



HUMANITY MEASURES ITSELF

Knowing Thyself in the Age of Data
through the Use of Self-Tracking Apps

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Declaration of Original Authorship

I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

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Abstract

Enabled by smartphones, AI, biometrics, and locative technologies, self-tracking apps allow users to monitor and track an increasing number of personal aspects of their daily lives. Yet this phenomenon is not solely technological—it is rooted in deep-seated ideological structures that shape how people experience their bodies, lives, and environments. This practice-based research critically examines the cultural and personal values embedded in the use of self-tracking apps and their impact on individuals and society. Focusing on the human within this paradigm leads to the following question:

What critical perspectives can challenge and re-evaluate the promise of enhancement through self-knowledge as offered by self-tracking apps?

The study develops a *Zoetrope Methodology*, rotating between multiple analytical lenses that, like the spinning pre-cinematic device, weave fragmented theoretical and artistic perspectives into a dynamic understanding of self-tracking practices. Four lines of inquiry are interwoven to form the research: a field study of the phenomenon; a multimedia artistic practice incorporating interviews, interactive installations, video, sound, and both low- and high-tech materials; critical dialogue with, and an expansion of, relevant theoretical frameworks; and an exploration of contemporary artworks that challenge political and cultural structures related to self-tracking apps. Synthesising these approaches, this thesis proposes that self-tracking apps privilege a worldview centred on scientific rationality and quantifiable objectivity, often at the expense of embodied,

subjective, and ambiguous ways of knowing. It also demonstrates how these technologies reinforce capitalist ideologies of self-optimisation, performance, and efficiency.

In response, I develop an approach I call *Beyond Quantification* in an attempt to reclaim complexity, uncertainty, and multiplicity as vital dimensions of human experience. Rather than rejecting technology, it reconfigures human engagement with it—treating subjectivity and technological knowledge as equal agents in shaping meaning. Ultimately, this work contributes to reimagining human–technology relations within the broader technological revolution, offering reflective and embodied alternatives to challenge dominant epistemologies of objectivity in digital culture.

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Introduction

Background

Motivation

This four-year PhD project explores the growing presence of self-tracking technologies, sensors, and applications (apps) in daily life and their role in shaping human experiences, perceptions, and ideologies. It seeks to uncover the genealogy—understood here as the historical and ideological development—of the mindset that established a mindset encouraging users to quantify various aspects of themselves in increasing amounts. Recognising the deep cultural and political entanglement of knowledge and power within this phenomenon, this research employs multidisciplinary approaches to trace its genealogy and propose a new horizon for alternative ways to understand the self—that resist reduction, embrace complexity, and allow for more open-ended modes of subjectivity.

There has been a rapid increase in the amount of scholarly literature on self-tracking apps. This spans disciplines such as computer science, which includes wearable sensor design and data mining (Rehman et al. 2015); behavioural psychology, focusing on habit formation and motivation (Zhu et al. 2024); public health, related to chronic disease management (Jiménez-Muñoz et al. 2022); health sciences, addressing patient monitoring and digital therapeutics (Sharon 2017); sociology, examining surveillance capitalism (Zuboff 2019); and human-computer interaction, involving interface design and user engagement (Wei et al. 2020). Critical

perspectives interrogate issues of data security (Mehrnezhad et al. 2024) and commodification, such as the sale of personal data to third parties, as well as gendered design biases and the neoliberal politics of self-surveillance (D. Lupton 2016). From a feminist perspective, the journal *Catalyst: Feminism, Theory, Technoscience* dedicated a special issue to self-tracking technologies, exploring their entanglement with neoliberalism, health inequalities, and surveillance and how they reinforce racialised, gendered, and ableist norms (Catalyst 2021).

In the artistic discipline, data artists employ gathered digital self-tracked data such as heart rate or step patterns as an experimental medium to create artistic visualisations (Frick 2025). Others look for creative ways to incorporate technological human-tracked data with artefacts, creating speculative designs and trying to forecast an imaginary future (Rothera 2025). Some artists combine art, activism, and politics as tools to explore and critique issues such as how new information and biotechnologies affect women's bodies, lives, and labour (SubRosa 2025).

Acknowledging the above, this study offers a comprehensive, genealogical view of the mindset involved in the emergent use of self-tracking apps through an interdisciplinary, critical, and art-informed perspective that extends beyond traditional disciplinary methods. By addressing the philosophical, cultural, and artistic discourses, using my artistic practice as a research tool, I explore this phenomenon, challenging and provoking the public to consider it in different, often bodily, ways, thereby contributing to the discussions and the literature.

Framed by two components—self-tracking apps and their users—this project centres on the space that unfolds between them: the relationship and the act of use. The study investigates the genealogy of this interaction as a site of meaning-making, shaped by both technological design and lived experience, and analyses them within the context of a broader cultural theme. Throughout the thesis, this focus provides insights into the values underpinning the phenomenon and its effects on users, challenging them and paving new approaches for this relationship.

My personal motivation for this inquiry stems from my own experience of struggling within a logocentric¹ society that sanctifies numerical, measurable, and scientific knowledge over subjective pluralism—an atmosphere that shaped my education. Such norms led me to hide my dyscalculia, a learning difficulty that affects the ability to perform number-based operations, with shame—not only during my school years but throughout my professional life. Typical of our era, I was taught to believe in these dominant values that, as I argue here, fuel the widespread adoption of self-tracking technologies. These ideologies are embedded in the apps themselves. In the 1990s, during my early career as a designer, I actively contributed to the digital and information revolution, leading a team that designed innovative devices leveraging emerging technologies to enhance users' daily lives—technologies that laid the groundwork for today's technological culture. I was enthusiastic about using design tools to advocate for this revolution to the public, where technology appeared to be the solution to every problem. More than two decades later, reflecting on these two personal encounters—the brutal exclusion of non-scientific knowledge and the revolution humanity faces, which seems almost too rapid to contemplate—I revisit the optimism of the technological revolution and view it through a critical lens.

A Very Short History of Self-Tracking Apps

Measuring and noting parameters of the human body is not unique to our era; it can be traced back to biblical tales where height, strength,

1 I use Derrida's concept of logocentrism to critique Western metaphysics, which disguises its cultural specificity as objective truth, marginalising alternative epistemologies that defy its logic of presence, reason, and hierarchy (Derrida 1997: 79).

hair weight, and physical structures were used to symbolise divine favour, power, or ability. In later centuries, technological advancements and Enlightenment-era beliefs led to the increased measurement and recording of human traits, such as age, body temperature, weight, and skull dimensions. While some of these advances were attributed to medical progress, others provided a basis for pseudoscientific social or racial theories. However, they established trust in these practices as an objective means to decode reality. The development and the proliferation of self-tracking apps², a contemporary phenomenon, rely on mobile sensors, internet connectivity, programmed software, and cybernetic feedback loops. All these elements, along with the addition of AI in a later phase, are technological developments that have enabled the massive expansion of these apps. Although the thesis focuses on the social, political, and personal aspects of this trend, I will present a background describing the emergence and proliferation of these apps in the market.

Since the early 1990s, developments in various technological fields, such as materials engineering, sensor development, algorithms, computing power, and more, have enabled people to carry or wear sensors that collect data, which has established a subculture that has gained momentum. By the early 2000s, it had attracted a growing number of people who developed methods, techniques, and technologies for data collection. In 2007, Gary Wolf, the former executive editor of *Wired Magazine*, formed an international community of digital self-tracking users and makers who tagged themselves—*Quantified Self (QS)*, *self-knowledge through numbers* (QS 2025). They were a group of early adopters, entrepreneurs, programmers, makers, and designers who, using new sensors developed mainly for the professional market, created methods, techniques, and

2 All the apps or genres I mentioned here or elsewhere in the thesis have a description in the Apps Catalogue appendix.

technologies for personal data collection. They documented the number of hours they slept; their heart rate and blood pressure; the amount of food, alcohol, or caffeine they consumed; their kids' nappy habits; their mood, symptoms, treatments; and the number of steps they took. The phenomenon at that time was still an esoteric niche.

In 2010, Wolf presented the technological facts driving a change in the self-tracking realm, emphasising the uptake and diffusion of mobile and cellular devices, the exponential improvement in data storage and data processing, the social networks that allow people to collaborate and contribute, and the remarkable progress in human biometric sensors (Wolf 2010: 1:18). Among the sensors and their abilities he presented were a small, cheap, 3D accelerometer that tracks movement through space, collecting incredibly detailed information; a Nike+ pressure sensor to measure pace and distance, combined in a strap to transmit heart rate data; and a device that monitors sleep times and phases. All these innovative tiny developments and the ubiquitous computing that allows the gathered data to be communicated fuelled the self-tracking apps' market penetration.

Today's market is saturated with devices and apps that monitor the body. Dedicated devices examine specific issues, like Lumen (Lumen 2025), which analyses the metabolism via the individual's breath. Others are multifunctional, such as the Ultra Human Ring (Ultrahuman 2025), which tracks various metrics, including heart rate, sleep, oxygen, and temperature, aiming to optimise bodily performance. However, due to cost-effectiveness and ubiquity, most apps rely on the built-in sensors embedded in general-purpose devices like smartwatches and smartphones. In the last category, apps, such as mood trackers or meditation sessions, depend on the users' data self-uploading rather than data gathered by sensors. All the self-tracking apps upload the collected data to the cloud, analyse it, and provide the user with actionable insights (Dror 2023). There is no public information regarding the size of this genre in the market; however, all the apps I viewed on the Google Play Store and referred to here have download

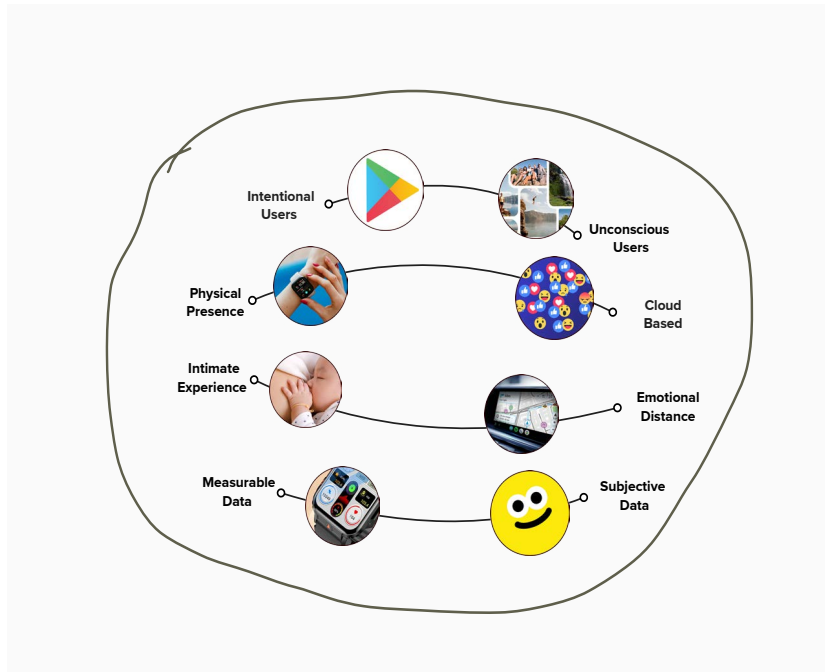
counts in the hundreds of thousands or even millions.

Furthermore, platforms such as Google Maps, which are not inherently self-tracking apps, offer default features that provide data and thus align with the project's definition of these apps, as presented below. The range of self-tracking genres and apps is vast, and their classification as a group is somewhat unclear; therefore, in the next section, I will outline the boundaries of the included types of apps.

Scope of App Selection

Throughout history, humans have tracked their physical, mental, and social progress by writing diaries and recording various aspects of their lives. However, the focus here is on the unique element that technology has contributed to this habit. This arises from recognising the difference between a pencil line marking one's children's height on a door frame and the recording of data on an interactive app that gathers and analyses the data, generates looped feedback, provides data visualisation, offers recommendations, and suggests calls to action, among other features. It encompasses genres of apps relevant to the research question while excluding others. I will present a framework to outline the boundaries of the apps I focused on in the study, including self-tracking features within popular web platforms. The boundaries are built out of four axes and present poles, each containing a wide variety of in-between options.

Intentional versus unconscious users: This distinction refers to the difference between users who intentionally engage with self-tracking apps and those who do so without full awareness. Intentional users actively download these apps—free or paid—from app stores and use them deliberately. In contrast, unconscious users interact with self-tracking features that are embedded by default within broader platforms. These users often remain unaware of the extent to which they are participating in self-tracking processes. For example, a sophisticated and challenging *Google Photos* feature to recognise is “Google Memories”, which tracks users' activities through photo metadata, leading to less awareness of the tracking process.



Framework of four axes used to determine which self-tracking apps are included in this research

Physical versus cloud-based presence: Some apps rely on tangible wearables and devices that engage users physically through biometric sensors and direct bodily interaction. Others operate in the cloud—such as retweets, likes, or citation counts—offering numerical feedback detached from concrete, physical actions. These cloud-based systems track performance based on digital engagement, forming a less perceptible but still influential mode of self-tracking.

Intimate experience versus emotional distance: This axis differentiates between apps that engage with a user’s most personal experiences—addressing how they perceive and relate to intimate aspects of life, such as breastfeeding—and apps that operate at a more functional or emotionally distant level, like GPS navigation. Although the second affects the user’s body’s geographical location, it is less likely to be involved in their intimate world. It also includes baby-tracking apps because, during my interviews, two users referred to this intimate domain in detail, perceiving

their parenthood through the apps. Although the apps were tracking their baby, they were simultaneously reflecting the parents' bodily and mental performance as carers.

Measurable versus subjective data: This refers to how the data is collected and what the collected content is. The distinct extremes are sensor-based apps, such as step trackers, as opposed to apps that rely on subjective reports, such as mood trackers.

The apps I analysed for this thesis were selected from the broader landscape for their ability to depict the situation under investigation, providing insight while prioritising those mentioned by the interviewees. The various genres of self-tracking apps share similarities, and analysing specific usage does not make any claim unique to a particular app. To conclude, I borrow Lucy Osler's allegory, which beautifully describes the above framework: 'A dashboard of information about our bodies, our habits, and our selves' (2023). By that, she portrays various apps that track different aspects of users' lives as being monitored and digitally staged, similar to systems that organise and present complex data in a readable, real-time, often in a mechanical or optimised way, enabling the viewer to see and control the data at one glance.

Research limitations

For the purpose of this project, I avoid analysing apps related to digital health (Sharon 2017). It is challenging to define the boundaries between fitness, calorie intake, sleep quality, etc., and glucose level tracking or other health issues per se; all of these are categorised under "health & fitness" in the Google Play Store (Google 2025b). Apps in this category, such as Face Yoga, which offers exercises to tone users' faces so they have youthful and glowing skin (Simple Design Ltd. 2025), are not necessarily used for health purposes and can be associated with lifestyle. Thus, I do not investigate apps that are used for medical requirements or the medical aspects of this phenomenon but rather examine their cultural, social, and political dimensions.

I do not address emerging technologies such as AR (augmented reality) Smart Glasses, which are still in the early stages of market adoption and not yet widely used by the general public. These wearable devices—developed by companies like Microsoft HoloLens (Microsoft 2025) and Meta Project Aria (Meta 2025)—combine body- or environment-sensitive sensors with transparent displays that overlay digital information directly into the user’s field of vision. This is an evolution of self-tracking apps that raises urgent cultural, ethical, and epistemological questions. This is a growing phenomenon that merits further investigation using the tools and claims developed in this thesis. Still, their current limited accessibility and adoption exclude them from the scope of this study, which focuses on mainstream, widely available self-tracking apps.

In addition, my research does not aim to contribute to the critical discourse on surveillance capitalism (Zuboff 2019), platform capitalism (Srnicek 2017), data mining for generating value from aggregated personal data (D. Lupton 2016), or topics criticising data collection that exploits the individual. These themes represent an overarching discourse criticising the corporation and stakeholders’ motivations, moves, and benefits, harnessing new technological and platform developments that gather information on individuals, whether for monetisation or control. The interest here, however, is in *self-surveillance*, which users practise on themselves. Capitalist values are discussed when linked to personal motivations that drive users to adopt self-tracking apps, emphasising the ideologies that permeate and shape users’ self-motivation and not through the lens of stakeholders. I discuss the stakeholders’ motivations only insofar as they are relevant to self-surveillance.

Finally, in 2016, the Oxford English Dictionary selected “post-truth” as Word of the Year, referring to circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief (Oxford University Press 2016). It is important to clarify that the claims made here do not align with the post-truth agenda, which undermines factual accuracy. Rather, it reassesses the dominance of

“objective fact” within a critical framework. Hence, it does not challenge the validity of the data collected by self-tracking apps but interrogates how such data are framed, interpreted, and positioned as authoritative knowledge. It critiques the unquestioned authority granted to quantifiable outputs, arguing instead for epistemological plurality—acknowledging that while data may be accurate, it is never neutral or all-encompassing.

Contextual Groundwork for My Inquiry

The Space Between Humans and Apps

Over the past two decades, a new human-technology interface has gained prominence and captured my interest, leading to this investigation. It centres on the relations between self-tracking apps and their users, creating a dynamic triangle of *apps*, *use*, and *users*. The human use of these apps is the phenomenon in focus. Its nature is to treat these apps as mediators that enable users to ‘decode’ their bodies, habits, and minds for themselves. This phenomenon is based, besides technological developments, on stable ideologies related to the modern Western mindset that are essential for its existence. Without this ideological basis, the cutting-edge high-tech breakthrough would not have matured to create the *apps-use-users* triangle bond. Once users start consuming these apps and establishing them as translators for real life through looped feedback, they become constituted as subjects in a culture that desires the set of promises embedded in the apps’ façade, creating a demand, connecting agents and shaping agents, generating ripples that impact individuals and society. The dynamics of this Use—the significance of its fundamentals on the one hand and its ripples on the other—need to be re-evaluated, a space for reshaping.

The focus of this study is not on these apps’ technology or history. Instead, it employs an artistic and theoretical approach that opens up space to consider the deep, subjective, and often unspoken meanings behind the

phenomenon of using self-tracking apps—offering a richer understanding of human behaviour and desire in this context. Such an understanding is essential because, fuelled by various forces, this phenomenon establishes patterns, habits, and beliefs related to the contemporary revolution that should be analysed critically. This examination serves as a wake-up call to enable and strengthen humans' ability to perceive reality, abilities that are at risk of extinction, and to pave the way for new relationships within this space.

Contextualising Technology

I will clarify two points concerning the term "technology" as it is used in this study.

First, while self-tracking apps are part of a broader technological landscape, this study focuses specifically on the technologies embedded within these apps or closely related contexts. Throughout the thesis, the term "technology" refers primarily—though not exclusively—to the novel developments driving the proliferation of self-tracking apps. The history of technology dates back to early human tools, created to fulfil material needs. Marx argued that throughout history, the ways humans produce their means of existence shape how they perceive and understand the world: 'The mode of production of material life conditions the general process of social, political and intellectual life' (1977: 20-21). The contemporary technologies I discuss are situated within that historical continuum. This research concentrates on modern computational and micro-technologies that operate via internet connectivity and the infrastructure of the cloud.

Within the historical human-technology relationship, these advanced technologies have a unique nature of being unseen yet simultaneously omnipresent. In the "Cyborg Manifesto", Donna Haraway describes silicon chips and microelectronic devices as mocking 'the Father's ubiquity and spirituality', noting that miniaturisation has transformed our experience of technology—making it less visible but more powerful: 'small is not so much beautiful as preeminently dangerous' (2016: 12-13). At the core of

the inquiry lies the particularity of these relations.

Second, this research is not technophobic—it does not portray technology as an inherently harmful or oppressive force. Nor does it adopt the pessimism found in parts of Heidegger’s (1977) critique of technology, which I discuss later. While I draw on Heidegger and other critical perspectives to examine the problematic aspects of self-tracking app usage, I go further by exploring possibilities for alternative human-technology relations. I do not position technology as an enemy to be resisted or eliminated, nor do I idealise a pre-technological, “natural” existence, as seen in Romanticism. Instead, it engages critically with technology as a complex, contradictory part of contemporary life. Rejecting binary views of either total acceptance or rejection, it follows thinkers like Lyotard, who propose scientific knowledge as one of many language games (2021: 27). Technology, in this view, is shaped by human intentions, social relations, and power dynamics—neither inherently good nor inherently bad. I also acknowledge my own position as a user, aiming to approach technology with awareness and responsibility, and recognising both its power and its limits without surrendering to its authority.

Western Modern Mindset Outlined

Know thyself, one of the seven Delphic maxims inscribed on the Temple of Apollo around the sixth century BCE, has been adopted and interpreted throughout history in various ways, reflecting the era and ideology of those who embraced it. *Know thyself* as manifest in modern-era predecessors of self-tracking apps could include engagement books, address books, household account ledgers, and health journals—all ways in which people recorded aspects of their lives in an analogue format, both qualitatively and quantitatively. The eighteenth and nineteenth centuries marked a peak for personal diary writing, which served as a means of moral accounting and emotional expression, connecting to individual identity and introspection. A more contemporary, but still analogue format example is how parents mark their children’s growth on the door edge, adding the date, height,

and name to track their development, and thus creating a visual, intimate family archive that holds both data and memory.

The interaction with self-tracking apps is a contemporary practice of *know thyself*—one that relies on technological developments and reflects a set of modern ideologies and mindsets underlying its usage. A core argument is that although the implementation of self-tracking apps depends on novel digital technologies, it is the pre-existing foundation of the ideological narratives that made their adoption possible. These attitudes and values—what I refer to as narratives of the modern Western mindset—formed the cultural and epistemological ground into which self-tracking took root.

I identify three such foundational mindsets that are central to this inquiry: the belief in the existence of objective epistemology and its primacy as the ultimate way to interpret reality; the belief in humanity's supremacy over nature and technology's ability to conquer, control, and optimise it; and the belief in capitalist efficiency, productivity, and self-improvement. These ideologies descend from broader life schemes into personal efforts to perfect one's body and performance, shaping the conceptual environment in which self-tracking apps have flourished.

Part One examines these modern Western ideologies, establishing the groundwork for their continued analysis throughout the thesis. Understanding how they function within the digital self-tracking culture allows for a deeper grasp of their influence on individuals and society. Rather than being treated as abstract philosophical positions, they are considered active, operational forces embedded in digital interfaces and daily routines—beliefs that not only shape the technological environment but also inform the values and expectations through which the self is interpreted, measured, and enacted. These ideologies are fundamental to the use of these apps.

It is essential to clarify my position on the Enlightenment and scientific reason, which have shaped the modern Western world's attitude towards equality among all humans, liberation from religious authority, the universal nature of reason, and the absolute freedom to think, speak,

and act as autonomous individuals. While this research acknowledges these achievements and their contributions to humankind, and is not an anti-Enlightenment essay, it does analyse the outcomes and influence of some aspects of Enlightenment ideologies that have materialised through capitalist culture into the use of self-tracking apps.

The anti-Enlightenment tradition, according to historian Zeev Sternhell (2010), originated in the eighteenth century, opposing and challenging the aforementioned ideologies. Sternhell argues that this mindset ‘laid stress on history, culture, ethics, the senses, the instincts, and the imagination: that is to say, on the things that distinguish and divide men rather than the things that unite them: that is, their common reason, universal values, and their material interests (ibid.: 101). Sternhell presents an often-dichotomous view, depicting the critique against the Enlightenment’s achievements as a disruptive force that laid the groundwork for the erosion of liberty, equality, and the rise of nationalism. I challenge this division; following the research call for multiple viewpoints, I advocate for critical analyses of some contemporary interpretations and consequences of Enlightenment ideologies, while still recognising the overarching Enlightenment contributions to mankind.

It is important to recognise the broad and dynamic nature of the term Enlightenment alongside the influence of other actors, such as capitalism, on these dynamics. In Part Five, I argue that capitalism assimilates and absorbs novel ideas, even when they contradict its ideologies, into its framework, appropriating and integrating them into its own structure. In Chapter 3, I discuss how capitalism uses technology, one of the Enlightenment’s achievements, to embed its own values within people’s consciousness. I quote György Lukács’ reification theory (1971), explicitly noting that the objectivity associated with Enlightenment thinking was often used to create a ‘phantom objectivity’ by imposing scientific objectivity on social relations, even though it is inherently abstract, transforming them into thing-like, seemingly objective forms (ibid.: 83). From this viewpoint, capitalism betrayed the Enlightenment’s original spirit and its scientific

objectivity. However, by critically questioning the use of self-tracking apps, the research examines Enlightenment ideologies that have materialised through capitalism in relation to the contemporary phenomenon under investigation.

Objectives and Aims and Significance

This research critically investigates the influence of self-tracking technologies on self-perception, focusing on how these tools embed dominant cultural and ideological values into everyday practices. The objective is to unpack the assumptions and aspirations encoded in these technologies, particularly those aligned with the modern Western mindset of efficiency, productivity, and data-driven objectivity, which reflects modes of power. By interrogating the values that guide the design and use of self-tracking apps, the thesis seeks to uncover the subtle yet powerful ways they condition users' understanding of themselves and their place in the world.

This study employs an interdisciplinary methodology, uniting artistic practice, philosophy, and cultural critique to interrogate the dominant norms. It positions self-tracking apps not merely as tools of measurement but as cultural agents that participate in constructing normative ideals of the self. Its originality lies in revealing how contemporary ideologies manifest through these technologies and in proposing alternative frameworks rooted in ambiguity, embodiment, and multiplicity. Its significance lies in its potential to challenge the dominant epistemologies covert in this trend and to open up space for more inclusive and pluralistic understandings of human subjectivity within this phenomenon.

Thesis Structure

This thesis is structured to reflect the multifaceted nature of the inquiry, unfolding through a series of parts and chapters that each explore the phenomenon of using self-tracking apps from distinct yet interconnected analytical perspectives.

The Methodology Chapter outlines four practices of inquiry that contribute to my artistic practice-based approach: (1) conducting a field study, (2) investigating through my artistic practice, (3) critically engaging with theoretical frameworks, and (4) critically analysing through contemporary art. I refer to these four focal approaches as lines or practices of inquiry, each contributing to the project's interdisciplinary methodology.

The Prologue addresses two previous artworks I created forty years apart and frames the personal and conceptual motivations that inform the inquiry.

The thesis body is divided into five parts:

Part One: Ideological Foundations lays the historical and conceptual groundwork for the thesis, serving as its critical background and exposition. Through references to artistic practice, it identifies the key modern Western mindsets and narratives that facilitated the adoption of self-tracking apps, and also considers the critiques of this mindset, which will be discussed in more detail in later sections. This part concludes by clearly framing the core addressed problem: the ideological foundations of using self-tracking apps as a phenomenon and the personal and cultural consequences.

The following three parts provide a panoramic analysis of the phenomenon, interrogating it through various cultural, philosophical, social, historical, and artistic lenses, each elaborated in dedicated chapters organised into overarching parts:

Part Two: Internalisation explores the ingredients that shaped the emergence of self-tracking apps. It focuses on how technology was utilised to promote capitalist ideals and examines its and users' motivations as instruments of ideological control. It questions users' free will in this engagement and emphasises the external powers and interests that cultivate users' motivations.

Part Three: Implications scrutinises the phenomenology of this technologically mediated experience, exploring its impact on variation, authentic skills, and embodied knowledge. It further considers the implications of the tangible technological relationship with the human body.

Part Four: Rethinking Possibilities engages with cultural and artistic responses, including both references and my artworks, that challenge dominant ideologies and propose approaches that can form alternative visions of new imaginative human-technology relationships.

Part Five: Beyond Quantification offers a reimagined stance—one that stems from the belief in the unique qualities of human abilities and affirms pluralism, embodiment, and a rich expressive language resistant to reductive, data-driven epistemologies.

Provisional Conclusions and Setting the Work Free synthesises key insights and proposes future directions for engagement with self-tracking culture.

Methodology

The Zoetrope View

A zoetrope is a nineteenth-century pre-cinematic animation device consisting of a spinning cylindrical drum with evenly spaced slits and a sequence of images on its inner surface. When viewed through the slits while in motion, it creates the illusion of continuous movement, revealing a hidden narrative from fragmented still images.

I have developed in this research an overarching methodology—the *Zoetrope Methodology*— which can be illustrated through the metaphor of the zoetrope: a layered process of analysing the phenomenon I investigate from multiple analytical lenses. Like a spinning zoetrope, whose segmented slits and shifting viewpoints reveal a hidden interior and connect fragmented images into a cohesive narrative, this multi-perspectival approach aims to capture the social, cultural, political, and individual dimensions interwoven into the phenomenon as a whole. Similar to the zoetrope, the varied perspectives invite a view of the inner, covert space of the apparatus I explore through shifting angles, refocusing, and weaving a narrative that extracts comprehensive insights and understanding of the phenomenon.

Using the zoetrope methodology involves working selectively with texts, each offering a distinct lens of inquiry. These divergent frameworks sometimes generate contradictions within the broader philosophical discourse, as I will shortly present. The conflicts that arise mirror the complexity of lived experience—a heterogeneity that echoes Haraway’s call for ‘a powerful infidel heteroglossia [hetero = different, glossia = tongues]’ (2016: 67-68). This approach embraces complex, sometimes contradictory, ways of analysing the contemporary phenomenon of self-tracking apps, referencing the insights and knowledge of modern and post-



Victorian Zoetrope (replica)

modern scholars, reflecting each thinker's historical perspective on human-technology development relevant to their time. Thus, the coexistence of differing viewpoints enriches the research rather than weakening its claims.

One example is the Marxist versus postmodern debate on the concept of “commodity”, which I refer to and develop in Chapters 3, 10, and 13. Marx and Lukács argue that under capitalism, the human body is reduced to labour power—a commodity in itself, bought, sold, and exploited for profit. For Marx, the commodity is not merely an industrial product but the social form through which labour and value are alienated, concealing human relations beneath the logic of exchange. Postmodern theorists such as Lyotard (2021) and Baudrillard (1987), writing explicitly against the Marxist tradition, invert this relationship, focusing instead on consumption, communication, and desire. Baudrillard's “The Ecstasy of Communication” (ibid.), for instance, moves decisively away from Marx's analysis of production, reinterpreting commodities as signs circulating in a system of symbolic exchange. This theoretical rupture sheds light on different aspects of the use of self-tracking apps. On one hand, self-tracking apps function as tools of productivity and discipline, translating daily acts into commodities to be optimised in accordance with Marxian logic. On the other hand, through a postmodern lens, the output of these apps represents lived experience as a measurable, presentable product, turning experience itself into a commodity—a simulacrum of its source, loaded with new meanings.

Similarly, I analyse both György Lukács (Chapter 3) and Martin Heidegger's (Chapter 11) critique of how technological objectivity influences social life, manifested in the use of self-tracking apps. Although neither acknowledges the other's theory, and Lukács (Lukács 1980) specifically critiques Heidegger (alongside Nietzsche), I find that, when examining the contemporary outcome, both frameworks contribute to my research, each from a different historical standpoint. Heidegger's 1954 work *The Question Concerning Technology* (1977) rejects the Enlightenment's faith in reason as a symptom of blindness to Being, and presents a critique that urges

thinking beyond the Enlightenment's conceptual boundaries. Lukács, by contrast, blames capitalism for disrupting the original Enlightenment's scientific objectivity, which he considers ultimate (1971).

Another significant tension arises between Heidegger's above phenomenological critique of technology and the postmodern and feminist approaches of Jean-François Lyotard and Donna Haraway, which I refer to and develop in Chapters 12 and 13. In Heidegger's 1954 work (1977), he describes modern technology as reducing both nature and human beings to calculable resources. His analysis conveys a deep anxiety about technological rationality as a mode of revealing that obscures more authentic ways of being. Lyotard and Haraway, by contrast, write from within a late twentieth-century context in which technology becomes the very condition of knowledge and identity. Lyotard, in his 1979 *The Postmodern Condition: A Report on Knowledge* (2021), transforms technology from a threat into an enabler of plurality, where knowledge is performed through multiple, incommensurable language games. Haraway's 1985 "A Cyborg Manifesto" (2016) extends this reorientation: the cyborg, as a hybrid of organism and machine, embodies an epistemology of situated knowledges that reclaims agency through technological entanglement. This movement—from Heidegger's pessimistic ontology of technological domination to Haraway's and Lyotard's affirmative multiplicity—marks a broader cultural shift in thinking about technicity, one that informs this research's negotiation between critique and possibility in the context of self-tracking practices.

The zeotropic analytical lenses were not initially formatted in chronological or hierarchical order, nor analysed through a single method. Instead, similar to Gilles Deleuze and Félix Guattari's concept of the rhizome (1987), they emerge from the practices of inquiry present in this chapter and create insights that link one to another in diverse and unexpected ways. In the thesis, I gather and assemble these insights, like images in a zoetrope, to convey the narratives and understandings I gain from observing, through multiple perspectives, the viscera of the self-tracking apps phenomenon.

My PhD project represents a continuum of investigative practice, building on my previous artistic inquiries into cultural phenomena related to contemporary human-technology relations. Staying grounded in the spirit that initially inspired my interest in this theme and within the academic framework, I employ interdisciplinary approaches and inquiry methods—planned and unplanned—and challenge assumptions that underpin the inquiry methodology of self-tracking apps. I do not reject rigorous scientific analysis but acknowledge its limitations. My artistic practice, along with the referenced artworks, embraces embodied knowledge as an investigative tool—one that offers insight into the research question and opens up alternative ways of thinking or responding to it. I intentionally harnessed this form of knowledge, which is often excluded by self-tracking apps due to its complexity and resistance to standardisation.

I integrate four practices of inquiry: (1) conducting a field study, (2) investigating through my artistic practice, (3) critically engaging with theoretical frameworks, and (4) critically analysing through contemporary art; each serves a distinct role in examining the phenomenon of self-tracking apps. Together, these practices create a multidimensional approach that encompasses philosophical, cultural, and socio-political perspectives. By integrating these modes of inquiry through multiple lenses, this framework enables a layered investigation, uncovering hidden narratives—those often overlooked or suppressed by the app culture. It encourages the reimagining of alternative ways of interpreting the self and the world beyond dominant ideological constraints. The following section describes the four practices of inquiry.

Practices of Inquiry

Conducting a Field Study

The apps and their features, as technological objects or functions, are not the subject of investigation. Instead, this investigation centres on the human experiences, values, and perceptions that emerge through their use. My focus is on how individuals relate to and make meaning from the act of digital self-tracking. Accordingly, my initial step in studying the phenomenon was to approach it from a foundational perspective, focusing on people's lived experiences and their personal insights into this trend. I did so through conducting interviews and by surveying digital platforms.

The interviews in this project serve two modes of inquiry. The first is as a creative exploration, generating material for an ongoing artistic investigation. The second is a more formal dimension, in which I analyse and interweave interviewees' firsthand experiences, varied perspectives, and insights into the thesis's discussion. While these interviews are intentionally subjective and open-ended, their strength lies in the range of positions they reflect. I do not treat them as universal evidence but as situated and diverse perspectives through which hegemonic epistemologies and paradigms can be examined. These accounts contribute embodied, affective, and relational understandings that enrich and complicate the critical discourse.

In the next section, I introduce the artistic interview methodology, which deals with investigating through my artistic practice. I conducted six interviews—four video-recorded, one audio-recorded, and one pre-existing audio interview—each lasting over an hour, with participants ages ranging from thirty-three years old to a very elderly individual who preferred not to disclose his age. They represent diverse genders, ethnicities, cultural backgrounds, and professions. Aside from encouraging diversity, I did not intentionally select the participants; instead, I focused on gathering varied personal perspectives.

Besides interviewing as a source to inquire into aspects of using the apps, I used two other sources: the first was reviewing the Quantify the Self forum (QS 2025), articles, and academic research conducted on this community. The second was a survey of the self-tracking app pages on the Google Play Store (Google 2025b), which describe and promote the apps. This source provides a unique perspective, as it does not directly represent the users' voices but reflects users' common desires through the outlook of the app's producer.

Combining these sources enabled me to gain insights into the complexity of this phenomenon and process it through the other three practices of inquiry, revisiting the raw material for further insights during the process.

