Cookies at War: A Somatic Approach to The Kill Cloud

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Information Warfare, Autonomous Weapons & AI

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This research is part of a larger project exploring new paradigms for understanding Ad Tech, the Internet's primary business model. The project focuses on how Ad Tech amplifies the military- industrial-security complex's surveillance abilities, subtly merging military and civilian sectors and leading to a silent militarisation of civil society.

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> **"We have exceeded all limits.**
> **A return to disorder is unavoidable."**
>
> – Carles H. Mor

Introduction

In April 2022, an article published by The Intercept[1] revealed that Anomaly Six, a media intelligence company based in the US, was able to track the precise movements of CIA and NSA agents. Far from using opaque sources of data, the location of the agents was obtained by combining unclassified satellite images with commercial advertising data, acquired from the Ad Tech (Advertising Technology) ecosystem.

Despite being the primary business model of the Internet, the Ad Tech industry is surprisingly unknown to most of its users. In essence, Ad Tech is a term that encompasses a wide range of technologies and strategies used to advertise digitally, and it generates most of the revenues of companies such as Facebook and Google. Although Ad Tech is a highly complex ecosystem, comprised by an ample spectrum of

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[1] Biddle, Sam, Jack, Poulson, et al. "American Phone-Tracking Firm Demo'd Surveillance Powers by Spying on CIA and NSA." The Intercept, Apr. 2022, theintercept.com/2022/04/22/anomaly-six-phone-tracking-zignal-surveillance-cia-nsa/. Accessed 30 Jan. 2023.

technical processes, products and companies, its primary resource is user data, such as location and clickstream data.[2] Thus, data extraction processes are vital to this industry, consolidating Ad Tech as the world's leading industry in the processing and *commodification* of user data, or in other words, as a major enabler for mass and centralized surveillance. Yet, despite the extraordinary importance of Ad Tech within the global economy, its methods and processes are extremely opaque and thus difficult to control and regulate.

Even though the main business model of digital advertising relies on the exchange of user data between companies to serve tailor-made ads to internet users, Anomaly Six is a clear example of the crucial role of Ad Tech in enhancing the surveillance capabilities of the military-industrial-security complex — a conglomerate of private-public stakeholders including the defense industry, the military, and private capital —, reinforcing a co-dependency that silently (yet incisively) blurs the boundaries between the military and the civilian sectors. This *silent* militarization of the civil society is particularly critical, posing significant threats to democratic processes by facilitating totalitarian modes of operation at a global scale, as exemplified through firms like Anomaly Six and others discussed throughout this text.

The research exposed in this paper — developed within the Disruption Network Institute, which investigates the entanglements between Ad Tech, the Kill Cloud, and its effects on the body — is part of a larger project[3]. This project's primary goal, or radical gesture, is to create new frameworks for exposing and apprehending the mechanisms of Ad Tech, so that new political imaginaries and metaphors can arise. To achieve this, the project intends to propose an embodied and extended map of Ad Tech through an experimental opera. The common mapping of Ad Tech mostly addresses its techno-economic aspects, but this paper aims to show that these factors are grounded in critical relationships to bodies, emotion and cognition, natural resources, warfare, ideologies, and past and present politics. Thus, this project intends to extend the cartography of Ad Tech by including the underlying affective, political and material dimensions of the industry.

Research Paths

Given the experimental nature of the project, identifying direct references or existing research methodologies that may inform its goals has been challenging. Consequently, developing and refining a research methodology has become a crucial aspect of the project and remains an ongoing process. In other words, building the research methodology has become a project in itself. As previously explained, a key

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2   Information about the user's physical location and their interactions with a website or app, such as the areas they click on, the links they follow, and the sequence of their actions.

3   The initial research phase of this project was developed within RED ACTS, a network promoted by the UOC and Hub d'Art, Ciència i Tecnologia, Hac Te, with the support of the Daniel and Nina Carasso Foundation, and in collaboration with CCCB and Hangar.

objective of this phase of the project is to render visible the physical and affective re-sponses of the body (and bodies) when integrated into the Kill Cloud[4] by means of digital advertising (Ad Tech). To achieve this, two distinct yet interdependent re-search paths have been established: **Historical Research** and **Embodied Research**. The former focuses on tracing the evolution of the Kill Cloud in relation to Ad Tech since the creation of the Telegraph, while the latter examines the emotional and bod-ily reactions within the context of our intensive engagement to these technologies.

It is important to note that the research methodologies devised for the current phase of the project have been heavily influenced by a thorough research process conducted in the first half of 2023. Therefore, to gain a broader and clearer under-standing of the investigative methods, decisions made, and the project as a whole, it is essential to briefly introduce the background research developed prior to 2024.

Background research

During the last ten years I have put a strong emphasis on revealing hidden processes occurring across digital networks in order to build a holistic portrait of the Internet: from data extraction strategies, to corporate and military surveillance, interface ideol-ogy, geopolitics, energy, and materiality of data, among others[5]. Even though this re-search has been crucial to gain a deep and broad understanding of the way the In-ternet shapes society, especially at political, economic and environmental levels, so far it had overlooked a critical aspect: the role (positionality, temporality and transac-tionality) of human bodies, and affects, within this global mesh of intertwined human and non-human entities. Thus, the initial motivation behind this project arose from the recognition that, in fact, the Internet is a network of connected bodies, as bodies act behind or beside connected machines. I believe that expanding the limits of what we commonly understand as the Internet — a global system of interconnected com-puters — is essentially a gesture to collectively imagine political strategies to inhabit this system accordingly.

Building on the ideas outlined above, the primary goal of this early research ap-proach was to read the Internet (and specifically Ad Tech) as a system of bodies, al-lowing for an analysis of both the physical and the cognitive, with a specific focus on emotions. To achieve this, the research methodology combined systemic[6] and so-matic[7] therapeutical methods during a two-week workshop that took place in March

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4   The Kill Cloud was first outlined by whistleblowers Lisa Ling and Cian Westmoreland in the Anthology Whistle-blowing for Change: Exposing Systems of Power and Injustice (Tatiana Bazzichelli, Ed., transcript Verlag, 2021), and 'it refers to the rapidly growing networked infrastructure of global reach with the primary intent of dominating every spectrum of warfare, including, space, cyberspace, and the electromagnetic spectrum itself'.

5   Works are available here: https://janavirgin.com/works.html

6   Systemic therapy is based on systems theory, which examines how different parts of a system interact to maintain the stability and balance of the whole.

7   Somatic therapy is grounded in somatic psychology, a body-focused approach to understanding the mind. It operates by engaging the continuous feedback loop between the mind and body. This approach involves

and May 2023 at Hangar and the Center of Contemporary Culture in Barcelona[8]. The workshop was conducted with the help of a therapist, Moshe Robes, and a group of college students from diverse backgrounds, including philosophy, computer science, architecture, and the arts.

The workflow of the research methodology used during the workshop included the following elements:

1. Preparation
To prepare the participants for the workshop, it was crucial for both the therapist and the students to gain a deep understanding of how the system operates, prompting them to recognize that they were part of a larger system, and understand the place they occupied within it.

2. Sensitizing the Body
The objective of these working sessions was to capture the physical and emotional responses of the participants' bodies. To achieve this, it was important to sensitize their bodies, i.e., make the body more reactive to stimuli in order to amplify their reactions and make them more recognizable.

3. Role-Playing and Performing Exercises
The main purpose of these exercises was to immerse the group, both physically and virtually, into Ad Tech dynamics. Different exercises were proposed for each day, tackling various aspects of the system (data brokering, surveillance, profile building, energy usage, etc.). For example, one exercise consisted in identifying and embodying different entities — both human and non-human (e.g., a tracking cookie, a cluster algorithm, a user, a person living in a "sacrifice zone,"[9] a piece of user data, a tech CEO, etc.) — that construct Ad Tech. Participants would enact these roles without a preset script, freely embodying these entities and building connections with the rest of the participants and their roles.

4. Meet, Share and Assess
While emotions and physical sensations were discussed briefly during the performing exercises, it was essential to provide a space where the participants could freely express their impressions in detail. This stage involved a thorough review of how each

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becoming aware of and working through physical sensations, movements, and body language to address trauma, stress, and other emotional issues.

8   CCCB (2024). GRAPA 1 JOANA MOLL. [online] Barcelona: HANGAR, CCCB. Available at: https://www.cccb.org/rcs_gene/grapa_1_joana-moll.pdf [Accessed 28 Oct. 2024].

9   A "sacrifice zone" refers to a geographic area that has been heavily exploited and degraded for industrial or economic purposes, often at the expense of the health, environment, and well-being of its residents. These zones are typically characterized by high levels of pollution, environmental damage, and a disproportionate burden of negative impacts on marginalized or vulnerable communities. The term highlights the ethical implications of prioritizing economic gains over the quality of life and environmental sustainability in these areas. Examples include regions heavily affected by mining, oil drilling, chemical production, or hazardous waste disposal.

participant felt within their role and in relation to the others, including the emotions and bodily sensations that arose. Additionally, role-playing and performance methodologies (i.e., embodying algorithms, tracking cookies, tech CEOs, and data, among others) were examined and adjusted as needed.

