13h00 End of studio session;

5 PLAN IN THE EVENT OF A HYBRID/VIRTUAL CONFERENCE

Our intention is to facilitate this studio in person. In the event of a hybrid/ virtual conference, the workshop structure and activities proposed can be adapted. The workshop materials can be made available in digital formats delivered over a conference call and the schedule adjusted to participants' time zones.

6 SUPPORTING MATERIALS

We plan to create a website prior to the conference which will host the studio's information and materials, call for participation, registration, schedule, important dates and the contact of the organizers.

During the recruitment phase the link to the website will be shared in various channels such our social media accounts (Twitter, LinkedIn, Mastodon), relevant mailing lists (such as PhD Design and AioR) and internally within our universities.

During the studio, photos, audio and video recording maybe taken (if participants agree with after filling in a consent form which will be provided). These, alongside observational notes from the authors, will be used as basis for a future publication. A summary report of the studio will be shared in the studio's website.

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REFERENCES

[1] Sara Ahmed. 2017. *Living a feminist life.* Duke University Press, Durham.
[2] Augusto Boal. 2019. *Teatro do oprimido: e outras poéticas políticas* (1ª edição ed.). Editora 34, São Paulo. OCLC: 1137218643.
[3] Judith Butler, Zeynep Gambetti, and Leticia Sabsay (Eds.). 2016. *Vulnerability in resistance* (Durham). Duke University Press.
[4] Joana Chicau and Renick Bell. 2022. *Choreographies of the Circle & Other Geometries.* Retrieved September 26, 2023 from https://criticalcode.recipes/contributions/choreographies-of-the-circle-other-geometries

[5] Cristina Cochior, Karl Moubarak, and Jara Rocha. 2022. *Digital Discomfort.* Retrieved September 26, 2023 from https://www.bakonline.org/prospections/on-digital-discomfort-editorial

[6] Kate Crawford and Vladan Joler. 2018. Anatomy of an AI System: The Amazon Echo As An Anatomical Map of Human Labor, Data and Planetary Resources. https://anatomyof.ai

[7] Paul Dourish. 2001. *Where the Action Is: The Foundations of Embodied Interaction.* The MIT Press. https://doi.org/10.7551/mitpress/7221.001.0001

[8] Silvia Federici. 2004. *Caliban and the Witch.* Autonomedia.

[9] Clare Hemmings. 2012-08. Affective solidarity: Feminist reflexivity and political transformation. 13, 2 (2012-08), 147–161. https://doi.org/10.1177/1464700112442643

[10] Kristina Hook. 2018. *Designing with the Body : Somaesthetic Interaction Design* (1 ed.). MIT Press, Cambridge.

[11] Max Liboiron. 2021. Pollution is colonialism. Duke University Press.

[12] Lian Loke and Thecla Schiphorst. 2018. The somatic turn in human-computer interaction. *interactions* 25, 5 (Aug. 2018), 54–5863. https://doi.org/10.1145/3236675

[13] Alan F. Newell, Margaret E. Morgan, Lorna Gibson, and Paula Forbes. 2011. Experiences with Professional Theatre for Awareness Raising. *Interact. Comput.* 23, 6 (nov 2011), 594–603. https://doi.org/10.1016/j.intcom.2011.08.002

[14] Kristina Popova, , Claudia Figueras, Kristina Höök, and Airi Lampinen. 2024. Who Should Act? Distancing and Vulnerability in Technology Practitioners' Accounts of Ethical Responsibility (forthcoming). In *Proceedings of the 2024 CSCW (CSCW '24).* Association for Computing Machinery, New York, NY, USA.

[15] Kruakae Pothong, Larissa Pschetz, Ruth Catlow, and Sarah Meiklejohn. 2021. Problematising Transparency Through LARP And Deliberation. In *Designing Interactive Systems Conference 2021.* ACM, Virtual Event USA, 1682–1694. https://doi.org/10.1145/3461778.3462120

[16] David Gray Widder, Derrick Zhen, Laura Dabbish, and James Herbsleb. 2023. It's about Power: What Ethical Concerns Do Software Engineers Have, and What Do They (Feel They Can) Do about Them?. In *Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency* (Chicago, IL, USA) *(FAccT '23).* Association for Computing Machinery, New York, NY, USA, 467–479. https://doi.org/10.1145/3593013.3594012