Investigating through my Artistic Practice

I practise art as an investigative tool through which I pose questions, experiment with assembly, challenge my assumptions and those of others, and experience wonder and surprise. It generates new insights from both my perspective and that of the viewers, which are harnessed into the research question. The human element remains at the centre of this ongoing inquiry, making it a continuous, practice-based exploration of the relationship between humans and the artificial artefacts we create to enhance life—namely, contemporary technologies. In my work, I combine artistic practice with complementary modes of inquiry to foster a critical

dialogue. Together, these approaches investigate the phenomenon of self-tracking app use as a revealing expression of the contemporary human-technology relationship.

My practice employs multimedia artistic methods that juxtapose human and technological elements, positioning their interaction as a central focus of inquiry. I work across a spectrum of low- and high-tech media, guided by my technological skills and aware of their limitations. Animation, paint, robotics, AI, audio, video, CCTV surveillance footage, and the human body are just some of the material forms of expression I use to embody human-technology touchpoints. Occasionally, these elements are configured as installations that invite interactive viewer participation, enabling the work to act as a mode of ongoing inquiry.

In both my own artworks and those I reference, artistic practice becomes a means of framing questions from unexpected angles. It provokes reflection, unsettles assumptions, and opens conceptual “doors” that might otherwise remain closed. Rather than offering fixed answers or stable narratives, the works create a nonlinear choreography that resists control, embraces ambiguity, and holds multiplicity.

Artistic practice thus functions as a unique analytical tool to disrupt the habitual immersion users often experience with self-tracking apps and the broader systems that sustain them—often unconsciously. Through a creative hermeneutic process of refining, contrasting, and juxtaposing, I create an assemblage of stories, values, technologies, and lived experiences to challenge dominant perceptions and open alternative modes of interpreting this widespread phenomenon.

In the following sections, I outline five key methods developed within my own artistic practice. While each draws from established artistic approaches, they are distinctively shaped by my perspective, priorities, and context. These methods serve to expand the analytical vocabulary of the thesis, positioning art-making as an investigative tool rather than a set of outcomes. To illustrate each method, I refer briefly to examples from my own work—not to analyse them in depth, but to demonstrate how artistic

practice functions methodologically within this inquiry. A detailed analysis and interpretation are reserved for later chapters, and a comprehensive list of artworks is provided in the appendix.

— *Assemblage: Juxtaposing the Human and the Machine*

Assemblage, as an artistic practice, combines found objects and diverse materials or concepts that challenge traditional modes of representation. This method, famously pioneered by Picasso's 1912 *Still Life with Chair Caning*, often cited as the origin of this method (Seitz 1961), laid the groundwork for artists to explore materiality, context, and meaning. By juxtaposing contrasting objects or ideas, it disrupts familiar associations and evokes new understandings, allowing unexpected connections to emerge between disparate elements.

The use of self-tracking apps forms an assemblage in which the human body, mind, and perceptions are juxtaposed with contrasting artificial entities—technologies, digital data, and embedded ideologies. Unlike assemblage artworks that intentionally evoke discomfort to provoke insight, these apps present seemingly harmonious relations that obscure their ideological underpinnings. This calls for critical examination through the lens of the cultural norms and value systems they reflect. In response, my artistic practice employs the method of juxtaposing human and technological or scientific elements—either by constructing new assemblages or extracting them from tangible or conceptual real-life situations—as a means of inquiry. This approach draws attention to and challenges dominant assumptions about the human-technology relationship as manifested in the self-tracking apps phenomenon.

In my *85% Human* artwork, for instance, I employ a familiar daily juxtaposition of humans and technology, where a CCTV camera monitors and frames a human figure within a red rectangle, accompanied by an AI recognition system label. By extracting stills from the footage, I emphasise the abnormal visual yet more conceptual assemblage of the situation, an assemblage that evokes tension in the work.

Similarly, *Self-Surveillance: You Have Reached Your Destination* (hereafter referred to as *Self-Surveillance*) creates an artificial scenario in which visitors encounter their speaking likeness in a deepfake video embedded within a mock self-tracking interface. This reconfiguration of the real and the unreal, the human and the technological, the commander and the subordinate, destabilises conventions and prompts reflection on how technological systems co-author identity and agency. In both cases, assemblage serves as a subversive method for revealing latent structures of control and value embedded in digital culture.

In my artworks, I often capture or position the visually curved living body alongside the rigid geometrical and architectural signs related to technological achievements. This assemblage addresses artificial, man-made formations that invade, sometimes at a conceptual level, and influence human aspects, and it raises fundamental questions at the core of my research.

— *Lived Situations and the Absurd*

Lived situations in my art are not treated merely as source material but as epistemic entry points—raw, real-world moments that, when reframed, can disrupt habitual perception and provoke inquiry. These scenes, drawn from everyday life, gain conceptual and emotional weight when lifted from their original contexts and rearticulated through artistic intervention. A subtle shift in framing can deconstruct what feels familiar, inviting new ways of seeing and understanding the dynamics between humans and technology.

Some artworks evoke absurdity, generating discomfort, not as a byproduct but as a tool—one that enables rupture, reflection, and the emergence of insight. In *Carroll House* and *85% Human*, for example, absurdity is revealed not through overemphasis but through the reframing of banal scenes. A concrete façade or a red AI detection frame becomes strange and unsettling when isolated and recast. In contrast, *Self-Surveillance* was designed to evoke unease more explicitly: a mobile robot follows visitors;

their likeness, deepfake video, and instructional commands unfold an uncanny sequence, heightening the absurdity already latent in the logic of self-tracking culture and exposing its mechanisms and consequences.

Together, these works use lived situations—amplified, manipulated, or simply reframed—to generate tension between the expected and the unfamiliar. Whether emerging naturally or staged deliberately, the absurdity becomes a method of deconstruction: it disrupts perception, reveals contradictions, and opens a conceptual space for questioning technological norms.

— *Utilising Technology in Artistic Practice*

The use of technology in my artworks plays a vital role, reflecting and critically engaging with the relationships users form with self-tracking apps. Each artwork incorporates carefully selected technologies relevant to its specific concept, together forming a cohesive body of work that explores the entanglement of humans and machines.

By expanding my practice beyond the boundaries of a single technology and working across both emerging and traditional technologies rather than limiting it to one medium, I enable the dynamics I examine to unfold across multiple conceptual and sensory layers. This strategy yields diverse insights into how technology mediates, frames, and even distorts one's perception of self and the other. Furthermore, by recontextualising technological tools in subversive and poetic ways, my artworks challenge conventional uses and meanings, opening space for unexpected interpretations and a deeper understanding of technology's role and power within the human-technology relationship.

— *Embodied Experience and Durée*

Investigating embodied knowledge and the human ability to know things in an unspoken, hard-to-define way is central to my artistic practice; I embrace this ability as a methodology to engage with the artworks, experience them, and extract insights, highlighting their unique

capabilities. This manifests through visitors' embodied experiences or the presented themes. In the installation, *The Archive of the Lost Embodied Knowledge* (hereafter referred to as *The Archive*), visitors' engagement in exploring the archive is inherently different from reading the transcription of the narrated context or watching a video. It involves bodily gestures of leaning, holding, opening, and listening carefully—all of which create intention and evoke curiosity and involvement.

Additionally, this artwork and the two videos—*Carroll House* and *#MathToo*—demand duration and attention, both during my practice and when exhibited, as visitors engage with the work. This echoes a theme I explored in a previous practice-based investigation entitled *Internal Durée*. In this artwork, the visitor is drawn away from the chaotic demands and pace of daily life, facilitating reflection on the act of duration, which is an endangered ability. In contrast, *Self-Surveillance* takes the embodied experience of using self-tracking apps to the extreme while still allowing the body to actively decode the experience and contribute its knowledge to the investigation.

— *Interview as Artistic Practice*

As an artistic research methodology, both the interviews I conducted³ and *The Archive* artwork that manifests them possess an open-ended nature, avoiding fixed rules or answers. This method was developed in a previous project, where I interviewed individuals to gather insights and used them as material for artistic analysis. While conducting interviews, I do not plan its artistic manifestation but instead, approach it as a collection of raw materials. Although I provide guiding questions, I allow the

3 The interviews for this thesis were conducted in accordance with the Research Ethics Committee guidelines and were approved through an ethics application submitted to the Head of Department at the Reading School of Art.

interviewees to steer their monologue in any direction they might choose, setting aside my own opinions and intervening as little as possible. For this study, this approach facilitated rich, subjective accounts of lived experience and enables both the interviewees and me to uncover themes we had not previously considered, as some shared with me after the session concluded. I treated this phase as a discrete, experimental stage—separate from the interpretative decisions that followed—allowing it to stand on its own as a form of inquiry.

The Archive is the artistic installation manifestation of the interviews and follows the same methodological mindset: open, unlabelled, and instruction-free. It invites free exploration by visitors and by me and functions as a platform for investigation. Both the interviews and the artwork remain experimental, unconstrained by guidelines, and open to limitless interpretation and insights.

Critically Engaging with Theoretical Frameworks

For each analytical lens through which I analyse the adoption of self-tracking apps, I engage with modern and contemporary canonical texts from philosophy, critical theory, feminist thought, and media theory that could illuminate the analysis. In most cases, these texts were written prior to the emergence of self-tracking apps; nevertheless, their theoretical insights remain significant, offering unique reference points as conceptual ideas rather than analyses of the current phenomenon. This allows me to extend their analyses to the contemporary phenomenon under investigation. I focus on the specific aspects most relevant to the cultural, political, and technological questions I explore. My analysis of particular texts does not imply full adherence to the broader philosophical positions of these thinkers but emphasises their relevance to the inquiry.

Critically Analysing through Contemporary Art

Contemporary artworks provide me with a continuous source of inspiration, functioning as both an experimental and creative practice and

as an engaging conceptual discourse that underpins my practice. They offer an intuitive and insightful approach to analysing and challenging conventions, sparking meaningful discussions. I critically analyse artworks that raise questions and awareness regarding ideologies and the structures of hierarchy, power, capitalism, social interaction, and human-technology relations. These works present various approaches to these issues, taking a stance, examining them carefully, questioning assumptions, analysing underlying ideas, and not accepting things at face value. I utilise them as a tool to explore, expand, and deepen insights into my practice and the inquiry's question, as well as to inspire new ways of thinking, initiating a process towards opening up new interpretive paths for the phenomenon under investigation.

Prologue

Two early artworks I created nearly three decades apart—*Cage* and *#MathToo*—laid the conceptual groundwork for this research by critically investigating problematic aspects of Western culture that have led to the phenomenon of using self-tracking apps.

⁴In 1986, I created the performance artwork *Cage*, the origin point of my creative research and an early investigation into an ongoing critical exploration. It underpins an inquiry shaped not by linear progression but by a rhizomatic structure—multi-layered, non-hierarchical, and unfolding across time, theory, and lived experience. This artwork explored how power operates through boundaries, ideologies, and symbolic structures, and it laid the conceptual foundation for much of my current thinking, demonstrating how art-making itself functions as a research methodology: a way of generating insight, framing inquiry, and developing critique.

In *Cage*, I questioned how intangible forces—language, symbols, ideologies, and cultural norms—can shape docile human behaviour without physical coercion. Using only black paint and the spatial features of a room's corner, I formed a triangle that, along with an imaginary fourth wall, “locked” the space conceptually. I then contorted my body into this minimal, pyramid-volume mould. Thus, the geometric shape became more than a visual form; it evolved

4 This stylistic choice signals that the section engages with artistic practice—either my own or that of others—as a form of inquiry.



Haya Sheffer
Cage, 1986

into an assemblage that juxtaposes various tangible and conceptual systems: lived physical body versus geometric, mathematical form; complex elements and a structure reduced to its essentials; the sortable and the unsortable; the real and the symbolic; physical power and the power of ideology; as well as the feminine and the masculine. It made this experimental work open-ended, providing insights that continued to unfold over the years, gradually revealing the depth of its conceptual contribution. *Cage* became an early articulation of how structures—particularly those that appear neutral or logical—can impose ideological boundaries and shape human life.

This is directly relevant to my current inquiry into self-tracking apps. Like *Cage*, these technologies rely on signals such as icons, images, colours, shapes, graphs, numbers, letters, and ringtones to structure behaviour. Their power lies not in overt coercion but in subtly shaping how individuals understand and act upon themselves.

The triangle in *Cage*—a fundamental scientific form—echoes humanity's drive to impose order and structure on real life. Individuals alter their existence to fit into technocratic, compartmentalised, measurable, and structured frameworks. Self-tracking apps exemplify this norm by presenting a set of measurable targets that reflect a social or scientific order, imposing standards by which one should discipline oneself, reshaping one's body and behaviour according to common boundaries, and receiving feedback from the app if one steps out of those margins. The artwork questions this expectation to adapt one's existence to rigid technological frameworks.

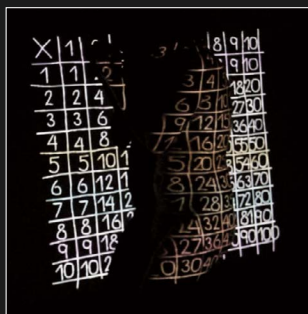
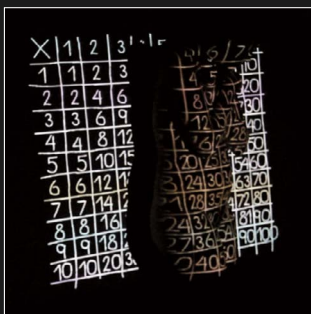
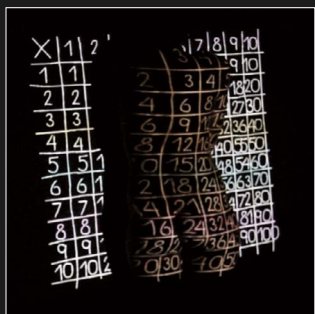
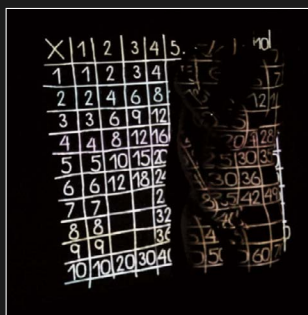
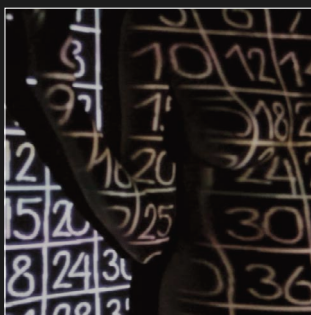
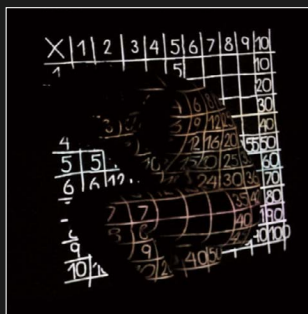
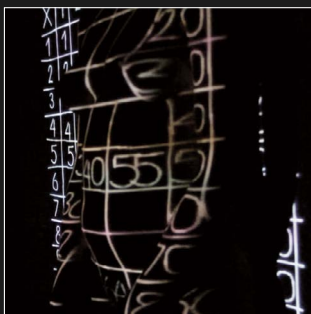
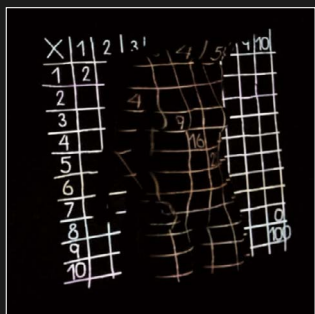
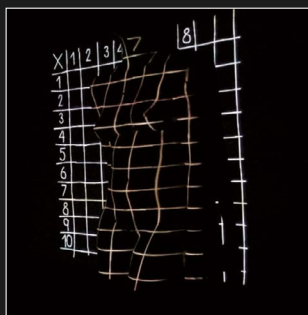
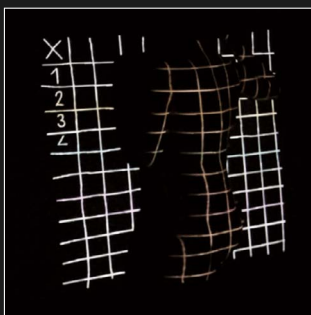
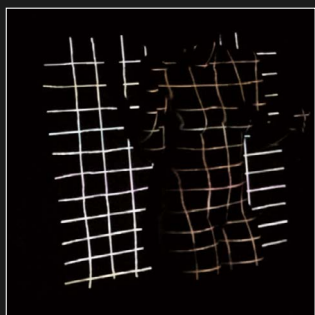
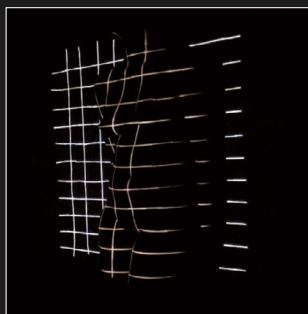
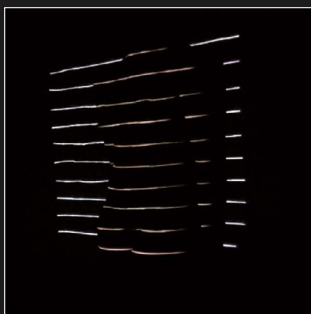
Cage thus performs a method of critique: it exposes how normative structures can override embodied knowledge and reconfigure subjectivity. It also highlights

the vulnerability of lived experience in the face of systemic rationalisation. This methodology—working through material, space, body, and symbolic language—has remained central to my practice. Cage is not merely an early work; it is an active participant in the theoretical and artistic framework of this thesis.

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#MathToo, a video I created in 2018, my second artistic research project underpinning the current one, investigates the tyranny of mathematical and scientific knowledge.

The artwork emerged from the distress I experienced due to my inability to conform to the rational thinking that dominates Western society—one that delegitimises my difficulty with numbers, a fact I concealed with shame. Only through this artwork did I realise that for most of my life, I had held common beliefs about the superiority of scientific thinking and followed the social norms shaped by it. This was a constant struggle against unseen forces that imposed an ideology not aligned with my personal qualities. Not remembering the multiplication table or even simpler arithmetic was deemed unacceptable and symbolised the dominant narrative of inflexibility toward its margins. The artwork gave me the opportunity to define and then reject this domination, opening up possibilities to challenge sets of presumptions that claim to represent the ultimate truth embedded in modern life. Inspired by the *#MeToo* awareness campaign, I gave the project its name, aiming to fight against the need to hide and to shift the blame



Haya Sheffer
#MathToo (video stills)
2018
Animation and video,
6:23 min
[Available on Youtube ↗](#)

from the vulnerable to the powerholder, aiming to change the balance and empower the excluded, weaker voices. Questioning the adoption of self-tracking apps is a case study that arises from the project's insights.

The video targets a society that sanctifies elementary school algebra studies as a fundamental condition for being a normative member of a modern, science-based society. It explores this issue by engaging with the perspective of the excluded, those who do not conform to this norm and are viewed as disabled. The artwork presents a casual filling-in of the multiplication table with white chalk on a blackboard, accompanied by the audio of a young girl's hesitant voice announcing the numbers during this process. The progression is not linear; instead, it follows the girl's internal logic in completing the table, leaving the difficult-to-remember calculations for the end. This entire familiar process is projected onto a naked, slightly moving female body. The video begins with the body hardly visible, as the board has not yet been constructed, and the projection is dark. The body gains contour, dimension, and live movements due to the girl's manual filling in of the multiplication table. The table gradually allows the human eye to recognise the body but, at the same time, traps it, becoming its warden. The body, ensnared like a deer in car headlights, cannot escape. It resists the grid and pushes against it but relies on the trapping multiplication table to realise itself, emphasising the unequal forces in this game.

The tangible, human, breathing, flesh-and-blood body, which has the potential physical power to manifest its strength, is trapped by the virtual tyranny of scientific objectivity and related beliefs. The uncomfortable emotions raised by this progress evoke insights into this connection, which allowed me to challenge the norms that underpin it. The insights gained from this project link directly to

the questions regarding the ideologies that enabled the proliferation of self-tracking apps, as well as their impacts and the opportunity for an alternative discourse.

[*#MathToo* is also discussed in the sections Situated Knowledges and The God Trick]

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In both artworks, I employ the robust assemblage artistic methodology, where an act of combining contrasts reveals new insights. The body, a live, tangible entity, is set against a virtual one constructed from straight lines and numbers, signifying norms and creating a contrast that refers to the emotional and physical states involved in this bond. Rather than creating harmony, this evokes tension. These are not theoretical inquiries; they utilise human female bodies, paint, rulers, digital animation, audio, screening, analogue and video cameras, and more to perform a scenario and gain the above insights about these cultural norms and how they are used to subdue vulnerable voices, excluding certain perspectives and ways of living that do not align with their values. The female body in this artwork represents the defenceless and the excluded, echoing Irigaray's notion of the "other" in *This Sex Which Is Not One* (1985)—a body that does not conform to the masculine parameters of quantifiable, phallogentric standards of representation and value, and that is marked as deviant within a worldview that seeks to reduce all experience to what can be measured. It embodies what is unruly, excessive, or unreadable within systems that privilege the discrete, the measurable, and the visually identifiable—such as data, numbers, or idealised male bodies.

Part One

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Ideological Foundations

Chapter 1: Three Narratives

This chapter identifies three core narratives of the modern Western mindset that, I argue, underpin the phenomenon of self-tracking app use—not only by shaping political systems or epistemologies but by actively structuring contemporary individuals' desires, self-conception, and daily practices. These narratives are the adoption of scientific objective epistemology as the ultimate way to interpret reality; the replacement of divine or cosmic order with human agency's mastery over nature, using technology as a tool to apply it; and devotion to efficiency driven by capitalist values. While self-tracking apps are contemporary digital artefacts, their appeal and acceptance are rooted in these older ideological currents. Beneath the surface of innovation lies a continuation of these deeper narratives that inform how individuals imagine progress, success, and self-worth. This chapter introduces and unpacks these narratives to provide the conceptual foundations of this thesis, framing them through artistic and design examples that render their cultural influence visible and lived.

The Primacy of Objective Knowledge

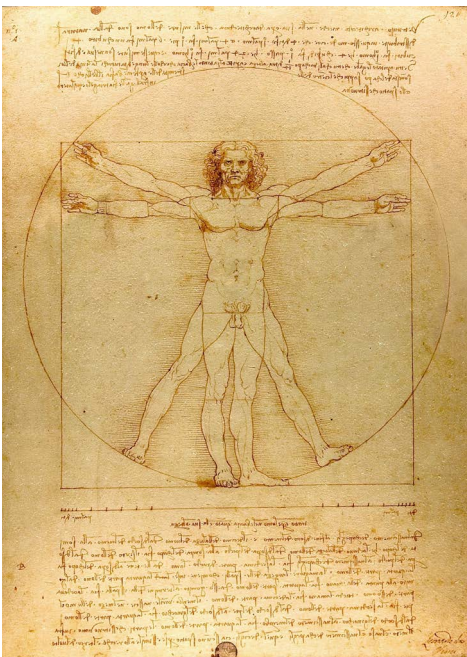
The prioritisation of scientific order over traditional forms of interpreting the world in the West can be traced to the mid-sixteenth-century Scientific Revolution, which is considered a precursor to modern scientific and technological approaches to nature. During this period,

thinkers such as Galileo Galilei, Isaac Newton, and others embraced the vision of the scientific project. They developed methods of empirical observation and mechanistic frameworks aimed at using science to decipher the mysteries of nature. This intellectual shift marked not only a methodological transformation but also a conceptual separation between two domains: the external, measurable world of nature and the internal, symbolic, or spiritual dimension of human meaning.

Michel Foucault considers the seventeenth century as a moment of consolidation in this shift, describing how old systems of resemblance and symbolism were replaced by scientific frameworks that demanded proof, measurement, and order: 'From now on, every resemblance must be subjected to proof by comparison, that is, it will not be accepted until its identity ... [has] been discovered by means of measurement with a common unit, or, more radically, by its position in an order' (2005: 60-61).

However, artistic practice preceded the cultural shift Foucault describes, as seen in Leonardo da Vinci's influential drawing *Vitruvian Man*, dated to the late fifteenth century. In *Vitruvian Man*, Leonardo exemplifies his integration of artistic skill with scientific and mathematical inquiry, depicting a combination of two overlapping nude male figures positioned within a circle and a square. It is based on the treatise *De Architectura*, written by the Roman first-century architect and engineer Marcus Vitruvius Pollio (1999). Vitruvius explored human proportions, geometry, and the relations between man and the universe, relying on theoretical proportions and seeing the human body as the ideal architectural model.

I do not analyse Leonardo's *Vitruvian Man* drawing in depth but instead focus on its iconic symbol, which portrays innovative Renaissance approaches. Leonardo's



Leonardo Da Vinci
Vitruvian Man
c. 1492
Pen and ink on paper

paradigm of the scientific method diverged from earlier ones by prioritising two approaches—empirical systematic observation and mathematical analysis of rational thinking—over inherited knowledge, examining and reassessing Vitruvius' ideas and classical sources.

He questioned and refined these principles through a process of observation, reason, and evidence-based understanding, and the meticulous dissection and documentation of the human body, viewing the human body not merely as a theoretical structure but as a structure whose proportions could be studied through systematic inquiry (Magazù et al. 2019: 751-58). His work emphasises that harmony is founded on precise quantities and measures governed by arithmetic and geometric laws. Empirical inquiry acts as an intermediary between man and nature, allowing for deeper exploration, a set of principles underpinning the century-later Enlightenment's pursuit of universal laws governing nature.

The following quotation by Sir William Thomson, Lord Kelvin, a British mathematician and engineer of the nineteenth century, consolidates the principles laid down by Leonardo.

When you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely in your thoughts advanced to the state of Science, whatever the matter may be. (Whitelaw 2007: 6)

In the modern era, phenomena that were not part of the scientific order became less relevant and lost their significance; they were regarded as lacking epistemic value and, thus, excluded from discourse. The role of this scientific-objective epistemology in the practice of applying self-tracking apps is essential. The phenomenon of using these apps prioritises empirical observations, scientific inquiry, mathematical laws, and rational objectivity over non-scientific, subjective methods to decode one's reality. Not believing in the former's superiority leaves no reason to apply these apps. The point to emphasise is that today, the preference for scientific approaches and a positivistic attitude to understanding reality is deeply rooted in Western culture. Rejecting the app's suggestions and comments while prioritising non-technological knowledge creates conflict that users find frustrating and difficult to handle. They often fail to recognise the app's tyranny or consider that technological knowledge is just one of multiple ways to interpret life. This situation will be presented in detail and critically analysed throughout the thesis.

Human Supremacy Over Nature

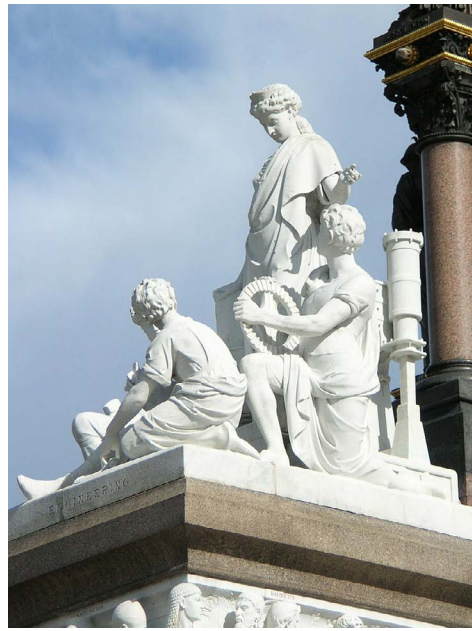
Parallel to the gradual epistemological change and due to unprecedented technological achievements, new-to-humankind relations with nature began to form, changing humankind's positioning and role in relation to

the natural world and establishing humanism. Pico Della Mirandola's 1486 *Oration on the Dignity of Man* is considered the manifesto of humanism and illustrates the spirit of its time. It declares that man is only a little lower than the angels and has the power to become godlike (Mirandola and Kirk 1956: Xiii).

At last, the Supreme Maker ... set [man] in the middle of the world and thus spoke to him: We have made you a creature neither of heaven nor of earth, neither mortal nor immortal, in order that you may, as the free and proud shaper of your own being, fashion yourself in the form you may prefer. It will be in your power to descend to the lower, brutish forms of life; you will be able, through your own decision, to rise again to the superior orders whose life is divine. (ibid.: 6-7)

This belief in human potential, empowered by reason and technology, was fully expressed in the nineteenth century as industrial advancements and engineering feats redefined human dominance over nature.

An outstanding expression of this ideology is George Gilbert Scott's *The Albert Memorial* (1875). Prince Albert, who spearheaded the 1851 Great Exhibition in Hyde Park, where the memorial is located, used its profits to found nearby cultural and scientific institutions—including the V&A, the Science Museum, and the Natural History Museum. This ambitious exhibition showcased cultural and industrial objects from around the globe. The 53-metre-high statue, a grandiose architectural tribute laden with symbols, was commissioned by Queen Victoria to commemorate the late Prince Albert. A declaration of technological capabilities and tyranny reinforces the narrative delivered through groups of figures symbolising



Left:
Sir George Gilbert Scott
Albert Memorial
 1875

Right:
John Lawlor
The Engineering Group
 (Detail of *Albert Memorial*)
 1876

various fields of Western achievements in the memorial. It is a monument that reflects the British Empire's developments and its respect for cultural, scientific, and industrial triumphs, affirming the nineteenth-century belief in humanity's progress and supremacy. I present part of the various sculptures, mosaics, and reliefs that inhabit the statue, mainly at the foot of the prince's golden figure, symbolising, from different aspects, the human mastery over matter and spirit.

The memorial's frieze encircles the podium with 169 life-size sculptures of Western intellectuals, from Pythagoras to Turner. At its corners are figures representing agriculture, engineering, commerce, and manufacturing, the pillars of Victorian industry. The canopy's columns house eight statues symbolising the practical arts and sciences, namely, astronomy, geology, chemistry, geometry, rhetoric, medicine, philosophy, and physiology, while mosaics above depict the four arts—poetry, painting, architecture, and sculpture—supported by historical figures like King David and Michelangelo. Surrounding this display of human

intellect, allegories of Africa, Asia, the Americas, and Europe represent the global dominion of a 'vast empire, on which the sun never sets' (Macartney 1773: 55; Sheppard 1975). The placement of Prince Albert's gilded statue and grand canopy above these achievements visually elevates him as a guiding force of modern civilisation, overseeing the progress that technology has made possible and subduing nature in both the scientific-technological and spatial-geographic sense.

The Albert Memorial is a visual argument for the modern belief that humankind can conquer and control nature through technology, science, and industry. It embodies the grandiosity of nineteenth-century technological optimism, mirroring the Enlightenment's rationalist faith while forming the base of the industrialisation-driven ethos that would define the modern world.

This shift in the human perception of nature—from a given, unalterable environment to something designable and subject to human control—extended from the global scale to the private, individual realm and became a conventional practice in technological intervention in people's bodies or mental lives. Various cross-disciplinary innovative developments are harnessed to decode and subdue the body and its defects through surgical knives, drugs, or digital image processing, fulfilling people's desires in an ongoing battle for perfection. Such expectation from technology arguably underpins the adoption of self-tracking apps. E., one of my interviewees, expressed his wish that more apps would be developed to aid him in controlling his personal situation (E. 2022: 34:43). E.'s attitude demonstrates a faith that technology will eventually overcome human limitations—an outlook consistent with the contemporary transhumanist movement.

The *transhumanist* view calls for emerging technologies to be harnessed in order to *transcend* the human realm. This philosophical and scientific movement, primarily presented by the World Transhumanist Association, was founded by the philosophers Nick Bostrom and David Pearce at the turn of the millennium. It advocates using current and emerging technologies to augment human capabilities. In some cases, there are supporting practices that invade the body with scientific breakthroughs such as stem cell therapies, in vitro fertilisation, brain chips, animal cloning, robotic arms, artificial intelligence, and genomics to evolve humans into ‘an enhanced species that transcends humanity—the “posthuman”’ (Ostberg 2022). “The Transhumanist Declaration”, from which points are cited below, echoes Pico Della Mirandola’s 1486 humanist manifesto ideas.

1. Humanity stands to be profoundly affected by science and technology in the future. We envision the possibility of broadening human potential by overcoming ageing, cognitive shortcomings, involuntary suffering, and our confinement to planet Earth.
2. We believe that humanity’s potential is still mostly unrealised. There are possible scenarios that lead to wonderful and exceedingly worthwhile enhanced human conditions.
(Humanity Plus 2009)

These two points extend the ideals that drove the Enlightenment’s philosophy and achievements, demonstrating a core idea of combining a belief in science and technology with the infinite potential of human expansion and transcendence. Contemporary artists use their bodies as a platform for experimenting with this ideology, transcending it into imaginary realms.



Neil Harbisson
Transspecies and Cyborg

A group led by the cyborg activist artist Neil Harbisson, named *Cyborg Art*, describe their activism as artwork that creates and implants new senses. Harbisson implanted an antenna in his skull that would allow him to perceive colours via audible vibrations, including colours from space, images, videos, music, or phone calls directly into his head via an internet connection. No longer feeling a hundred per cent human, he identifies himself as *transspecies* and has been officially recognised as a cyborg by the British government (Harbisson 2023).

Harbisson's art and E.'s wish, cited above, illustrate an assumption that many today are, in fact, transhumanists who believe in technology's ability to overcome human physical and mental limitations, transcending both body and mind. Users utilise sensors to track their performance, ask AI to evaluate it, and develop an enhancement plan, trusting the technology's ability to overcome what is perceived as human defects.

In conclusion, over the past few centuries, a new perspective on humanity's role and place in the surrounding world has gradually emerged in the Western world, supported by remarkable scientific achievements. By

employing the laws of reason, humans have begun to shape an organised, man-made environment, maximising their power over nature as if it were something to be conquered, subdued, and controlled for maximum benefit. The belief in prioritising objectivism and applying scientific principles based on the ability to analyse, organise, and control phenomena is a modern Western mindset foundational to the emergence, widespread adoption, and growing dependence on self-tracking apps. It underpins the cultural logic that frames these technologies as tools for human enhancement. By aligning with the transhumanist pursuit of mastery and self-optimisation, self-tracking apps offer a mechanism for reshaping humans according to ideals of control, efficiency, and improvement. In this light, the phenomenon of self-tracking could not have evolved without a deeply embedded belief in humanity's capacity—and imperative—to master nature.

Capitalist Efficiency and Self-Optimisation

I have identified two modern Western narratives, both rooted in Enlightenment thought, as essential to the adoption of self-tracking apps. The first is the prioritisation of scientific, objective ways of interpreting reality. The second is the belief in the superiority of human technological development, particularly its capacity to overcome and control nature. Together, these narratives reveal how scientific and technological achievements have shaped not only how humans perceive the world but also how they act upon it—seeking order, control, and improvement.

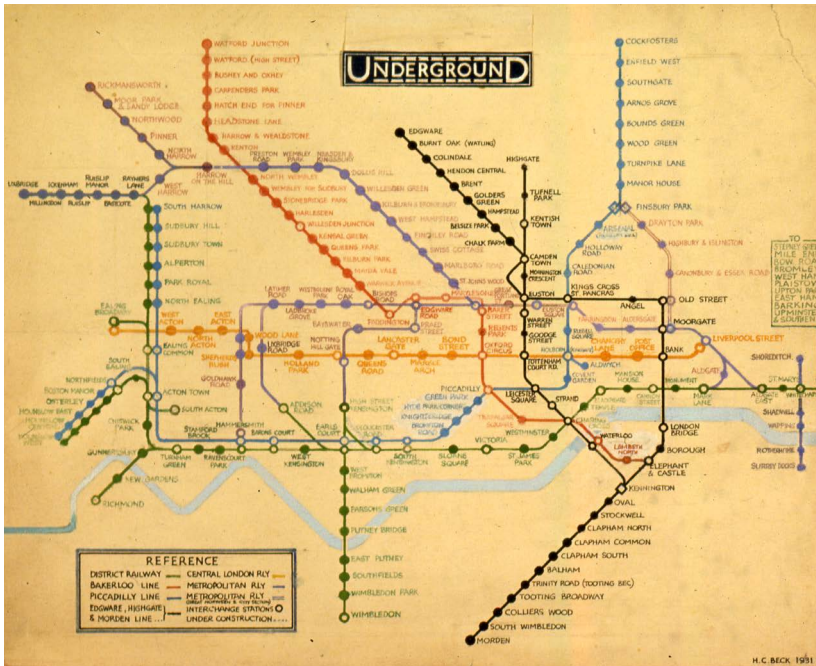
A third narrative developed out of these two: the values of capitalism. Capitalism operationalises Enlightenment principles by applying reason, calculation, and systematic organisation to all spheres of life, including economic, social, and political domains. Rooted in the Enlightenment's emphasis on progress and empirical analysis, capitalism structures production and exchange through rationalised, efficiency-driven systems governed by market logic. As Max Weber argued, capitalism not only developed from these principles—it also depends on them. It requires,

in his words, ‘a system ... whose workings can be rationally calculated, at least in principle, according to fixed general laws, just as the probable performance of a machine can be calculated’⁵ (Lukács 1971: 96).