5. Closure
Initially, the meeting, sharing and assessing practice was intended to act as a closure for the daily routine. However, performance and role-playing exercises generated a considerable degree of emotional distress for some of the participants. As a result, collective and individual protocols were established and practiced daily to address these issues.

Post Workshop Thoughts

This initial research phase of the project was developed within an artistic research residency at the Center of Contemporary Culture of Barcelona (CCCB).[10] The core curatorial concept of the residency was to host projects that used artistic research methods and open this process to college students interested in the topic, so they could get familiar with this type of research. In other words, the residency did not expect a finalized project, but rather focused on supporting and socializing research processes. Thus, this program proved to be ideal for the experimental nature of the initial phase of this project, as it allowed us to devise radically experimental research methods without having the pressure to produce a finished artwork: success and failure were equally embraced. I had flirted with the idea of investigating Ad Tech through the lens of systemic therapy for a while and this residency seemed like an ideal opportunity, as I could not assure at all whether this new approach would provide interesting results. Moreover, it was not even clear to me whether it would provide any results at all, as the whole idea of approaching Ad Tech through systemic therapy methods was built upon an intuition — an essential building block of artistic research — but was not sustained on anything I had seen or experienced before. Luckily, or not, I was wrong, as the methodology that was put in place for the workshop proved to be incredibly efficient to elicit emotional responses from the participants, something that neither the therapist conducting the sessions, nor I, had anticipated would happen with such intensity.

Although positive emotions were expressed, especially when an awakening of awareness in relation to Ad Tech practices arose, which appeared as a sense of regained agency, most of the participants voiced highly distressful feelings, mostly in the shape of fear and anxiety. One participant, a computer science student, expressed deep concerns for the lack of ethics among his teachers and the general

10 Hangar.org. (2023). GRAPA, artistic residency programme | Hangar. [online] Available at:
    https://hangar.org/en/grapa/ [Accessed 17 Oct. 2024].

curriculum of the degree. Another one, also a first-year student of computer science, experienced a panic attack during one of the exercises (which was contained and managed accordingly). I met him a few weeks later and he went as far as expressing that the workshop had been a life changing experience and that he had decided to quit computer science and start a degree on philosophy.

I also took part in the role-playing and performative sessions at the same level as all the other participants. Even though I was, by far, the one most familiar with the specifics of Ad Tech, along with its political, economic and environmental particularities, I was also hit by an unexpected wave of anxiety and fear. There, I understood that the virtual nature of these systems propitiates a distancing and neglecting of the body.[11] This doesn't mean that the body ceases to produce affects. Instead, it becomes dormant, and the ability to consciously connect with what it is actually experiencing is dramatically reduced. Embodied research — which is partially what we did in the workshop, and developed it in full in the workshop carried out in July 2024 — is based on the premise that the body knows much more than it can readily articulate, and this is exactly what happened: by sensitizing the body and providing it with a context, a time and a space, the body spoke.

Additionally, after several discussions with the group and various interviews I carried out with therapists specializing in systemic therapy, we came to the conclusion that the overabundance of fear and anxiety among the participants was coherent with the object of the study, in the sense that the participants were asked to embody the perverse nature of Ad Tech: a giant, yet opaque global industry which lives on capitalizing user data — datafication of real life experiences, interactions and affects emanating from bodies — without any margin of negotiation, stripping users of any sense of agency, and, as we could appreciate during the workshop, a pronounced sense of powerlessness which triggered strong fear and anxious emotional reactions. Moreover, systemic therapy as a method is designed to identify and fix toxic emotional patterns in a relationship system in order to stabilize it. The extractivist nature of Ad Tech, facilitated by the few tech oligarchs, its intermediaries, and legions of algorithms, is not just opaque, but acutely distant from the reality that users can apprehend through the interfaces that allow for interacting with this system. The inaccessible and hierarchical nature of Ad Tech makes it virtually impossible for users to stabilize the system by themselves. Ultimately, Ad Tech is a 24/7 open pipeline flowing in just one direction: from our bodies to countless distant and unknown others. Thus, the promise of balance, reparation and closure that could have been potentially achieved with systemic therapy failed drastically, which contributed to provoke the general unease experienced by the participants of the workshop.

Finally, while experiencing fear and anxiety was complex and difficult to manage, it validated the project's significance, and eventually gave way to a deeper drive to

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11 This idea was central to the second workshop held in July 2024 and is further developed and explained in the following chapters.

explore the body in relationship to the Internet, and Ad Tech in particular, from a new perspective. However, after this initial experience, I recognized the need for a more contained setup that would allow for a closer examination of the triggers of fear and anxiety consistently encountered throughout the workshop. This shift from a macro to a micro perspective became the main focus of the second research seminar held in July 2024.[12]

Historical Research

As explained earlier, this component of the research focused on tracing the temporal evolution of the 'Kill Cloud'[13] in relation to Ad Tech. This analysis was crucial for understanding the historical legacies that enabled digital advertising to become a massive source of global military intelligence, blurring the boundaries between civil society and the military in pervasive and subtle ways.

The major outcome of this part of the research is a timeline with over five hundred entries, with more being currently added. This timeline aims to provide a historical view of the chain of events that have influenced the development of the Kill Cloud since the invention of the telegraph, widely regarded as the first form of electronic communication. The history of the Kill Cloud is a complex one, emerging from a web of material, political, economic, technical, scientific, military, commercial, and cultural entanglements. As the philosopher Graham Harman suggested, while we often lazily assume that 'everything is connected,' we must remember that, in fact, 'everything is not connected.'[14] Therefore, it is necessary to continuously trace and revisit the connections that do exist between objects, ideas and events to gain a deeper, more complex understanding of a specific research subject.

Thus, an ongoing process of tracing connections is crucial for understanding the broader implications of the Kill Cloud, particularly in its relationship to Ad Tech, consumer data and the bodies that produce it. The timeline produced in this research not only maps the chronological materialization of these systems, but also highlights the intersections between various socio-political, cultural, military, technological, scientific, and material factors.

By examining these connections, we can begin to see how seemingly unrelated events have significantly influenced the way these systems have been forged. The timeline's most significant contribution is offering a clear portrait of how the simultaneous, disparate nature of events has shaped individual and collective imagination,

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12 A thorough description of this activity is provided later in this text

13 Ling, Lisa and Westmoreland, Cian. "The Kill Cloud: Real World Implications of Network Centric Warfare." Whistleblowing for Change: Exposing Systems of Power and Injustice , by Disruption Network Lab, Bielefeld, transcript Verlag, 1 Nov. 2021, pp. 129–139.

14 Harman, G. (2012) 'Everything is not connected' [Lecture], Transmediale. HKW Berlin. 2 February. Available at: https://archive.transmediale.de/content/keynote-graham-harman-everything-not-connected-0 (Accessed: 17 Sep. 2024).

and, consequently, how a specific version of the world as a reality-making system has emerged. In other words, the timeline offers a reverse-engineered map to understand the kind of society we have created and the historical choices that facilitated its development.

For example, in 1856 photographer Matthew Brady, who studied under Samuel Morse — credited with the invention of the telegraph — created the first example of modern advertisement in the *New York Times*. A bit earlier, in 1845, Gutta-percha, a natural rubber from the Palaquium gutta tree (native to Sumatra, Peninsular Malaysia, Singapore and Borneo) became instrumental in the manufacturing of underwater telegraph cables. The material does not degrade in seawater and it is a good electrical insulator. Gutta-percha usage in electrical cables generated a huge demand which led to unsustainable harvesting and collapse of supply, while also highlighting the role of colonialism in the capitalist development of Western societies. In 1860, the *History, Theory and Practice of the Electric Telegraph* reported how thirty-three offices of the American Telegraph Company were linked together in order to conduct a business meeting.[15] In 1893, the Telefon Hírmondó, a 'telephone newspaper' in Budapest, provided news and entertainment to subscribers over telephone lines. The Telefon Hírmondó is regarded as the first service to electronically deliver a wide range of spoken and musical programming to a diverse audience. As early as 1901, a commentator in the *London Spectator*, quoted in the November 4th 1901 edition of the *Los Angeles Times*, predicted what 'The Wireless Age' might bring, envisioning that 'someday men and women will carry wireless telephones as today we carry a card case or camera.'[16]

Throughout the timeline, it becomes evident how not only intimately linked events, but also seemingly unrelated ones — such as the military origins of the Internet's infrastructure — have become blurred in the social imagination. This historical amnesia has been instrumental in establishing the Internet as a cultural paradigm for individual freedom and empowerment,[17] thereby assisting the implementation of a global surveillance apparatus through a commercial enterprise like Ad Tech. For instance, in 1969, the year the ARPANET[18] went online, students at MIT and Harvard university attempted to shut down research taking place in their universities under the umbrella of the ARPANET. The students saw this early version of the Internet, as 'a system of surveillance and control, computerized people manipulation,'[19] and already alerted of

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15 Earlyradiohistory.us. (2024). History, Theory and Practice of the Electric Telegraph (1860) -- Meeting extract. [online] Available at: http://earlyradiohistory.us/1860meet.htm [Accessed 13 Jun. 2024].