I use the London Underground system and Beck’s 1931 Tube Map to analyse how they reflect capitalist values by framing life as a performance-driven system. This mindset, once culturally embedded, spreads beyond efficiency-focused domains, shaping expectations that underlie the self-tracking app culture—where optimisation becomes a default, unquestioned value. The London Underground emerged from the pressures of the Industrial Revolution, as rural migration flooded the capital with workers needing access to industrial centres. The London Transport Museum describes the issue as a social and economic *problem* that this novel public transport aimed to solve. The city relocated slum dwellers to the suburbs and enabled mass transport through this cost-effective system (TFL 2025). This solution, as Weber observed above, reflects capitalist logic—solving problems with systems designed for measurable performance and efficiency.

Henry Beck revolutionised transit mapping in 1931 with his diagrammatic design for the London Underground map, inspired by electrical circuit diagrams. Prioritising clarity over geographic accuracy, Beck arranged stations by sequence and direction, using a strict grid of horizontal, vertical, and 45-degree lines. Initially rejected, his design was adopted after a successful trial and became a model of intuitive, expandable navigation. Reflecting modernist principles

5 I used this translation from Lukács (1971: 96), which I prefer to the translation in Weber’s *Economy and Society* (Weber 1978: 1394).



Henry C Beck
Presentation
drawing for
diagrammatic
Underground map
1931
Ink and coloured
pencil on paper

of clarity and function, the map embodies a rational, performance-oriented mindset aligned with the modernist maxim FFF: *form follows function*. The construction of the London Underground and Beck's map design reflect and align with early capitalist values: efficiency, systematisation, and control.

This mode of thinking, rooted in scientific and technological developments, extends beyond infrastructure into private life, shaping how individuals interpret and manage their bodies and behaviours. I argue that self-tracking apps are evidence of this and further reinforce this mindset, encouraging users to assess their lives through metrics of performance and productivity. Similar to supervisors on a factory floor, these apps monitor success and failure, managing life as a process of outputs to be optimised.

Marx's historical materialism suggests that, throughout history, personal values have been shaped by the mode of production in material life: 'It is not the consciousness of men that determines their existence, but, on the contrary, their social existence determines their consciousness'

(1977: 20-21). The infiltration of capitalist economic logic into personal life is reflected in E's interview, which describes the baby-tracking app's role in his morning routine, manifesting commercial values while handling his newborn.

I wake up in the morning, I can tell when was the last time he ate at night, how much he slept, and when was the last diaper change, and whatever, and I can keep from there and not starting to guess ... *I feel like* he is hungry ... it was like a record that we can always check: okay, this is where we stand; this is the next thing we might need to do. (E. 2022: 16:04)

E.'s approach here is shaped by a logic of efficiency as if both he and the child are components of a system designed to meet business standards of time utilisation. The need to intuit whether the baby is hungry becomes an inefficiency, an obstacle to be eliminated. He uses the app to reduce ambiguity and establish a clear set of actions to complete "the task." His language frames the app as a professional tool for managing the baby's needs with maximum efficiency. As in commercial environments, ambiguity is treated as a problem to be solved, and tasks are planned and guided by data. This is not a critique of parents' need to navigate the complexities of modern life but an example of the mindset underpinning the adoption of such apps.

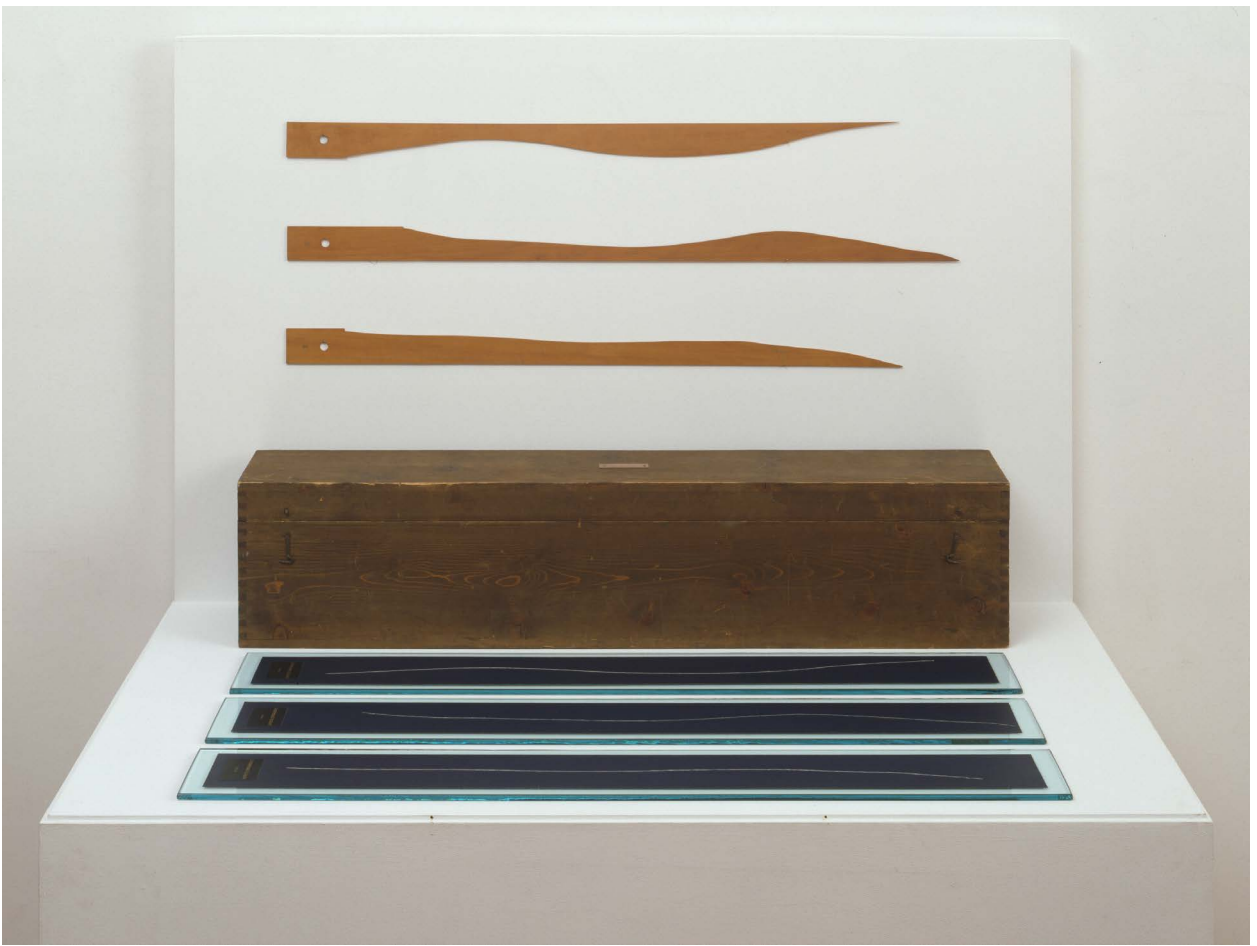
To conclude, the newly widespread phenomenon of adopting app technologies for tracking the self is a manifestation of ideologies gradually assimilated from the Enlightenment era, the Industrial Revolution, and capitalist structures, which I refer to in this project as the modern Western mindset. The three main concepts necessary for this adoption are the trust in objectivism as the ultimate way of understanding life, the belief in technological power to overcome nature, including one's own body, and the perception that the individual and their body are an apparatus that should be handled and that function as a mode of production. These mindsets are fundamental in encouraging users to seek out such technologies as tools for enhancement.

Doubting the Narratives

The picture would be incomplete without acknowledging the voices that challenge the dominance of modern Western narratives. This section concludes the discussion of the modern Western mindset by highlighting counter-perspectives that reject reductive frameworks—a theme I develop in this thesis through further critical analysis of artistic and scholarly rejections of this mindset.

Since the turn of the twentieth century, artists and philosophers have begun to question the modern Western mindset—assumptions I have described above—associated with the Enlightenment. One of the first and most influential critics of science’s cultural authority as a truth-bearing institution was Nietzsche. He did not oppose scientific enquiry per se but questioned the metaphysical assumptions behind society’s reverence for science—particularly its ‘unconditional will to truth’ (1974: 281). He argued that science, like religious faith, is grounded in belief systems shaped by historical and cultural conditioning rather than pure rationality: ‘From where would science then be permitted to take its unconditional faith or conviction on which it rests, that truth is more important than any other thing, including every other conviction?’ (ibid.: 280-82).

Three decades later, a similar question was raised by Marcel Duchamp through his experimental artwork *3 stoppages étalon* (*3 Standard Stoppages*). Duchamp’s *3 Standard Stoppages* reflects an early artistic scepticism toward the objective scientific trend that is relevant to my research, as it challenges the three narratives underlying the contemporary use of self-tracking apps. In this artwork, Duchamp, along with written instructions for his act, utilised three straight horizontal threads measuring one metre in length. He dropped them from a height of one metre onto a horizontal plane, allowing them to distort



Marcel Duchamp
3 stoppages étalon (3 Standard Stoppages)
1913–14, replica 1964

freely and creating a new shape for measuring length, which he used to design curved wooden rulers ill-suited for measurement, an ironic alternative to the standard metre that limits authorial control. He stored the fixed threads and rulers in a disused croquet case, labelling them 'canned chance' (Iversen 2010: 12-13). This is how he described his artwork:

This experiment was made in 1913 to imprison and preserve forms obtained through chance, through my chance. At the same time, the unit of length: one meter, was changed from a straight line to a curved line without actually losing its identity [as] the meter, and yet casting a pataphysical doubt on the concept of a straight line as being the shortest route from one point to another. (D'Harnoncourt and McShine 1973: 273-74)

The three curves generated in *3 Standard Stoppages* were directly reused as templates in *The Large Glass*. Later, presenting the artwork in the MOMA he added a mark I METER to the wooden sticks (ibid.). Duchamp linked the artwork to Alfred Jarry's *Pataphysics*, the 'science of imaginary solutions'. Jarry described it as opposing conventional science, focusing instead on exceptions and absurdities. Blending science, theology, and art with humour and irrationality, *Pataphysics* offered an alternative way of understanding reality (Ades et al. 2021: 17-18).

The importance of Duchamp's artwork to this inquiry lies in his challenge to the dominant assumptions that have shaped—and continue to shape—scientific, political, commercial, and social thought. His subversive act rejects the grand narratives underpinning the logic of self-tracking apps. First, it undermines objectivism by presenting three measuring rulers, each producing subjective, context-specific results that defy the rigid standard of a one-metre ruler. Second, through his gestures and instructions, Duchamp renounces human control, returning authority to nature and unpredictability. Third, he constructs a tool that

mimics the efficient, standardised forms of Enlightenment-era science, yet proves functionally useless—mocking the idolisation of productivity and performance.

Duchamp's experimental work echoes Nietzsche's critique of the scientific worldview—not for its pursuit of truth per se but for its elevation of a particular kind of truth as absolute. Nietzsche questioned the 'unconditional will to truth' (1974: 281) as a culturally conditioned conviction rather than a rational imperative. Duchamp's *3 Standard Stoppages* responds to this by subverting the idea of fixed measurement. Instead of rejecting truth altogether, his work reveals that truth can take multiple forms. By offering a playful, non-standard approach to the metre, Duchamp opens space for truths that are contingent, variable, and imaginative—countering the singular authority of scientific standardisation with generative alternatives.

While Duchamp's artwork exemplifies an artistic rejection of Enlightenment logic, Jürgen Habermas later mapped out the philosophical trajectories of this resistance. He identified two main branches of post-Enlightenment thought shaped by Nietzsche's legacy: one leading to thinkers like Bataille, Lacan, and Foucault—who unmasked power structures through anthropology, psychology, and history—and another to Heidegger and Derrida, who interrogated metaphysics and the origins of subjectivity (Habermas 1987).

Although Habermas himself opposed postmodern critiques for undermining rational discourse and democratic ideals, his outline is useful for positioning contemporary resistance. Other Frankfurt School thinkers such as Adorno and Horkheimer also critiqued Enlightenment reason but without abandoning rationality. They argued that reason had been distorted by capitalism and instrumentalism, while still upholding its

potential for assessment and transformation.

This section does not attempt a full exploration of these philosophical movements but gestures toward the critical lineage that continues to inform alternative perspectives. I draw selectively from these counter-narratives to examine the cultural and ideological foundations of self-tracking apps and to imagine how such systems might be questioned or reconfigured.

Chapter 2: Revisiting the Problem

Despite the cultural shift toward postmodern critiques of modern metanarratives—overarching, totalising frameworks that claim universal validity—many modernist ideologies remain deeply embedded in everyday life. This endurance is visible in the use of self-tracking apps, which continue to prioritise rationality, measurement, and control. While postmodernism—manifested through architecture, literature, art, and popular culture—has challenged these dominant narratives, the cultural scientific, logocentric framework of order, optimisation, quantification, and technological rationality remains prevalent. I will analyse this conflict in Part Five.

This chapter articulates the conceptual ground on which my practice intervenes. It examines how self-tracking technologies reassert hegemonic norms under the guise of self-care and personal progress. I argue that the widespread adoption of self-tracking apps, while often framed as empowering, reflects a deep internalisation of modern metanarratives that prize objectivity, efficiency, and quantification—values upheld as markers of technological superiority.

The phenomenon of using these apps stems from numerous innovative technological advancements aimed at enhancing users' well-being. This combination has integrated self-tracking technologies into people's daily routines, as evidenced by the millions of downloads of self-tracking apps in the Google Play Store. The global market for habit-tracking apps alone was valued at 11.42 billion USD in 2024 and is projected to triple by 2033

(Business Research Insights 2025). The apps are affordable, customisable, portable, and user-friendly, and agreeing to the terms of use indicates that users engage with these apps willingly and appreciate their assistance. It is essential to acknowledge the popularity of these apps and their contribution to people's lives.

This invites a reasonable question: If using self-tracking apps help users feel better, function more efficiently, or gain insight, why question it? Yet, it is precisely this apparent benefit that demands scrutiny. When optimisation becomes the dominant framework through which people interpret their lives, the scope of human experience risks becoming flattened—reduced to what can be measured, compared, and improved. The cultural embrace of performance and productivity may appear benign—even desirable—but it often conceals deeper ideological alignments: a privileging of control over uncertainty, of outcome over process, and of data over intuition.

The need for an investigation of self-tracking apps stems from the belief that, despite their helpful appearance, these tools often carry overlooked consequences. Anything that revolutionises people's lives, even when it seems beneficial, should undergo close examination, and this phenomenon is no exception. As Adorno and Horkheimer (2002) have argued, internal perceptions and desires are often shaped by hegemonic systems—as exemplified by modern capitalist societies—producing conformity through the illusion of individual choice. Consequently, while using self-tracking apps might give users the impression of enhancing and enriching their lives, I submit that this habit can often limit and result in the reduction of the richness of the lived experience. There is inequality between user and technology that deserves particular attention. While the user experiences life in its full multiplicity of existence, the app returns streamlined outputs and goal-driven prompts that can obscure the user's internal authentic vision. The asymmetry in this relationship reveals a vulnerability in users' perception of life, recognising that it emphasises the need to strengthen weaker voices and explore alternative assumptions within this phenomenon.

The question at the heart of this study reflects this need: What critical perspectives can challenge and re-evaluate the promise of enhancement through self-knowledge as offered by self-tracking apps? Drawing on artistic and multidisciplinary methodologies, I demonstrate how these technologies reinforce a singular vision of truth—one that silences multiplicity and ambiguity. Through the framework I term *Beyond Quantification*, this research exposes how the logic of self-tracking narrows lived experience to what can be measured, thus marginalising more intuitive, symbolic, or emotional ways of knowing.

Like Duchamp's *3 Standard Stoppages*, which mocks the rigidity of standardised measurement, my practice challenges the epistemological dominance of technological rationality by reframing it through ambiguity, relationality, and embodied perspective. This is exemplified, for instance, in my installation, *The Archive*, which presents multiple perspectives drawn from users' lived experiences, recorded and stored in naked metal tins. The work offers an "anarchival" space of open and embodied exploration. Visitors, through participatory and sensory experience, encounter a non-linear constellation of stories, where rhizomatic linkages invite them to construct their own paths of meaning, resisting the logic of categorisation and control.

My aim is not to replace one metanarrative with another. It offers no singular method of knowing. Rather than propose a new universal, it seeks to restore plurality—inviting a rebalancing of epistemological authority. By exposing the cultural logic that underpins this phenomenon, a space is created for less dominant perspectives to resurface. It does not treat intuition or emotional insight as superior to data but treats them as suppressed equals in need of re-recognition.

At stake is the richness of subjectivity—the fullness of lived experience—which becomes endangered when filtered solely through metrics. Left unchallenged, the hegemony of techno-scientific logic promotes a culture of optimisation that privileges external validation over personal, intuitive, and plural ways of being. Artistic practice here actively reframes the problem itself, challenging dominant epistemologies in everyday life and asserting a space for reimagining selfhood, knowledge, and value.

Part Two
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Internalisation

Chapter 3: Harnessing Technology to Embed Capitalist Values

This chapter initiates a discussion that explores the ingredients shaping the emergence of self-tracking apps. It builds a theoretical foundation for understanding how self-tracking apps embed and reproduce capitalist values by drawing on critical perspectives from Marxist theory, Foucauldian analysis, feminist critique, and contemporary technological practices. Together, these frameworks trace the evolution of bodily regulation under capitalism—from labour-power to docility, gendered self-discipline, and finally, to its digital manifestation in self-tracking culture.

The Body as Labour-Power: Marx and Lukács

I refer to Marx's writing, which shaped the understanding of capitalism as a historical and economic system. In *Capital* (2015), Marx examines how the human body is reduced to labour power—a commodity bought, sold, and exploited for profit. He describes the mechanisation of labour, where workers are treated as machines to maximise productivity. In the following passages, he illustrates how the body becomes a production tool in capitalist modes of production, with human labour consumed in the process much like fuel burned to generate output.

While producing [the labourer] consumes by his labour the means of production, and converts them into products with a higher value than that of the capital advanced. This is his

productive consumption (ibid.: 401). By converting part of his capital into labour-power, the capitalist augments the value of his entire capital. ... He profits, not only by what he receives from, but by what he gives to, the labourer. The capital given in exchange for labour-power is converted into necessities, by the consumption of which the muscles, nerves, bones, and brains of existing labourers are reproduced, and new labourers are begotten. ... It is the production and reproduction of that means of production so indispensable to the capitalist: the labourer himself. (ibid.: 402)

This reduction of the body to labour power shaped social relations as if they were products of labour rather than relations between *individuals* during their labour performance (ibid.: 50). Consequently, people perceived themselves as a ‘thing’ that produced value. György Lukács’ reification theory (1971) further develops this concept by analysing how capitalism not only commodifies labour, detaching it from the worker as an object, but also shapes human consciousness itself, making social relations, which are inherently abstract in nature, seem thing-like and objective. His introduction to “The Phenomenon of Reification” is as follows:

The essence of commodity-structure has often been pointed out. Its basis is that a relation between people takes on the character of a thing and thus acquires a ‘phantom objectivity’, an autonomy that seems so strictly rational and all-embracing as to conceal every trace of its fundamental nature: the relation between people It stamps its imprint upon the whole consciousness of man; his qualities and abilities are no longer an organic part of his personality, they are things which he can ‘own’ or ‘dispose of’ like the various objects of the external world. And there is no ... way in which man can bring his physical and psychic ‘qualities’ into play without their being subjected increasingly to this reifying process. (ibid.: 83, 100)

Lukács’ reification theory analysed capitalism a century ago when it

was still in its infancy. Since then, capitalism and late capitalism have come a long way, leaving the production floor and, as Lukács predicted, being established in every aspect of people's lives. His diagnoses support today's widespread perception—whole consciousness of man—in his words, where capitalist thinking is deeply embedded in commercial and social life and, thus, in individuals' mindsets. The adoption of self-tracking apps is an ongoing, live reality, contemporary technological refinement, and evidence to this statement. As the following quotations from the 'About this app' page in the Google Play Store indicate, they are a high-tech tool that helps the individual manage their 'qualities and abilities' as if they were 'no longer an organic part of [their] personality'. This attitude is common to all genres. Fitness apps 'will help you run further, run faster and run longer' (ASICS 2025), screen time apps will 'awaken self-realisation against excessive phone usage' (Mindefy Labs 2025), and mood apps provide a 'monthly calendar that gives you a glimpse of your mood flow' (DailyBean 2024).

These quotations illustrate how self-tracking apps promote themselves. All present as aids that help users treat their body or mind as if it were a thing that should produce better performance, echoing a claim developed later in this chapter by Sandra Lee Bartky, who argues that women perceive their body as an 'enemy, an alien being bent on thwarting the disciplinary project' (1998: 28). Self-tracking apps share the notion that users are detached from their physical and psychic qualities, representing a strict rational autonomy of phantom objectivities. By perceiving these qualities as separate possessions, they are treated accordingly; as with other possessions, their owner seeks to derive maximum value from them. Perceiving the body as a "thing" that carries value leads to the utilisation of self-tracking apps as a technology that can help raise this thing's value.

The Docile Body: Foucault and Invisible Techniques of Control

I have presented the foundation upon which individuals have come

to perceive their being as governed by commercial commodity norms and how this manifests in the use of self-tracking apps. I will now analyse this process from a different perspective—focusing on the technological role of self-tracking apps as agents that promote and sustain capitalist ideologies, embedding them into people’s daily lives. From this viewpoint, these apps can be seen as the latest in a sequence of technologies used to instil such values in people’s perceptions and behaviours—a sequence that, according to Foucault, originates in the Industrial Revolution. To demonstrate Foucault’s notion of the *docile body*, I will begin with an example I heard frequently throughout my childhood.

My mother, now in her eighties, can clearly remember how her classroom was organised in a small church in the Peloponnese during the early 1940s.

In the small village of Matzani, there were only a few students, and we all shared one classroom. Most students arrived irregularly, so the priest arranged those who came in rows in a semicircle around him. The rows presented our ages, with the youngest at the front and the oldest at the back. Each row was organised as follows: the best students were placed on the right, gradually downgrading to the weaker students on the left. This method also helped Papa Athanasoulis track which students were present and who were absent.

She once told me she always wished to improve her status and be placed in a better position. I mentioned to her that this was a practice to establish a disciplinary form of control, referencing Foucault quoting Jean-Baptiste de La Salle’s vision of ‘a classroom in which the spatial distribution might provide a whole series of distinctions at once: according to the pupils’ progress, worth, character, application, cleanliness, and parents’ fortune. Thus, the classroom would form a single great table, with many different entries, under the scrupulously “classificatory” eye of the master’ (1979: 147). My mother argued that there was no intention in this organising method, claiming it was just the most practical and logical way to manage

the class, saying, ‘You could not hear a sound; the students were as silent as the grave’. Her argument, viewing this organisation as the most natural thing and rejecting its hidden power, is evident in the deep internalisation of an ideology through a technique that became unnoticed. One could think of several other ways to organise a multilevel class. Still, as someone who had experienced the capitalist order of economics and an efficient way of thinking for most of her life, it is unsurprising that she perceived the classificatory table classroom as a simple and effective way to arrange the class, caring not for any hidden message.

Foucault claims that the modern era of political liberty created new demands for the human body, replacing the traditional need for economic productivity and political loyalty. New disciplinary methods were developed to produce modern submissive subjects, invading the human body and taking control of its functions, and the economy and efficiency of its movements, and so creating the docile body. A comprehensive set of techniques, methods, knowledge, and data was utilised to control humans. From such trifles, the man of modern humanism was born (1979: 135-69). As in Matzani’s classroom example above, visual space was employed as a technique to transmit and internalise an embodied message of discipline.

The disciplines create complex spaces that are at once architectural, functional and hierarchical. ... They are mixed spaces: real because they govern the disposition of buildings, rooms, furniture, but also ideal, because they are projected over this arrangement of characterisations, assessments, hierarchies. ... [It aimed] to establish presences and absences, to know where and how to locate individuals, to set up useful communications, to interrupt others, to be able at each moment to supervise the conduct, of each individual, to assess it, to judge it, to calculate its qualities or merits. It was a procedure, therefore, aimed at knowing, mastering and using. (Foucault 1979: 143-48)

An abstract ideology of docility was conveyed through a non-violent

physical approach. The classificatory table method used in my mother's classroom can be described as a "low-tech" way of invading the body to achieve the goal of training obedient students who are 'as silent as the grave' as she described it. It possessed an invisible yet powerful nature that could not be perceived by the viewer. This mechanism of power—surveillance, training, and hierarchical observation—operates in a manner that minimises resistance and maximises control with the least effort and most significant effect. It delivers these values as a goal, shaping productive individuals and producing docile, useful bodies—individuals who are more obedient, more skilled, and more productive in their roles. It both refines its efficiency and seeks to make people more efficient within the system. Thus, modern power creates efficient, normalised, and self-regulating individuals suited for capitalist and bureaucratic societies.

Foucault's description of the seventeenth and eighteenth centuries emphasises this era as one in which change occurred, new forms of disciplinary power emerged, and techniques were developed to regulate and control bodies effectively. This period witnessed the rise of disciplinary institutions such as the military, schools, hospitals, and workshops, where power was exercised through precise control over individuals' movements, behaviours, and productivity. Encoded disciplines targeted the body, and a new 'mechanics of power was being born; it defined how one may have a hold over others' bodies ... with the techniques, the speed and the efficiency that one determines. Thus, discipline produces subjected and practised bodies, "docile" bodies' (1979: 138) reacting to an unseen disciplinary power as if it were a voluntarily free act.

Invasiveness and invisibility are qualities that are transferred and refined in contemporary apps for related matters. Once a system is practised and normalised, individuals understand it through their bodies, and it conveys its message invisibly, making the technology and method behind it unrecognisable. Foucault describes this as ensuring 'the circulation of effects of power through progressively finer channels, gaining access to individuals themselves, their bodies, their gestures, and all their daily

actions' (1980: 151-52). As will be seen later in the thesis, this access has expanded from penetrating the bodily aspects to encompassing the entire being and state of mind.

Self-Discipline and Femininity: Bartky's Critique

Two decades later, the feminist philosopher Sandra Bartky wrote an essay focusing on contemporary ways of disciplining bodies, raising a discourse on patriarchal power and femininity. She criticises Foucault's argument, accusing him of neglecting the disciplinary practices that make the docile bodies of women more docile than men's. Bartky asserts that Foucault's analysis reproduces sexism as it 'is blind to those disciplines that produce a modality of embodiment that is peculiarly feminine' (1998: 27). She expands Foucault's theory of docile bodies to the feminine realm. Her essay contributes to this inquiry by augmenting Foucault's findings to examine the role of new subduing techniques and technologies, offering unique insights that connect these technologies to my research.

Bartky highlights the modern techniques and technologies that women employ to meet today's social expectations, disciplines that produce a mode of embodiment that is distinctly feminine: practices that aim to produce a body of a particular shape, create a specific repertoire of gestures, and view the female body as an ornamented surface. Women adhere to these demands from a disciplinarian, which is everyone and yet no one in particular, a disciplinary power that is everywhere and nowhere, making it challenging to identify. This vagueness of the source gives the impression that these actions are voluntary and natural. Consequently, women perceive the body as an 'enemy, an alien being bent on thwarting the disciplinary project' (1998: 28).

Today, a variety of technologies that depend on measurement habits have been developed to help individuals of all genders combat this enemy while attempting to 'measure up' to normative standards of beauty. Quantified parameters are utilised either as measurable goals or as convenient tools to achieve them. For instance, the common desire to shape

one's body to fit social standards can be quantified into numerical goals, such as a specific trouser size, weight, BMI, or waist circumference. To achieve these goals, individuals might count calories, weigh food, calculate their eating habits, track their fitness sessions, count steps, or use breath sensors to monitor metabolism and calorie burn (Lumen 2025). There is a standard for each of these metrics, and users are expected to conform to them, developing desires that I will later claim might operate as part of the docile discipline.

New applications are continuously developed to assist in fulfilling these measurable commitments. Bartky's essay outlines the technological project that supports feminine efforts to address an internalised desire to meet modern standards, which includes surgeries to correct perceived defects, fitness centres to sculpt their bodies, garments such as bras and heels designed to perfect appearance, weight-loss medications, and strict cosmetic regimens. I argue that the omnipresent pressure defined by Bartky, which targets women and their use of technology to combat and subdue their bodies, reflects the phenomenon observed in the adoption of self-tracking apps. Here, as in Bartky's diagnosis, users seek the latest technologies to help them overcome what they perceive as flaws in an alien body that is incompatible with the production line.

Self-Tracking Apps: Embodiment of Capitalist Discipline

Over the last two decades, driven by new technology, computerised personal portable devices have become a natural and ubiquitous part of people's lives, keeping them constantly connected to the internet. Many self-tracking habits rely on this shift and the widespread ownership of mobile devices; in 2021, 88% of all adults and 96% of those aged 16-24 in the UK owned a smartphone (Hiley 2023). Numerous developments based on these platforms have created new opportunities to establish capitalist values such as efficiency, time utilisation, and performance optimisation among individuals. A connection can be traced from the early days of capitalism

through the phenomenon critiqued by Bartky up to the phenomenon of using self-tracking apps. Utilising them marks an evolutionary step from the situation in the late 1990s that Bartky described, where women engaged with various technologies to render their bodies compliant under the command of an unseen patriarchal oppressor. Practices of measurement, evaluation, and hierarchy manifest the capitalist values noted earlier, embedded within the discourse surrounding the phenomenon of using self-tracking apps, where advanced technological capabilities facilitate their implementation.

The Quantified Self (QS) is the name of an international community of users and makers of self-tracking tools with a shared interest in the ‘self-knowledge through numbers’ (QS 2025). It was founded in 2007 by Gary Wolf, the former executive editor of *Wired Magazine*. Interviews conducted with members during their first conference in 2011 link their personal behaviours and mindsets to the economic logic used in the market. For instance, Michel Galpert, a twenty-eight-year-old internet entrepreneur, remarked, ‘Running a start-up, I’m always looking at numbers, always tracking how business is going. ... That’s under-the-hood information that you can only garner from analysing different data points. So, I started doing that with myself’ (Dembosky 2011). The community maintains an active forum where QSers share thoughts, methods, and practices while discussing ethics, ideologies, and more. I follow their discussions for two reasons. First, I view them as the spearhead of the technological self-tracking phenomenon, illuminating the more widespread adoption of these apps. Secondly, community members express their ambitions for development, which could reveal not only existing practices but also future trends. In June 2022, the following was posted in the forum:

Hi! I’m looking for a good app to track how I spend my time.
Some features I would like
(1) I want to be able to create categories and subcategories. For example, I want to be able to track how much time I spend studying and how much time I spend working on my job and

also how much time I spend generally being productive with “being productive”, including the combined amount of time I spend studying and working on my job.

(2) Tools to spot trends and important metrics: For example, the average # of hours I was productive/day in a given week or month; graphs showing me the rate at which my productivity has been changing; a pie chart showing me how much time I spend being productive relative to other activities; etc. (H. 2022)

The writer clarified that he wished to use tracing and quantitative tools to enhance productivity in both his professional and personal life. Commercial companies employ this practice to monitor their workers, viewing them as resources or economically measurable units, with the goal of utilising these resources to maximise profits. H. had adopted this objective, perceiving his life and body, throughout the week, day and night, as a labour force that should be optimised according to capitalist values. H.’s request illustrates the embrace of the capitalist belief in measurable productivity as a goal and the desire to use technological tools to discipline both body and mind in order to implement efficiency values.

When discussing Western narratives and the devotion to optimisation, efficiency, and productivity earlier, I described E.’s use of a baby tracker app to manage his son’s morning patterns, employing terminology from his marketing profession. The main point to be derived from this sharing was that he and his wife would record ‘anything we want to track’ on the app and utilise the data efficiently, minimising vagueness and the unproductive tendency to guess: ‘I think he is, I feel like he is ...’ (E. 2022: 15:10). When reflecting on his wishes for future app developments, he said:

As a marketer, I need to know who does what exactly and in real life, sadly, I wish it was like that. ... Most of the time, especially when you get the chaos of kids... I have no other choice but to rely on my intuition. ... If I had some measurement or application to tell me, right now, what’s bothering him, ... I could defuse the situation and get the rational decision much

quicker rather than using my intuition to try and figure it out and then testing some solutions that at first didn't work. If I got the right answer the first time ... it was amazing for me. (E. 2022: 25:04)

Without questioning E. and his wife's love for their baby, I want to focus on the logical way of addressing the baby's needs and the analytical manner in which E. describes it. His language is borrowed from the commercial realm, beginning with quantifying, then optimising, and finally controlling a situation. His primary aim is to quantify and evaluate as many aspects of the baby's life as possible, as he puts it: 'anything we want to track'. E.'s second goal is to operate efficiently and accomplish his tasks optimally. He reviews the night records and adjusts his steps accordingly. He wishes the app could better present options and give him the 'right answer' to make quicker, rational decisions. He expects an immediate diagnosis, viewing the current process as a waste of time. Moreover, he perceives messy or unknown situations as states of being out of control. He regards them as interfering factors that should be better organised using analytical tools to maintain control. Therefore, he views the 'chaos of kids' as a problem to be resolved, preferring to avoid uncertainty rather than relying on guessing or intuition. E.'s approach of transferring concepts from the commercial realm to personal life, perceiving himself and his son as commodities that should meet efficiency standards, illustrates how individuals are conditioned to adopt capitalist values as their own. The examples from E. and H. portray how today's digital self-tracking technologies are harnessed to materialise norms of capitalist values often mistaken as one's own.

This section expands previous theories to outline two threads I assert have merged to facilitate the adoption of self-tracking apps. First, people began perceiving themselves as objects, detached from their bodies, components in a vast apparatus operating according to capitalist consumer norms and should be treated and should function accordingly. In parallel, techniques used to tame individuals into conforming to capitalist norms were further developed to be employed in emerging technologies utilised to

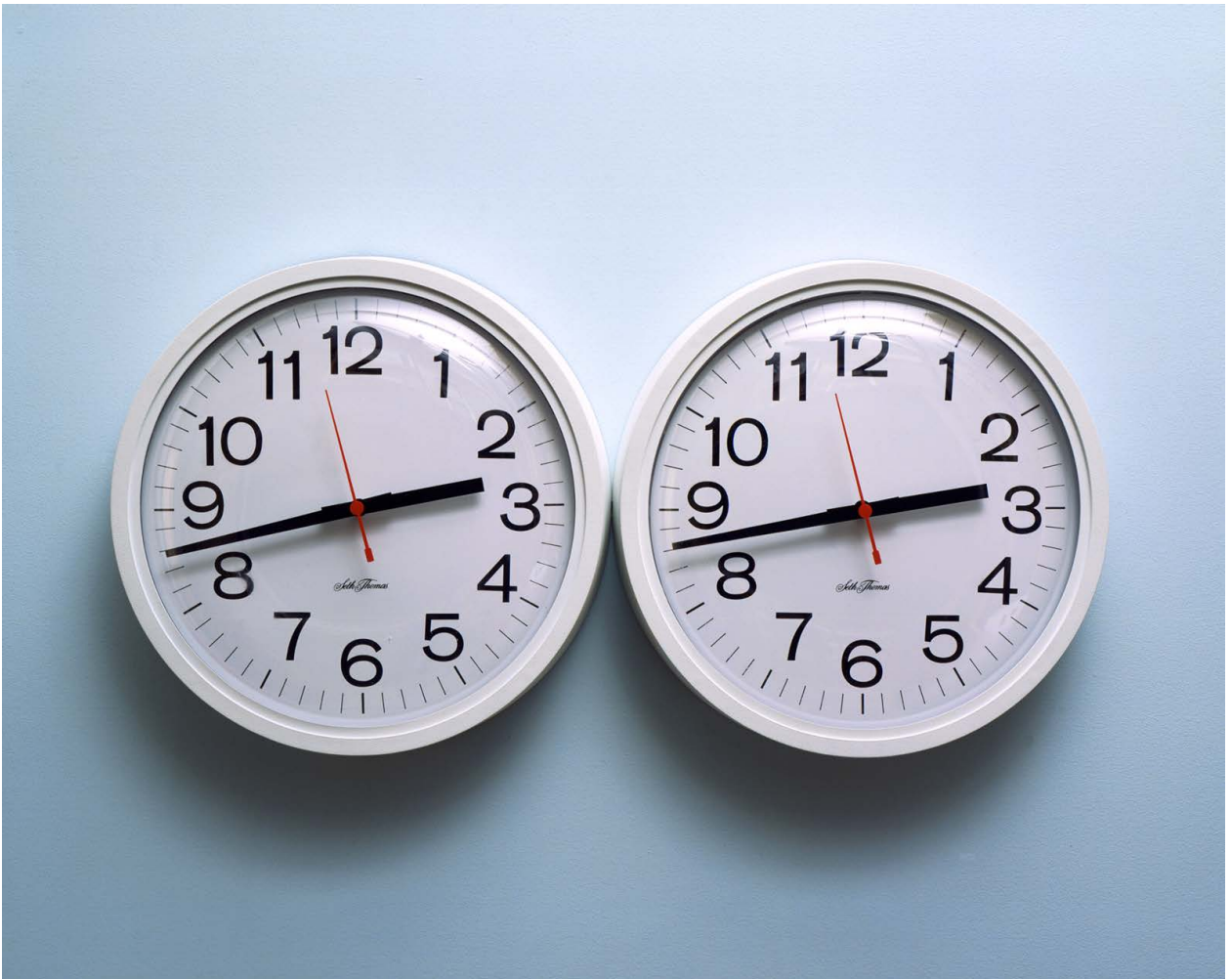
condition individuals and conform to capitalist standards. The adoption of self-tracking apps represents the culmination of these two trends, where advanced technologies, predicated on how users perceive themselves as external merchandise, are utilised disguised as supportive tools, both promoting these norms and, through unseen forces, compelling users to conform to these standards. The following chapter addresses a key aspect of leveraging technology to tame individuals to be beneficial in the industrial capitalist context. This aspect is the invention of the mechanical, standardised, modern approach to managing time.