16 Earlyradiohistory.us. (2024). 4. Personal Communication by Wireless (1879-1922). [online] Available at: http://earlyradiohistory.us/sec004.htm [Accessed 13 Jun. 2024].

17 Levine, Y. (2018). Surveillance Valley. PublicAffairs.

18 ARPANET was the first operational packet-switching network, developed by the U.S. Department of Defense's Advanced Research Projects Agency (ARPA) in the late 1960s, and it served as the precursor to the modern internet.

19 Levine, Y. (2018). Surveillance Valley. PublicAffairs.

the potential risk of it being used by the US government to spy on American citizens and counteract progressive political movements. Conversely, in 1967, Richard Brautigan, an American writer most representative of the countercultural movements of the late '60s, wrote the poem "All Watched Over by Machines of Loving Grace"[20] while being a poet-in-residence at the California Institute of Technology. The poem presents an enthusiastic description of a technological utopia in which machines improve and protect the lives of humans. The poem has counterculture and hippie themes, influenced by Cold War-era technology, and it's a living testimony of the initial shifts in cultural perceptions of the Internet among countercultural figures, perceptions that later permeated the commercial computer revolution of the '80s and '90s.

In sum, this research emphasizes the necessity of understanding the intricate connections that have shaped the evolution of the Kill Cloud, particularly its entanglement with Ad Tech. The timeline served as an essential tool for the current research phase of the project, revealing how historical events, technological and scientific advancements, and cultural shifts have collectively forged the systems to which we are now subscribed, exposing how a particular vision of reality — one that blurs the lines between military power, civil society, consumer data, bodies, and affects — has emerged. This historical clarity is crucial for contextualizing further research and exploring in depth the bodily and emotional responses of users within these systems, which was the core focus of the successive phase of the research.

Embodied Research: From the Body to the System

The current research phase described in this text aims to re-imagine the relationship between Ad Tech and the Kill Cloud ecosystems through embodied knowledge. Embodied knowledge unfolds as a key vehicle to the project. 'Without the bodily, we would not be able to organize ourselves in our environment: we will not know where/what we are, what/how we are learning or how we can communicate about our feelings, experiences and modes of being.'[21] In other words, our bodily experiences influence our actions in the social world and correspondingly, the social environment influences our bodily experiences and cognition. Moreover, our physical sensations and experiences are not just personal but have social and political dimensions, and are in a constant state of change and development. Neuroscientific research has shown that cognitive systems are deeply intertwined with bodily sensibility. This means that our perception and actions are not just controlled by our brain in

20 Wikipedia Contributors (2023). All Watched Over by Machines of Loving Grace. [online] Wikipedia. Available at: https://en.wikipedia.org/wiki/All_Watched_Over_by_Machines_of_Loving_Grace [Accessed 2 Sep. 2024].

21 Coetzee, Marié-Heleen. "Embodied Knowledge(S), Embodied Pedagogies and Performance." South African Theatre Journal, vol. 31, no. 1, 2 Jan. 2018, pp. 1–4, https://doi.org/10.1080/10137548.2018.1425527.

isolation but are deeply connected to our bodily experiences which, in turn, are shaped within specific cultural and contextual frameworks.

In the complex and often non-transparent realm of the digital economy, especially within Ad Tech and the Kill Cloud, parallels can be drawn to Marx's Theory of Alienation and Durkheim's *anomie*.[22] Here, users are increasingly distanced not only from the tangible benefits of their online activity but also from their own bodies and the awareness that their interactions constitute a form of labour that is becoming increasingly militarized. In such a dynamic, reclaiming the role of the body is not just critical, but a radical political act to confront the increasing asymmetries of power within this system.

Furthermore, the body and emotions serve as living evidence of what constitutes a system — what a system is. This is particularly evident in the case of drone personnel. These trained U.S. soldiers engage in a system of remote warfare, where, despite not being physically present on the battlefield, their actions have tangible impacts in physical spaces. Studies on drone crew members, especially those operating weaponized drones like Reaper and Global Hawk, have shown a higher incidence of psychiatric symptoms compared to operators of manned aircraft. Approximately 46% to 48% of drone operators experienced significant psychiatric symptoms, such as sadness, guilt, poor concentration, irritability, anxiety, and sleep disturbances. This evidence reveals that what seems to be an antiseptic system for drone operators — executing their duties from a physically safe space — is, in fact, not safe. The physical and emotional toll on their bodies provides crucial evidence of the violence that drone personnel endure, thereby exposing the underlying brutality of the drone program.[23]

As seen in earlier research phases of this project, Internet users, who are inevitably hooked into Ad Tech networks, expressed acute symptoms of fear and anxiety when becoming aware of their role within the extractivist system to which they are actively and daily subscribed. In the context of the Kill Cloud — where user's actions, interactions, and data in the realm of Ad Tech can potentially be used in a theater of war — parallels can be drawn with drone personnel: vast amounts of commercial user data is being put to use in the Kill Cloud, a global weapons system, while the bodies that produce it are kept "safe" in the seemingly antiseptic spaces of everyday life. As Lisa Ling puts it, 'users are telecommuting to war.'24 However, unlike drone personnel — who understand their active role in a military system — most regular users are

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22 Anomy refers to the disconnection or estrangement individuals feel from their own bodies when societal norms regarding identity, appearance, or physicality become unclear or contradictory. This can lead to a sense of alienation, where individuals struggle to align their bodily experiences with shifting social expectations, resulting in feelings of disorientation or detachment from their physical selves.

23 Bryant, Brandon. "The Art of War, the Moral Law and the Art of Whistleblowing." Whistleblowing for Change: Exposing Systems of Power and Injustice , by Disruption Network Lab, Bielefeld, transcript Verlag, 1 Nov. 2021, pp. 49–54.

24 Ling, L. (2024). The Kill Cloud. 3 Sep.

unaware of the roles they may be playing, making it increasingly difficult to assess the effects these systems have on their bodies and emotions, as their burdens cannot be traced back to a specific action.

Moreover, for some drone operators, it took nearly two years to receive a diagnosis.[25] That could explain and validate the mental and physical burdens associated with their jobs, even when the source of their symptoms was clearly identified.[26] In the case of users participating in the Kill Cloud, the causal link between their actions and their effects is dramatically diluted. This unawareness does not equate to insensitivity; it means that while the body feels the impact, it remains in a dormant state without the framework to express it with awareness. Then, somatizing the Kill Cloud — that is, analyzing it through the body by rendering visible the "invisible" — is a core methodology of embodied research and is crucial for this current phase of investigation.

Somatization of Ad Tech

The main goal of this research phase is to explore how the technical — and, by extension, ideological — natures of Ad Tech and the Kill Cloud permeate and affect the structure of the body and mind. In other words, this phase aims to reveal how the ubiquitous and constant exposure to these systems invisibly modifies, constitutes, and organizes human bodies. Additionally, refining specific embodied research methodologies for this project remains a central focus of this phase. To achieve these objectives, I organized a two-week research session with college students from July 16th to 26th 2024, at the Institut del Teatre in Barcelona.

For this workshop, I collaborated with Mar Medina, a renowned Barcelona-based choreographer experienced in developing methods to somatize data for research purposes. Our primary challenge was to develop a methodology that could protect individuals, as much as possible, from the potential harmful side-effects of their immersion into Ad Tech dynamics, particularly in its relationship with the Kill Cloud. One of the main concerns was the risk of potential moral injury[27] that could arise from consciously involving participants in such processes. As already described, in earlier research phases of this project, we found that embodying Ad Tech — especially with a strong focus on user data extraction — was highly distressing for most participants, and in some cases, led to severe emotional reactions consistent with the described side effects of moral conflict.

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25 Saini, Rajiv Kumar, et al. "Cry in the Sky: Psychological Impact on Drone Operators." Industrial Psychiatry Journal, U.S. National Library of Medicine, 22 Oct. 2021, www.ncbi.nlm.nih.gov/pmc/articles/PMC8611566/.

26 Ibid.

27 'Moral injury is understood to be the strong cognitive and emotional response that can occur following events that violate a person's moral or ethical code'. - https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366(21)00113-9/fulltext

The workflow for the research methodology applied during the workshop was structured as follows:

1. Preparation

The workshop was attended by eleven participants, split between two groups. Half were college students from performance studies, while the other half had backgrounds in computer science, design and programming. Consequently, the latter group had a general understanding of the Internet as a techno-social-economic-material infrastructure and its connections to military systems, whereas the former group lacked familiarity with these concepts. To bridge this gap, the first day of the workshop included an introduction to the nature of the Internet and Ad Tech, and their ties to the military, providing necessary context for the study.