Chapter 4: Clock Time—a Capitalist Agent in Self-Tracking Apps

This chapter examines how standardised time—referring to the system that replaced the natural, sun-driven flow of time with a mechanically divided, synchronised structure—has become a core agent of capitalist discipline. Emerging with industrialisation and the advent of railroads, this rigid segmentation of time into fixed, uniform units imposed a collective framework over local solar rhythms. The chapter begins with an analysis of Felix Gonzalez-Torres’ artwork, then traces the historical rise of clock time, and concludes with its digital continuation in self-tracking apps, where temporal control becomes a powerful tool for self-regulation.

Experiencing Time

The artist Felix Gonzalez-Torres learned that his partner, Ross Laycock, was living with HIV—a diagnosis that, at the time, often carried the expectation of a limited lifespan. In 1991, he created “Untitled” (*Perfect Lovers*), an artwork composed of two identical wall clocks hung side by side (Lindsay 2019; MOMA 2018), reflecting that the time he and his lover had left to live together was limited. Art



Felix Gonzalez Torres
"Untitled" (Perfect Lovers)
1991
© Estate Felix Gonzalez-Torres

history has addressed mortality in various ways. "Memento mori", a Latin phrase meaning "Remember you must die", famously featured in sixteenth and seventeenth-century Dutch oil paintings, symbolising the fleeting nature of life through objects like wilting flowers and rotting fruits. These two approaches to evoke the viewer's feelings regarding the passage of time represent different perceptions of time and reflect the era in which they were created. While the first relates to one's lived experience of the life cycle, Gonzalez-Torres appealed to the visitor's emotions using

clocks as technological counters—a stark reminder of the days, hours, and minutes he and his partner had left to spend their love together. He addressed the visitor's profound notion that the time one has to live is valuable in its quantifiable amount, often more than its quality, and their faith in chronological clock time to value it.

Gonzalez-Torres' decision to use wall clocks that display measurable time to convey his pain reflects today's prevailing language in discussions about time. It evokes deep emotions rooted in how individuals internalise minutes and hours as accurate and objective representations of time as well as parameters for reflecting emotional experiences. This concept is now organically embedded in people's perceptions and has become a tool that can manage and control individuals from within. Thus, it is fundamental to how users experience and utilise self-tracking apps, first as the executive arm of capitalist norms and second as a replacement for various embodied, lived experiences of time and duration.

Running, dog walking, or sleeping—time has shifted to become a significant parameter in realms where it was once irrelevant. My elderly neighbours, who immigrated from Yemen, have no idea what year they were born because no one deemed it essential to record it. The motivation to discuss the concepts inherent in the modern development of measurable and standardised tools and approaches to managing time stems from acknowledging its fundamental role in the capitalist system. Thus, it serves as a powerful tool in taming people so they fit this system. This case study demonstrates how technology was used to profoundly change human perceptions regarding time, integrating them into the new economic and sociological apparatus. Clock time has successfully become deeply

embedded in modern life and people's consciousness, so recognising its artificial nature and immense power is challenging. This argument does not prioritise the pre-industrial perception of time but highlights the existence of the artificial one and its role within capitalist norms. Standardising time plays a unique role in this study, as it is a core component of self-tracking apps. Almost anything tracked is measured on a timeline, which gives it its distinct essence. Steps are counted per day, one's mood is recorded on a calendar, and meditations are assessed based on their duration and frequency. Without standardised units of time, self-tracking would lose a significant portion of its essence. I will now present the extensive taming project aimed at internalising clock time that has taken place since the Industrial Revolution, along with its logic and practices, which reveal its substantial influence on today's perceptions. I argue that excluding alternative understandings of time serves as evidence of technology's role in weakening resistance to the capitalist system.

The Invention and Commodification of Clock Time

The sociologist Daniel Bell observed that in 'industrial societies ... life is a game against fabricated nature. The rhythms of life are mechanical and chronological, and the world is ruled by the clock' (1976: 576). Thus, the Industrial Revolution created a new mechanical rhythm and demanded something abnormal from traditional human experience, granting the clock master power. This new condition propagated ideologies that used the clock to inhabit them. The mechanical clock, based on the standardised global division of the day, is detached from how individuals experience their seasonally related days and evokes narratives of scientific objectivity, mastery over nature, and capitalist efficiency. Just as capitalism led people to perceive themselves as objects, a thing, detached from their bodies, time has also become a valuable entity that stands on its own. It has been transformed into a currency, a commodity, where it no longer simply passes by but is actively used and consumed. This marked the Industrial Revolution's shift in the perception of time from task orientation to timed

labour, creating the modern reliance on clock time (Thompson 1967: 60-61). This transformation from viewing time as a transparent entity that passes by to an understanding where time holds its own value is well illustrated in Benjamin Franklin's 1748 essay "Advice to a Young Tradesman". Franklin opens his paper by introducing a concept that was then new to people and has since become fundamental in the modern Western mindset: Time is Money, meaning that time has value.

Remember that Time is Money. He that can earn Ten Shillings a Day by his Labour and ... sits idle one half of that Day, tho' he spends but Sixpence during his Diversion or Idleness, ought not to reckon That the only expence he has really spent or rather thrown away Five Shillings besides.
(1748: 2)

By comparing time to money, Franklin highlights time's new status as valuable, countable, and tradable, presenting a concept where idle time, not just working hours, is valued. Once time was perceived as a standalone entity with its own value, it became a new lens through which humans experience phenomena; furthermore, it was transformed into a new entity that could be controlled by social structures. However, this was not a natural process, and active efforts were needed to train the body and mind to adopt this new mindset.

Once the worker's time lost its connection to the circle of life, and the labourer's time became a commodity, the individual's time no longer belonged to the individual worker. However, the new approach did not align with people's conception of time; the shift was so dramatic that it required active training, regulating the mind for this new state, and educating it for the modern, efficient use of time. In his discussion on discipline and docile bodies, Foucault (1979: 135-69) links the taming of the body and the education of the mind, among other factors, to the effectiveness of utilising time. The following instructions are part of a long list of rules distributed to employees in 1844 by The Royal Overseas Trading Company in Berlin. They demonstrate the rigid and strict process of taming the mind and body

to fit industrial capitalist time-thinking and illustrate Foucault's concept of disciplining through the subjugation of the body. It is essential to recognise the capitalist forces behind these changes and their motivation to utilise the new objective, abstract units detached from the cycles of nature, season, or the body. This new method was designed to govern the worker for the benefit of the apparatus.

The normal working day begins at all seasons at 6 a.m. precisely ... Five minutes before the beginning of the stated hours of work until their actual commencement, a bell shall ring and indicate that every worker employed in the concern has to proceed to his place of work, in order to start as soon as the bell stops. The doorkeeper shall lock the door punctually at 6 a.m., 8.30 a.m., 1 p.m. and 4.30 p.m. Workers arriving 2 minutes late shall lose half an hour's wages; whoever is more than 2 minutes late may not start work until after the next break, or at least shall lose his wages until then. ...

Any disputes about the correct time shall be settled by the clock mounted above the gatekeeper's lodge.

[These rules] shall be unconditionally accepted as it will not be possible to enter into any discussions about them. (Pollard and Holmes 1968: 534-6)

Marking the start of the working day as 6 a.m. at *all seasons* demonstrates a clear dismissal of the natural daytime that workers had previously experienced, conditioning them instead to internalise the new system. The list introduces two machines that disrupt the natural order—the clock determining the time and the bell announcing it. Resolving disputes regarding the *correct time*, as stated in the ordinance, would rely on the hands of the clock; this created a new power dynamic where, for the first time, people confronted a machine instead of a human being, or God as an objective judge. This seemingly minor issue, paired with the designation of time as correct, conveys a powerful message: when human knowledge challenges technological knowledge, the precedence now is in the hands of the machine. The current struggle, where instinct

clashes with an app's recommendations, is rooted in how humanity has been conditioned to regard technology as supreme and the authoritative guide—leaving interpretations in a subordinate position. This ordinance not only signifies a historical moment when humanity began viewing time as mechanical, standardised, objective, and linear but also illustrates how, over a short period, people internalised this perspective to the extent that they now see it as self-evident, devoid of any agenda or ethical implications.

Foucault presents two examples—taken from the military and education domains—of refining the use of time into quarter hours, minutes, and seconds. This method was used to synchronise large groups of people into a single working apparatus, but it also served to subdue the body and embed the new time system into workers' perceptions. In a military ordinance of 1766, to control the troops, precise instructions were given to the marching soldiers: 'The small step and the ordinary step will last one second, during which two double steps would be performed; the duration of the marching step will be a little longer than one second. The oblique step will take one second' (1979: 151). A similar approach was used in a timetable suggested in the early nineteenth century for *Écoles mutuelles*: '8.45 entrance of the monitor, 8:52 the monitor's summons, 8.56 entrance of the children and prayer, 9:00 the children go to their benches, 9.04 first slate, 9.08 end of dictation, 9.12 second slate, etc.' (ibid.: 150). The outcome of this physical practice must have influenced the mental conception of time and tamed the subject to internalise this new perception. As analysed by Foucault: 'It controls its development and its stages from the inside ... Time penetrates the body and with it all the meticulous controls of power' (ibid.: 152).

Taming the body and mind was a controlled process of shifting one perception of time into another. Its importance does not stem from prioritising either but from understanding and refining their differences. Analysing their inherently disparate essence and recognising the force invested in this shift along with its agenda can help portray the current experience of time. The trigger for this shift, initially related to labour,

influenced leisure and entertainment, making them organic in people's perception. This is crucial when utilising self-tracking apps that rely on this perception and tie capitalist values to some of these apps' goals, which aim to improve time performance and efficiency.

Internalising Self-Tracking Apps through Positive Temporal Control

Modern perceptions of time encourage individuals to navigate life using time management disciplines. Foucault notes that this approach promotes the optimisation of time through a *positive economy*, focusing on its benefits rather than a negative framework that restricts time wastage.

Discipline, on the other hand, arranges a positive economy; it poses the principle of a theoretically ever-growing use of time: exhaustion rather than use; it is a question of extracting, from time, ever more available moments and, from each moment, ever more useful forces. This means that one must seek to intensify the use of the slightest moment, as if ... one could tend towards an ideal point at which one maintained maximum speed and maximum efficiency. (1979: 154)

The positive attitude presented by Foucault fosters complicity with a system that implies one's worth is quantifiable by productivity, a perspective that is difficult to challenge. Self-tracking apps empower this conception of time—they establish goals for improving time utilisation, measure the user's productivity, and rank the user's worth. Thus, time plays an essential role in self-tracking apps and enhances self-performance.

The award-winning *Time Timer Visual Productivity* app was initially created by Jan Rogers for her four-year-old daughter and is available on the Google Play Store. It promises to improve time management skills, executive function, and focus with a visual, colourful, user-friendly timer, down to a resolution of seconds, that tracks activities like cleanup, lunch, morning stretches, and walking the dog. A completed task is celebrated

with an image of a victory cup. This positive attitude towards time management, designed for a preschool girl, echoes the nineteenth-century Écoles mutuelles timetable cited above, both aiming to educate children to conform to strict norms related to time productivity. The app's goal, however, is cloaked in an interactive positive attitude, making it harder to question it (Time Timer LLC 2025).

The baby-tracking app mentioned by M. in her interview tracks the duration of her breastfeeding sessions, prompting her to stop feeding when the suggested time elapsed. This created a presumption, as she commented, that adhering to the app's timer would make her a better mother (M. 2022). Both examples demonstrate a fundamental belief that measurable time matters; thus, they provide evidence for the ideology conveyed through the apps and illustrate how technology powerfully integrates this ideology. This supports Foucault's assertion that modern disciplinary methods infiltrate the body and generate submissive subjects, controlling their function and creating a docile body (1979: 135-69).

Duration

I will conclude by using M.'s example of breastfeeding to discuss duration as a lost quality of time when using apps, and to address an issue raised by the influential early twentieth-century French philosopher Henri Bergson, who initiated a debate opposing positivism, which was the dominant intellectual current of his time. In *Time and Free Will* (1950), Bergson opposes the positivist scientific concept of time, arguing that measured clock time reduces time to a series of static, externalised moments, organising it along a linear, homogeneous framework—much like points on a ruler—thus stripping away its true nature as a continuous, qualitative flow. In contrast, real time, or *durée* (duration), is an indivisible, lived experience in which past and present interpenetrate, resisting the rigid, mechanistic frameworks imposed by mathematics and measurement. Rather than a sequence of isolated instants, time is an organic, interwoven process where the past remains present and shapes the future. Bergson

does not dismiss scientific time as incorrect or useless but contends that it provides an incomplete picture. To understand the true nature of time, one must look beyond clock time and engage with the inner experience of true duration (Tillotson 2019).

Bergson's notion beautifully highlights the conflict M. raised during her interview, sharing the struggle she experienced when the app suggested she should stop breastfeeding, which contradicted her inner intuition. She mentioned that she knew she must follow her intuition rather than the app's measured advice, yet she still followed the app (M. 2022: 30:43). Breastfeeding is a clear example of how the duration of experiencing time can easily be overshadowed by a preference for scientific clock time. It is up to the mother to choose her approach in this intimate situation with her baby, which could at times be precious mother-child mutual time or a task to complete in another. Recognising that there is more than one possible way to approach time in lived experience is a mindset that the apps obliterate, as it does not align with the ideologies that underpin them. While M. understood there were different ways to approach the situation, the app effectively concealed this possibility. This raises the question discussed in the next section: Do users fully own their freedom when following the apps' recommendations?

This section has shown how the long historical process—driven by the demands of industrial capitalism—transformed time from an embedded, lived experience into a standardised, divisible, and measurable unit. This shift has not only reshaped how individuals structure their daily lives but has also laid the conceptual groundwork for the widespread adoption of self-tracking apps as a tool to manifest this perception. These technologies rely on and reinforce the belief in clock time as an unquestionable standard, presenting their data-driven outputs as ultimate truths. As a result, they contribute to the erosion of more diverse and personal ways of inhabiting time, narrowing the possibilities for richer, embodied temporal experiences. Recognising this loss is essential to confronting the deeper ideological structures embedded in self-tracking culture—and to imagining alternatives beyond the logic of quantification.

Chapter 5: Freedom of the Will

M.'s above struggle with whether to follow the app's suggestions or her inner desires while breastfeeding underscores a fundamental tension at the heart of my research regarding the assertion that self-tracking apps serve as tools to help users achieve their goals. The point under investigation here is the deep freedom to choose the goal.

To analyse this assertion, I will discuss Harry Frankfurt's essay "Freedom of the Will and the Concept of Person" (1971) and its relevance to self-tracking apps. Frankfurt distinguishes between *first-order* and *second-order desires*: the former pertains to basic impulses to act or refrain from acting, while the latter involves the awareness of *wanting* to have specific desires. These higher-order desires, unique to humans, include *second-order volitions*—the wish for a particular desire to govern one's will, which involves the consciousness of *wanting to want* something. Frankfurt uses the term *wanton* to describe agents who lack such volitions and, unlike rational persons, never consider whether they wish to shape their first-order desires through reflective will. Expanding on this idea, he states that 'a person enjoys freedom of the will means ... that he is free to want what he wants to want. ... free to will what he wants to will or to have the will he wants' (ibid.: 15). Free will, according to Frankfurt, is the alignment of one's will with second-order volitions, distinct from that of the wanton. This capacity enables individuals to act against immediate impulses—such as resisting a tempting cake in favour of maintaining a desired physique—demonstrating what Frankfurt defines as the conscious exercise of free will.

It may be argued that this is precisely where self-tracking apps can assist: When individuals struggle with first-order desires that conflict with their second-order desires, they seek technology to help subdue the former by strengthening the latter. By aiming to improve one's performance—such as reducing calorie intake, limiting screen time, increasing fitness sessions, or optimising breastfeeding—people activate their capacity for second-order volition. These desires are inherently human and overcoming them often requires willpower. Thus, users of these apps perceive both the selection of targets and the use of technology to achieve them as their free choice—the freedom of the will. However, I challenge this claim.

While supporting Frankfurt's theory—which highlights the human ability to choose and pursue desires beyond mere first-order impulses, I argue that users' second-order desires are often not freely chosen but are instead shaped and manipulated by two forces. First, there are various social, commercial, and political influences. For instance, the desire for a slim physique or career advancement may seem to reflect higher-order volition that involves overcoming first-order desires such as eating or stagnating. However, these aspirations are not necessarily authentic wishes; they may be heavily influenced by societal expectations and norms. I elaborate on this conflict in Chapter 7: The Dictatorship of the “They”.

The second is contemporary and relates to desires generated through the use of self-tracking apps, where, in addition to the first influences, technology is specifically designed to guide users towards pre-programmed goals, presenting them as assumptions that should not be questioned. Still, these goals may have never been chosen by the user. Further discussed in Chapter 9, app programmers and designers adhere to guidebooks like Amazon's bestseller *Hooked* (Eyal and Hoover 2019) or *Laws of UX* (Yablonski 2020), which teach methods aimed at steering users towards dependency on the apps, thus aligning with the producer's interests while leaving the user with limited manoeuvring space disguised as freedom.

Although utilising self-tracking apps can assist users in achieving goals that exceed first-order volitions, my claim that users are often manipulated into the apps' preprogrammed set of common, social, and idealised goals

challenges Frankfurt's assertion. When M. followed the app's prompt to stop breastfeeding, despite her desire to continue, she employed technology to help her become what she described as 'the best mom version of myself' (M. 2022: 26:31). For M., there was an inherent connection between the app's prompts and being a good mother. Desiring to be the best version of a mother represents a 'high desire' to attain an ideal model. This is a volition traditionally endorsed by mass communication. However, since the proliferation of self-tracking apps, it is also generated by technology designed to encourage parents to adhere to the norms promoted by these apps, presenting measurable goals as the user desires. Once an app is downloaded, the user becomes subject to the app's rules, accepting them as if they were their own wishes. This example highlights the inherent power of technology in shaping one's desires as if they were authentic, creating an illusion of free choice.

Frankfurt's notion that 'a person enjoys freedom of the will means [that he is] free to will what he wants to will' (ibid.: 15) might not hold true when what one wants to will may have been implanted and designed in advance. The claim here is that when adopting apps as an aid to fulfil one's will, two unseen forces are involved, supporting one another and having the ability to manipulate this will—one linked to society and the other to technology. This revelation is essential when re-evaluating the promise of enhancement through the use of self-tracking apps, a promise that targets the users' belief that they are following their own authentic will.

Chapter 6: Self-Surveillance: You Have Reached Your Destination

To further understand the *freedom of the will* involved in adopting self-tracking apps and as a foundation for the advanced perspectives I explore throughout this thesis, I present *Self-Surveillance: You Have Reached Your Destination* (hereafter referred to as *Self-Surveillance*), a project grounded in practice-based inquiry. This artwork was an interactive installation developed in 2023 in collaboration with creative technologists and computational artists Shai Rapoport and Zhichen Gu. It was created to investigate the role of the use of self-tracking apps as a third-party agency that mediates between individuals and their self-perception, influencing how people inhabit, enact, and "live" their bodies. It focuses on two inquiries. First is the looped situation in which the user acts as both the surveillant and the surveilled, the observer and the observed—a unique circumstance that differs from the one famously described by Shoshana Zuboff as *surveillance capitalism* (2019). The second is the destination—asserting that the app's user is unaware of adopting values that may not be their own,



Haya Sheffer
*Self-Surveillance:
 You Have
 Reached Your
 Destination*
 (installation
 views)
 2023

ideals reflecting external themes instilled by the app's doctrines.

The theme explores and illuminates the interaction between self-tracking apps and their users by amplifying this human-technology interface and isolating it from daily life in a lab-like environment. Being sensitive to personal data gathered by governments or organisations through technological surveillance, including data collected from self-tracking apps, people often overlook the personal implications of this habit; it is these that I focus on—the self-surveillance that arises from using these apps, a practice presented as innocent and devoid of agenda. The app's positive reputation renders users unaware of the nature of this new technological tool, its role in this new relationship, and how it affects the way individuals perceive themselves.

Upon entering the installation space, the visitor was invited to take a selfie and select a voice from various styles. A program was then used to convert this data and create deepfake AI videos featuring the visitor's "talking head" narrating commands, praises, and remarks mimicking those found in self-tracking apps. The visitor stepped into a white space monitored by two webcams, one mounted on a mobile robot and the other on the ceiling beam. Their movements were tracked, generating data processed to trigger deepfake videos displayed on monitors. Now, as an active "feeding-the-system" participant, they were directed and encouraged to act by their own AI video image projected on a tablet screen—a non-human actor in this assemblage. A series of animations mimicking self-tracking device screens followed the AI's narrations. The project's space created a satirical condition, allowing visitors to engage with this daily practice through overlooked lenses. The mobile robot constantly followed the visitor wherever

they moved; its webcam searched for the visitor and focused on them, intensifying a physically disturbing sense of surveillance and the notion that one could not escape.

The installation was designed to create a clean environment, isolating the phenomenon from the outer world in a lab-like setting, which allows space for questions and thoughts. The only objects present were three small monitors with wires mounted in one corner; a wooden IKEA stool, and a small mobile robot with a webcam placed on the concrete floor alongside the beam webcam mentioned earlier. All the items were ordered, mass-produced objects, and had been stripped down to reveal their function, technology, and electrical wires. The tablet-sized monitor projected the deepfake videos created from the visitor's selfie, stamped with a watermark indicating that AI produced the video. On the two smartphone-sized monitors, we displayed a set of GIF animations I had designed in correlation with the video's spoken sentences, which I styled like self-tracking apps screens.

The exposed technology, illuminated by the room's stark white light, suggested transparency while evoking tension between the visible and the concealed. Echoing Foucault and Haraway, it underscored the power of the unseen yet omnipresent observer. Although the visitor could see everything, they remained uncertain about various aspects, such as what data was being collected, why the robot followed them, and whether the self-portrait on the monitor truly knew what it claimed to know. The fabricated data, though fictional, reinforced the illusion of omniscience, making them feel scrutinised. With no escape from the webcam's gaze, the experience, amusing but disturbing, heightened the awareness of surveillance and the unsettling power of data, reinforcing the notion that, on this occasion, the surveillant was the visitor him/herself.

Self-Surveillance

Zuboff coined the term “surveillance capitalism” (2019), pointing out an economic system in which companies profit by collecting and analysing individuals' personal data, often without explicit consent, to influence behaviour, target advertising, and maximise corporate gains. Self-surveillance focuses on a novel data collector that employs the same system to influence individual behaviour, but in this context, the data collectors are the users themselves. The personal motivation for self-surveillance is driven by external market interests; however, the situation here emphasises the users' choice to participate and surveil themselves while using these apps. It is a relatively underexamined phenomenon in which advanced technologies are employed to surveil oneself.

Using the visitor's own portrait to create a deepfake video of their talking head, while enabling this image to command and motivate the visitor's actions addresses this issue. It generates a bizarre situation and emphasises the user as the one who operates the system to track their own performance. This scenario is unique to self-tracking apps, where knowledge is gathered to control oneself, thus expanding Zuboff's or Foucault's theories of harnessing knowledge to control others. Here, one acts as both the guard and the guarded. The situation created by the artwork, where one is commanded by oneself—mimicking self-tracking app monologues—was described by visitors as weird and uncanny. And so it was; the machine was everywhere, controlling the visitor's voice, portrait, and free will, blurring the boundaries between one's authentic

self and the processed outcomes, seeming the same, but still not, looking alike but slightly strange. Users often perceive the apps as a natural, uninvolved agency. The artwork's unfamiliar situation prompts visitors and me to reflect on a new understanding of the power-knowledge-control affiliations within self-tracking apps. It identifies users as those who collect data and knowledge while using the system's power to regulate physical and mental behaviours, emphasising their dual roles in this dynamic.

Furthermore, the deepfaked audio video is a hybrid assemblage of one's own image with a non-human agent, giving the machine a human touch. The face is one's own, but technological forces share the outcome, merging one's appearance with that of an AI image to produce a manipulated new active actor in the installation. This hybrid situation serves as a reminder that self-tracking apps create new human-machine relations, blurring the boundaries between human and non-human and mixing personal needs, wishes, self-understanding, and embodied knowledge with technological inputs and outputs. One's own figure mechanically constructs them, while their reactions feed the system, creating new commands that are programmed using the figure to deliver these commands back to the visitor and elicit new reactions, and so forth. It is no longer clear who operates whom. Is it the machine that utilises the user, or does the user operate the machine? Are they responsible for their actions, reacting to their own performance on the narrating screens, or is the AI sharing one's face programmed to trigger them? When using self-tracking apps, the action-feedback-action loop is perceived as natural, as long as it is the user's action, the app's feedback, and the user's action. Adding one's facial image may seem funny and playful, but it is simultaneously

horrifying, positioning the user as a technological self-guard. This disruption reveals self-surveillance, breaks conventions to undermine confidence in the role one assumes while using self-tracking, and encourages visitors to reexamine conceptions inherent in this bond. This amplified self-tracking app performance raises insights into the inflexible role users impose upon themselves while adopting these apps, establishing an unspoken contract where they act as their own guards, making sure they adhere to a predetermined set of rules. The question that arises from this insight is whose destination they follow.

Destination

The artwork's subtitle, *'You have reached your destination'*, is the phrase a GPS user hears when successfully arriving at their journey's end. It is borrowed from the tangible geographical realm to ironically challenge assumptions about individuals' physical and non-physical destinations presented through self-tracking apps. This raises questions about who established these destinations, whether the goals inherent in self-tracking apps are supreme, and whether it allows for leeway in free will. People are conditioned to believe in metanarratives that present themselves as destinations: the best, the most, the shortest/longest, the highest/lowest, adopting them as absolute binary goals. The visitors in the installation engage in a cycle of actions where they are encouraged to act

and pursue goals that align with the concept of “the best”, assuming there is a singular best social or personal outcome to aspire to. The set of targets in the installation references the objectives of popular self-tracking apps, often placing the visitor in a ridiculous situation to question their nature and tyranny. The first-person plural reference, also used in the self-tracking apps, emphasises the bizarre connection between the image and the visitor, uniting them as one. The following are four examples of phrases embedded in the visitors' AI-manipulated narration video:

Hurray, it's our best ten-second meditation. We have earned 1250 coins. It's time for some jumping jacks in front of the camera to reach our daily goal.

We're on fire. It's our best gallery walk. Keep walking. Don't slow down, and maintain a positive mindset. We are heading towards our daily goal.

Our third favourite cousin started a job at Tesla. Congratulations. Show him how happy we are by some ecstatic dance.

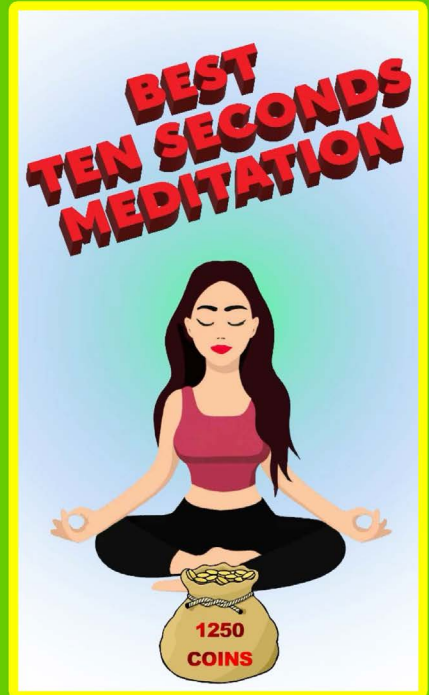
We have earned 1,250 coins. Well done. We really got it going on, don't we? Time for some guilty pleasure screen time.

These phrases are interpretations of the prevailing tone and context of the self-tracking app culture. Minor adjustments were made to align them with the artwork's theme, presenting them out of context: earning coins

for an unknown achievement, urging congratulations for individuals one may not be pleased with regarding their success, and rating immeasurable activities like meditation. The GIF animations accompanying the footage are akin to those used in the app's realm. Here, as in real life, they serve as a powerful visual graphic tool to communicate the app messages, leaving minimal space for hesitation, questions or self-investigation. Extracting these familiar phrases and animations from their original use into the installation portrays them as absurd, thereby raising insights and heightening awareness of their potential to dominate authentic lived experiences and free will.

Deepfake

Using deepfake technology undermines trust in the data provided as “true” data analysis. Here, I do not address malicious intentions, which are widely discussed elsewhere, but instead raise more conceptual questions: Is there one true way to analyse data? Is deepfake any less true than other pre-designed programming data processing methods? Utilising deepfake, especially when manipulating one's selfie, highlights the diversity of production options stemming from a single data set. Daniel Rubinstein argues in his essay “The Digital Image” (2013) that once an image is captured digitally, the outcome ‘is simply an ornamental decision taken by the creators of the processing algorithms, as the data captured by the camera sensor could be just



Haya Sheffer

Self-Surveillance: You Have Reached Your Destination (Stills from installation screens)
2023

Left: Deepfake video generated from a visitor's selfie

Right: Animation screen reflecting the video's context

[AI Footage available on Vimeo ↗](#)

as easily output as something completely different: a string of alphanumeric characters, a sound or even remain unprocessed as binary data' (ibid.: 5). Acknowledging the outcome as a decision made by the algorithm's creator holds true for digital images as well as any other digital data. The use of the deepfake video process in this case highlights the insight that personal data collected from real life could be presented in numerous outputs, creating endless meanings.

My initial description for this work was that I would utilise advanced technologies to investigate the unique human-technology relations associated with self-tracking

apps and to explore technology with its own tools, turning them inwards towards technology for its self-exploration. During the process, two aspects of my research unfolded: transforming surveillance methodologies, originally external tools used to control individuals, into methods people use to exercise self-control, and adopting the societal powers of control for self-regulation. This highlighted questions regarding the ideology transferred from one realm to another, which, in turn, raised the second aspect—questioning the authenticity of users' goals. The work revealed the blurred boundaries of whose values are being implemented, underlining technology's ability to manipulate users into overlooking that essential question and its power in delivering ideologies—issues I will elaborate on in the next section.

Chapter 7: The Dictatorship of the "They"

The phrase *dictatorship of the "they"* is drawn from Heidegger's "Being and Time" (1962: 164) and aptly frames this section's concern with self-tracking app usage. It captures how external ideologies—embedded in app design and social norms—are internalised as if they were one's own goals. This mindset echoes my artwork discussed above, where users do not pursue genuine selfhood but instead conform to an impersonal yet persuasive "they." Assuming that an authentic self, defining the individual, exists, this conformity creates inner conflict and raises critical questions. The issue is particularly urgent today, as AI-driven personalisation in these apps amplifies the influence of the "they," further eroding the space available for authentic self-understanding.

The way users allow technology in general, and self-tracking apps in particular, to interpret situations raises the question of whose perspective the user is experiencing. Who establishes the goals and values that subsequently become one's own desires? Bartky presents the feminist claim that a 'woman experiences her body as seen by another, by an anonymous patriarchal Other' (1998: 34). This is manifested through how we, women, perceive ourselves, evaluate ourselves, shape our bodies, and practice movements and gestures. Thus, feminist discourse has contributed to the awareness and critical understanding of the feminine body as one that is

seen and judged by another under the *male gaze*⁶. In this situation, women find themselves in a unique, vulnerable position. I will adopt this notion into this inquiry and expand it to include the current condition where the anonymous Other, by whom people experience their bodies as seen, is the gaze of self-tracking apps.

Living in society teaches individuals to be attentive to how their actions affect others and how those actions are perceived. Over time, external perspectives can become internalised, functioning as if they were one's own—an adaptation that supports social cohesion. Avoiding theft, for instance, is one such socially conditioned behaviour. Yet within these shared norms lies room for personal distinctiveness, shaped by complexity and contradiction. This capacity for difference stands in contrast to the marginalisation of those who deviate from the norm—a tendency that promotes uniformity over plurality.

While self-tracking apps may appear to support users' autonomy by allowing them to shape habits and enhance performance, I argue that these technologies are embedded with implicit values that often go unrecognised. Through their externalised gaze, they subtly suppress individual agency, steering users toward standardised, unauthentic patterns of selfhood. Bartky's concept of the 'anonymous patriarchal Other' underscores the power this gaze gains when it takes the form of a vague and anonymous Other, as there is no single particular figure to address or negotiate with.

6 The term *male gaze*, coined by Laura Mulvey in her 1975 essay "Visual Pleasure and Narrative Cinema," describes how classical Hollywood films frame women through heterosexual male desire—rendering them passive, sexualised objects. Mulvey writes that 'the determining male gaze projects its fantasy onto the female figure' (1975: 11). This foundational feminist concept has since been extended across media. Bartky later described this dynamic as the *dominating gaze of patriarchy* (1998: 43).

Self-tracking apps gain the power of the anonymous Other when watching, diagnosing, and ranking the user, providing them with seemingly objective and non-negotiating outcomes. Moreover, the app's technological gaze fixates on surface-level behaviours, overlooking the individual's complex authenticity. As Bartky notes, there is a longstanding tension between appearance and reality: 'The phenomenal forms in which [a thing] is manifested are often quite different from the real relations that form its deeper structure' (1998: 38).

I now present examples of the methods employed by self-tracking apps—methods that reflect the characteristics discussed: an external and vague Other, the invisible transmission of values, the simplicity of use, and the avoidance of deeper complexity. These apps adopt a particular tone to assert normative goals and outcomes, signalling what users are expected to achieve. The phrases below, drawn from a range of apps and removed from their original contexts, reveal a striking consistency in rhetorical style, regardless of the specific content being promoted.

Beauty must-have	Get creative
Ideal weight	Great values
2nd fastest	Get more
Easier parenting	Highest level
Poor character traits	Fast&easy
Your baby / Glow	Amazing!
babies	Your journey to a
Recommended for you	better...
Minimise parenting	Excellent readiness
struggles	Stress management
Earn rewards	Sleep score
Your daily goal	Purposeful day
Perfect week	

Value-laden words such as “must-have”, “ideal”, “fastest”, “easier”, “poor”, “recommended”, “minimise”, “earn”, “goal”, “perfect”, “great”, “highest”, “amazing”, “better”, “excellent”, “score”, “purposeful”, etc., share a commonality in that they are influential, on the one hand, yet become unseen to one’s eyes on the other. This set of phrases reveals that, regardless of the app’s subject, some Other has already determined what constitutes a bad, good, must-have, or amazing performance for the user. The app’s design leaves no room for doubt or re-evaluation, making users take its statements for granted. Bartky claims that the anonymity of this Other strengthens its power. Similar to the male gaze internalised in female gestures, so too is the app’s gaze, making the individual experience their body as seen or expected by another.

For instance, the *Glow Baby* app (Glow 2025) invites parents to log their baby’s milestones to track their development. One of the suggested features, labelled ‘In-depth Analysis’, allows parents to compare their baby’s cycles, such as sleep patterns and breastfeeding sessions, with the average cycles, referred to as “Glow babies”. It could be argued that this is merely statistics and objective data leveraging technological capabilities, with parents given the option to choose their level of engagement. However, I contend that juxtaposing both sets of data—*Glow Baby*’s average and individual statistics—creates an implicit premise, disguised as neutral information, shaping the goals parents should aim for, a target to pursue. This artificial target is set by some vague Glow-Baby-Other and the app’s gaze, which is difficult to contest. As a mother, I can confirm that ignoring or resisting such information is incredibly challenging. Once the app displays the data, all the previously mentioned definitions are satisfied: the norm concealed within the message seems to come from nowhere, disguised as innocent information. It conveys implicit values suggesting that one would be a better parent if one’s baby were in alignment with the *Glow Baby* app standard. This is a simple message that is easy to grasp and that ultimately sidesteps any complexities of the baby’s real life. The claim here is not that the app’s providers composed this message; they are trapped

in the same conception as the users. Rather, the use of self-tracking apps, as a phenomenon, is grounded in norms derived from social expectations that reflect capitalist ideologies, which the apps powerfully convey through the *anonymous Other*.

Another example is the *Runkeeper* app (ASICS 2025), a GPS-powered fitness-tracking app. Its free plan offers basic features such as calculating calories burned during a run session, seemingly an innocent feature that harnesses technological capabilities to enhance the user's data. A prevalent assumption in Western culture is that burning calories is a common objective, rooted in the belief that everyone aspires to lose weight. This trend is associated with health, as being overweight or obese can be a risk factor for mortality. However, this does not capture the entire picture; fat oppression has a significant aesthetic dimension, as argued by Prof. Eaton (2016). She points out that our collective taste in seeing fat as repulsive is driven by the debasement, stigmatisation, marginalisation, and subordination of fat individuals. She cites the CEO of a well-known clothing company that does not offer large sizes for women's pants, stating, 'Good-looking people attract other good-looking people, and we want to market to cool, good-looking people' (ibid.: 38). This highlights the terms *cool* and *attractive* as aesthetic ideals. The pressure to lose weight is a trend reinforced by fashion imperatives that align with *Runkeeper's* marketing decision to use it as a free feature to promote the app. The calorie-burned score, presented at the end of each running session, appears to be innocuous objective data. However, disguised as unbiased information, it was selected as one of the offered outcomes to make the user view it as their own original goal. The *Runkeeper* app promotes the vision of weight loss as an ideology sent from an *anonymous Other* treating it as a consensus for which no one is accountable. The runner is manipulated into adopting it even if it was never their authentic aim; it can harm their health, or they may like how their body looks currently. Here also, the message invisibly propagates aesthetic norms, is simple to follow, and avoids life's deeper meaning structures.

The way self-tracking apps use technology to deliver norms sent from

an anonymous Other is often unseen and difficult to recognise, leading users to believe that their destinations were determined by free will. This represents the dictatorship of the “they,” where users self-dissolve into otherness. Unlike earlier critical analyses of this situation, technology here plays a role in delivering ideologies in a sophisticated and delicate manner, using the user’s collected data as though it were tailored specifically for the user’s authenticity. However, the opposite is true. While the data is individual, the whole contradicts authenticity and establishes norms that hinder the development of uniqueness. This resonates with the insights gained from my project, *Self-Surveillance*, which confronted the visitor with the overlooked aspects of a tool that promotes itself as if it serves the user’s needs goals. The insight from both the artwork and this section is that the goals users pursue are not necessarily fulfilling an authentic will, but instead social norms are implanted through the apps into one’s practice. This understanding leads to an investigation of the motivations behind adopting these apps.

Chapter 8: The Motivations and Their Costs

In exploring the motivations that fuel the phenomenon of using self-tracking apps, I focus on the need to meet the escalating demands of modern life, which individuals internalise as their own. I analyse four key sources of motivation essential for engaging with these apps, which I argue are reactions to the complexities of modern life and reflect today's culture, alongside an increasing reliance on technology as a support tool. This broadens the conversation about the values inherent in self-tracking apps and their impact on the user. These motivations are: *Best version of oneself*—the aspiration to align with an imaginary role model, driven by social ideals of self-optimisation; *power, knowledge, control*—the utilisation of knowledge gathering as a means of exercising control over oneself; *reducing complexity and chaos*—the reliance on technological ordering to eliminate vagueness and confusion; and *outsourcing responsibility*—transferring decision-making to app-generated authority.

Best Version of Oneself

In response to dominant norms—once shaped by the entertainment industry and now amplified by social media—individuals come to view themselves as products that must optimise performance to match an *ideal self*. Self-tracking apps reinforce this pressure by encouraging continuous improvement and fostering loyalty to these norms. Deborah Lupton and Gavin Smith, who studied global self-tracking users, conclude their study

“A Much Better Person” (2018) by noting that participants described their embodied self and internal intuition as ‘inherently flawed, unruly and untrustworthy, in need of technical augmentation and surveillance’ (ibid.: 8-9). They argue that the motivations expressed reflect contemporary Western ideals of selfhood—marked by a desire for control and improvement and becoming a *much better person*.

I gained two key insights from their observation. The first is the belief in the existence of ideal selfhood that one should strive for, and the second, which I will elaborate on later, is the wish to outsource responsibility to technology instead of trusting one’s own skills. The belief in optimal self-realisation resonates with what Max Horkheimer and Theodor Adorno framed as the *Mass Deception* of the *Culture Industry* (2002), claiming that the dominant taste derives its ideal from the commodified beauty advertisement.

It is as if some omnipresent agency had reviewed the material and issued an authoritative catalogue tersely listing the products available. The ideal forms are inscribed in the cultural heavens. ... The culture industry makes itself the irrefutable prophet of the existing order. (ibid.: 107-26)

Furthermore, it impacted how people internalised this model, reducing themselves to be a part of this industry.

The whole inner life compartmentalised according to ... [categories], bears witness to the attempt to turn oneself into an apparatus meeting the requirements of success ... conforms to the model presented by the culture industry. The most intimate reactions of human beings have become so entirely reified ... that the idea of anything peculiar to them survives only in extreme abstraction. ... That is the triumph of advertising in the culture industry. (ibid.: 136)

The modern belief in a measurable scale, combined with the culture industry concept of a role model, has established a foundation for the

contemporary practice of grading people's performance as if they were part of an industry, one that created imaginary values, as seen in M.'s sharing:

I asked myself quite often why I am relying on devices and not just going with the flow anyway. And I think that it's, it comes from ... something inside me that I want to be the *best version* of myself or the *best mom version* of myself.
(M. 2022: 26:31)

M.'s desire, giving this section its title, echoes the routine of downloading updated app versions for better performance, containing the belief that there is some ideal or best selfhood, that it is achievable, and that one should do their best to attain it. However, since a human best version is an unattainable goal, this pursuit is doomed to constant performance dissatisfaction.

Self-tracking apps are often designed to push users toward performance enhancement, even when doing so may not align with their real-life needs—especially in competitive or comparative contexts. The *StepUp* app, for example, encourages users to “Compete with friends” by uploading and comparing step counts (StepUp 2023). At a 2011 QS conference, Michael Galpert described a workplace contest in which employees publicly shared daily weight and fitness data, arguing that comparing progress—like who had lost more weight or had done more push-ups—would drive motivation (Dembosky 2011). Other apps promote goals derived from dominant cultural values, such as speed, thinness, popularity, and productivity—an *authoritative catalogue*, in Horkheimer and Adorno's terms. These examples reveal how self-tracking apps merge technological affordances with normative ideals, reinforcing the pursuit of a best version of the self. In this way, *the mass deception* of the *culture industry* logic persists, now mediated by interactive platforms that incentivise imagined ideals.

Power, Knowledge, and Control

Power and knowledge directly imply one another, suggesting that there is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not simultaneously presuppose and constitute power relations (Foucault 1979: 27-28).

A second motivation for using self-tracking apps is the desire to manage life's complexity through perceived control. Foucault (ibid.) describes how modern power operates not through force but through knowledge and observation. His panopticon model—where inmates internalise constant surveillance—illustrates how discipline is maintained without coercion. Foucault notes, 'It is not necessary to use force' (ibid.: 202). Examining Foucault's theory reveals a parallel between the panopticon's implementation of the power-knowledge relations and users' reliance on self-tracking apps, reflecting the internalisation of its methods. I will now examine how self-tracking apps address surveillance as an exercise of power and control.

The link between modern life's perceived complexity and the use of self-tracking apps is supported by Lupton and Smith, who found that participants adopted them to 'deal with the uncertainties, complexities and contingencies generated by everyday life' (2018: 6). At its core, self-tracking is a surveillance mode, gathering data on users' daily activities. Lucy Osler expands this notion by describing the phenomenon as a dashboard of information about our bodies, our habits, and our selves' (2023). This broader framing includes apps for fitness, sleep, finances, mood, routine, or the *Google Photos*' "memories" feature (Google 2025a), which resurfaces personal past events. Some apps are consciously chosen; others are embedded into systems and used passively. Osler's dashboard allegory suggests users become like front-desk security guards, constantly monitoring multiple screens. While this habit can offer control, it also reveals the unsettling normalisation of the habit of self-surveillance in everyday life.

Like the panopticon guard watching from a central tower, self-

tracking apps can observe users' actions at any time. In this system, the user becomes both inmate and guard—tracking, monitoring, and disciplining themselves. As with the panopticon, it is unnecessary to confirm surveillance; the awareness that the app is watching is enough to prompt self-regulation. Apps like *Fitbit* (Fitbit 2025) exemplify this, influencing users to align their behaviour with its tracking goals. The app's gaze disciplines the body by rewarding compliance or randomly reminding users they are being monitored. Online content reinforces this dynamic—ranging from tips to walk more (Fitbit 2020) to advice on cheating step counts (CBS Miami 2017)—all serving to satisfy the “guard.”

Linking knowledge to power must also consider its inverse—where not knowing signifies a lack of power. Renouncing the control gained by reviewing one's routines through analysed data can trigger anxiety over the lost agency. E., in his interview, compared this fear to the well-known FoMO (fear of missing out) tied to social media, noting that in both cases, his motivation stemmed from a fear of missing something important. The uncertainty of not knowing what is missing, or whether it might be useful, intensifies what he described as a “fear of not knowing”:

We are gathering data that we don't know we need and ... how we will use it. But I believe that one day, someday, I will use it. ... Yeah, it's like a FoMO because maybe one day... I will be sorry that I don't have the necessary information. (E. 2022: 1:02:24)

Here, E.'s adoption of self-tracking is rooted not in the power of knowing but in the anxiety of its absence.

To conclude, the desire for knowledge, power, and control is a central motivation in using self-tracking apps. By using technology as an invisible but omnipresent gaze, such apps provide users with an efficient method for monitoring and self-regulating behaviour. However, this method may come at a cost, stemming from its power and controlling ability, which I will present, concluding the motivation discussion.

Reducing Complexity and Chaos

In modern systems of governance, the urge to simplify complexity is tightly bound to classification and ordering—processes that Foucault described as central to the exercise of power. In his analysis of eighteenth-century responses to disorder, such as plague outbreaks, Foucault explains how the imposition of hierarchy, observation, and documentation served to transform chaotic multitudes into controllable structures (1979: 202). He further explores how Enlightenment-era projects of classification—from living organisms to diseases to economic activity—sought to reduce disorder by transforming ‘dangerous multitudes into ordered multiplicities’ (ibid.: 148). Foucault cites Guibert, who observed that generals, physicians, and economists were ‘blinded by the immensity, dazed by the multitude’ (ibid.), reinforcing the drive to impose order through taxonomy. This logic extends to the Enlightenment’s use of the table as both a ‘technique of power and a procedure of knowledge’ (ibid.), exemplifying how categorisation became essential to managing uncertainty. While these systems appeared rational and objective, they also carried ideological weight—structuring not only understanding but also control.

This logic—reducing complex realities into manageable units—is now embedded in how individuals perceive and navigate daily life. Faced with overwhelming routines and competing demands, many turn to self-tracking apps to bring order. As E. shared earlier, caring for his infant meant reviewing organised data from the night’s feedings and sleep to determine what to do next. This shift reflects a broader modern attitude: addressing life’s complexity by segmenting and standardising experience into discrete, analysable components.

Self-tracking apps exemplify this mindset. They do not merely record behaviour; they structure it—through dashboards, timelines, and metrics—into interpretable forms. These are built upon predefined categories that enable users to analyse, compare, and adjust actions. Reflecting Foucault’s assertion that power operates through systems that ‘record, differentiate and compare’ (1979: 208), these apps shape perception and behaviour while presenting themselves as neutral tools.

Lupton and Smith's study shows how users adopt such tools to regain a sense of control, designing self-tracking routines to manage "chaotic elements" of life. By developing devices that track different lived aspects, they sought solutions that would make them feel 'reassured about a world defined by uncertainty, complexity, intensity and liquidity' (2018: 8). This is a form of modern reduction: turning life's fluidity into measurable, ranked values. *Google Photos*' "memories" feature, for example, filters a user's archive to present curated moments, reinforcing a seamless, idealised narrative.

While effective in managing complexity, this logic carries consequences. It subtly imposes value systems and norms embedded in its structure. The overlooked outcome is the bias inherent in the pre-defined taxonomy embedded by the app developers.

Outsourcing Responsibility

A recurring theme in the interviews was a loss of trust in one's embodied knowledge, leading to new, quasi-human relationships with self-tracking apps. Users described engaging in imaginary dialogues with these tools, treating them as entities that knew better, could calculate optimal choices, and—most significantly—relieved them of responsibility. E., who used a baby-tracking app, explained: 'If I make a rational decision and get it all wrong, I don't feel bad... some data led me to this decision. But if I'm making an intuitive decision... I feel like, okay, it's my fault' (E. 2022: 26:59). For E., delegating decisions to the app offered emotional protection. Similarly, as mentioned earlier, M., a new mother lacking confidence, turned to apps for guidance. One of them tracked her breastfeeding patterns and used algorithms to suggest feeding times in real time. The app's logic became a substitute for, while still raising conflict with her intuition.

There were a few times that my gut feeling, I would say, was different than what the app suggested that I should do. ... Well, you can basically feel it if you need to breastfeed your baby. ... At the beginning, there were a few times that I disconnected

him or, I stopped nursing him because the app said, we see it's 30-minute mark, for example. You have to stop, you have to stop breastfeeding. And I, I felt that it was wrong. But I still followed the instructions. (M. 2022: 31:36)

The two examples illustrate new relations with apps by reconsidering trust in one's inherent knowledge and abilities, along with reliance on a technological package that provides a better understanding of an individual, calculates what is best for them, and alleviates responsibility.

This shift in trust—from one's abilities to external technologies—parallels the transition from homemade to industrial goods. As Eva Illouz notes, the rise of processed products led to a disconnection from items once made at home, diminishing both skill and intimacy (2002: 86). Tasks like baking or sewing, which once fostered a bond between maker and object, are now replaced by outsourcing convenience—ordering a pizza instead of baking one. Similarly, outsourcing personal abilities to external technology impacts the connection to one's body and skills. Individuals lose confidence in their senses and judgement, and in the intimacy related to this confidence, as seen when M. withdrew from her baby when the app told her to. She was outsourcing her self-decision-making, giving the app the authority and the responsibility rather than trusting her body and knowledge.

The Costs

The motivations explored—pursuing the best version of oneself; seeking power, knowledge, and control; reducing complexity and chaos; and outsourcing responsibility—reflect broader social structures and personal struggles in contemporary life. While each motivation addresses real needs and desires, this very relevance makes critical reflection both difficult and necessary. I conclude this section by assessing the problematic implications of these motivations.

Best version of oneself: This motivation establishes a self-reinforcing cycle in which the app defines both the goals and the tools to achieve them,

leaving little room for reflection or resistance. The role model offered is often abstract and idealised, fuelling an endless pursuit that overlooks individual context and authentic need. The app's authority creates an imbalance, where the user may prioritise the app's logic over their own desires, blurring the line between internal and external goals.

Power, knowledge, control: Harnessing the app's omnipresent gaze to monitor and shape behaviour may be efficient, but it reproduces a disciplinary model that positions the self as something to be monitored, corrected, and subdued. Like Foucault's panopticon, the user becomes both warden and prisoner, internalising the gaze and treating the self as an object of control and an adversary to subdue.

Reducing complexity and chaos: Apps offer appealing order through taxonomy and bureaucracy, structuring lived reality into fixed, simplified frameworks. However, this demand for fit and conformity risks excluding aspects of life that do not align with the apps' methodology, a risk I will further explore in Part Three. Furthermore, a significant cost lies in the unexamined bias built into the taxonomic structures predetermined by app developers, which subtly guide user behaviour and perception.

Outsourcing responsibility: Handing decision-making over to the app may alleviate stress, but it undermines confidence in one's own judgement. This dynamic can weaken the bond between individuals and their embodied knowledge, evoking Marx's notion of alienation—where the user becomes estranged from their own agency.

Ultimately, examining these motivations reveals how self-tracking apps function not only as tools for support but as mechanisms for shaping user behaviour and worldview. This prompts deeper questions: Who sets the terms of engagement? Who benefits from users' participation? And how does this influence their ability to choose freely?

Chapter 9: Who Benefits: A Challenge to Free Will

Self-tracking apps are developed by companies that are required to generate profit, often by employing persuasive design, behavioural nudges, and gamified features that extend usage and increase data production. Within the scope of this project, I do not focus on corporate monetisation or surveillance capitalism, but I recognise that these strategies intersect meaningfully with the user experience. Through design, companies influence behaviour to serve their economic goals—often in ways that feel seamless or even empowering to users. Techniques such as choice architecture, menu control, and reward-based feedback systems subtly shape perception and action, raising questions about autonomy. These commercial strategies reveal the tension between corporate goals and user agency. In this section, I analyse the practical methods used to manipulate user behaviour under the guise of free will.

Navigation apps, often considered neutral tools, can subtly influence user perception through strategic design choices. Artur Grabowski demonstrated this by conducting an experiment across 60 trips using Google Maps, Waze, and HERE WeGo, logging estimated vs actual arrival times. He found distinct behavioural patterns: Google Maps tended to overestimate travel time, giving users a sense of “winning time”; Waze aimed for accuracy, building trust; and HERE WeGo often underestimated travel time, thus creating a positive feeling before travel. While the apps

never stated these intentions, Artur Grabowski analysed these patterns as deliberate design decisions shaped by each provider's goal to increase user satisfaction and app preference (2018). Regardless of their motivation, each chose a different strategy in the guise of objectivity.

What appears as neutral design is, in fact, grounded in behavioural psychology, where predictable user responses are codified into "laws" that shape perception and decision-making. Yablonski's *Laws of UX: Using Psychology to Design Better Products & Services* (2020) presents psychological principles tailored for UX designers, offering empirically grounded "laws" to justify design decisions and influence user perception and behaviour.

Hick's Law, for example, states that 'The time it takes to make a decision increases with the number and complexity of choices available' (ibid.: 24)—simplifying or framing options, as with menus that promote specific goals, shapes user behaviour by subtly nudging action. For example, when downloading the *RunKeeper* app (ASICS 2025), its menu promotes buying training plans, adding friends, and sharing photos, all beneficial for the app's business plan.

Fitts's Law (Yablonski 2020: 13-21) suggests that the more steps and distance required to reach an option, the less likely a user is to follow through. The *RunKeeper* app manifests it by requiring multiple clicks to quit the app, repeatedly asking the user on their way out: "Are you sure?" and sending rewards and suggesting actions such as "share" or "compare workouts", leading to hidden paid features. By making quitting hard and adding enticing prompts, the app affects the users' behaviour and subtly nudges them toward the producer's goals.

One major shift from manual to digital environments is the use of psychological mechanisms to control behaviour—particularly the *variable reward* system drawn from slot machines. This technique maximises addictiveness by offering unpredictable rewards, which trigger stronger responses than the anticipated ones. Users are hooked by the anticipation, not just the reward—mirroring gambling dynamics. As Dr Francesco Tamagnini notes, capitalism exploits the brain's dopamine-driven reward

system. Drawing on Liraz Margalit's *Designing the Mind* (2021), I explore its broader societal and economic implications.

The reward system evolved for survival trains the brain to predict rewards by releasing dopamine in anticipation four times more than during pleasure. Modern extrinsic rewards, like social or financial success, trigger the strongest dopamine surges, creating addictive loops, so 'we experience a surge of pleasure precisely because that reward is unexpected' (ibid.: 172).

Modern survival extends beyond basic needs, linking success, consumerism, and social validation to the reward system. Striving for efficiency, time optimisation, self-evaluation, and performance improvement are related to the need for reinforcement, pursuing satisfaction by accessing the brain's reward system. The capitalist order would thus benefit from the need of the vulnerable to stimulate the reward system.

This highlights the distinct power of digital self-tracking over manual methods, such as marking a child's height on a doorframe. While both satisfy the desire to observe and evaluate personal growth—often driven by love and care—digital tools deliver far more potent and frequent rewards. Unlike manual tracking, digital systems target subconscious impulses, manipulating dopamine-driven behaviours for profit. The difference lies in precision, frequency, and emotional targeting. As Margalit notes, no historical reinforcement matches today's digital stimuli in their ability to shape thoughts and feelings. In Silicon Valley, she writes, dopamine has become the most valued molecule (ibid.: 173).

Gamification uses game elements—points, scores, and competition—to influence behaviour and maintain user engagement. In self-tracking apps, these tools shape user actions through structured rewards. For example, *Glow Baby* (Glow 2025) encourages parents to compare their baby's habits, while *StepUp* (StepUp 2023) promotes competition through step-count leaderboards. Even without external competition, self-improvement becomes a game; the 'Sexperience' app tracks sexual activity for personal satisfaction (D. Lupton 2015: 14)

Thi Nguyen (2021) argues that gamification trades rich personal

values for simplified metrics in exchange for short-term pleasure; it flattens nuanced experiences into data. Users may begin exercising for health but shift their focus to step counts, or they may join X (formerly Twitter) for social connections, then chase “likes”. Nguyen warns that such systems redirect motivation to serve the interests of the platform, not the users. Drawing on Winnicott’s *Playing and Reality* (1971), I emphasise the vital distinction between creative, free play and gamification, which displays rigid structures designed for data capture. These frameworks prioritise institutional goals, such as efficiency and profit, over genuine self-expression and user well-being.

Authorities and corporations wisely wrap daily actions under, sometimes addictive, gamification practices, such as school grades, social media “likes” or self-competition rewards on apps. They take advantage of the human inclination for competition, variable reward, and achievement to manipulate people’s behaviour, providing identified rules, boundaries, and measurable and immediate rewards. Within this given courtyard, users play a game with total dependence on the producers, which excludes the profound nature of life and creates shallow satisfaction. Furthermore, they do not consider the users’ actual needs but prioritise their own benefits and goals.

Revisiting Frankfurt’s theory on the freedom of the will (1971), now from the perspective of the psychological and neurological methods presented, it challenges the belief that by using self-tracking apps, people are *optimally free*, harnessing technology to strengthen their higher desires to defeat their lower ones. I claim that once users are “trapped” by the producer and behave with some degree of addiction, many of their acts, which seem like a free choice, are, in fact, lower addictive needs. In other words, users are not using their noble willpower—*volition* in Frankfurt’s terms—to overcome basic needs; instead, what essentially motivates them are their basic needs.

Part Three
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Implications

Chapter 10: Loss of Variety and Options

This chapter opens Part Three: Epistemological and Embodied Implications of Contemporary Self-Tracking Practices, which examines the problems, implications, and outcomes that emerge from engaging with self-tracking apps. This part of the thesis is structured into three chapters, with each addressing a distinct consequence of these practices. The first two chapters explore different forms of loss—the loss of variety and options and the loss of authentic, embodied skills. The third chapter considers the implications of the tangible technological relationship with the human body.

In this chapter, I investigate four perspectives that illustrate how using self-tracking apps contributes to the erosion of experiential variety. Collectively, they reveal how utilising these apps aligns with dominant ideological frameworks—analytical ways of thinking, capitalist ideologies, bureaucratic structures, and methods associated with the commercial realm. Through this lens, life becomes measurable, manageable, and increasingly shaped by technological abstraction. This leads to the exclusion of ambiguity, depth, and alternative modes of interpretation. Consequently, users risk narrowing their lived experience and losing access to richer, more diverse ways of engaging with the world.

Standardising the Experience

In this section, I examine the gaps created when lived experience is mediated by self-tracking apps, focusing on the discrepancy between

real-life events and their datafied representations. These apps reduce rich, complex, and often messy experiences into standardised formats, presenting them as personalised “customer services”. I argue that this phenomenon reflects a deeper modern Western mindset that prioritises standardisation, encouraged by capitalist values. Drawing on Horkheimer and Adorno’s *cultural industry* theory, I suggest that this standardisation has become culturally ingrained, shaping experience into unexamined and unquestioned norms.

Self-tracking apps provide outputs that are the end-product of a programmed process. Whether or not they are using AI, they are set to collect data from live situations, perform calculations, and combine the data into a visual, linguistic, or numerical output, which should be simple, communicative, and easy to understand. Types of outputs can vary from plain data, diagrams, a word of praise, an award, a suggestion, a call to action, an encouraging GIF, and more. Common to all is a ready-to-use simplified outcome. I will present three apps from different fields to depict the source and outcome gap.

Netflix tracks users’ viewing habits and gathers and analyses them to build a user profile. When a video finishes playing, while the movie titles scroll, personal suggestions are provided for further viewing, presenting a percentage that indicates the movie’s degree of compatibility with the viewer’s profile. Baby-tracker apps use algorithms to recommend to a mother when to start, go on, or stop breastfeeding her baby. Both examples provide outputs in the form of straightforward suggestions built on gathering and calculating complex personal data according to predetermined programming. Only data that can be computed are collected, such as the Netflix pre-tagged genre of the movies the user has watched or neglected, their searching habits, etc., or records in baby tracker apps of times and duration patterns of the infant’s feedings, sleeping, and more. The algorithm cannot collect and thus neglects the vague, unmeasurable aspects that represent life’s deepness, its chaotic, unclear sides. In both examples, the subjective experience—the movie-viewing experience or the

profound involvement of breastfeeding —is converted and reduced into data, which is gathered and programmed into a limited output, while the origin is left out.

Once I have finished my jog, my *Runkeeper* app (ASICS 2025) asks me to score my training experience, suggesting five grading icons: unhappy smiley, not so happy one, and so on to a happy smiley. I am encouraged to reduce the whole workout experience, the rain that suddenly stopped and was replaced by spring sunshine, my mood, the hardness of the route, my painful knee, the ducks I viewed on my way, the thoughts that were raised leading to an “Aha! moment”, all of these into a single flat score. The questions raised by these examples include: What makes it clear for users to condense a situation's entire richness into a one-to-five output? What in the modern mindset leads people to accept the shift from a profound multidimensional practice to a one-dimensional result?

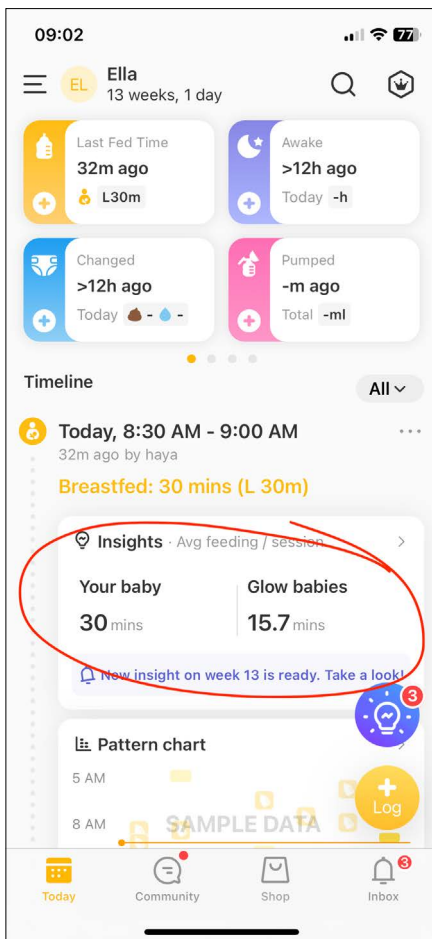
This section analyses the willingness, or even wish, to flatten experience into standardised moulds, linking it to the rise of what the neo-Marxist philosophers Max Horkheimer and Theodor Adorno defined in the first half of the twentieth century as the “cultural industry”. They coined this term to criticise how art, across its various forms, encompassing music, literature, and the visual arts, became commodified to serve capitalist goals. Unlike *mass culture*, the term emphasises industry, where standardisation overrides genuine expression and apparent diversity masks uniformity, creating a pseudo-individualisation that neutralises critical potential. By critically engaging with this discourse, I will broaden the scope of this term, examining the evolution of the cultural industry into the establishment of today's acceptance of reducing broad and complicated phenomena into a single numerical output. By that, I argue that it was not a phenomenon local to its time but a trend that was developed according to the emergence of the technologies and that the mindset needed to adopt the standardisation of experience, as the self-tracking apps provide, is a contemporary performance of and rooted in the cultural industry.

Horkheimer and Adorno (2002) analysed the takeover of capitalist

industrial production methodologies and ideology, which significantly impacted popular culture, as is apparent in how it began standardising products such as films, music, radio programmes, magazines, etc. By doing so, what used to be experienced with deep cultural involvement was reduced to passive and docile cultural consumption. They analysed the method and the danger embedded in standardising and subordinating culture to a formula suppressing creativity. Their study depicted a trend that began in the consumer goods industry and was transformed into an emerging cultural phenomenon in the first half of the twentieth century in the United States. It has since spread worldwide, perfecting itself using new technologies and creating new cultural products. I develop their diagnoses of the cultural products of their time, where they highlight standardising as a flattening phenomenon. In addition, I claim that not only has this standardising rooted itself and expanded into today's late capitalist culture, which relies on standardisation at the expense of diversity, creativity, and individual expression, but that this mindset has influenced and enabled the proliferation of self-tracking apps. I support my statement by examining three aspects of the cultural industry: the way it was framed, the nature of its products, and how it misrepresented itself as variety. I present the critical role of the three as ingredients of and active factors in self-tracking apps.

The framing approach in this context is based on presenting the standardisation of culture not only as beneficial to but as 'derived from the needs of the consumers [and as a] first service, ... what made it accepted with so little resistance' (ibid.: 95). Adorno's aphorism "Customer service" says that 'the *culture industry* sanctimoniously claims to follow its consumers and to deliver what they want' (1978: Aphorism 129) manipulating the customer to believe that this unifying is their own will and is for their benefit. It is positioning standardisation as customer service, requiring no further actions from the consumer. This framing started in the capitalist industry; standardising goods is beneficial to optimise their production, distribution, marketing, and service. This industry's need is framed in a way that creates an assumption that it benefits customers, pointing out that

they get uniform products sorted for their needs. Horkheimer and Adorno claimed that this concept and framing was diffused from the traditional industry into the cultural industry, making people perceive standardisation as customer service providing products that save people's need to navigate the complexity of culture. I argue that self-tracking apps are this mindset's new, contemporary phase—a sophisticated customer service tool digitally tracking users' acts, adjusting them to pre-programmed external slots. It is based on the same framing that standardising is derived from the user's needs, while actually it is an essential tool for the capitalist apparatus that drives the apps, as I will now present.



Glow Baby (Glow 2025), a baby-tracker app, gathers users' data to present a fictional figure called "Glow babies", a data-driven model which displays an average of different data parameters sorted into ages. The app, built on numerical values, needs these standard parameters and a standard entity to communicate with and provide recommendations for the babies' carers. Although it is essential for the app's functioning, it is framed as being driven by the user's needs, urging them to compare their baby's performance to that of "Glow babies". This call makes the users accept standardisation in issues like breastfeeding and nappy changing with little resistance. In the Netflix example above, the standard slots are a set of categories necessary for

Glow Baby App, *Patterns* (screenshot), 2024

the algorithm to push a new video for the user to watch. Although the standardised categories are essential for the app, they are positioned as a beneficial service to the user. Both examples address Adorno's "Customer service" aphorism quoted above, pointing out that standardising is presented as being derived from the needs of the consumers and, first and foremost, is a service, while actually, the system's needs drive it. This way of framing the service makes it easy for the user to take for granted and adopt the situation where one's real-life acts are squished into predetermined artificial standardised templates.

A second aspect of the cultural industry that has developed and is now a central characteristic in self-tracking apps is the shallow nature of the schematisation's products. Horkheimer and Adorno (2002: 133-34) depicted it as the *demythologising of language*, linked to an efficient, realistic, logical perception of reality, changing words 'from substantial carriers of meanings to signs devoid of qualities' (ibid.: 133). They link it to positivism, an approach to analysing phenomena in terms of their most fundamental constituents. This form of reduction is a simplification process and a powerful scientific tool that takes complex affairs and breaks them down into simpler components to clarify understanding. Reduction as an ideology is further addressed in this chapter. This logocentric way of thinking, reducing complexity, passed from the scientific realm to culture and, in Adorno and Horkheimer's view, significantly influenced the richness of the language, reducing it to a shallow practical tool. They claimed that this demythologising of language is an element of the total process of enlightenment and that 'the blindness and muteness of the data to which positivism reduces the world passes over into language itself, which is limited to registering those data' (2002: 133-34). When interpreting *language* as representing the richness of expression, the consequence of reduction might be efficient but at the cost of losing real life's profoundness.

Today, their time statement can be further developed to analyse the quality of the *language* that the apps offer, stating that the capacity of the gathered data is limited to the description of the data themselves.

The experience provided by self-tracking apps is based on data that has been derived from real life and reduced into a simpler format, an efficient but limited, inferior outcome. As in the framing effect, this reduction is perceived as a customer service for the user's benefit, where the app eliminates what does not fit its standard. However, by letting the apps simplify a complex phenomenon into an easily readable numeric or graphic performance, the user gets a result that is simple to understand and handle but that lacks the richness of the source and the experience. The reducing mindset is, in many cases, preferable for people today, blinding them from seeing the transformation from what Horkheimer and Adorno described as *substantial carriers of meaning* into *signs devoid of qualities*. The *Glow Baby* app, for example, provides a variety of charts presenting the baby's eating, sleeping, pooing, communicating, etc., but these are signs devoid of qualities compared to the substantial carrier of meaning—the living baby. This does not mean that the users do not see their baby anymore, but that, in certain aspects, the data's language takes over real life, and the baby's sleeping habits reduced into a chart can be seen as preferable to the lived experience. Not being aware of the reduction into signs devoid of qualities prevents users from critiquing the app.

To return to the *Runkeeper* app example above, asking users to reduce and squeeze the running experience into a scale of one to five, later used by the algorithm to analyse and present in charts, demonstrates how easily users accept this reduction into 'signs devoid of qualities.' The same happens when Netflix tags the movie's degree percentage of compatibility with the viewers' profile, neglecting and reducing the fullness of the experience into limited data. The process that this reduction took from the mid-twentieth cultural industry to its manifestation in self-tracking apps is critical, as in the last one, AI and algorithms create tailored personalisation outcomes, which can misrepresent real life and the user's deep individuality and can be perceived as profound knowledge. It leads users to believe that the apps know more than they know about themselves, as I heard from my interviewees (S. 2022: 14:28), and thus, this kind of standardisation is more

straightforward to accept. However, this is a deception; the data provided can only be as profound as the preprogrammed, data-based slots, so the app is *limited to registering those data* and will always be a shallow imitation of the lived experience.