2. Sensitizing the body

To understand how a system impacts the body and mind, one must first gain distance from it in order to observe its effects clearly. With this in mind, we conducted daily exercises aimed at decompressing the nervous system — such as breathing exercises and relaxation techniques that helped soften the muscles surrounding the spine — with the goal to "resetting" it. This enabled participants to reach out a heightened level of awareness, helping them to better identify the connections between the inputs received through devices and their physical and mental responses.

3. Somatization practice

The somatic practices were centered on the effects that the participant's smartphones triggered in their bodies and minds. The set of exercises performed during the workshop were designed to slowly dive into these effects, starting from the physical interface, the virtual interface and beyond the interface (data extraction and its associated processes). For clarity, I detail some of the practices carried out during the working sessions:

Practice 1: Virtuality and Subjectivity

The goal of this practice was to explore each participant's virtual subjectivity when navigating physical space, and to raise awareness on how they processed spatial information. The activity involved exploring the surroundings of the building where the workshop was held, alone and in silence, without the aid of smartphones or any technologically mediated navigation system. After 30 to 40 minutes, the participants returned to the classroom and were asked to mentally recreate their walking paths.

It was interesting to observe how each student recalled the experience differently. Participants familiar with computational processes tended to narrate more detailed routes but had difficulty recalling sensory experiences like sound, heat, or the feel of the terrain. In contrast, the other group struggled to precisely recall their path, but were highly attuned to how their bodies felt throughout the walk.

What was particularly revealing about this exercise was that, first, it reminded participants of their own virtual subjectivity, their particular way of apprehending the environment, and second, it highlighted how much of our sensory experience is outsourced to our smartphones, such as when navigating with Google Maps. A consistent observation across most exercises suggested that this voluntary outsourcing temporarily diminishes our sensory capabilities, and effectively collapses parts of our bodies, and may result in the blockage of some sensory inputs in the nervous system. In other words, our subjective, context-attached representation of the world is replaced by a homogeneous, recontextualized virtuality that blurs virtuality and physicality together, making it difficult to distinguish one from the other, and therefore potentially resulting in states of sensible disarray.

Practice 2: Gesture Before Data

This somatic practice[28] was designed to help participants become aware of the subtle, often unnoticed physical and mental processes that occur just before we generate data, such as holding a device and interacting with interfaces. It focuses on the moment before these actions take place, encouraging participants to pause and reflect on the connection between their bodies, minds, and the technical unconscious — the automatic, invisible systems and processes, like algorithms or data collection mechanisms, that sustain the digital realm. Ultimately, this exercise aimed to reveal the symbiotic influence of the technical unconscious in the organization of the physical (movements and postures), the cognitive (attention and decision-making), time (how long one sustains movements, postures, and attention), and space (how we become present and navigate the space).

The practice was divided into three exercises, each focusing on the parts of the body actively involved in the generation of data: the hands, eyes, fingers, and fingertips. Participants were asked to perform a variety of actions, such as touching their smartphone screen while the devices were off, paying close attention to the movement of their hands, fingers, eyes, attention, and gestures, as well as sensations like texture, temperature, weight, volume, and the surrounding space. These exercises were then repeated with their phones turned on.

Throughout the practice, a range of reactions emerged among the participants, but one state was commonly expressed: exhaustion. Some students were unable to continue holding their smartphones, as they became acutely aware of the physical and cognitive effort required to perform the seemingly simple task of holding the device. For some, this awareness became unbearable, with one participant breaking down in tears when they finally managed to touch the phone again, emotionally overwhelmed. For others, the experience was quite the opposite: while their bodies

28 This excercise was a recreation of a workshop held by Alejandra López Gabrielidis and Mar Medina in 2017: Somatizar los datos. Alejandra López Gabrielidis and Mar Medina. Practice from workshop within Datatification Conferences. Transmutations Art-body-data for imarte, Research art, science and technology group of Fine Arts Faculty, UB. February 17th, 18th, and 15th 2017, HANGAR. Barcelona

expressed different levels of collapse — such as having difficulties to stand up —, they continued to actively use their phones, highlighting the disconnect between the activity of the body and the persistent effort required to continue engaging with their device. To keep using their phones, they had to block the signals of exhaustion coming from their bodies, which would otherwise have prevented them from continuing.

The practice also heightened participants' awareness of the relationship between touch and meaning. While the phones were off, participants understood that touch was directly tied to its immediate meaning: they were "simply" touching a glass screen. The response to touch, carried out through their hands, fingers, and fingertips, conveyed information about the screen's shape, position, size and texture, as well as the volume and weight of their devices. However, when the phones were turned on, although participants were still touching the same glass screen, they were also interacting with an interface which carried a multifaceted meaning that made sense somewhere else, far beyond the physical device. Actions such as scrolling, activating buttons, or opening an app trigger an unknown number of immediate and remote events, which become distributed through networked computers located in remote physical spaces, and are ultimately accessed by an unknown number of entities, both human and non-human.

Thus, the act of touching the screen became detached from its immediate, time- and-space-bound meaning. The touch not only made sense in the physical presence of the body, as the feedback from that touch inhabited and made sense, simultaneously, in unseen spaces. However, the remote meaning was concealed from the body that initiated the action, thus creating a tension between the sensory feedback the body received from the touch and the actual impact generated by the action, which also contributed to the participants' overall feeling of exhaustion.

Practice 3: Material Feedback

The main goal of this exercise was to raise awareness of the relationship between touch and physical feedback. To achieve this, we created a sensory prop using a mixture of corn flour and water. The density properties of the resulting dough allowed participants to sensitize their fingertips, making them more aware of the different pressures applied to the material and the feedback information received from those forces.

Information transmission depends on the "tone" — as in muscular tone of human bodies — of both the object and subject of information.[29] When the forces exerted within the assemblage of bodies broadcasting and sensing information are balanced, the flow of information received is more complete. However, if the tone is unbalanced (i.e., one body applies more force than the other), some information is lost.

This imbalance is particularly evident in human interactions with screens, and by extension, with the broader ecosystems that exist beyond screen interfaces. Through

29 Medina, M. (2024). Final thoughts on embodied research. 7 Aug.

our experience, we feel that, as the body becomes anchored to the virtual reality presented by a screen, its ability to engage with its physical surroundings diminishes dramatically. While the body may find its natural balance in a physical context, the presence of a screen potentially disrupts this balance by prompting the body to re-calibrate toward the screen's activity. This results in physical and mental compression, as the mind and the body are subjected to the screen's constant pull. Over time, the mind begins to disassociate from the body, losing its ability to self-regulate, which can lead to exhaustion and collapse.[30]

In this process, friction becomes critical to understanding and balancing the tone of forces at play. Without friction — whether physical or cognitive — the body cannot properly adjust to the external pressures. When friction is absent, the body becomes overwhelmed, leading to a sense of exhaustion and eventual submission to the forces that it cannot exert resistance against.

The hand, in this case, is also representative of this re-balancing of forces within the entire system of a body. When tension occurs in the hand, it isn't isolated; instead, the whole system responds by redistributing the tension to maintain its balance. This principle also applies to architecture. For example, in large skyscrapers, the structure acts like a network that redistributes tension across its system. This concept is known as "tensegrity," which refers to a system's ability to keep its balance and avoid collapse.

Finally, the magnitude of the pressure that we apply with our fingertips on a screen does not correspond to the pressure received from systems operating beyond our devices, such as Ad Tech. The human body has the ability to naturally adapt to external forces, but when these external systems, like Ad Tech, do not respond or adapt in sync with the body's tone, the flow of information between both sides is disrupted. As a result, parts of both systems become obscured and hidden.

Practice 4: Understanding Breathing
In this practice we explored the relationship between the head, neck and back. The exercise was carried out in pairs: one person used their phone while the other, through gentle touch, observed the alignment and tension in the head, neck, and back of the phone user.

Participants became aware of how the act of focusing with the eyes impacted the rest of the body, especially in relationship to breathing. The conclusion was that when the eyes focused on the phone, the rest of the body adapted to this gesture by modifying the position of the head, neck, and back. When the finger began to move on the screen, it further solidified this position, disrupting the natural alignment of the upper parts of the body. This deviation towards the object (the phone), created tension and "froze" the body in an unnatural posture that remained static rather than flowing through time.

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30 Ibid.

As a counterexample, consider a 100-meter freestyle runner. The runner "freezes" a starting position but immediately moves forward, completing the action that the starting point was aimed at. In contrast, when we use a phone, our body stays in the same position, while our mind races ahead, disconnected from the body's (lack of) physical motion.

Breathing is the body's fundamental and constant movement — we are always breathing. However, maintaining tension in the body for extended periods of time affects breathing. The body is designed to maintain its balance through movement, but when we remain still and fixated, as we do in front of a device, breathing adjusts to this static posture, accepting different degrees and zones of compression, closure, and disconnection between body and mind. The ribcage contracts, preventing the lungs from expanding fully. As a result, the lungs take in less air and the quality of breathing deteriorates. This reduced breathing means that less oxygen reaches the body, and sensory-perceptual information from the muscles and skin diminishes. Over time, the body adapts to this sustained compression, reducing its range of movement and expansion, ultimately functioning in a more restricted and restrained manner.

4. Meet and Assess

During the exercises, emotions and physical sensations were touched upon briefly, but it was crucial to create a dedicated space for the participants to openly share their detailed impressions. These daily meetings involved a comprehensive reflection on each person's experience, both within their individual role and in connection with others, including any emotional or bodily responses that emerged. Furthermore, these meetings allowed us to evaluate the somatic practices and methods, and adjust them as necessary.

5. Guided Interviews

One of the main challenges I've encountered when working with embodied knowledge is translating the findings into verbal communication. As noted in a recent study, a key characteristic of embodied knowledge is that much of it is bound to the body. Its implicit rather than explicit nature makes it difficult to articulate verbally.[31] The primary goal of the guided interviews, therefore, was to recall, identify, and link bodily sensations with emotions arising from specific practices carried out during the workshop, in order to document them. This part of the workshop was led by Agustina Andreoletti, an Argentinian/German curator and researcher specializing in archiving practices. The interviews were conducted individually based on a method called Narrative Exposure Therapy,[32] commonly employed in clinical psychology to treat complex trauma disorders.

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31 Ehmer, O. and Brône, G. (2021). Instructing embodied knowledge: multimodal approaches to interactive practices for knowledge constitution. Linguistics Vanguard, 7(s4). doi:https://doi.org/10.1515/lingvan-2021-0012.

32 Narrative Exposure Therapy (NET) is a trauma-focused therapeutic approach designed to help individuals process and integrate traumatic experiences by constructing a detailed and coherent narrative of their life, from

This method involved recreating a timeline of events that occurred during the workshop, focusing on bodily sensations associated with specific events, and identifying the emotions triggered by them. The technique allowed the participants to verbalize a significant amount of implicit information, and it enabled the creation of an accessible archive of the general findings[33] from the two-week embodied research practices.

Post Embodied Research

The main focus of this two-week intensive embodied research was to reveal how the ideology of the socio-technical-political assemblages of Ad Tech, in combination with the Kill Cloud, organizes our bodies and minds. In short, the workshop aimed at translating the seen and unseen transactions with socio-technical-political systems into physical and emotional knowledge. The original scope of the sessions was to begin working with the body even before it generated data, and then gradually exploring our entanglement with Ad Tech and the Kill Cloud. However, after thoroughly assessing the group dynamics — particularly considering the set of strong reactions observed during the first week of work — we decided to slow the pace in order to give the group more time to process the information in depth. While I still believe that this was the best course of action, as it provided the opportunity to insist on crucial aspects of the research, it also meant that we could not delve as deeply into the second part of the workshop as intended.[34] Nonetheless, the research outcomes exceeded the initial expectations and are more than sufficient to validate the current hypothesis and establish a clear roadmap for further research.

While we performed a wide variety of exercises that provided a wide range of subjective reactions, we observed an outcome that was consistent in every participant: the hyperactivity of the nervous system. The evidence of hyperactivity, followed by collapse, was widely staged by their bodies and minds (in principle, body and mind are a continuum, but for the purposes of this research I think it is useful to distinguish between bodily and mental spheres) throughout the workshop.

The nervous system is a highly complex network responsible for controlling and coordinating all the body's activities. It consists of two main parts: the Central Nervous System (CNS) and the Peripheral Nervous System (PNS). The CNS comprises the brain and the spinal cord, where the brain acts as a centralized control entity capable of managing thoughts, emotions, memories, and movement, while the spinal cord acts as a communication pathway between the brain and the rest of the body. The

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birth to the present. It is particularly effective for those with complex trauma or PTSD, as it encourages the individual to confront and reframe traumatic memories within the broader context of their life story.

33 This archive is aimed at informing the research and it is not publicly accessible.

34 This part will be explored in depth from 14 of January to 14 of February 2025 in the context of an artistic residence at PACT Zollverein (Essen).

PNS connects the CNS to the rest of the body, and it includes nerves that branch out muscles, organs, and skin, allowing for sensory input (like touch or pain) and localized movement. The PNS has two subdivisions: the Somatic Nervous System, which controls voluntary movements, and the Autonomic Nervous System, that regulates involuntary functions such as heart rate and digestion. This system is made up of three parts: the Enteric Nervous System, in charge of controlling the functions of the gastrointestinal tract; the Sympathetic Nervous System, responsible for the "fight or flight"[35] response; and the Parasympathetic Nervous Systems, which promotes rest and recovery.

The collapse of different parts of the nervous system was effectively demonstrated during the somatic practices. For example, a very characteristic gesture derived from the use of smartphones is a sustained slouched-forward posture that involves a neck forward tilt, rounded shoulders, and a collapsed chest among other effects. The area of the head, neck, and back hosts the nerves that regulate the lungs and heart, as well as arm mobility. All primary coordination of the body depends on the well-being of this region. Interestingly, humans are the only mammal capable of continuing to function despite experiencing tension in this part of the body. Most mammals would halt their activity to preserve the integrity of their bodily system when a blockage in this area occurs. For instance, when cats are grabbed by the back of their necks, a critical zone, they release this area because they sense danger, and immobilization happens as a survival response.[36]

In contrast, humans, despite undergoing and even recognizing pressure in critical areas of their bodies, tend to persist, adding more pressure until they collapse. This pattern was especially evident during the second practice **(Gesture Before Data)**, where some participants noticed the contraction in their bodies and could no longer sustain interaction with their phones. Others, however, ignored the pressure in their bodies and continued to using their devices, even though their bodies appeared visibly neglected from an external perspective.

During the fourth practice (**Understanding breathing)**, we observed that even the seemingly insignificant act of holding and positioning the phone by rotating the muscles of the hand, wrist, and arm provoked tension on the pectoral muscles. When these muscles are tensed or blocked, breathing does not fully reach the upper lungs. As a result, the body's need for air is not met, contributing to additional muscular tension and the reduction of space and volume of the area where the respiratory system is located.

The CNS plays a crucial role in maintaining the function of the entire body. If something goes wrong in core parts of the system, it inevitably affects the periphery,

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35 The-flight-or-fight response is a physiological reaction that occurs in response to a perceived harmful event, attack, or threat to survival.

36 Medina, M. (2024). Final thoughts on embodied research. 7 Aug.

because the central system controls and communicates with all parts of the body. Damage to the central axis, such as a spinal cord injury, can cause irreversible effects, as the CNS cannot repair itself in the same way other parts of the body might. The nervous system is organized around this central axis, and if the axis fails at a certain point, everything associated with that level of the spine will also fail.

Nerves emerge from the spinal cord and spread to other areas. A good example is the trigeminal nerve, responsible for processing information related to sight, hearing, smell, and partially taste. If compression or damage occurs in the area of the spine that connects to the trigeminal nerve — as can happen with prolonged use of smartphones or computers —, it cannot receive information properly, leading to sensory distortions. Nerve compression can affect how an individual perceives the world; if a nerve receives incomplete information due to collapse or compression, it impacts how the brain processes sensory information. For instance, if the trigeminal nerve is under stress, sensory inputs may become distorted and, as a result, one's thoughts and reactions may not be coherent with the environment because the brain receives incomplete or inaccurate sensory data.

This concept applies not only to sensory nerves but also to the nerves that regulate vital functions like the brachial plexus system, which controls the lungs and heart. Any change in the volume or weight of the lungs can create a general imbalance in the body. Imbalances or blockages in the upper parts of the nervous system can cause a ripple effect that impacts the entire body. As demonstrated in some exercises carried out during the different stages of the workshop, such issues can negatively affect even simple tasks like typing, as higher-level blockages disrupt the communication and functionality of the entire system. Often, people don't notice these blockages because they are not consciously paying attention to their bodies, as their focus is on the virtual interaction through their screen.