Misrepresentation of variety is the third point I will analyse as a contemporary digital phenomenon grounded in the cultural industry, where products are introduced as diverse, offering the consumer a deceptive sense of choice. One of Horkheimer and Adorno's main critiques of the cultural industry is how it provides uniform products painted with an appearance of diversity: 'The advantages and disadvantages debated by enthusiasts serve only to perpetuate the appearance of competition and choice', and the freedom to choose, they say, 'proves to be freedom to be the same' (2002: 97, 136). Repetitions of similar content are delivered by sophisticated marketing techniques, guaranteeing uniqueness but calling the consumer to integrate into the already existing. I argue that while they refer to and analyse the film industry of their time, this misrepresentation has established itself as a norm, preventing today's app users from realising they are being roughly led into limited targets. For example, the 'You may also like' recommendation on various apps provides a range of products from which one might want to choose. A similar algorithm on news apps presents further articles to read tailored to one's taste, and the GPS apps suggest to the user a route option out of limited alternatives. All three offer the impression of diversity and a democratic feeling of free choice and make the user thankful for the service of reducing the circumstances into practical action. Delving deeper, the options displayed are the top few results of a query and share more similarities than differences. Users are trained to expect this narrow outcome and perceive it as a sign of diversity. But actually, the apps have been programmed to customise an output that will suit the individual consumer's needs, creating a *misrepresentation of variety*. Since GPS provides the three fastest routes, it will not occur to the user to try routes that are not the fastest—routes that might surprise them with qualities other than speed. Likewise, one will not search for news

items, articles, or merchandise that have not been defined as relevant to one's profile. Users will not be exposed to a genuine range of options because the app was not designed and programmed for it. True diversity, with margins that might not be chosen, will not align with commercial efficiency values; therefore, Horkheimer and Adorno's claim of 'the freedom to be the same' is even more relevant than it was almost a century ago. The apps, using tailored outcomes with personal customisation and an outcome of preprogrammed options, make people follow a misrepresentation of variety and an illusion of choice while being blind to its uniform, limiting, monochromatic nature.

To summarise, the above arguments related to the cultural industry—framing standardising as a service, reducing phenomena into simple, standard output, and the misrepresentation of variety—capture different aspects of how self-tracking apps function to standardise heterogeneous human experiences, which are fundamental to successfully implanting data-gathering sensors and self-tracking apps into users' lives. The apps present the outcome of a complex, messy situation in a flat, easy-to-understand way, which is influenced by a modern mindset rooted in scientific positivist reduction ideology. They offer symbols, reducing phenomenon into data, which is described by Horkheimer and Adorno as *limited to its registration*, meaning it can analyse only the data it could collect, preferring to ignore aspects of subjective experience that cannot be described in measurable manners. Favouring the standard outcome is a reduction that is perceived as a service driven by the user's needs but addresses the capitalist values of optimisation, efficiency, and productivity, which people have internalised as their own. The way these apps are consumed is partly driven by them misrepresenting the variety of options they offer, leading users to prefer a semi-diverse set of limited choices over the limitless array of real life. These techniques were agential tools that served the *culture industry's* ideology and have been developed throughout the years, established in contemporary beliefs, and perfected in the programmed culture of self-tracking apps.

The contemporary wish to standardise the complexity of life into a

flat outcome carries the same threat that Horkheimer and Adorno warned against—harming the possibility of the growth of autonomous human beings and disrupting the ability to develop individuals who are able to make independent judgments and make conscious and responsible decisions: ‘Each single manifestation of the culture industry inescapably reproduces human beings as what the whole has made them. And all its agents ... are on the alert to ensure that the simple reproduction of mind does not lead on to the expansion of mind’ (2002: 100). It appears that people today can harness technology to enhance their *second-order* desires, which reflect the individual’s free will, allowing them to overcome lower *first-order* desires, an issue I previously analysed in relation to Frankfurt’s Freedom of the Will theory. However, what seems like free will is a narrowing standard outcome designed and marketed by the above tools, blocking the possible expansion of one’s authentic mind that comes with spontaneous encounters and exposure to novelty.

— *Guy Ben-Ner, Treehouse Kit, 2005*

Standardisation as a concept and practice is central to contemporary capitalist Western life, favouring efficiency over creativity and variety. It is essential to the modern apparatus and is embedded in today’s lifestyle, projecting from one realm to another. Although I critique its appearance in self-tracking apps, I bond it to the broader cultural mindset, particularly how it is influenced by capitalist consumerism.

Guy Ben-Ner, a video artist, addressed in several of his artworks retail chains such as IKEA and others. He focused on their uniform interior design and goods that lack the characterisations of their geographic location,



Guy Ben-Ner, *Treehouse Kit* (video still), 2005, Video, 10 min

presenting the world in terms of cost-benefit, inputs and outputs, profit and loss (Rabina 2023: 8). Like other artworks I analyse in this thesis, including my own practice, he uses existing language in a subversively recontextualised manner, creating an unexpected outcome and, in this way, criticising its values. His video and installation, *Treehouse Kit* (ibid.: 180-206), first exhibited at the 2005 Venice Biennale, presents a treelike structure assembled from pieces of furniture sold at IKEA, icons of industrial reproduction that can be similarly found in numerous houses around the globe. In the film presented in the installation, he emulates a DIY instruction video, disassembling this “IKEA tree” and using it to construct items of furniture: wooden chairs, a parasol, a table, and a bunk bed. He uses assemblage, taking the components apart and then putting them back together in an entirely different assembly, as a powerful methodology to present the gap between the two states and a third one, the original natural tree, that the viewer retrieves from their memory. These three states of matter

produce contrast and tension, which is necessary for the questions raised in the artwork. The scene looks like it is taken from Robinson Crusoe, Defoe's 1719 novel that represents the White man's efficient utilisation of nature. Ben-Ner addressed business chains as a symbol of capitalist consumption in several of his artworks. Still, here, he deals explicitly with issues of standard industrial products and fixed instructions, emphasising their disconnection from their source and contrasting them with values of creativity, intimacy, and personalisation. All of these are significant in my research, as I will elaborate.

The core item of the artwork, the treelike sculpture, is situated in a characterless gallery room, rootless and stabilised on the ground with four artificial wooden supports. In contrast to a natural tree, the location and the lack of roots underline the loss of connection between uniform, universally designed industrial products and their origin. The artist's subversive act, trying to reverse engineer the creation of the IKEA furniture into the original tree, ironically fails, as the connection to the natural tree was lost in the industrial production process. The outcome is a rootless product in a space without identity or individuality. Ben-Ner's installation, emphasising the disconnection of modern life and industrial products from their origin, demonstrates my claim that fitting experiences—of all kinds—into standard moulds or unified outcomes is a process that fades the origin, detaching the outcome and the user from its source. This disengagement that occurs from experiencing the standard representation of the origin was exemplified by my interviewee G. when he described his insights from GPS navigation: 'I found that when I use satellite navigation in the car...you get to where you want to go, but you've got no idea that you've been

there... And you've missed that sense of awareness of your surroundings and the journey you've taken' (G. 2022). G.'s description points out that navigation in the Alps, the Sahara Desert, or Wales will be uniformly represented on the app's screen, disconnecting the driver who experiences the journey through the GPS from its source.

The film emulates a DIY tutoring video. Regarding his choice, Ben-Ner said in an interview that 'genres are already filled with content even before you touch them From this point of view, the instructional video is the meta-genre. It instructs us without trying to hide it' (Cattelan 2016). It represents a culture where creativity is channelled into limiting options given in fixed instructions. This misrepresentation of creativity is a set of actions the clients must follow if they wish to achieve the (pre-designed) goal. It drains creativity or originality, making the process sterile and lacking innovation. In his words: 'We obey the demands more willingly since we are under the illusion that these demands are our own'. He later refers to Aesop as a metaphor for an external authority that is inserted within one's mind (ibid.). This falsification of IKEA-style creativity produces standard outcomes that emphasise Horkheimer and Adorno's claim of 'the freedom to be the same' that I dealt with earlier as a misrepresentation of the manifestation of variety. As written in the exhibition's catalogue: 'These instructions... manipulate [the consumer] to suit the manufacturer's needs. The notion of freedom remains entirely virtual if the nominal possessor of freedom is precluded from any creative act. Doing something creative with a consumer product means defying the instructions for its use, which limit its inherent possibilities to just one' (Rabina 2023: 34). The starting point of Ben-Ner's video—an "incorrect" assembly of

furniture parts that created a treelike structure—and the ending point—the correct assembly that created “proper” furniture items, highlights the gap between these two poles of creativity. The process, ending with a set of well-recognised standard IKEA products, leaves the viewer with a sense of disappointment when the treelike, appealing, joyful, humorous sculpture becomes, after all, what the producer expected it to be: a set of functional objects.

I analysed how misrepresenting variety in the cultural industry provides limited options in the guise of diversity, neglecting endless creative possibilities. Following instructions is a far narrower act, as it offers only one possible way, whether in IKEA or self-tracking apps. G., in his interview, recognised this limitation. He described how he rebels against the GPS (Sat Nav) app command’s tyranny:

I like to argue with my Sat Nav (when I do put it on). ... [When] it says, go this way, and I'm not going that way, I'm going to take a left turn here. And then I see that the Sat Nav says, take a U-turn or something like that, and I go, ha-ha, I'm not gonna take a U-turn and carry on this way. And then it sort of comes up with another suggestion: take the next right. And maybe I'll take the next right. But then I tried to confuse the Sat Nav just for the fun of it to see I'm challenging the Sat Nav to play. (G. 2022)

G.’s sense of joy and creativity while refusing to follow the instructions and playing with glitches and disruption,

like Ben-Ner's creation of the treelike sculpture, underlines the instructions' nature of restriction and reduction of creativity and self-expression, a method that forces creativity into standard behaviours and outcomes.

Toward the end of the video, when all the pieces are assembled into functional furniture, a short, intimate scene presents the artist looking with love and yearning at the only personal item in the space—a photo of his family. He then folds it and uses it to stabilise the wooden ladder which he needs to climb onto the IKEA bed. Thus, the only unique item in the artwork that has personal meaning rather than functionality and that cannot be found in countless houses worldwide is sacrificed for the sake of usability and utility. His hesitation before he decides to do so illustrates the story of the cultural battle between the emotional and the practical, the unique and the modular, the creative and the instructed, and his choice to use it predicts the trend towards the victory of efficiency.

In this section, I analyse the phenomenon of producing a limited variety and reduced options when self-tracking apps transform users' lived experiences into standardised moulds and outcomes, presenting them as customer service tailored to their needs. I expand on Horkheimer and Adorno's cultural industry theory, arguing that it has become so ingrained in today's capitalist culture that it allows self-tracking apps, based on new technologies, to establish the standardisation of experience as unnoticed and unquestioned norms. In the following section, I will focus on the loss that results from consuming the narrowed, standardised outcomes of these apps on users' lives.

Narrowing Down the Options

After discussing how self-tracking apps use algorithms to convert lived experience into pre-programmed, standardised outputs—and the constraints this imposes—I turn to examine the loss generated by such standardisation. Drawing on linguistic insights, I argue that the reduction of human languages diminishes expressive capacity. I expand this argument to contend that relying on technology to decode lived experience limits one's inherent ability to interpret the world, resulting in a narrowing and loss of experiential options. This concept emerged from my artistic research, which included a series of interviews that formed the installation presented next.

— *Names for Snow*

Although languages have always come and gone, anthropologist H. Russell Bernard estimates that today there are about 15 per cent fewer spoken languages—out of several thousand—than in 1500 AD. Yet only about 276 of these languages are spoken by more than a million people, meaning that the vast majority are used by small or isolated communities and are therefore increasingly vulnerable to extinction. Furthermore, he emphasises the vulnerability of languages without written representation, which are doomed to extinction. This threat can also be cast to embodied knowledge, which lacks graphic or written representation or tangible expression, compared to technological knowledge established through written and calculated records. Bernard is alarmed by the loss of this vast diversity, stating that ‘it lowers the pool of knowledge from which we can draw’(Bernard 1992: 82).

My mother tongue, Hebrew, was developed in the Middle East in a climate with one rainy season during the winter, essential for agriculture and crop growth. In Hebrew, therefore, there is a unique word for the first rain occurring during the autumn, “Yoreh”, and the last during the spring, “Malkosh”. Even today, when people do not depend on agriculture as in the past, these two rainy sessions that signify the beginning and the

end of the winter are identified by their unique names, which appear in poems and have cultural meanings that can hardly be translated. Hearing the word “Yoreh” brings up various bodily feelings in me and memories connected to experiencing the harbinger of the coming of winter. A well-known example of this topic is Benjamin Whorf’s 1940 paper, which pointed out the diversity of words the Eskimos use to describe assorted snow forms, which in English has only one noun. He claimed that the various snow types are hard to distinguish if the only word in the language is snow. The multiple ways to describe the different kinds are necessary to recognise them. Similarly, he brought up the example of the Hopi language, which can be described as a timeless language (that lacks specific verb tenses to indicate past, present, or future and focuses on process rather than marking time in discrete units), and the way it influences how the Hopi perceive time (1940). His argument was revolutionary in that it posits that language impacts the way of thinking and behaviour, highlighting the importance of a variety of languages when wishing for rich and diverse experiences. Reducing this diversity narrows the options; it will first limit the possibilities to experience phenomena and, as a result, the way to express them. Whorf’s findings and further linguistics developments highlight the importance of language diversity and the concept of loss when the global world seeks communication limited to a few common languages, letting the others go extinct.

This is beautifully dealt with in Rebecca Thomassie’s short movie *Names for Snow*, which gives the section its title. She delicately and poetically criticises the loss of a specific knowledge that does not have the power to exist in modern life. Rebecca is an Inuk woman from the Canadian Nunavik region, where snow is present for nine months a year. In her video art, she documents forty-seven words for snow—traditional knowledge she learns from Tommy



**Rebecca
Thomassie**
Names for Snow
(video still)
2019
Video, 5:53 min

[Available on Vimeo](#)


Kudlak, which she aims to teach her daughter to ensure the sustainability of her indigenous culture (2019). She describes her motivation to create the movie, saying, 'It's important to share with other people that there is not just one name for snow... It's good when you're going on the land. It's good to know this stuff to survive' (Stanley 2019).

Most of the world's population does not need forty-seven words for snow nor a unique word for the winter's first and last rain, as in my language. Still, standardising how people express themselves in fewer languages, regardless of the culture they experience in their daily lives, creates a trend where humankind loses options to experience the world. Recognising this loss underpins my claim that varied inner ways of interpreting reality—endless inner languages—are necessary for experiencing life in a more meaningful and profound way, and the loss of this range narrows down the options to engage with life and 'lowers the pool of knowledge from which we can draw' as quoted above.

— *The Archive of the Lost Embodied Knowledge*

Embodied knowledge, to some extent, is a vague and hard-to-grasp term. I will draw upon Jean-François Lyotard's description of what he called *narrative knowledge*, a concept I expanded upon in the Metanarratives Section. In essence, Lyotard points to a type of knowledge that does not necessarily form stable or universally communicable language structures (2021: xxiv). This is weak, vulnerable knowledge with no written form, one that risks being suppressed from discourse as technology increasingly shapes lived experiences. Adopting this concept, embodied knowledge represents what people know without the need or ability to prove or express it in words. This will be clarified further through this artwork.

My artistic project, *The Archive of the Lost Embodied Knowledge*, (hereafter referred to as *The Archive*), was the outcome of the first phase of my research—field study through interviews. In this phase, I engaged the community through face-to-face recorded interviews, aiming to deepen my understanding of personal interactions with self-tracking apps. The methodology I employed in the interviews, drawn from a previous research-based project of mine, was to provide the interviewees with a free space to express their thoughts, feelings, practices, and habits related to using these apps. My approach was to collect recorded personal evidence without framing goals and outcomes apart from the aspiration for potential artistic material for further developed artworks or as a source of insight for my further analysis.

The project's second phase materialised when I



Haya Sheffer
*The Archive of
the Lost Embodied
Knowledge*
(installation view)
2022



Haya Sheffer
*The Archive of
the Lost Embodied
Knowledge*
(installation view)
2022

accidentally encountered the phrase, 'When an African elder dies, it is as if a whole library is burnt down', an undocumented saying attributed to the African scholar Amadou Hampâté Bâ (1901-1991), who appears to reference the loss of African oral heritage in this allegory. Hampâté Bâ's concept of oral heritage as a form of cultural wealth stored in people's minds, which relies on their existence, directed my attention to recognising embodied knowledge as personal, social, and cultural wealth that rests on living people's mental abilities. In the interviews I conducted, the interviewees described, in various ways, the vulnerability of this knowledge when confronting self-tracking apps' data. Regardless of their diverse preferences and perspectives regarding this knowledge, I noted an overarching awareness that these abilities and inner knowledge are endangered and at risk of extinction. Considering the potential loss when this embodied knowledge dissipates, I utilised their stories to create an archive intended to symbolically preserve it, as is often done with items that face the danger of extinction.

The Archive project sheds light on the loss of vulnerable, inner, intuitive, and embodied knowledge, which I recognised as being in danger of extinction when outsourcing the interpretation of phenomena to self-tracking apps. It questions how people today experience life through self-tracking apps, with a special focus on the kind of know-how that is becoming lost, asking whether humans might not be able to experience the world that way anymore.

The interviewees' approaches, beliefs, and usage habits, which span from app usage to contemporary technologies, gathered in *The Archive*, varied widely. However, they all distinguished between technological and personal knowledge. E., for example, expressed his preference for

data-driven decisions over intuitive ones concerning caring for his child: 'If I make a rational decision and get it all wrong, I don't feel bad with it because ... some data led me to this decision, other than if I'm making an intuitive decision and I get it wrong. I feel like, okay, it's my fault. I did it wrong' (E. 2022: 26:59). W. portrayed a different approach: 'From my personal point of view, I don't use technology to find out anything about my body, particularly. No. ... it doesn't have any impact on me, really. I mean, if I want to know what my pulse rate, I'll just put my fingers on my pulse and measure it with my internal biological clock' (W. 2022: 31:46, 28:23).

S. discussed the potential erosion of inherent human skills by describing experiences from her childhood, comparing them to her son's: 'The inaccessibility that we had earlier is what is still making us feel more alive rather than being screwed into something which the rest of the world wants us to do' (S. 2022: 25:27). E., on the other hand, claimed that this loss might be beneficial since people do not need such skills anymore: 'We are losing some skills when we become reliant on technology. ...I think that the complete overview of everything, we're getting better ... It opens new options for us, and I haven't gotten to the point where I feel like I have lost a skill that I need right now' (E. 2022: 37:52). E.'s mindset of evaluating lost skills on a scale of efficiency—whether he needs a skill or not—echoes the ideology concerning extinct languages in favour of international languages and overlooks other values that these lost skills may offer. Hampâté Bâ's phrase, related to this loss, inspired me to archive these accounts. Its mission was to raise awareness of the loss, allowing visitors to interpret and determine their own stance on the subject.

I recorded twenty-three short audio tracks related to

the theme, extracted from the interviews; each was stored on a light-sensitive chip and kept in a metal tin. When a visitor opened the tin, the chip was exposed to light, and the audio began playing, enabling the visitor to hear a story. When the visitor closed the tin, the audio stopped, and the “embodied knowledge” faded into darkness until, and if, it would be exposed again. The electronic light-sensitive chips were displayed bare in the box for the visitor to see, contrasting them with the concealed technology and software that operates the apps. I exhibited *The Archive* in a straight line on the gallery floor.

As with the other projects that comprise my research,



Haya Sheffer, *The Archive of the Lost Embodied Knowledge* (installation view), 2022
[A full compilation of the audio tracks is available on SoundCloud ↗](#)

The Archive juxtaposes human aspects with technology, both conceptually and tangentially. It involves context, technology, the human body, reactions, and behaviours to create insight from this assemblage. Two fundamental methodologies were involved in the installation phase: “anarchiving”, on which I will expand in the discussion on feminist thinking, and joy, adding layers to the exploration of the loss.

Anarchiving challenges and criticises the values embedded in archives (Kokoli 2017), the tyranny of scientific knowledge that can be identified, described, measured, labelled, and archived rigidly in organising data. It favours knowledge that should be freely explored and may lack order, recognised themes, or shapes. Anarchive conveys that real life should not be shaped into a preconstructed archive; instead, an archive should adapt itself to encompass the impossible to archive, transforming itself into an anarchive. Thus, archiving the lost embodied knowledge in plain, unlabelled standard Amazon tins provided no clue about their contents, and nor did it possess the archival organised order, inviting free exploration. It rejected the power embedded in the hierarchical system of categorised, marked, labelled, and sorted archives, as manifested through the data in self-tracking apps, and privileged the lost embodied knowledge in the anarchived manner in which it was preserved.

Joy, as in Winnicott’s idea of creativity, is a way of engaging with reality that involves free discovery, unpredictability, and play without fixed rules, contrasting with compliance and rigid structures (1971: 65). Joy was positioned as a methodology of discovery. Visitors were invited to explore freely, activating curiosity and bodily engagement, embodying joy through an open, self-directed

interaction with knowledge. It was a playful archive with no rules, neither in the archiving process nor in exploring it. Both anarchiving and joy, applied here, address the knowledge that adopting self-tracking apps excludes, as it does not fit into the apps' norms or technological abilities.

The insights gained from this project were derived from the context of the interviews, the installation archiving them, and the interactions with visitors exploring *The Archive*. It called attention to the potential loss that leads to a limitation of options inherent in contemporary habits, where technological knowledge confronts personal embodied knowledge, as seen in self-tracking apps, and symbolically preserves this lost knowledge and skills. It reflects and is influenced by the cultural loss of languages, where vulnerable knowledge becomes extinct when faced with modern values of efficiency, modularity, and productivity, and it opens a discussion on the qualities lost alongside this knowledge. The content of the narrated extracts presents various approaches, allowing the visitor to formulate a stance on the loss. It challenges tools and methods from the realm of self-tracking apps to either undermine or question them, such as revealing the technological apparatus or anarchiving *The Archive* as an activist artistic statement. Additionally, it fosters an interactive, bodily, free-from-rules experience, criticising the rigid pre-programmed, binary guidance, and consistently valuing style of apps, while inviting embodied experience and knowledge into the game. The discourse on loss transitions to the next section, where I focus on data visualisation, a crucial communication tool in self-tracking apps, arguing that it was ideologically developed to exclude the type of knowledge described above from the discourse and aims to create a world devoid of mystery.

[*The Archive* is also discussed in the sections Data Pollution and Anarchive]

Data Visualisation, Reduction, and the Loss of Depth

In this section, I present Isotype as a case study in a broader critique of how data visualisation (DataVis) reduces lived complexity and marginalises interpretive variety. DataVis—shorthand for the practice of translating personal, social, or scientific information into graphs, pictograms, and statistical images—has become a dominant representational form, practised in self-tracking apps. These visual systems are often praised for enhancing clarity, comprehension, and accessibility. However, I argue that the clarity they offer is not neutral but is rooted in an epistemological and ideological history that privileges uniformity and reduction over depth or plurality.

A particularly influential chapter of this history emerges from the early twentieth-century Vienna Circle and its visual design application through Isotype, the International System of Typographic Picture Education. This system exemplifies the translation of a philosophical stance—Logical Positivism—into a visual methodology that simplifies complex realities into measurable, visual units. By tracing Isotype’s development and philosophical underpinnings, I demonstrate how visual tools shaped by Logical Positivism continue to inform contemporary DataVis practices. What appears as accessible information often results in the loss of the complexity, nuance, and ambiguity that characterise lived experience. In doing so, it reflects a deeper ideological commitment to reduction.

— *The Vienna Circle and Logical Positivism*

The Vienna Circle, active in the early 1900s, was a group of philosophers and scientists—among them Otto Neurath—who formulated the principles of Logical Positivism. Their 1929 manifesto, *The Scientific Conception of the World*, proposed a radical anti-metaphysical programme grounded in empirical observation and logical analysis. Their mission extended beyond philosophy into the total organisation of knowledge and everyday life. They wrote: ‘education, upbringing, architecture ... economic and social life ... The scientific world-conception serves life, and life receives

it' (Hahn et al. 1973: 305, 09, 17)⁷.

Central to their method was the exclusion of ambiguity: 'Neatness and clarity are striven for, and dark distances and unfathomable depths rejected. In science there are no "depths"; there is surface everywhere ...' (ibid.: 306). Logical Positivism thus viewed complexity not as something to explore but as a problem to solve through simplification and stepwise reduction to empirical facts. It is this ethos that would shape Neurath's visual approach in Isotype.

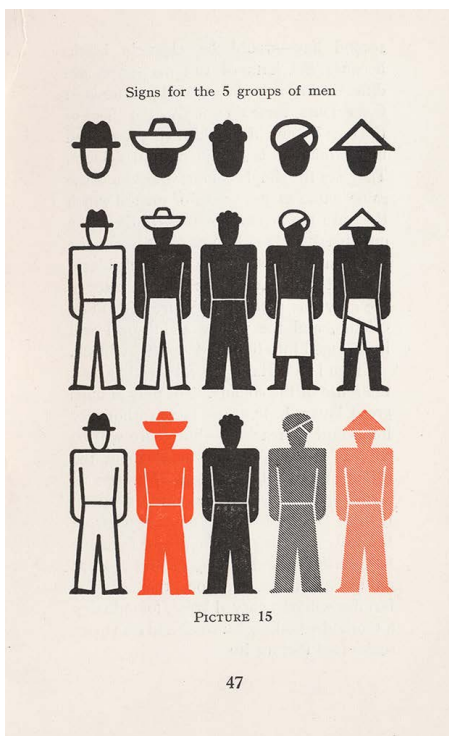
— *Isotype*

Isotype was developed by Otto Neurath in Vienna in the early 1920s as a practical visual language to communicate statistical and social information to the public. Intended as a tool of education and emancipation, it reflected both the political ideals and scientific values of the Vienna Circle. Neurath founded the Museum for Social and Economic Affairs in Vienna (GWM), which served as a laboratory for the system's development (Burke 2013). Through pictograms and charts, Isotype aimed to make knowledge visually accessible, emotionally neutral, and universally legible.

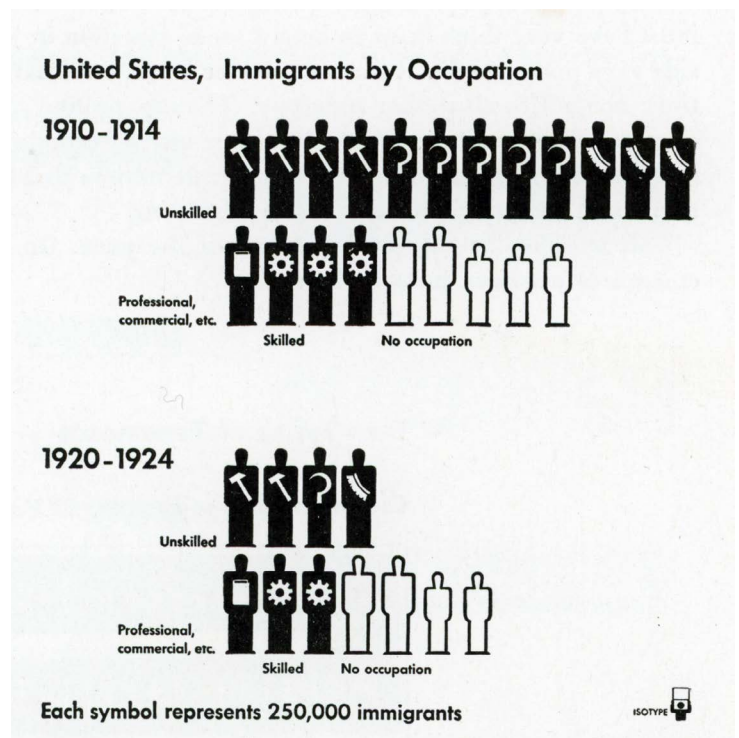
While ostensibly democratic, Isotype also served as a vehicle for Logical Positivism (E. Lupton 1986: 49). It

⁷ (Hahn et al. 1973) refer here and onward to 'The Scientific Conception of the World: The Vienna Circle, ' the Circle's manifesto published by Hahn, Carnap, and Neurath in 1929, a central essay in this section.

operationalised the manifesto's call for clarity by eliminating ambiguity in visual communication. Neurath's team stripped away decorative or subjective elements to create signs that could convey generalised knowledge quickly and clearly. By developing consistent, standardised icons and charts, they hoped to achieve what Neurath called an 'international encyclopaedia' for modern life—a universalist system that reflected the Logical Positivist principle that what cannot be measured should be discarded; it will 'put out all feeling—



Isotype
Signs for the 5 Groups of Men
 1936



Isotype
United States, Immigrants by Occupation
 1939

all words for right and wrong' (1936: 110).

This marriage of ideology and design was Isotype's enduring legacy: it demonstrated how scientific rationalism could manifest visually, in ways that seemed objective but were fundamentally shaped by exclusions and value-laden simplifications.

— *Reduction*

The Isotype project was driven by a powerful belief in the virtues of reduction. Neurath and his collaborators sought to communicate complex social and scientific realities using the fewest, clearest visual elements possible. Reduction was not simply a design choice; it was the ideological heart of the system. As Neurath put it, 'You attain pedagogical effects through simplification ... The one who best understands what to omit is the best teacher' (2017: 112).

This approach reflected a broader Logical Positivist rejection of metaphysical depth: 'All statements lie on one single plane ... like all parts from a workshop that supplies machine parts' (Neurath 1973: 326). Developing methodologies of charts and pictograms, Isotype translated statistical reality into a flat visual grammar. Complex data were distilled into countable symbols—men in hats, women in skirts, tools, machines—placed on neat grids that implied empirical certainty. This reduction had several consequences. First, it excluded what could not be

measured: emotional, contextual, or qualitative dimensions of experience. Second, it empowered designers to choose which variables were relevant, thus creating inherent bias. Third, it created the illusion of objectivity—charts appeared to be scientific and value-free despite the subjective framing choices behind them.

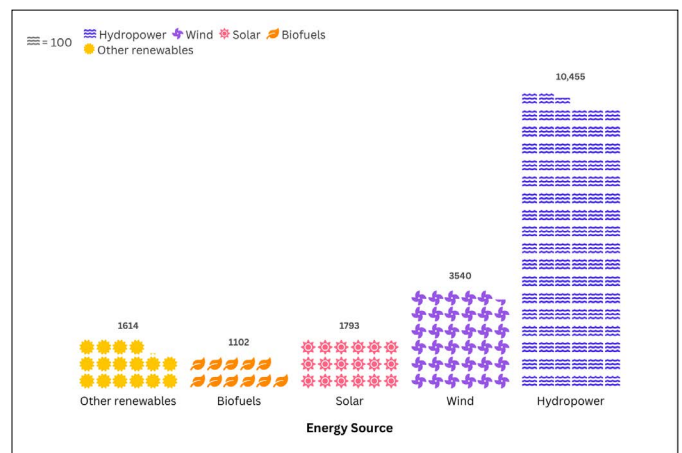
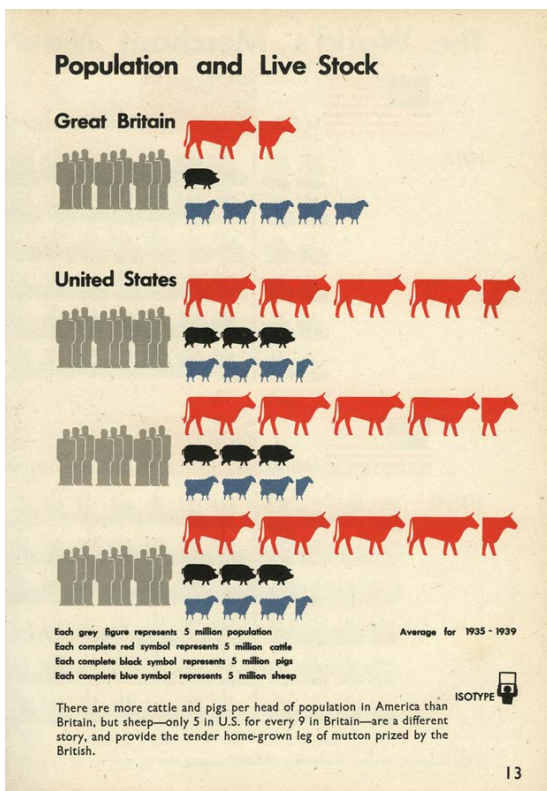
Pictograms carried this logic even further. Neurath's Picture Dictionary categorised thousands of life forms—jobs, genders, nationalities, roles—into simplified, generalised shapes. This system of visual signification allowed no room for ambiguity. What appeared as a neutral design choice was in fact a powerful political gesture: it sorted people and ideas into categories, privileging the seen and the countable over the nuanced and the lived. While such a reduction might be appropriate for emergency signage, Isotype's ambition extended far beyond functionality into a universal language—aspiring to “replace” cultural and linguistic diversity with a single, visual logic of clarity.

— *Contemporary DataVis Practices*

The reductionist principles of Isotype are foundational to today's DataVis (Bider and Clark 2021; E. Lupton 1986: 49), which inherits and expands upon Isotype's logic: clarity, universality, and surface-level representation. Over time, this visual logic has become not only dominant but normalised. The aesthetic of simplification is no longer recognised as an ideological choice but as a common-

sense design standard—as manifested in self-tracking apps. The *DailyBean* app (DailyBean 2024), for example, visualises moods through coloured icons and statistical graphs, promising to make one's inner life manageable and intelligible. Yet ambiguity, contradiction, and non-quantifiable feelings are systematically excluded. Visual clarity is a substitute for emotional nuance; the simplification of data becomes a stand-in for understanding.

While I do not share Neurath's strict rejection of subjective experience, I acknowledge the intellectual honesty in his writing. Today's self-tracking apps, influenced by these epistemological ideals, apply data visualisation, algorithms, and AI to shape personal data as if it were an objective account of reality. However, unlike the Vienna Circle, they do not openly acknowledge what is excluded—



Left:
Isotype, *Population and Live Stock* (chart 13), 1943

Right:
Flourish, *Interactive Pictograms Platform*, 2025

leading to an unspoken erasure of ambiguity, nuance, and lived complexity under a reductive veneer of clarity.

Furthermore, this structure reinforces a positivist worldview—one that equates knowledge with measurability. Users are trained to view their lives not as rich, evolving experiences but as a set of visual metrics to optimise. As in Isotype, this appears benign, even helpful, but it entrenches a form of epistemic reductionism that privileges data over depth. The dream of clarity, inherited from Logical Positivism, lives on but at the cost of interpretive richness and the full range of human experience.

The Phenomenology of Demystified World

In the previous section, I analysed the ideology that underpins the concept of transferring the methodology of scientific reduction into real life. Here, I will focus on the different nature of decoding reality through technological reduction as opposed to human inherent abilities. I claim that the mediation of tech in the interpretation of lived experience is gaining benefits but at the cost of losing an essential characteristic, that is, an amount of mystery. Experiencing uncertainty about when a bus would arrive, not knowing the gender of the expected newborn, betting on when the rain would stop, or having no idea how much screen time or book time one had spent during the day were, until recently, mundane ambiguities. People could still acknowledge the experience when the indefinite and the unknown were more common in daily life, as in the example above, when bus stations did not provide an electronic time sign, nor did passengers have a dedicated app announcing the exact minute of the bus's arrival, when travellers relied on a printed timetable stuck to the bus station wall. People did not expect to have precise information calculating live data to predict the arrival time; there was a natural and acceptable gap between the known

and the uncertain, between the known and the unfolding.

Two approaches regarding the expectations from technology to clarify uncertain situations arose through my interviews. One was represented by W., who said, ‘I don’t worry about doing 10,000 steps a day because I sometimes do 50. I walk a lot because I don’t have a car, so I tend to walk, you know, so I know that I’m doing quite a lot of walking without having a machine to tell me. ... I get through life perfectly, adequately and quite satisfactorily without doing it’ (W. 2022: 31:16). On the other hand, E. described his attitude, saying, ‘We need more devices to help us [comprehend, because] in our day-to-day life, there are so many unknowns. I don’t know the mood of the person I’m talking to, and I don’t know what the other driver will do on the road. And I don’t know why my son is crying’ (E. 2022: 34:43). Both interviewees referred to the same issue—the vagueness of real-life situations as opposed to technological possibilities to dispel the uncertainty and present concrete data—which is the core goal of self-tracking apps. This goal is a cross-genre custom not necessarily specific to the more tangible tracking realm, such as fitness or screen time. It is also essential when tracking popularity, mood, or meditation.