Furthermore, numerous studies have linked the use of smartphones with an overstimulation of the nervous system.[37] This overstimulation prevents the nervous system from self-regulating, leading to an imbalance between the sympathetic and parasympathetic systems — crucial for maintaining homeostasis, a stable internal state in the body. This imbalance disorganizes the body, putting it in a constant survival mode, similar to the effects of trauma in the system. Additionally, while engaging with the virtuality of a smartphone, the body is positioned in relation to a reality that is not present in the situated environment of the body. This dissonance between the physical body and virtuality creates a sharp contrast between the almost total lack of muscular activity and the excess of mental activity. Immersed in such a situation, the body begins to collapse: the physical body shuts down, while mental activity detaches from it and stays connected to the virtuality of the phone. In fact, the more activity that takes place on the screen, the less activity there is in the body. This further

37 Small, G. (2020). Brain health consequences of digital technology use. Dialogues in Clinical Neuroscience, [online] 22(2), pp.179–187. doi:https://doi.org/10.31887/dcns.2020.22.2/gsmall.

increases physical strain, as awareness of basic needs — like rest, critical for the self-regulation of the nervous system — is diminished.[38]

A system unable to assume excessive pressure blocks the flow of information to make the experience sustainable.[39] For example, if someone is in a bar with unbearably loud noise, they have two options: leave the bar or disassociate from the noise. If they choose disassociation, they voluntarily stop processing parts of their surroundings, effectively making the experience more bearable by suppressing certain stimuli. This can be extrapolated to device usage: when interactions with screens are prolonged, the nervous system desensitizes, collapses, and detachs. It blocks certain sensory inputs to make sustained device use affordable for the body.

The nervous system serves as the body's communication network, allowing it to respond to internal and external stimuli in order to survive in a situated physical environment. Yet, as the body's communication network collapses, blocking crucial information needed for self-regulation, the data extraction ecosystem thrives, and with it, all the networks connected to that system, including Ad Tech and the Kill Cloud. It might be facing a paradoxical situation: as the body becomes increasingly compressed, the data collection machinery that lies beyond the interface continues to expand.

The Military Nature of the Internet

As argued previously, the counterculture movements of the 1960s and 1970s dramatically shifted the cultural perception of the internet: from a military infrastructure into a tool of individual empowerment and liberation. For most Internet users today, its military origins have been effectively erased from the collective imagination. However, a historical reminder of the Internet's military foundations is critical to understanding the deeper relationship that exists between Ad Tech and the Kill Cloud.

The Internet cannot be detached from the political context in which it emerged: the Cold War and the fight against communism. The modern Internet saw the light in 1969 as the ARPANET, established by the Defense Advanced Research Projects Agency (DARPA), part of the United States Department of Defense. DARPA, originally ARPA, was born in 1958, right after the Sputnik I, the first artificial Earth Satellite, was launched by the Soviet Union in October 1957, fueling fears of a nuclear attack from space. As a result, ARPA was put in place to advance weapons and military technologies to counteract this threat, and the ARPANET was a product of this effort.

The 1960s marked a critical transformation in the nature of warfare, characterized by a shift from conventional conflicts between the large and easily identifiable superpowers during World War II, to more complex and decentralized forms of insurgency

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38 Anbumalar, C. and Binu Sahayam, D. (2024). Brain and Smartphone Addiction: A Systematic Review. Human Behavior and Emerging Technologies, [online] 2024, p.e5592994. doi:https://doi.org/10.1155/2024/5592994.

39 Medina, M. (2024). Final thoughts on embodied research. 7 Aug.

warfare, as seen in the Vietnam War. This rise of such asymmetric warfare scenarios created new insecurities for superpowers like the U.S, as they faced new and unpredictable threats. Unlike conventional wars between states, where military superiority, strategy, and technology could bring decisive victories, asymmetric conflicts presented challenges that were much harder to manage, as their amorphous and unpredictable natures clearly exposed the limits of state-military power. As argued by Levine (Levine, 2018), the efforts to reverse this trend were central to the early conceptualization of the Internet, which was envisioned as 'a computerized system that could collect and share intelligence, watch the world in real time, and study and analyze people and political movements with the ultimate goal of predicting and preventing social upheaval.'[40]

As described earlier, in 1969, the same year that ARPANET was introduced, a group of MIT and Harvard students tried to sabotage the network, fearing it could be put at the service of the government to surveil American citizens and deter progressive social movements. Indeed, by 1975, NBC's evening news reported that the ARPANET was being used by the CIA and the NSA to spy on American civil rights activists.[41] A few years before, a 1971 issue of *Off Our Backs*, a Radical Feminist Journal, had published a call to join a protest at the Spring Joint Computer Conference to fight against 'the use of computer-based information systems as a mean of social control', claiming that 'Military Intelligence keeps data banks on civilians – including all of us.'[42]

Nonetheless, over the next few decades, the perception of the Internet shifted dramatically from being perceived as a military tool for control and repression to being celebrated as a vehicle for government and corporate emancipation. This transformation was largely influenced by countercultural movements, media, and pop culture narratives. The Whole Earth Catalogue (1968), a publication deeply rooted in the '60s counterculture, known for its central role in this shift, promoted the idea of technology as a vessel for personal empowerment. Likewise, the 1980s Cyberpunk literary movement, with works like *Neuromancer*, also staged a promise of the Internet as a way to escape the reach of authoritarian control and corporate dominance. By the 1990s, with the invention of the World Wide Web (WWW), *Wired* Magazine popularized the idea that technology was not just a tool for technologists, but available to the masses. These combined influences may have effectively helped to iron out the political frictions that could have stopped the push of the utopian vision of the Internet towards the forefront of collective imagination. In doing so, they effectively buried a real but increasingly dystopian version of the internet — a version largely hidden until 2013, when Edward Snowden's revelations brought it starkly back into

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40 Levine, Y. (2018). Surveillance Valley. PublicAffairs.

41 Ibid.

42 Gaillot, A.-D. (2018). Remembering the '70s activist group that tried to save us from the tech industry. [online] The Outline. Available at: https://theoutline.com/post/4029/computer-people-for-peace-history [Accessed 20 Sep. 2024].

public awareness. This cultural turn has been instrumental in enabling the Internet as a technology of mass consumption, and with it, Ad Tech, 'the largest information-gathering enterprise ever conceived by man.'[43]

Ads and Cookies

The links between the Kill Cloud and Ad Tech were not present from the beginning. However, the convergence of arguably the largest open-source intelligence ecosystem in history, and the rising importance of data as a weapon of war, has led those two industries to become increasingly intertwined.

Ad Tech evolved alongside the commercialization of the Internet, particularly with the advent of the World Wide Web in 1991, which brought websites, browsers and webservers to life. The invention of the Web made the Internet user-friendly enough for mass adoption, and with it, the possibility to capitalize this brand new territory. In 1994, less than three years after the first website was publicly introduced, the first online ad appeared on *Wired* Magazine's website. That same year, the HTTP cookie was invented, marking the first time in the history of the Internet where a website's data could be reliably stored on a user's computer.

This invention caused a fundamental shift in the way users navigated the Internet. Browsing went from "being a relatively anonymous activity, like wandering the streets of a large city, to the kind of environment where records of one's transactions, movements and even desires could be stored, sorted, mined and sold."[44] Interestingly, the inventors of the cookie themselves warned of potential privacy issues derived from the misuse of such technology in a text published in 1997.[45] Indeed, just a few years later, their premonition became real: seemingly harmless cookies enabled the Internet to become a tool of mass surveillance, allowing companies and governments alike to track users across networks.

The inherent capabilities of the Cookie — storing endless strings of user data such as browsing history, credit card information, GPS coordinates, and device type, to name a few — greatly serve the advertising industry's main purpose, based on generating revenues by monetizing user attention and guiding decision-making. The more information advertisers can gather about a specific user, the better they can capture and maintain that user's attention, influencing future choices. In short, cookies are fundamental to how Ad Tech collects data, tracks users and optimizes online advertising. They are the backbone of the digital advertising ecosystem, the primary

43 Tau, B. (2024). Means of Control. Crown.

44 Wolfie Christl and Spiekermann, S. (2016). Networks of control : a report on corporate surveillance, digital tracking, big data & privacy. Wien: Facultas.

45 Fuller, M. (2022). Analysis, Exposure and Addition: The Aesthetic and Ecological Logics of Joana Moll's Carbolytics. [online] Carbolytics.org. Available at: https://carbolytics.org/fuller.html [Accessed 23 Sep. 2024].

revenue stream for companies like Google, Facebook, and thousands of others operating within the World Wide Web.

In 1995, just a year after the cookie was implemented, WebConnect — the first ad network, a platform that automatically connected advertisers with websites — was launched. WebConnect was followed by DoubleClick in 1996 (acquired by Google in 2007), establishing a foundational model where websites could monetize their traffic through ads.

Another significant development in the development of the Ad Tech industry and its business model was the invention of ad exchanges, which typically operate alongside ad networks, marking the beginning of programmatic advertising. The first operative ad exchange was created by RightMedia in 2005. Ad exchanges are advertising marketplaces where publishers buy and sell ad space in real-time, supported by a technology called real-time-bidding (RTB). RTB is an automated digital auction system that allows advertisers to bid on ad space, determining which (targeted) ad is served to a particular user based on their consumer profiles. For this reason, Ad exchanges and RTB serve as hubs where vast arrays of user data are simultaneously shared among multiple companies, such as data brokers, and organizations, including government agencies. Indeed, in 2022, on average, the data-intensive nature of RTB systems would expose user data of a person connected to the internet in France 340 times per day. In Germany it would be transmitted approximately once per minute.[46] For a US citizen, these figures are even higher, as data on online activity and geographical location was 'exposed 57% more often than people in Europe.'[47]

As the industry evolved, the amount of user data being collected skyrocketed, solidifying Ad Tech as the primary data collection ecosystem on the Internet. Just as Ad Tech took advantage of the cookies' potential for data collection, the Kill Cloud leveraged Ad Tech's vast data-accumulating capabilities.

9/11 and The Kill Cloud

The 9/11 attacks on US soil, and the US government's subsequent call for a global "War on Terror", marked a turning point in the relationship between Ad Tech and military intelligence, and in the construction of a global police state.[48] The aftermath of the attacks launched an ongoing effort to stop terrorists before they would act, which played a decisive role in bringing Ad Tech and the Kill Cloud closer together. As

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46 Ryan FRHistS, D.J. and Christl, W. (2022). Europe's hidden security crisis How data about European defence personnel and political leaders flows to foreign states and non-state actors. [online] Irish Council for Civil Liberties. Available at: https://www.iccl.ie/wp-content/uploads/2023/11/Europes-hidden-security-crisis.pdf [Accessed 24 Sep. 2024].

47 Ryan, J. (2022). ICCL report on the scale of Real-Time Bidding data broadcasts in the U.S. and Europe. [online] Irish Council for Civil Liberties. Available at: https://www.iccl.ie/news/iccl-report-on-the-scale-of-real-time-bidding-data-broadcasts-in-the-u-s-and-europe/ [Accessed 30 Sep. 2024].

48 Robinson, W.I. (2020). The global police state. London: Pluto Press.

argued below, this effort opened the door for consumer data to contribute to counter-terrorism operations. From that point onward, user data — and the corporations that collected it — began their journey into the shadowy realm of intelligence gathering.

A report issued by the US Congress in July 2004[49] assessed that one of the major reasons behind the failure to prevent the 9/11 attacks was the inability to share and connect the dots between different pieces of available information across government agencies. The report found that the C.I.A. and the F.B.I. both held information on two of the terrorists that perpetrated the attacks, and determined that if intelligence would have been shared between the organizations, the events that took place on September 11th could have been averted. This failure highlighted a gap in intelligence-sharing and, in the years that followed, commercial consumer data began to fill that void.

Consumer data — such as travel records, hotel stays, and gym check-ins — revealed suspicious patterns in the movements of the terrorists that participated in the attack. When combined with existing intelligence, these patterns could have raised red flags and potentially prevent the attack. It was companies like Acxiom, one of the largest data brokers in the world and a major player in the Ad Tech ecosystem, that realized the data it had collected on millions of users for the purposes of targeted advertising could assist the government in understanding and preventing future attacks. Data brokers — companies that collect, buy and sell personal information and behavioral data about consumers from a wide range of sources — 'presented a new vector for understanding the world,'[50] offering the government unprecedented access to vast consumer information for its intelligence efforts.

This newly found relationship expanded even further, as exposed by Edward Snowden's revelations in 2013. The former NSA intelligence contractor disclosed the extent of government intrusion into users' privacy and evidenced the use of corporate data collection practices to expand surveillance operations by agencies like the one that employed him.[51] As a result, a shift towards more encrypted communication began, making it increasingly difficult to absorb endless flows of information by the US government, which made Ad Tech data an easier exploitable source for intelligence purposes.[52]

An example of how this relationship evolved can be traced back to a company named PlanetRisk, initially a small start-up founded in 2014 with ties to the US

49 Kean, T.H., Hamilton, L.H., Ben-Veniste, R., Kerrey, B., Fielding, F.F., Lehman, J.F., Gorelick, J.S., Roemer, T.J., Gorton, S. and Thompson, J.R. (2004). The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the United States (9/11 Report). [online] Washington: Executive Agency Publications. Available at: https://www.govinfo.gov/app/details/GPO-911REPORT/summary [Accessed 25 Sep. 2024].

50 Tau, B. (2024). Means of Control. Crown.

51 Ibid.

52 Ibid.

government.[53] PlanetRisk specialized in "risk and opportunity"[54] assessment for its costumers. In 2015, the company showcased a demo for a product that would later be called *Locomotive*, which demonstrated how commercial location data from mobile phones in Aleppo — then a war zone — could be later used to track Syrian refugees around the world. *Locomotive* became so effective that it was reportedly able to track Vladimir Putin's location based on commercial GPS data extracted from the phones of his personnel.[55] *Locomotive* eventually turned into a program for the US Joint Special Operations Command.[56] The company that provided location data to PlanetRisk was called UberMedia, an advertising company that had access to ad exchanges. Ad exchanges allowed UberMedia to collect vast amounts of data, including geolocation coordinates — a rich piece of data that effectively connects online and offline behavior. UberMedia is far from being an isolated case; it is one of the many companies operating in the realm of Ad Tech, expanding the capabilities of the military-industrial-security-complex by leveraging online advertising infrastructures.

Another recent example is *Patternz,* a surveillance tool owned by an Israeli security company called ISA. *Patternz* acquires RTB data to track individuals globally, and the company claims to have profiled over 5 billion people, including children.[57] Additionally, as mentioned earlier in this text, Anomaly Six — a media intelligence company founded in 2018 by former intelligence analysts and commercial data experts[58] — sells global location-data products to the US government and other clients.[59] The company has claimed that it could track "3 billion devices in real time, equivalent to a fifth of the world's population."[60]

This growing trend in which Ad Tech companies are turned into key facilitators of military and intelligence operations, has blurred the lines between civilian and military actors. This process, aided by the intrusive and pervasive nature of Ad Tech, the rise of data-centric warfare, and the inadequacies of the current privacy laws, is bolstering the rise of a mass surveillance state. In this scenario, personal data and the

53 Ibid.

54 Crunchbase. (2021). Crunchbase. [online] Available at: https://www.crunchbase.com/organization/planetrisk [Accessed 17 Oct. 2024].

55 Tau, B. (2024). Means of Control. Crown.

56 Ibid.

57 Ryan FRHistS, D.J. and Christl, W. (2022). Europe's hidden security crisis How data about European defence personnel and political leaders flows to foreign states and non-state actors. [online] Irish Council for Civil Liberties. Available at: https://www.iccl.ie/wp-content/uploads/2023/11/Europes-hidden-security-crisis.pdf [Accessed 24 Sep. 2024].

58 Six, A. (n.d.). Anomaly Six. [online] Anomaly Six. Available at: https://www.anomalysix.com [Accessed 27 Sep. 2024].

59 Wikipedia Contributors (2024). Anomaly Six. [online] Wikipedia. Available at: https://en.wikipedia.org/wiki/Anomaly_Six [Accessed 27 Sep. 2024].

60 Biddle, Sam, Jack, Poulson, et al. "American Phone-Tracking Firm Demo'd Surveillance Powers by Spying on CIA and NSA." The Intercept, Apr. 2022, theintercept.com/2022/04/22/anomaly-six-phone-tracking-zignal-surveillance-cia-nsa/. Accessed 25 Sep. 2024.

bodies that "voluntarily" produced it are insistently compressed, and thus, increasingly vulnerable to exploitation and oppression.

Global Military Neoliberalism

During a metro ride in July 2024, shortly after one of the workshop sessions at the Institute del Teatre in Barcelona, I observed a now-mundane landscape of people absorbed in their phones. Suddenly, a deep shudder ran through my body, and in a sort of dystopian haze, the scene shifted. I no longer saw humans casually scrolling and clicking; instead, I saw individuals who had effectively internalized the logic of contemporary corporate military capitalist logistics.

From World War II until the end of the Cold War, economic policy in many Western countries, particularly in the US, was heavily influenced by *Military Keynesianism*. This economic model is based on the premise that government should increase military spending to promote economic growth. It assumes an interdependence between the welfare state and the warfare state, where the latter supports the former in a vicious circle that can perpetuate indefinitely.[61] The early 1990s marked the end of the Cold War era, which brought about a reduction in the geopolitical need for massive military infrastructure, often referred to as the "peace dividend". This term describes the economic benefits from decreased defense spending, leading to a gradual shrinking of government armament budgets in the West,[62] and a slow transition to a new economic paradigm: neoliberalism, which emphasizes reducing government intervention and promoting free markets.

The terror attacks on September 11th opened the door to restore U.S. militarism as a primary ideological construct, which had been lost as a result of the debacle in the Vietnam War.[63] In response, we witnessed a global increase in militarization within both the economy and society, consolidating in global neoliberal militarism.[64] This shift is exemplified by the dramatic rise in defense spending in the U.S., where the budget of the Pentagon increased 91% between 1998 and 2011.[65]

Part of the agenda of neoliberal politics is to shrink the state; under neoliberal militarism, this translates to bringing the stakeholders of the military-industrial-security-complex closer to the centers of power. This economic regime operates on the basis

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61 Wikipedia. (2022). Military Keynesianism. [online] Available at: https://en.wikipedia.org/wiki/Military_Keynesianism.