An app called *Insight Timer - Meditation App* (Insight Network Inc 2010), which has been downloaded over 5 million times, promotes itself as the winner of TIME magazine’s Apps of the Year. The “About this app” page offers, among other features, a ‘customisable meditation timer’ or ‘stats and milestones for tracking your progress’ (ibid.). This app is a fascinating allegory to illustrate my point, starting with its name, *Insight Tracker*, which holds a promise to control unknown aspects hidden in the insight process with technological methods, transferring them from the inner realm into the countable production and illustrated outputs. Furthermore, although meditation is a technique that uses methods and instructions, it is a process of a spiritual nature that focuses on the practitioner’s internal experience, fostering detachment from external distractions or realities. The technological statistics, milestones, and timers the app provides are foreign to an inner journey and flatten its potential depth. Defining the timer as

‘customisable’, as if one can technologically customise a timer to imitate internal time, only highlights the efforts made to blur the transformation from a practice with a profound, mysterious inner nature to one ruled by technology, which flattens it to provide measurable instructions, grades, statistics and timers.

The app’s objective is to make meditation optimally productive by recording and organising the results. In other words, it clarifies the unknown by structuring the measurable and eliminating the abstract ingredients. Its method rejects elements technology cannot handle, recognising them as unnecessary obstacles, and thus it aims to exclude them. But those very obstacles—ambiguity, uncertainty, the ineffable—are often central to the most meaningful inner experiences. Flattening them into trackable milestones not only misses the point but reshapes the practice itself. Therefore, I claim that the very spheres rejected by this process are essential to a more profound experience.

This section seeks not to disqualify one app or another or to call users to abandon apps; it aims to critically examine the overall phenomenon of self-tracking apps concerning demystifying reality—the ideology that fuels self-tracking apps, the personal outcomes, and its cultural influence.

It is easily predicted that as more self-tracking apps become prevalent, fewer ambiguous situations will be part of people’s lives. When critiquing the role of these apps in the disappearance of mystery in contemporary life, it is necessary to be aware of two points. The first is asking whether this mystery carries values worth preserving while neglecting the contribution of data to make one’s life more manageable and if seeking the lost mystery is not merely a romantic wish for an unnecessary appendage in today’s reality. The second point is the need to acknowledge that the first one, based on a view that evaluates the apps through their utility, is a fundamental capitalist framing of this inquiry. This framing depicts the mindset inherent in the values of these apps developed to perfect users’ physical, mental, and social performance, targeting capitalist goals and norms of optimisation, efficiency and productivity. This mindset does not cultivate wasteful ideals

such as mystery unless they prove beneficial.

Science and technology have been used since the Enlightenment project to eliminate the unknown; thus, life's mysteries and secrets were tagged as puzzles to be solved. In other words, I claim that self-tracking apps are tools developed under capitalist values precisely to banish the unknown from users' lives. Questioning the benefit of mystery as opposed to technological knowledge in today's life is especially difficult, as most of the Western population, as stated by Mark Fisher (2009), can imagine no other way than capitalist norms. From this point of view, it is hard to inquire about the value of the unknown, an ingredient considered inferior in the first place. To seek values in a situation of not knowing when to expect a bus or to prefer mystery regarding the expected newborn gender, given that the technologies are there, might sound ridiculous.

Therefore, I do not reject the technological achievements used in self-tracking apps but highlight the outcome of this impactful move and inquire about both the apps carrying the ideology of demystifying reality for the benefit of efficiency and the ideology itself. The cost of eliminating ambiguity is not just a cleaner interface or a more efficient life—it is the erosion of the mysterious, the nuanced, and the deeply human. Emphasising the outcomes is necessary not to abolish technological achievements but to lead to new relations based on an awareness of the phenomenology of a world that is losing its mystery. I do so through two analytical frameworks: extending Jean Baudrillard's essay (1987), "The Ecstasy of Communication", to analyse today's world of demystifying, and through the insights I gained from my *Carroll House* project.

Baudrillard published his essay in the early 1980s, exploring themes of hyperreality, the saturation of media in daily life, and the transformation of modern society influenced by omnipresent communication technologies. He presents a critical perspective on how media and technology reshape people's experiences with reality, becoming what he calls *the ecstasy of communication*. I will focus on his analysis of the transformation of objects into commodities, which he argued was influenced by media, and

on his inquiry into the different nature of the two. Baudrillard targeted television as the primary technology that influenced this transformation and shaped new relations with reality at that time. I will expand on two aspects of his diagnosis. First, I will focus on self-tracking apps and will claim that they joined the trend started by television, which generated *new relations with reality*. Then, I will extend his object-into-commodity transformation theory to address a new kind of transformation these apps generate—converting reality into measurable representation. Television, at the time of the essay, was a one-directional broadcasting medium that lacked the interaction and feedback of today’s media. It was an omnipresent commercial and entertainment communication tool which invaded the domestic private space, an issue I will elaborate on later. Its power to reshape one’s experience with reality was limited compared to the user interaction that was developed following the introduction of Web 2.0 and that was adopted into self-tracking apps. Current interactive technological developments use AI tools to analyse the individual’s acts, give them tailored feedback, and encourage the user’s participation. Still, the following quotation from Baudrillard is more than relevant. It describes the nature of the source compared to the nature of its transformation—the object compared to the commodity and the gap between them.

The commodity is readable: in opposition to the object, which never completely gives up its secret, the commodity always manifests its visible essence, which is its price. It is the formal place of transcription of all possible objects; through it, objects communicate. Hence, the commodity form is the first great medium of the modern world. But the message that the objects deliver through it is already extremely simplified, and it is always the same: their exchange value. Thus, at bottom, the message already no longer exists; it is the medium that imposes itself. ... All functions abolished in a single dimension, that of communication. That’s the ecstasy of communication. All secrets, spaces and scenes abolished in a single dimension of information. (ibid 131)

Baudrillard characterises the object as a carrier of qualities of unknown secrets and criticises the transformation of that object within the framework of the capitalist system, where its essence is replaced by its role as a tradable, measurable unit labelled by its exchange value. The new entity presents itself only by visible aspects; thus, it is easy to read; it uses modules to standardise the objects into its simplified language, creating a single dimension of information. Baudrillard critiques how it imposes its clear-cut and accurately evaluated output at the cost of missing its original message. This conversion from a lively, rich source into a new technical language and its consequences are mutual to the *ecstasy of communication*, as Baudrillard framed it, and to the language of the self-tracking apps. In this way, real life is transformed into presentable data on the user's screen, and thus it is relevant to my study. I have expanded on various aspects of this transformation throughout this thesis. Still, here, I want to build on the essay's emphasis on the unique, mysterious, holding secrets character of the origin, which is lost through it being translated into a communicational, readable product—the commodity in Baudrillard's critique and the app's outputs in mine.

As the targets of the self-tracking apps are characterised by various domains, such as mood or weight, so are Baudrillard's objects; both are not limited to a physical, tangible entity. Among Baudrillard's mentioned objects are the surrounding landscape, time, bodies, and pleasures, as well as automobiles; all are transformed into a non-reflecting operational surface, in a homogenous virtual functionalisation process (ibid.: 127-29). I will draw upon Baudrillard's words (slightly edited, marked by square brackets) to make my point on the phenomenology of the messy aspects, mystery, and secrets these technologies aim to eliminate in the name of capitalist values.

The hot, sexual obscenity of former times is succeeded by the cold and communicational, contactual, [shallow], and motivational obscenity of today. The former clearly implied a type of promiscuity, but it was organic, like the body's

viscera, ... or like all that is not spoken, teeming in the silence of repression [and allowing mystery and depth]. Unlike this organic, visceral, carnal promiscuity, the promiscuity that reigns over the communication networks is one of superficial saturation, of an incessant solicitation, of an extermination of interstitial [spaces—the small gaps, pauses, or liminal spaces where reflection, ambiguity, and intimacy can exist] and protective spaces, [the separations that allow for privacy, introspection, or genuine connection], (ibid.: 131)

Baudrillard's dense prose above does not build a stable argument to prefer the former communication style practised before the communication ecstasy. The opposite is true; his description of former times might sound repulsive and create rejection. Instead, its strength is by expressing a distinct, descriptive viewpoint on both methods. Readers can identify with cold, superficial, and saturated modern communication where nothing is hidden, and every interaction is flattened into hyper-visible, transactional exchanges, crafting a surface-level world. Or they can be fond of past relations' visceral, mysterious, and organic nature before the protective and interstitial spaces that allowed for depth were eradicated. As I realised during the interviews and as shared above, users expressed different attitudes towards the possibilities that the self-tracking apps offer to expose the mystery. This is reflected in millions of users who follow these apps, drawn to the hyper-visible while others choose to avoid it. My role here is not to choose for the users but to discover and portray the phenomenology of the outcome for the user to decide. I claim that the technology used in those apps is so tempting or, as Baudrillard said, incessantly solicitous that it is necessary to question and characterise the outcome, to present it, to create a wake-up call, to raise awareness, so people can decide according to their preferences. Or, better yet, people should be encouraged to develop a new kind of relationship with these technologies, one that can give equal space for a variety of ways to engage with lived experience, refusing the tyranny of one over the other. The *Carroll House* project explores this question, focusing on the outcome of a life driven by efficiency, a *to-do-life* that leaves little room for interstitial, mysterious spaces.

— *Carroll House*

Carroll House is a short observational video work documenting the façade of a London residential building, recorded from a fixed viewpoint over several months. This façade was, for an extended period, the main view through the window from my coffee table. Staring at it became a daily ritual that evoked what I imagined to be the experience of late nineteenth and early twentieth-century artists, who were drawn to the view outside their window—gazing at it, blending their interior and personal world with the exterior, broader outside world as a rich source of inspiration before painting it. This methodology allows for a balance of introspection and observation. It was not a planned artwork but unexpectedly formed part of my research, adding its novel insights.

The façade that occupied my window was the front, open corridor of a typical London residential house constructed in the early 1980s. Its architectural style reflects the functional layouts and modernist conceptual trends of that era, embodying the ideology of practical and straightforward aesthetics focusing on utility and simplicity, aligning with the architectural movements prevalent during its construction period. The Carroll House façade, the setting of my window's scene, was a geometrical matrix of open corridors, doors, and windows. In front of the Carroll House building were two giant trees that, during the summer, hid most of the façade. One day, returning from a vacation, I realised the council had pruned the trees. The tree stumps in front of the uninspiring building created a depressing grey, dystopian setting but exposed a





Haya Sheffer
Carroll House (video stills)
2023–2024
Video, 12:17 min

Available on Vimeo [↗](#)

mesmerising spectacle—a matrix of walking individuals. I was inspired by Luiz Roque's *Urubu* (2020), a silent Super8 looped film I had seen a year before at the 2022 Venice Biennale. The film, taken from the artist's apartment window during his long COVID-19 isolation, captured Urubu, a typical urban bird in São Paulo, in a poetic flight within a complex of one of the city's buildings. Like the painters I mentioned before, here again, a dynamic scene of a random exterior inspired the artistic introspection and creation, which, in this case, condenses the feeling of suspension shaped by the unprecedented conditions of the pandemic (Weisburg 2022).

I began filming the human occurrences set against the backdrop of the geometric matrix I observed from my window. I filmed about seventy hours of footage, distilling the insight inherent in this scene before editing the 12:17-minute final video. It captured a spectacle of human bodies' operative movement, with their purposeful and effective body language. People appear and disappear in and out of the standard doors of a modern modular, functional, grid-designed residential house, being the setting of the performance. An ongoing scene of individuals walking to or coming from, target-oriented, creating a live flat matrix



Luiz Roque

Urubu

2021

Super8 film transferred to video

of efficiency. My window scene refined and revealed a narrative at the core of the ideology I am targeting, the one that fuels the consumption of self-tracking apps: reducing life to its most basic, controllable, and efficient elements, neglecting and abolishing the mysterious, messy parts which disrupt this narrative. The videos I took archived hours of one of the achievements of modern life—minimising it to the orderly by eliminating the chaotic, wild elements. People did not communicate with neighbours, express happiness, show interest in the weather, or pause to look at the view. The doors were slightly opened for the delivery men, the minimum necessary, creating no involvement or contact. The footage gathered live human figures trapped in a manufactured man-made concrete monument that manifested both the docile body and the subduing, disciplining architecture. The only free, non-horizontal movement in my window's frame, disrupting the matrix, was the pigeons' rare flight. I tied the insights of this spectacle to Baudrillard's words:

'This is the time of miniaturisation, telecommand and the microprocession of time, bodies, pleasures. There is no longer any ideal principle for these things at a higher level, on a human scale. What remains are only concentrated effects, miniaturised and immediately available. ... All secrets, spaces and scenes abolished in a single dimension of information.' (1987: 129, 31)

The Carroll House architecture can reflect Langdon Winner's essay, "Do Artifacts Have Politics?" (1980).

Winner argues that technologies and built environments, like Robert Moses' low bridges preventing racial minorities from accessing Long Island's public beaches, are not just neutral tools but actively reinforce power structures and social hierarchies. One of the insights gained from hours of observing the scene from my window was the profound influence of the artefact. The impact of the message inherent in the efficient architecture on the walking tenants was evident—the politics and ideology of its ascetic style, which eliminated any unnecessary elements and permitted only what was deemed functional, shaped the movement of its occupants and orchestrated choreography of efficiency.

Using an editing methodology that treats the footage as a vocabulary of actions—composed of body language, interactions, and sounds (both human and nonhuman)—the video assembles these elements into choreography that, rather than focusing on constructing a linear story, allows the theme to create its own narrative. This not only highlighted my understanding gleaned from the show but also provided viewers with the space to immerse themselves, pondering and raising their personal emotions and insights from a seemingly casual scene captured by my camera. As in several of my other artworks, here too, viewers must adjust their temporal pace to match that of the movie if they wish to participate, a manipulation that challenges the typical modern pace of life.

The insights gained from this project underscore the image of life reduced to perfect necessity, cutting oneself off from spontaneous encounters or unplanned experiences and becoming an automaton, as seen in self-tracking apps that encourage users to take the shortest route, eat a precise number of calories, or meditate according to a set programme. The sadness in the scene was the sadness of

the observer, stepping away from a conventional setting and realising how the ideology conveyed through artifacts, such as buildings or self-tracking apps, encourages the user to eliminate the unproductive, ultimately suppressing rather than enabling options and offering a broader horizon.

— *Self-Tracking Apps' Double Role in Demystifying*

Self-tracking apps are a player in this worldview. They are a tool for perfecting people's performance, training them for values that repress the messiness and mystery of life. Furthermore, not only are they a technique for achieving these goals, but they also serve as agents that carry and spread the above capitalist values and affect cultural perceptions. I will use examples from the interviews to demonstrate the looped connection between apps as tools and their role in carrying a promise to achieve an ideal by decoding the mystery and removing it from the user's life. The apps present their technological option, holding an inherent hidden message that the unknown must be eradicated. In the following examples, the interviewees refer to their experiences with the baby-tracking apps they used. Once the apps provided the demystifying tools, the users perceived the realm of uncertainty as a defect, wishing for more assistance to demystify further.

As known, the child doesn't come with a book. ... I wasn't sure if [my physical sensation] feeling was the correct feeling and how I should act upon it. ... At the beginning of E's life, I basically a hundred per cent relied on devices ... relying on devices helped me, I don't know, become a better mom. I asked myself quite often why I am relying on devices and not just ... going with the flow anyway. ... Because [E'] lacks the ability to say, I need this, I need that. So, I'm relying on devices to create a bridge or to close the gap between what he needs and what he can say. ... I think it's because I want to give him everything that I can give him: the best night's sleep

or the best feeling in the world—that he’s cared for (M. 2022: 15:12, 26:31).

My work is completely reliant on data, and as a marketer, I need to know who does what exactly. In real life, sadly, I wish it was like that, but it’s not that linear... especially when you get the chaos of kids. ... If there were some kind of data source that ... is guaranteeing what is happening, I would use it. I don’t believe that regarding children, there is something like that yet (E. 2022: 25:04).

Both parents shared the attitude that their relations with their baby created uncertainty regarding the baby’s needs, and this gap of the unknown must be bridged, believing technology could potentially help. Neither of them questioned the possible qualities hidden in this gap and whether this mystery could cultivate new values, such as parental sensors bonding and strengthening their mutual connection, or any other advantage, sometimes at the expense of what they perceived as reduced performance. The role of the apps and devices in these examples was to demystify the baby’s needs. Moreover, it created a presumption, arising from the apps’ values, that the unknown in this relationship must be eliminated and that there was a goal—a perfect child or a perfect parent—that the users should aim for. Therefore, self-tracking apps not only provided the tool to demystify life but also propagated values of docile, homogenous capitalist subjects, optimally productive bodies, aiming to eliminate ‘all secrets, spaces and scenes abolished in a single dimension of information’ (1987: 131) in Baudrillard’s words.

Chapter 11: Loss of Authentic Skills

To examine the epistemological and embodied implications of contemporary self-tracking practices, I began by analysing the loss of variety and options for interpreting one's body and reality. I argued that during the act of translation, these apps reduce lived experience into limited technological outputs, omitting aspects that cannot be codified or that fall outside the app's underlying ideology. This first analysis approached the loss as a structural phenomenon—critiquing the app's proposals as preconditioned, narrowed choices presented to users. In the following section, I shift the focus to the user's standpoint, asking how this process affects the individual's embodied epistemology: their skills, intuitions, and interpretive capacities for engaging with the world—and whether these are at risk of erosion.

Data Pollution

The term *data pollution*⁸ came to my mind after observing an unexpected urban wildlife phenomenon—birds, probably European robins, chorusing at midnight in a London Christmas-lighted Street. Zoologists have several assumptions on what causes robins in specific locations to change their singing habits and begin their morning chorus hours before dawn. One familiar theory suggests that high levels of artificial light, known as *light pollution*, possibly affect the physiology and endocrinology of birds in several ways or cause neurological changes. The outcome is a change from the robins' typical behaviour of performing songs at dawn to a night singing performance (Miller 2006: 138). This could be described conceptually as if the robin's body perceives the artificial light, the light pollution, as sunlight and thus senses nighttime as dawn. After living my whole life in rural areas, this unexpected performance was haunting. The spectacle of the influence of artificial intervention in birds' decoding of nature raised an insight, encouraging me to analyse the impact of the intervention of artificial data on human perception through the same analytical lens, calling it *data pollution*. I found a similarity between these two human achievements—light and big data—that, in contrast to air pollution, for example, gains positive connotations. Still, both can potentially pollute, and as I realised through this occurrence, they have the capacity to pollute living beings' embodied knowledge.

I have cited one of my interviewees above, who stated that the more data will be used to decipher reality, the better. This mindset represents

8 The term 'data pollution' is used by researchers infrequently, primarily to describe problematic outcomes of the current proliferation of big data in the context of environmental issues; however, it is not yet an officially recognised term. In my research, I refer to another type of pollution created by data and its effects.

self-tracking app developers who collect growing amounts of data to improve, as they claim, users' quality of life. Increasing the amount of data, according to this attitude, resembles the municipal decorators' approach to Christmas streetlights, where, in both cases, technological achievements are perceived as positive and as free from disadvantages. The point to highlight is the similarity where both light and data enjoy a positive public perception. Critically analysing how the gathered data can pollute peoples' authentic skills, which are used to decode life and affect their perception of reality, brings a second similarity. It resembles how robins are affected by light pollution. The effect of data pollution on humans is the claim I want to develop here. It is an analysis that requires several stages. The first is to ask if the data in self-tracking apps serves as eyeglasses that have any effect on users' perception of reality. This then raises the question of whether these glasses obscure or sharpen the original observation of reality. Finally, does this phenomenon threaten the sustainability of these inherent abilities?

The first question tackles situations where the app's presentations differ from users' experience of reality, for example, when the mother I cited elsewhere said she *knew* that she had to continue breastfeeding, although the app stated she had fed enough; when a user wakes up from a good night's sleep and gets an input from the app that it was a low-quality sleep; or when the father I cited before shared an occasion when his baby was not hungry, but the app determined he should eat now. Similarly, Netflix's "You may also like" feature generates recommendations, which are AI-tailored alternative realities, deviating from what might have been the users' authentic preferences. This is not psychological research, and although the interviewees claimed they tended to believe the apps rather than their inner knowledge, I do not have the tools to say the outcome provided changed their perception of the given situation. I can claim, though, that the apps offer alternative ways to depict reality. They were not developed to duplicate users' knowledge of a given situation but to provide additional information, whether aligning or contrasting with user's reality. Consuming or using these apps creates a hidden consent

where the user considers the apps' outcomes as an acceptable reality. Thus, it can be assumed that there are cases where the apps' knowledge affects users' perception of reality, for example, the two parents might see their baby's needs as the apps suggested, silencing and oppressing their parental intuitions and their own interpretation, and the Netflix watchers could adopt the idea that the suggested videos are their preferred ones to watch.

The second question is whether this effect obscures or sharpens one's original observation of reality. This is an ideological question, and I will critique it as such. Users can claim that using the apps' outputs can help them gain a sharper understanding of reality. I argue that although the tools provided by these apps present a sharp, clear-cut reality, this is a deeply processed, treated, and manipulated reality presented as an ultimate truth. Furthermore, it uses DataVis tools, UX/UI, selected data, and a speaking tone, creating a powerful voice of certainty. Like the light pollution allegory, the app's presentation is so bright and shining that it has the ability to dim the human inner voice. Netflix's suggestions, or any other customer-tailored marketing suggestions, can be perceived as the clear-cut ultimate reality, guiding the users toward their preferences, like eyeglasses that enable vision; still, instead of sharpening the user's vision toward their authentic wishes, the algorithms' offers keep the user from thinking independently. The parents above, who struggled to figure out their baby's needs, recalling their experience in the interview, were aware enough to doubt the app's sharp voice. However, in other cases, where the users are unaware of this battle, they can perceive this light as reality-enhancing eyeglasses instead of data that pollutes their ability to use their inner skills.

The last question inquires about the potential erosion of human inherent knowledge due to the effect of data pollution and its shining and potent nature. It is tempting to address this question from a cognitive perspective supported, for example, by a study that has found that frequent GPS use negatively impacts people's ability to use spatial memory strategies (Dahmani and Bohbot 2020). This is important and relevant; still, I want

to focus on the individual's *relations* with their body or surroundings and the profound loss when it becomes dependent on external crutches, weakening its strength and abilities.

My project, *The Archive of the Lost Embodied Knowledge*, addresses this question by attending to people's experiences and thoughts regarding the weakening or loss of natural skills to technology and self-tracking apps. I described this project in depth in the section dealing with the loss of variety when the apps suggest a narrowed language that neglects the richness of a lived situation. Here, I will address *The Archive* from a different angle, highlighting insights related to the potential erosion that can lead to the extinction of these inner abilities.

The Archive artistic installation stores audio-narrated personal bits of stories extracted from interviews I conducted. An audio fragment is heard only when one who explores *The Archive* opens its metal tin. It is a collection of experiences, beliefs, and notions focusing on the involvement of technology in the intimate relations between one and one's body, one's close environment, and the world. I will present a few transcriptions as they appear in *The Archive*.

V.

I think that the, I would say, the happiness of being a human is the mysterious nature of how we are, isn't it? It's like, don't have to know everything about yourself. Nor does...

M.

I don't know. A child doesn't come with a book. And a thermometer is like giving you the correct answer, the accurate answer. And a thermometer gives you a decision, right?

G.

And in fact, I think what you're actually doing is you're outsourcing, outsourcing part of your consciousness. You're outsourcing your consciousness to that device. What you miss in that process is some sort of feeling of satisfaction. You have a satisfaction of getting [to use] your own senses and not outsourcing. So, what do we become if we outsourced all of our packages outside? Do we become just a piece of meat, or are we less satisfied? Is there some satisfaction of, of having our own senses and? I don't know.

V.

I like the physical feel, touch and feel of a book. And I was just thinking it would just save me a lot of space. And I was wrong that day. I would have detested if I had a (laughing) Kindle, and I would never finish a book because it doesn't give me that connection.

V.

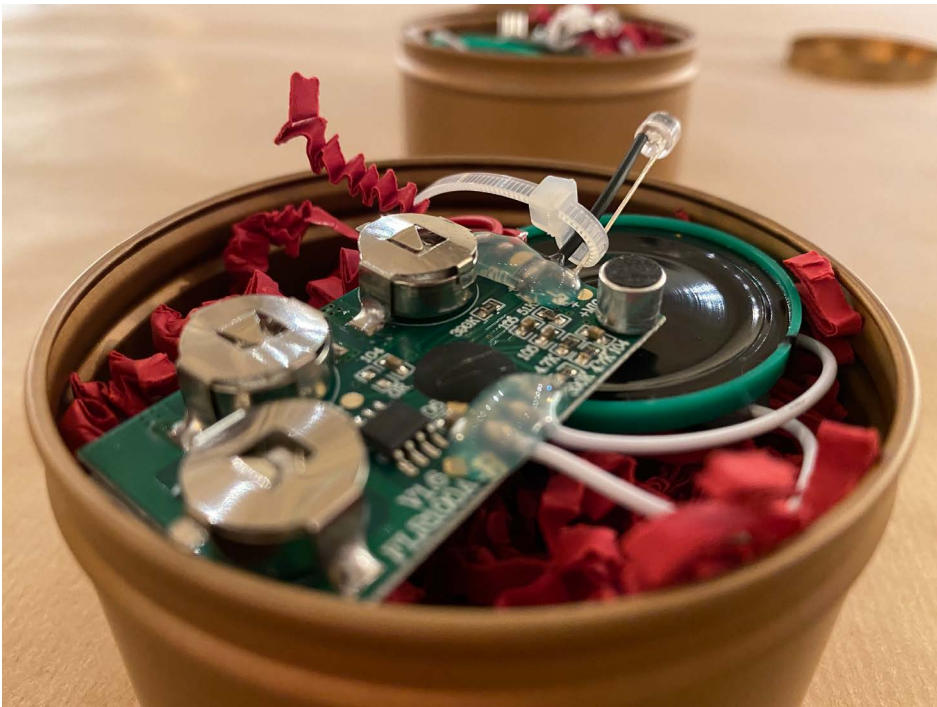
It depends on how I feel about myself before I get into gadgets. I actually don't like collecting personal data like this. It's, um, I think it's intrusive. Um... it knows more than how much you know about yourself, which is scary sometimes.

W.

And even now, I will not use a machine where I can use a human being. I don't approve of, you know, machines replacing people. So I'd rather they didn't.

V.

But, my husband, on the other hand, who's like a technology activist, I would say. And some of his friends and cousins are really inclined towards using this because they, they think it's motivating them to do what they have to be doing, like exercising every week and or walking or it reminds them to even as when to sleep. So, and how many hours to sleep and how many hours to have a screen time. For me, it's like, it's like having another mother. It's like, yeah, (laughing) you have somebody who's telling you what do you have to be doing all the time. It's like, I wouldn't like it (laughing), I want to be my own boss sometimes.



Haya Sheffer, *The Archive of the Lost Embodied Knowledge* (installation view), 2022
[A full compilation of the audio tracks is available on SoundCloud ↗](#)

The random exposure of the fragments created countless discussions between the narrators rather than a linear story. The listener, wandering between the tins and the narrated stories, will not necessarily find an account declaring a loss. Instead, they will be exposed to various approaches, hesitations, life events, and thoughts that evoke their personal insight regarding this issue. The outcome of concentrating juxtaposed, sometimes contrasting, fragments evoked self-reflection, and the exhibition's visitors were keen to share with me their insights about their personal views triggered by participating in the installation. The understanding raised by this project was not a judgment but an acknowledgement of the existence of a battle between embodied knowledge and the new technological force inherent in self-tracking devices, realising the second's potency and how it sneaks into modern life and establishes itself as if it has no cost.

[*The Archive* is also discussed in the sections *Narrowing Down the Options* and *Anarchive*]

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I will add to the discussion the analogue data drawing project *Dear Data* by Stefanie Posavec and Giorgia Lupi (2015), which is part of the MOMA collection. The two tracked a weekly chosen theme of their personal life for one year, designing and drawing it on a postcard and sending it by post to one another, whether to the UK or the US. Examples of the 52 themes they tracked are *Week 5 (Things I [We] Bought / A Week of Things I Buy)*; *Week 18*

First was their initial choice of the analogue format, which they framed as 'slow data transmission' emphasising its contribution to the human experience: 'From the beginning, physicality has played an important part ... the intrinsic, physical, imperfect nature of an analogue drawing challenges the seemingly cold and impersonal world of digital data through their humanity and warmth, ... creating the physical interaction of "discovering" while turning the postcard from the back to the front, and then the back again, [adding to that] the physical journey of the postcard across the ocean'. (Somerset House 2015)

Second, it used the human ability to seek deep meaning as opposed to technological, functional outcomes: 'We've always conceived *Dear Data* as a "personal documentary" rather than a quantified-self project, which is a subtle - but important - distinction. Instead of using data just to become more efficient, we argue we can use data to become more humane and to connect with ourselves and others at a deeper level' (Lupi and Posavec 2015). Week 24, for example, was a week of doors to give the other person an idea of the pace of the internal and external environments they entered or came from. The collected data had no efficient meaning. The only value it gained was due to the significance the sender or the receiver poured into it.

Third, they used non-modular methods to challenge the modularisation and the standardisation inherent in digitised self-tracking: 'A common approach in data visualisation design is to visualise data using tools that

often return a very standard visualisation, but by hand-drawing our data ... and by removing the technology from the equation ... we've been compelled to craft the visual model specifically for the very dataset we were dealing with' (Somerset House 2015).

Lastly, and maybe the most important element in human relation to tracked records, is how they encouraged themselves to experience the gathered data not as an answer but as a question to investigate: 'We both realise that data is the beginning of the story, not the end, and should be seen as a starting point for questioning and understanding the world around us instead of seeing it as the definitive answer to all of our questions' (Somerset House 2016). This point is significant because the self-tracking apps' 'call to action' is unmotivating or even blocking the possibility for further questioning. As users repeatedly mentioned in the interviews, the apps tell them what to do, and even if the app does not officially present it as such, they perceive the outcome as the end of the discussion.

In conclusion, returning to the question of whether self-tracking apps threaten to extinguish human embodied knowledge, my insight from both *The Archive* and *Dear Data* is that this knowledge is in a survival war. In other sections, I inquire about the qualities of this knowledge and the necessity of preserving it; however, here, I argue that the brightness and shininess of the data have the power to pollute the human capacities raised in these two projects and make people perceive data as the ultimate truth. Like the city lights that dazzle, hiding the stars from humans' view, inner abilities to interpret the world could be expressed by dimming the data's voice and finding new ways to combine the two.

Eroding the Capacity to Experience the World Authentically

My grandmother on my father's side graduated in Biological Sciences in 1934 at the University of Lviv, then Poland, when women could rarely be seen in scientific faculties. She was a pioneer—following her passion rather than the norms—and held a modest career and scientific approach throughout her life. She once shared a long, unresolved debate between my grandfather and her, where he claimed that biologists, aiming to study, analyse, and classify nature with quantified, calculated, and rational tools, would eventually miss its true deep essence. My grandfather's perspective reflected a debate of his time regarding the role of science and technology in altering people's approach to nature and their experience of the world. Heidegger's 1954 *The Question Concerning Technology* (1977) raises questions about the consequences of these new methods of revealing the truth. He claims that the technology of the twentieth century allows people to gain practical knowledge of the world, arguing that the essence of technology is to reveal the real in the mode of ordering. But human control of the production process reduces it to something often inferior to its true essence. Thus, despite its success in determining reality, it holds a threat—it hides the true and authentic essence of being.

The unconcealment in accordance with which nature presents itself as a calculable complex of the effects of forces can indeed permit correct determinations; but precisely through these successes the danger may remain that in the midst of all that is correct the true will withdraw.

The destining of revealing is in itself not just any danger, but the danger. (ibid.: 26)

Heidegger's emphasis on technology's potential power as not just any danger, but *the* danger, is relevant regarding the implications of adopting self-tracking apps. I will avoid demonising technology, but I will still critically analyse its ability to alter one's perception when it presents itself as a supreme truth.

While Heidegger points to the hydroelectric plant being set into the current of the Rhine and changing its destiny from being a river into being a power supplier, today's technology invades delicately and becomes a stowaway in various aspects of an individual's life. As such, it blocks one's *poiesis*—‘the bursting of a blossom into bloom, in itself’ (ibid.: 10), meaning the capacity to perceive the world in its original form, remain receptive, and respond adaptively to it.

G. expressed his feelings about GPS (satellite navigation) in an interview.

I found that when I use satellite navigation in the car, I get a sense that I don't really know where I am. And so, you're just following the sitemap, and you get to where you want to go. But you've got no idea that you've been there, you've got no idea you're just concentrating on this screen. And you've missed that sense of awareness of your surroundings and the journey we've taken. (G. 2022: 51:54)

N. offered a different perspective on the same issue based on his experience. He is a farmer aged over fifty who left school and started working at the age of ten. He is a talented natural stone terrace builder; having known him for a long time, I can confidently say he loves his work. I interviewed him in the spring of 2019 as part of a previous project.

Most of my time is quiet. I choose silence. Sometimes I sit under a tree after I've finished my day, quiet and relaxed. I look at something. When I build a terrace, it is like painting. The stones for terraces are ones that exist in nature. Nature has everything. I look at the rocks, my mind is clear, and I know how to place them together. I think of every stone I find; each one has its shape. I don't drive a car; I don't have a car. I would ride on a donkey, and I would see every stream and every valley in the winter.

Today, with these iPhones, the mind is distracted, and people can't see the real things as I see them. I can feel the day. I see the real things. They see things but don't live them. (N. 2019)

G. and N., hailing from vastly different cultures, educational backgrounds, and perspectives, shared an experience in which technological devices threaten to obscure their intuitive vision of the world, their sense of connectedness with the environment, and a “natural” way of understanding it, defined by G. as ‘sense of awareness of your surroundings’. The point they raised is not the more common argument on technology’s fight for attention; the issue is how people see the world through technological analysis, which changes the essence of the viewed. The journey with or without GPS is not the same journey, and the surroundings are not the same surroundings. Like Heidegger, G. thought GPS was a superior technology that ‘can indeed permit correct determinations [to reveal] a calculable complex of the effects of forces’ (1977: 26) but criticised it, as it reduces the journey to something inferior to its true essence.

N. depicted the way he works with rocks, seeing each stone’s nature and expressing his pity about how people are no longer capable of seeing the nature of things. When he mentioned that he rode a donkey and not a car, he said, like G., that nature, once it is experienced through a car window, will be an interpretation that blocks our *poiesis*, our capacity to see the world as it is, authentically. N. shared later in the interview his concern about his children: ‘I try to disconnect them from the devices ... so they won’t lose their ability to see and that their minds will not be lost in their devices’ (N. 2019). He was worried that the time they spend seeing the world through technology will weaken their natural ability to see things as they are without advanced technologies’ interpretation, which would be a significant loss from his point of view. This ongoing change of balance that N. indicated, abandoning one’s natural abilities and relying on external devices’ semiotics, is a realisation of Heidegger’s prophecy, talking about the technological way of revealing as—*not just any danger but the danger*.

M. described herself honestly as ‘quite often relying on devices’, suggestions from AI, etc. Surprisingly, she portrayed her attitude towards running devices as untypical:

‘I enjoy running. I don’t have Fitbit or a special device for

it. I just go running ... the data is irrelevant. I'm not in a competition. I go out running because I want to enjoy it'. (M. 2022: 21:09)

The way M. kept her *running time* away from the devices she relied on emphasises her awareness of their influence on how she perceived situations and, therefore, the potential effect on her running experience. Since she had no practical goal when running, she felt free to let go and handle it differently, to keep it as a sanctuary where she could use her capacity to see things as they are without technological mediations. This is a refuge situation that M., who was addicted to tracking technologies, had developed for herself. It is an inspiring starting point when exploring options to adopt advanced technologies that can interpret life while rejecting it as an ultimate truth.

The threat of technology that Heidegger identified in *The Question Concerning Technology* highlights the significant industrial changes of his time, but it is perhaps even more relevant to today's transformations. The new developments have created sophisticated, readily available, hard-to-refuse products that act as reality decoders providing quantified truths. Thus, the insight of this section is that it is no longer the Rhine changing its destiny from a river into a power supplier, which threatens humans' capacity to experience the world authentically. Instead, it is a set of personal omnipresent apps claiming to interpret the world in a way that is better, sharper, and more easily digestible than human abilities, making the latter seem irrelevant. Attempting to handle technology as a means of decoding reality, as practised in self-tracking apps, can dazzle and obstruct one's ability to perceive the authentic essence of being, thereby threatening people's capacity to view the world without mediation.