62 Toporowski, J. (2023). The War in Ukraine and the Revival of Military Keynesianism. [online] Institute for New Economic Thinking. Available at: https://www.ineteconomics.org/perspectives/blog/the-war-in-ukraine-and-the-revival-of-military-keynesianism.

63 Cypher, J.M. (2007). Monthly Review | From Military Keynesianism to Global-Neoliberal Militarism. [online] Monthly Review. Available at: https://monthlyreview.org/2007/06/01/from-military-keynesianism-to-global-neoliberal-militarism/ [Accessed 30 Sep. 2024].

64 Ibid.

65 Robinson, W.I. (2018). Accumulation Crisis and Global Police State. Critical Sociology, 45(6), pp.845–858. doi:https://doi.org/10.1177/0896920518757054.

of accumulation, social control, and repression[66] — sold as an illusion of freedom — combined with advanced data-centric weapons, AI systems, and mundane commercial tracking technologies enabled by cookies and integrated within the Ad Tech ecosystem, which aids the (often covert) militarization of the civil society and the creation of a surveillance state.

Finally, as argued throughout this text, this process of *accumulation by repression*[67] is effectively enacted by our bodies in our everyday interactions with technology and the larger ecosystems that extend beyond it. In that sense, technologies act as a pivot that articulates the macro and the micro levels. The mechanization of gestures, as observed in my metro ride, plays a central role in inscribing the dynamics of military neoliberalism (macro) into our bodies (micro). These repeated actions have become increasingly naturalized, disconnected from the ideologies they serve—just as the bodies increasingly detach from themselves and their physical contexts when interacting with devices. Understanding how these physical processes are turned into tools of repression and accumulation is critical if we are to confront the growing entanglement of Ad Tech and the Kill Cloud in our daily lives.

Mechanization, Compression and Oppression

Though interacting with devices may seem like a simple and static activity, it is, in fact, an intricate operation that involves the activation of numerous interconnected systems within the body. This complexity is manageable only because of the body's inherent ability to filter sensations. In other words, while the body detects every sensation, it brings them into consciousness in a specific hierarchical order. This filtering process is repeated indefinitely, meaning that when we are confronted with similar circumstances, our senses organize themselves in the same way, carrying out the same movements repeatedly.[68] This repetition results in mechanization, a static pattern that is produced, and reproduced. For instance, wrinkles form due to a fix pattern of movement that, when repeated over time, leaves a visible mark on the face.

When we interact with our devices, our bodily movements are highly prescribed by the way interfaces are designed — serving the business models and ideologies behind systems like Ad Tech, and leveraged by the Kill Cloud. The nervous system registers a recurrent state, fixing the pattern emanating from the mechanization of the movements dictated by the device. As a result, rather than the systems adapting to the body, the body adapts to the systems. In essence, the body becomes an extension of the device and the larger infrastructures to which it connects.

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66 Ibid.

67 Ibid.

68 Boal, A. (2005). Games for Actors and Non-Actors. Routledge.

Just as wrinkles are the visible part of a sustained pattern, our bodies show signs of continued exposure to devices. Throughout the course of this research, the bodies of the participants have manifested acute signs of hyperactivity, compression, collapse, exhaustion, disconnection, and disassociation. These signs, which reflect a reduced capacity of the nervous system to process information from our surroundings and self-regulate, create a feedback loop where sensory processing is increasingly outsourced to devices, sooner or later resulting in a collapse. Interestingly, this contraction of sensory abilities arranges the body in such a way that enhance the data extraction capacities of systems like Ad Tech, and those that feed from it, such as the Kill Cloud.

Furthermore, there is a tension between the action initiated by a body and the response it receives. While the touch of a fingertip on a screen and its immediate feedback is brief, the implications of this seemingly minor gesture extend far beyond the physical realm. This simple touch travels across networks and acquires meaning within a complex web of global infrastructures comprising human and non-human entities — advertisers, corporations, governments, data analysts, algorithms, computers, servers, and submarine cables, among many others. This dissonance between the brief physical gesture and its far-reaching implications manifests visibly in the body. As the physical trajectory of our gestures and meaning shrinks, compressing the body, their impact expands exponentially across other bodies and systems. This expansion occurs both in terms of data extraction and capitalization, creating a paradoxical relationship where reduced physical movement correlates with extended digital presence.

For example, myopia, a condition closely associated with sustained screen time,[69] illustrates this phenomenon. Myopia causes close objects to appear clear while distant objects become blurry. The eye adapts to the constant requirement of focusing on nearby objects, eventually altering its shape to accommodate the screen's demands, growing larger in the axial direction. Similarly, during the workshop, we observed how the body adjusted to the compression of the respiratory system that occurred while holding a device. This compression reduced the space the body occupies, as the expanded range of movement is unnecessary when interacting with devices. Instead, the opposite occurs: as our physical and cognitive presence in the body shrinks, our presence in the virtual realm is enlarged, exposing us, once again, to increased control, exploitation, and capitalization.

The repetitive mechanization of movements, which become fixed patterns, over time, denies the body — and by extension the mind — the possibility of executing an original action every time the opportunity arises.[70] This mechanization serves as an

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69 Zong, Z., Zhang, Y., Qiao, J., Tian, Y. and Xu, S. (2024). The association between screen time exposure and myopia in children and adolescents: a meta-analysis. BMC public health, 24(1). doi:https://doi.org/10.1186/s12889-024-19113-5.

70 Boal, A. (2005). Games for Actors and Non-Actors. Routledge.

effective tool for neoliberal militarism, which operates on the principle of *accumulation by repression*. Through our daily interactions with devices — whether through Ad Tech or the broader militarized networks of surveillance like the Kill Cloud — movements and thoughts increasingly detach from the material realities that sustain them, compressing both in time and space. This compression promotes bodily and cognitive desensitization and collapse, smoothing the path for enhanced accumulation of data, control, and exploitation, by enabling bodies to sustain interactions for prolonged periods. In this way, the body becomes not just a site of control, but a medium through which these systems perpetuate their ideological and economic objectives, reinforcing the domains of military neoliberalism.

A New Balance

Technology as a medium to inscribe ideologies through the mechanization of bodies is not a new phenomenon. For instance, during the first industrial revolution, the demands of capitalism coerced workers into adapting to the discipline of time, the architecture of factories, and the functioning of machines, among other factors. However, while the boundaries between labor, leisure, and militarization were never absolute — but easily distinguished —, the ubiquitous, pervasive, and homogeneous nature of digital interactions promoted by Ad Tech and leveraged by the Kill Cloud has enabled a model where these boundaries become increasingly blurred, converging in a single space: the assemblage formed by the body and the device. This convergence marks a significant shift from earlier forms of technological inscription, permeating every aspect of our lives, colonizing our bodies, minds, and time in ways that are often invisible and therefore difficult to resist.

This shift has given rise to a new form of embodied subjectivity, where the logics of neoliberal militarism are internalized, reproduced and exploited through seemingly mundane digital interactions. As a result, hegemony is established and perpetuated through devices, digital media, cookies, and advertising systems that serve the interests of firms such as Anomaly Six, operating in the realm of the Kill Cloud, which leverage bodily and cognitive collapse for control and profit.

The rise of data-centric warfare, fueled by Ad Tech's vast access to user data, will likely exacerbate the dynamics of militarization of the civil society and continue to blur the limits of its domains, leading to increased compression, desensitization, and eventual collapse of the bodies that lie beyond digital interfaces. As observed during this research, sustained interactions with devices fail to allow the nervous system to self-regulate. As a result, the sympathetic and parasympathetic systems become increasingly unbalanced by means of hyperactivity and collapse,[71] essentially pushing

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71 Pascual, E. (2024). Devices, Internet, and the Nervous System. 18 Sep.

the body into a survival mode, the same physiological response triggered by trauma.[72]

In this scenario, reclaiming the body as a site of resistance becomes urgent. Systems tend to become visible only when they break or when friction occurs. In this case, introducing friction is essential to interrupt the efficient nature of these systems and bring them to light. As demonstrated during the two-week workshop held in July 2024, raising awareness of the body in relation to extractive, hegemonic systems allowed participants to observe, and re-calibrate, even if momentarily, their interactions with technology. By repeatedly sensitizing the body and decompressing the nervous system, we observed significant improvements for some participants with diagnosed depression and ADHD.[73] While these results are not conclusive and further research in this area is required, they hint at the power of *counter-mechanization* and *counter-repetition* in resisting the inscriptive power of digital technologies.

Finally, this research underscores the need to place the body at the center of our understanding of Ad Tech, the Kill Cloud, and the ideologies they serve. As humans increasingly outsource the regulation of their nervous systems to digital technologies, a new kind of bodily and cognitive balance needs to emerge. The physical and affective traces of this new order are inscribed on the body, narrating not only our present condition, but incisively shaping our future, making them essential to understanding what it means to be human in the age of digital militarization.

72 Ibid.

73 These improvements were sustained only during the course of the two-week working session.