Second-Hand Experience

A fundamental perspective for envisioning the phenomenology of using self-tracking apps is to focus on the apps' output as suggestions from the app for experiencing and understanding a given situation. This section develops Baudrillard's idea that 'we live in a universe strangely similar to

the original' (1994: 11), which describes the experience of living through a situation as mediated by its records. When I was five, an educational survey was taken at my kindergarten. The survey editor asked me a set of questions, one of which I clearly remember, as I kept dealing with it over the years. She showed me an image of a tractor and asked me what was more powerful: the tractor's image, the word "tractor" or a real tractor. I remember myself as a young child debating with myself about the power relations between the three, eventually, answering that the word is the most powerful. I perceived the *symbol* as containing the real, not recognising the contrast between them or defining the unique nature of each one. This, in a way, depicts the situation where app users react as if the representations—numbers, graphs, icons, text, sounds—of what they track are what are real, are more accurate than the lived experience. In this section, I analyse the idea raised by Baudrillard that today's society is a *hyperreal society*, concerning self-tracking apps, a concept depicting experiences detached from their origin and reality. In self-tracking apps, this notion creates a unique phenomenon where one is simultaneously the origin of the *real* and the one to experience the records; as I mention elsewhere, one is the *source* of the message, the *object*, and its *receiver*. This dynamic, mediated by the app, creates an inner tension between the embodied self and its detached simulacrum, destabilising embodied ways of perceiving the body. Therefore, it is a unique phenomenon of significant importance in the simulacrum discourse. I will first present the overarching contemporary issue of living in a universe strangely similar to the original.

The information society (Bell 1976: 576) defines a new era of knowledge-based economies, dominated by information, services, and intellectual labour. The *meta-media society* coined by Lev Manovich (1999: 17) suggests that a new stage has emerged where today's information workers engage not directly with material reality but with its records. Focusing on reports rather than their sources can underscore the phenomenon under examination: documentation versus reality itself. The difference between nineteenth-century merchants and contemporary meta-media workers emphasises

the shift. The former viewed, touched, smelled, lifted, checked, evaluated, stored, and sold their products. They earned cash while sorting, counting, and physically engaging with its touch, smell, and weight. In contrast, today's meta-media workers handle the data of transported supplies and might not physically see the products or the money involved; instead, they deal with records. They type orders, sell or buy, transfer, store, and review the profits on a digital sheet, a complete data set that is more relevant to them than the source. The experience of engaging with the products and profits is entirely different between physical and recorded interactions, and it must influence how they perceive their commodities. Once the recorded material has gained its official status and established its reliable authority in the workspace, it changes how individuals trust or privilege life's second-hand, recorded outcomes.

Analysing the practice of self-tracking apps, where the individual both performs the physical event and experiences its record, users, in many cases, find the second one preferable—for instance, gathering likes and followers on social media to be assured of social acceptance instead of trusting their own senses and judgement, or when perceiving photos taken and uploaded to social media as the ultimate reality, surpassing the actual event being photographed. I am fascinated by the common situation where people photograph the dish they ordered, even iced coffee in a plastic cup, and upload it to their story as if this image validates reality.

Baudrillard's (1994) concept of *simulacra and simulation* analyses the above phenomenon of recording the real, distinguishing between three stages—representation, simulation, and simulacra. Representation refers to signs or images that stand for and reflect a real object or experience, maintaining a connection to reality. Simulation goes further, imitating reality without necessarily having an actual reference, while simulacra are copies without any original, creating a self-contained reality of signs that refer only to each other: 'It is no longer a question of imitation, nor duplication, nor even parody. It is a question of substituting the signs of the real for the real' (ibid.: 2). Hyperreality is a state where the boundaries

between the real and the simulated blur or vanish, as representations and simulations become more real than reality itself, shaping perception to the point where distinguishing between reality and simulation becomes difficult.

Baudrillard illustrates a process where the image transitions from reflecting a profound reality to gradually losing its connection to any reality, ultimately becoming a pure simulacrum. Self-tracking practices inherently rely on recorded data, and the services they provide vary on this scale. The following example illustrates a situation in which, due to a misunderstanding, an app presented data as ultimate truth, thus disconnected from reality, leaving the user confused about whether the app's outcome is a simulacrum or reality itself. E. described an occasion when his baby tracker app indicated that he should feed his baby, who did not want to eat: 'I was pretty persistent and got annoyed that he didn't want to eat because the app said he was supposed to be hungry' (E. 2022: 21:20). Ultimately, it became clear that the app's output was based on incorrect records, but this is not the main issue; the crucial point is that E. had to choose between two realities: the lived one and what he perceived as its analysed record. The first depicted a satiated baby, while the second showed a hungry one. For E., the recorded reality—the one derived from the analysed data presented by the app, detached from its origin, was the one to trust, illustrating a universe strangely similar to the original, as framed by Baudrillard.

The claim is that the apps' users face a situation where they constantly have to choose between two dishes on their plate: the one they have physically or mentally experienced and the interpreted one presented on their device. Being part of contemporary society creates a daily conflict, which is often overlooked as people increasingly refer to the simulacrum rather than its origin. However, the uniqueness of self-tracking devices lies in the fact that the source is one's own self. The following *85% Human* artwork explores the meaning behind the capabilities of advanced technologies to craft a second-hand experience.

85% *Human* is a collection of images I downloaded from a set of rural landscape CCTV datasets—a closed-circuit television system that transmits signals to a monitor for security purposes. It caught my attention when I realised that while it detected movement and sent still images to a control centre monitor, it marked a red square around the moving figures with an attached label indicating whether the figure was “human”, “vehicle”, or “other”. In addition, it assessed its own accuracy regarding this diagnosis. A shift of perspective to the outcome could easily be perceived as a sign—evaluating the figure’s humanity or otherness. It created an unexpected glitch-like situation where the machine, a human invention, took an active role and stance on the degree of humanity-ness of the figures. The more images I gathered, the more bizarre it became, weaving a narrative where technology employs its human-given gaze to express its opinion on two philosophical and delicate issues: otherness and humanity-ness. Humans, dogs, hyenas, porcupines, bushes, cyclists, jackals, or cars—the machine had a vision on each.

It echoed Rubinstein’s previously cited notion that digitised images, by their nature, are interpretations of gathered data and can be displayed in any visual possibility, ultimately not escaping their ornamental outcome relative to their origin (2013: 5-6). In this case, it produced a digitised intervention—a wildlife landscape juxtaposed with AI-generated measurable data, visualised through a rigid, mechanically imposed, primary red RGB 255,0,0 rectangle. This geometric frame, a sign, superimposed on organic beings, constitutes an artificial imprint on nature, starkly contrasting with the complexity and fluidity of the living environment. This scene, captured by an artificial eye, was then transmitted to a control centre, where it was



Haya Sheffer
85% *Human*
2023
Printed CCTV stills

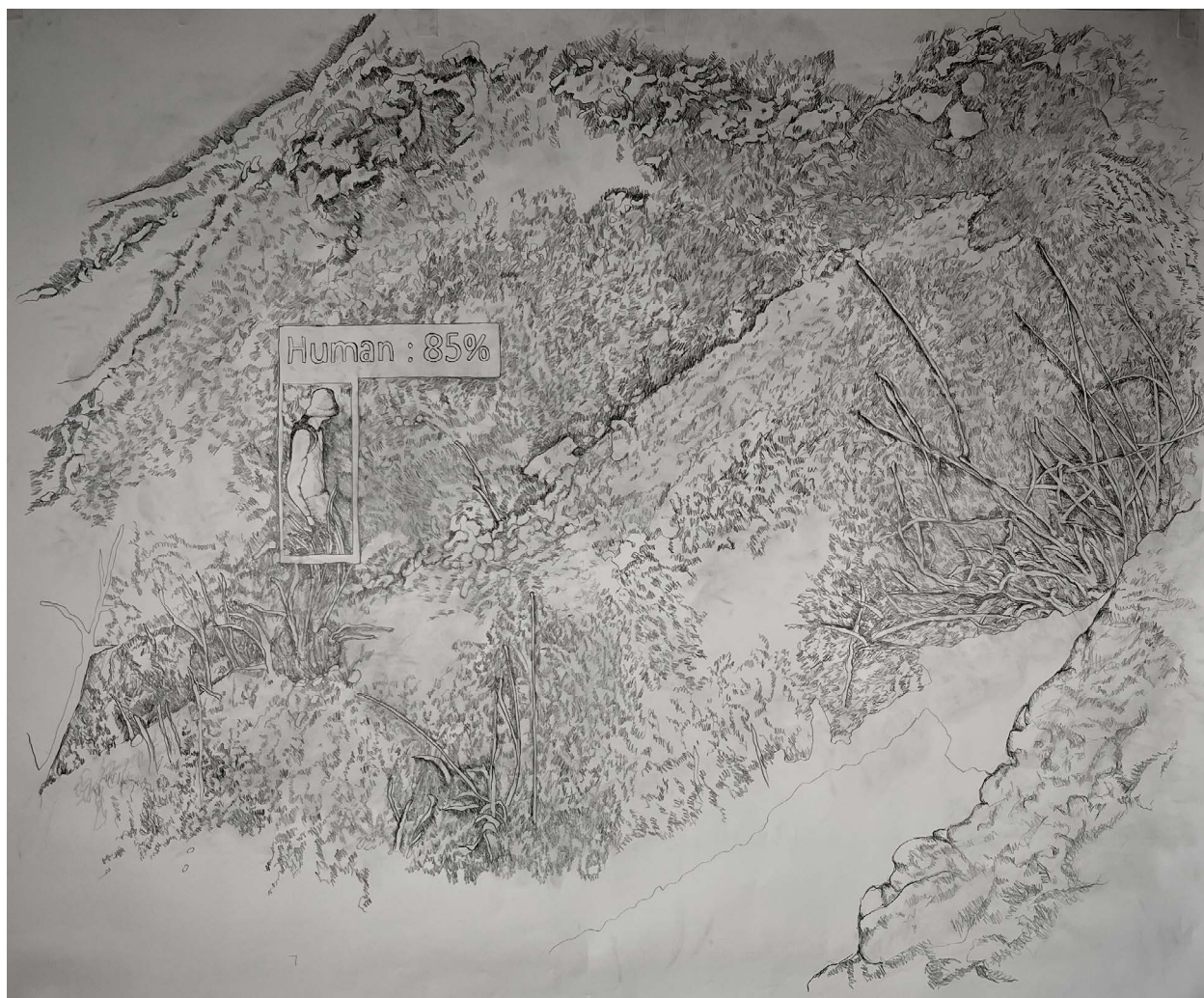
reduced to a flattened image on an LCD monitor. Both the textual and visual conflicts displayed on the monitors raised questions about the technological role in staging reality and how humans, particularly the guard in this case, live this second-hand experience detached from its source. The outcome sarcastically positions the human viewer in a ridiculous situation as if the non-human were mocking them for taking its outputs seriously. Furthermore, it illustrates the power that the technology gained by adding its interpretation, signing the human as 85%.

As an insight from the dynamic displayed on the flat screen, confronting the AI's final word—85% human—presented on the screen, I intervened in this sequence by adding my interpretation as an additional layer to the thread, a human say in the organic-mechanic chain. Without altering the staging, I experimented by transferring the digital output to new media: first by painting the scene with thick acrylics and then by creating a large-scale pencil drawing, both emphasising my human touch. Rather than



Haya Sheffer
85% Human
2023
Acrylic on paper

painting en plein air, I approached traditional landscape painting through the lens of the camera's gaze. I imagined myself sitting in nature, observing wildlife and humans going about their lives—yet all of it framed by a red, geometric, data-driven border, accompanied by a hovering sign that quantified their humanness or otherness. This was my artistic way of experimenting with technology's ability and power to shape reality for human viewers by adding a personal layer to this cycle and breaking the known yet unrecognised sequence. In this way, I was criticising



Haya Sheffer, *85% Human*, 2025, Pencil on paper, 150 cm × 180 cm

the bizarre situation to which people have become so accustomed that they can hardly recognise it.

In parentheses for the title of this chapter, I ponder on the similarity of the assemblage here, which contrasts the bodily curves with the technological geometry akin to the artwork *Cage* I made years before CCTV became a common product. In both works, geometrical shapes function as capturing, ranking, and limiting artificial tools over the human body, evoking insights into this relationship.

Revisiting Baudrillard, self-tracking apps demonstrate how self-tracking practices can become detached from lived reality, evolving into simulacra. A high step count may signal health, app-guided breastfeeding may represent good motherhood, and thousands of Facebook friends may imply strong social ties—each example marks a progressive stage in the detachment from lived experience, where the apps' outcomes stand in for reality rather than reflect it.

Recognising this condition is often challenging unless the app's suggestions confront one's inner feelings. Still, one may often be entirely unaware of the gap between the apps reality and real life. People's trust in these records increases as they become accustomed to them, especially as the apps grow more sophisticated and tailored. Shifting preference from reliance on the original to favouring its analysed simulation reflects Baudrillard's *hyperreal society*, which constructs its perception of reality from artificial experiences. The use of the self-tracking app plays a unique role in this situation, as it accompanies users physically or through the cloud, records aspects of body and life, produces a tailored artificial narrative, and presents it back as superior to its source. More than any other reality simulation, this hyperreal narrative focuses on the self, thereby influencing one's perception of self and the ability to interpret it authentically.

Chapter 12: The Human Body

While my primary focus is on analysing the content delivered by self-tracking apps—the relationships they foster with users and the meanings they generate—this section shifts attention to the medium itself, recognising that, often, communicated content is inherently shaped by its material form.

When Marshall McLuhan famously stated that the medium is the message (1964: 7), he changed the familiar focus from the content to the tools, highlighting their significant effect on the message. Andrew McLuhan, the director of the McLuhan Institute, explained the novelty in his grandfather's life project of analysing communication, saying that McLuhan's unique approach to media and technology was his distinction between the common content criticism and his concentration on the effect these technologies have (McLuhan Institute 2021: 21:32) pointing to the opening paragraph of McLuhan's book:

In a culture like ours, long accustomed to splitting and dividing all things as a means of control, it is sometimes a bit of a shock to be reminded that, in operational and practical fact, the medium is the message. This is merely to say that the personal and social consequences of any medium—that is, of any extension of ourselves—result from the new scale that is introduced into our affairs by each extension of ourselves, or by any new technology. (1964: 7)

Self-tracking apps are a new technology that extends one's body and, as such, has personal and social consequences. In the following section, I will analyse the personal repercussions affected by this medium. First, I will examine how it invades a space considered private—one's body or mind—and then analyse the cyborg created out of this match. Lastly, I will explore how this medium can merchandise the body. This section provides a platform for exploring the physical, digital, and ideological aspects of this medium.

The Invasion into Private Space

The house and its expression as a *home* is traditionally considered a sanctuary of privacy, individuality, and personal identity. It provides a retreat from the public sphere and an intimate space of self-expression, protecting personal routines from external intrusion. Popular domestic pursuits in Western living rooms at the turn of the nineteenth century included leisure activities such as embroidery, reading aloud, magic lantern shows, or game playing. Public entertainment and commercial advertisements were left outdoors, away from the private sphere. The sociologist Eva Illouz states in her book *The Culture of Capitalism* that from the 1960s onwards, large corporations have been present in living rooms through television sets. Referring to the pre-internet era, she states that television, one of the most advanced devices of capitalist culture, is the primary tool serving advertisers and investors to bring their products to people's consciousness. It has invaded the arena of life and leisure spaces that were previously considered private and immune from the external world. In this way, capital's inherent economic tendency was exploited in order to burst into lives through the products of culture and, above all, to penetrate private life and push it into the sphere of leisure and, by that, to take over the whole system of one's life (2002: 78). Illouz depicts a situation where technology, fuelled by capitalist interests, conquered without restraint a space that was, throughout history, considered private. This invasion by the medium was met with poor resistance, and public broadcasting has irrevocably entrenched itself in

the private domain. The cultural meaning is that once TV was established in people's homes, regardless of the content of the broadcasts, it became the outside world's powerful pathway into what used to be sheltered from outside interference. The invasion of the TV, the novel communication medium of the 1960s, into people's homes preceded a current medium, namely, self-tracking apps, invading a more private space—people's bodies and minds—which is more profound, targets a more personal and private space, and is ubiquitous. This section will extend McLuhan and Illouz's criticism of the invasion of mid-twentieth-century communication media and analyse the nature of the current infiltration that I am investigating.

Apps, as well as app users, involve tangible and non-tangible elements. Self-tracking apps are digital media that need physical devices to manifest themselves and address the human body and the human mind. This microcosm is part of a broader life framework, which I will place to one side for a second. The users and the apps create a network of relations that bonds mechanical, bodily, digital, and mental aspects, built of inputs and outputs where each one of these entities affects and is affected by the others in continuous feedback. The user becomes both sender and receiver, generating data through their body and behaviour, and receiving it back as processed, visualised information—and as the object of that information. Thus, in this feedback loop, the user is simultaneously the message's source, object, and receiver. This dynamic, mediated by the non-human interpreter, creates an inner tension between the embodied self and its detached simulacrum, destabilising traditional, embodied ways of perceiving the body.

An Apple Watch, for instance, is a tangible device that can monitor its user's heart rate, cardio fitness, respiratory rate, wrist temperature, blood oxygen, and sleep duration. It then analyses the gathered data and, through its interface, notifies the user of the outcomes, influencing them mentally. This, intentionally or unintentionally, results in their physical reactions, which give feedback to the sensors, creating a perpetual loop where all the constituent parts I mentioned actively participate. Therefore, the invasion

of such apps takes place in the tangible and non-tangible realms of the medium and the user. As cited above, McLuhan claimed in 1964 that any new medium developed by technology forms a new extension of oneself, creating new personal and social consequences, which is the outcome of the new scale introduced into one's affairs by each new extension. Focusing on the scale, the most cutting-edge medium McLuhan could refer to in the mid-1960s was television, which took a massive step into extending oneself in relation to previous media and technologies. The contemporary medium of self-tracking apps, as seen in the Apple Watch, creates a significant leap in scale to what people experience as an extension due, among other things, to its invasion of the individual's physical and mental private space.

As mentioned earlier, although this research generally does not involve devices that carry self-tracking apps, here, by analysing the invasion of this medium, I will incorporate the apps' appliances into the study. Some self-tracking apps require a unique device to monitor the user's bodily parameters. The Lumen Metabolism Tracker (Lumen 2025), for example, uses a handheld device to measure the CO₂ concentration in the user's breath, studying the body's metabolic fuel usage and providing the user with personalised dietary and fitness guidance, not necessarily as a medical directive. However, due to cost-effectiveness and ubiquity, most apps rely on the built-in sensors embedded in general-purpose devices like smartwatches and smartphones. Smartwatches are physically worn on the wrist, sometimes up to twenty-four hours a day. Smartphones might be more interesting here in that people make an active effort to keep them in sight for an extended portion of the day. A recent survey reported that among 18-75-year-olds in Ireland, 98% use their smartphone daily, with more than a third doing so during mealtimes and 74% saying they do so as soon as they wake up (Deloitte 2024). Both smart devices, the watch and the phone, apply a physical and mental *extension of ourselves*, as McLuhan framed in the quotation above. The best way to demonstrate this self-extension phenomenon is to use Heidegger's concepts of readiness-to-hand—*Zuhandenheit*—and recall the feeling when, for some reason, they

become unavailable. In this concept, he refers to how people interact with everyday practical activities' tools or objects, where they are seamlessly integrated into one's actions, making the objects invisible as long as they function. A breakage of their functioning highlights the previously unnoticed, integrated relations between the tool and the user (1962: 98). The smart devices are transparent for the user, like experiencing their hands or eyes as part of the body without explicitly thinking about them during action. Daily expressions like 'I can't speak, my battery is low' or 'I can't see your note, my screen is broken' demonstrate the physical invasion and the self-identification with the device.

The apps, the digital entity, are even more invasive. They have no physical barriers and are programmed to be involved in any niche in one's life that an agile entrepreneur identifies as profitable. The range has no limits and varies from esoteric issues to more conventional ones, as seen in the following examples. The *Moonly: Moon Phases & Calendar* app, which over one million users have downloaded, calls them to harmonise their lives and connect with themselves using *Moonly*. One of the features the app's AI was programmed to offer is to decipher users' dreams, as presented in Joan's note on the app's review page in December 2024: 'I love how it uses AI to interpret my dreams so I don't have to interpret myself and it's faster and get to read it plus it paints a cute picture, but I am having trouble saving it to my device' (Cosmic Vibrations Inc 2025). More conventional and very popular are menstrual cycle-tracking, weight maintenance, or fitness apps that digitally monitor, collect, and track personal physical data, interpreting its meanings before delivering it to the user. The involvement of these technologies is not limited to apps that users actively download but also to default tracking features in smart devices' operating systems, not necessarily as a conscious user's choice.

An example is the *Smart Albums* feature in the *Google Photos* app. Although it is not a self-tracking app, it performs similar epistemological and behavioural roles, as I explain in the background section, and thus it is included in the inquiry. Introduced in 2016, it promises to find one's

best moments to create an album automatically (Google Photos 2016). Since then, the app has developed massively, using powerful AI and the photos' metadata to manage one's private photo library. It was rebranded as *Memories*, a new name emphasising the invasion concept, transforming the technology from an external *smart album* into managing one's private *memories*, which carries an internal essence. Today, if photos taken on a smartphone are saved by default in *Google Photos*, one automatically becomes a user of the *Memories* app, which will manage the vast number of images in their library, deciding for the user 'what types of content to include or filter out [and] reconnecting people with their memories' (Shapira 2021). Hence, the developers claim the app is able to control a procedure related to peoples' memories. To be clear, this default feature can be switched off manually; however, not opting out does not mean deliberately choosing AI to do the job. The examples I provided above are a drop in the ocean of the self-tracking apps empire, and what is common to all is this medium's smooth path into what used to be the physical and mental private property of the individual.

Following McLuhan's 'The medium is the message' view, the question to investigate here is as follows: What message comes with the self-tracking app medium due to its extension or invasion of people's bodies and minds? What is the nature of this medium as a phenomenon that carries a message? To answer these questions, I will analyse Barbara Kruger's video, *Untitled (No Comment)*, 2020, and the insights it provides.

Barbara Kruger's *Untitled (No Comment)*, 2020, a three-channel, immersive, primarily internet-based video installation, features screen grabs, snippets of footage from social media, audio, and text in a dynamic and relentless mix. These are accompanied or disrupted by questions, statements, and quotations remixed and presented in her iconic high-contrast coloured Futura Bold or Helvetica

Extra Bold style, confusing and conflating conventions of media, spectatorship, pop culture, and politics. Kruger speaks to her audience with a direct address, a form of communication popular and dominant in advertising: 'We are told what to do, how to do it, what we should want, need and desire' (Serpentine 2024: 7). The artwork explores how people consume information, digital forms of self-reflection, and the notions of being present in contrast to the mediated presence in digital existence. It is an essay on contemporary lives online, and it addresses and antagonises structures of value, power, and capital. Additionally, it is an indictment of the online narcissistic culture, as she framed it, 'the brutal anthropology of this crash of narcissism and voyeurism. Can we exist without having a camera pointed at us?' (Eleey et al. 2021: 50/51, 80; O'Grady 2020).

I will focus on minute 08:38, a 35-second animation that mimics a GPS screen of a car riding in a city. The audio in this short piece is of the GPS instructor's female mechanical voice and a slightly mechanical male voice, which could be either the car's driver or the voice of an autonomous car. The conversation between them goes as follows:

GPS (female): Proceed 1.2 miles on Adoration Road to Contempt, left on Contempt, three miles to Jealousy Drive. Go right on Jealousy 2.5 miles to Revenge.

Driver (male): But there's construction on Revenge. Stay on Jealousy.

GPS (female): You are wrong as usual. Proceed on Revenge and make a hard right on

Obstruction. Continue on Obstruction until it ends at Denial. Take the roundabout at Denial.

Driver (male): But there's always traffic at Denial.

GPS (female): Stay on Denial for three miles to Desire.

Driver (male): Why are we going in circles?

GPS (female): Because Desire ends in circles.



Barbara Kruger

Untitled (No Comment) (installation view)

2020

Three-channel video installation, 9:25 min

This short self-parody of human emotions uses dialogues like ‘- Continue on Obstruction until it ends at Denial - But there’s always traffic at Denial’ or ‘- Why are we going in circles? - Because Desire ends in circles’, to sharply combine the difficulty in navigating one’s mental life with the well-known GPS street navigator. The juxtaposition breaks the boundaries between the help users seek from the self-tracking apps, believing it is a technical procedure and the outcome where the apps are deeply settled in one’s body and mind. At that stage, the human who negotiates with technological knowledge in this animation finds themselves at a disadvantage. The driver perceives the GPS and themselves as ‘we’ ‘- Why are we going in circles?’, while the machine takes over ‘- You are wrong as usual. Proceed on Revenge’. The app in this animation has completed its invasion, and the host loses their original say. The direct, personal, and often confrontational way and the tone of the app’s ownership of the situation echoes the interview with M. where she describes the guidelines she got from the app, quoting the app’s addressing her as ‘we’: ‘I stopped nursing him because the app said so—we just hit the 30-minute mark ... you have to stop; you have to stop breastfeeding’ (M. 2022: 31:36). The navigation animation, in the context of the whole video, which deals with contemporary human-technology and human-media relations, emphasises the communication style popular in this realm—and self-tracking apps in particular—which states what to do, how to do it, and what one should want, need, and desire.

In the citation above, Kruger mentioned the crash of narcissism, asking, ‘Can we exist without having a camera pointed at us?’ This is another perspective on understanding the invasion of technology and self-tracking apps into the

private sphere. In 2010, Apple's iPhone embedded the first front-facing camera, creating a new culture relying on cameras that view inwards rather than outwards. People who used to describe the world through their cameras changed their gaze from viewing the world to looking at the self. They moved from recording the world they see to recording themselves, their acts, or the world surrounding their figure in the centre of the image. The front-facing camera became a medium that changed the gaze by 180 degrees, placing the individual in the centre. I claim that the selfie's 'navel-gazing' has created a cultural mindset that paved the way and underpins the invasion of self-tracking apps into private spheres.

Similar to my project, *Self-Surveillance*, presented earlier, where the visitor is immersed in the exhibition space and the app is everywhere, here, too, the app is no longer in one's palm. It immerses the visitor/app user, extending, invading, and eventually controlling them—an insight that emerged from both investigations. The mechanic cold AI tone used in these two projects to manipulate the exhibition visitor or the driver within the streets of emotions blurs the borders between the human and the machine, leading to realising the app's Trojan horse move.

What G. described in his interview as an exciting argument with the GPS when he intentionally refused to follow its instructions and challenged their relationship (G. 2022: 52:30), became in the two art projects a dystopian prophecy. It is no longer a controlled game of routes and roads but a real battle on one's fundamental self. In the Greek mythology tale of the Trojan horse, the wooden horse was brought into the city through the

main gates by the Trojan people themselves. Only at night did they realise that Greek soldiers, hidden inside the horse, had emerged to open the gates for the Greek army, allowing them to conquer the city. Likewise, by using self-tracking apps, what is seen as a novel, welcome, promising medium has the potential to invade one's body and mind, controlling users from within. As McLuhan taught us, media have the power to create transformations, such as to transform a television viewer into a consumer. Likewise, the apps in my research serve as media that can transform the user from a subscriber who owns the app into its pawn. The substance delivered *through* the apps is handled by the providers, who can now pour whatever content they wish into them.

Haraway's Cyborg and Responsibility

I will now shift the focus to examine the whole—the new entity created through the human-technology coupling inherent in self-tracking apps. It is a hybrid containing four elements: the tangibles—the organic human body and technological sensors, and the non-tangibles—the human mind and digitally programmed apps. This hybridity is much older than the apps I investigate today. It can be traced back to 1960, termed *cyborg* by Clynes and Kline in their article “Cyborgs and Space”, where they were looking for ‘artifact-organism systems which would extend man's unconscious, self-regulatory controls’ (1960: 26) to solve the human body's extended stay in space in the US space program NASA. The term “cyborg”, a blend of *cybernetic* and *organism*, refers to a being composed of organic and artificial parts that exchange information through feedback loops—a core concept in cybernetics, which studies systems of control, communication, and self-regulation. The cyborg is distinguished from the robot, which is entirely mechanical, and the science fiction android, a mechanical robot in human form.

In the philosophical realm, one of the most impressive and influential essays critically questioning NASA's cyborg is Dona Haraway's “A Cyborg Manifesto” (2016), written in 1985. It is an ironic, political, imaginary

vision, a *cyborg myth*, as she called it, of coupling organic bodies with advanced technologies, which drew upon the very early days of what came to be the contemporary technological revolution. To validate her then imaginary vision, she stated that ‘the boundary between science fiction and social reality is an optical illusion’ (ibid.: 6). This was proved to be accurate, and cyborgs have become present entities in contemporary life. Haraway’s dialectics constantly move from the abstract to the concrete, from the theorised to the fabricated and back. At times, she analyses the cyborg as a fictional entity, carrying conceptual values that do not directly depend on existing developments or, at times, as a means to target concrete scientific, social, or political issues. Now, forty years later, when humanity is experiencing the fruits of this technological revolution, it is necessary to read her essay from today’s critical perspective. In this section, I will not address all the vast social and political issues raised in the manifesto but will analyse Haraway’s cyborg vision, focusing on the threats she finds in such developments and warnings against them on the one hand and the promises she sees in them on the other. I will do so via the analytical lens of today’s cyborg hybrid nature of self-tracking apps. First, I ask whether using these apps couples technology with the users and creates a cyborg.

Haraway exposits the cyborg situation, stating that ‘by the late twentieth century, our time, a mythic time, we are all chimaeras [a genetic hybrid of different origin organisms, such as plants and animals] theorised and fabricated hybrids of machine and organism—in short, cyborgs. The cyborg is our ontology; it gives us our politics’ (ibid.: 7). She suggests that in a world where technology and biology are inseparable, our fundamental nature as beings has changed. This philosophical, metaphorical hybrid existence can be and is becoming a material reality that shapes how humans understand themselves and engage socially and politically. In her essay, Haraway refers to the military operations concept of the integration of technology systems but broadens the idea by saying that we are all cyborgs, meaning that from the moment of birth, when a baby can be considered an utterly organic being, they are subject to constant technological interventions; these range

from vaccinations to the food they eat, produced using technological means, up to the communication and broadcasting technologies with which they are surrounded. This hybrid state is the foundation of contemporary being and the starting point for rethinking identity, agency, and power (Neeman 2010). Self-tracking apps and their users apply all the definitions; they are a hybrid of humans and technology, both in their material and non-material aspects, enabling cybernetic feedback loops between humans and machines, which were initially separate entities. However, this might not be enough. To become a cyborg, the couple must become a unified entity in a more profound sense. In the previous section, I claimed that self-tracking apps are a medium that has invaded humans in physical and intangible expressions. In many cases, users experience the apps as a hybrid extension of themselves. When a user, for example, looks several times a day at their Fitbit or Apple watch, strapped to their wrist, to see their daily step count, the device becomes an organ identical to an organic internal sensor that the body uses to diagnose itself in relation to the environment. When Google smoothly manages, categorises, prioritises, promotes, etc., users' photos in their digital album—tagged by Google as *Memories*—the feature becomes a new component in the users' mental being. Users and self-tracking apps, thus, are a cyborg entity.

Haraway carved her myth out of technologies developed by militarism, patriarchal capitalism and state socialism as a means of achieving power and control. She used speculative methodologies to design an entity that manifests a socialist-feminist and postmodernist way of thinking, embracing contradiction and multiplicity. The cyborg functions as an image that presents her subversive worldview. She depicts it as ironic faith, believing in the potential of conflict, defying unity, and challenging singular truths, qualities embodied by the cyborg: 'Irony is about contradictions that do not resolve into larger wholes, ... about the tension of holding incompatible things together because both or all are necessary and true' (2016: 5). I will focus here on what she presents as possible outcomes of this new development and critically analyse them through the manifestations

of the apps. She presents two opposite possible consequences. The first is the opportunity created for liberating from binary perceptions of gender, origin and teleology, matter and information, human and non-human—a postmodern occasion to disassemble and reassemble, to blur the boundaries and originate a multiplicity of codes and perceptions. On the other hand, she raises the threat of the means of power and of control that characterise the cyborg’s developers’ targets in the first place. Thus, she repeatedly calls for a responsible interpretation of the cyborg opportunity: ‘From one perspective, a cyborg world is about the final imposition of a grid of control on the planet. ... From another perspective, a cyborg world might be about lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of permanently partial identities and contradictory standpoints ... This essay is an argument for pleasure in the confusion of boundaries and for responsibility in their construction’ (ibid.: 15, 7). Haraway encourages the reader to think through the two outlooks she presents, saying that ‘the political struggle is to see from both perspectives at once because each reveals both dominations and possibilities unimaginable from the other vantage point [and, that] single vision produces worse illusions than double vision or many-headed monsters’ (ibid.: 15). By *seeing from both perspectives*, she does not necessarily mean supporting the two, as during the manifesto, she presents one as a threat and the other as a promise, calling for responsible construction. This is what I aim to diagnose here.

The human/self-tracking app cyborgs’ coupling is evidence that Haraway’s vision of ‘suggesting some very fruitful couplings’ (ibid.: 7) became true. Moreover, numerous fruitful couplings are now part of modern life, and people embrace them rather than being afraid of ‘joint kinship’ with technology or anxious about becoming ‘permanently partial identities’ (ibid.: 15). For example, the use of pacemakers or in vitro fertilisation (IVF) are technological elements assimilated in human bodies, and xenotransplantation is the use of animal organs as transplants, creating a human-animal hybrid. Self-tracking apps are practices that celebrate

people's interconnection possibilities with non-humans. This could be seen as a success in 'refusing an anti-science metaphysics, a demonology of technology, and so means embracing the skilful task of reconstructing the boundaries of daily life, in partial connection with others' (ibid.: 67). Nevertheless, Haraway was aware of an inherent threat to this celebration, namely, these technologies' qualities of invisibility; they invade the body, are everywhere, and can be used not as equal hybrid couples but as dominating powers. Contemporary ideas about the shape of power have shifted from immense tools and weaponry to intelligence tools and technologies, omniscient hidden devices that can capture information through their smallness. This is manifested in self-tracking apps, which have found their way to influence so many peoples' lives through accessible devices such as smartphones. However, this human acceptance and will for coupling and the implications of its results, whether as a promise or a threat, is only part of the vision.

I will emphasise a more problematic element, which failed to fulfil Haraway's call for responsibility when reconstructing the hybrid. I define this element as more concerning because it sabotages fundamental perceptions more profoundly than the "omnipresent issue" of the coupling. It is the failure to implement Haraway's cyborg model of enabling multiple perspectives, realities, or identities that can be simultaneously valid, even if they seem incompatible: 'Cyborg politics are the struggle for language and the struggle against perfect communication, against the one code that translates all meaning perfectly, the central dogma of phallogocentrism' (ibid.: 57). Phallogocentrism is a term from feminist and poststructuralist theory that critiques how Western thought privileges masculine-centred reason and fixed meaning, marginalising alternative or embodied ways of knowing.

Self-tracking apps, which together with their users are one of the manifestations of a cyborg, are technologies that create precisely what Haraway invites us to eliminate—perfect communication, one code that translates all meaning perfectly—being a dogma of phallogocentrism. The

human-technology coupling here is motivated by a mindset that strives for one clear-cut way to interpret the multiplicity and vagueness of real life. This hybridity does not celebrate the coupling to open new possibilities; rather, it was created to use technology to control the unknown in human life by eliminating its ambiguity: ‘as known, a child doesn’t come with a book’ (M. 2022: 15:12), said one of the mothers I interviewed, meaning this is an unbearable situation that needs to be translated and communicated by a baby tracker app that will gather, analyse, and present the baby’s data, thus eliminating uncertainty. The same happens when “Google Memories”, a feature in *Google Photos*, which curates one’s photo archive by promoting smiling faces and concealing funeral photos or unfocused ones (Shapira 2021), deciding for all users what is relevant and what increases complexity and should be veiled, according to one cultural code. The proliferation of the apps is based on the dogma that *there is* one code and that what does not fit should be excluded, showing impatience towards uncertainty and multiple interpretations, which the manifest strives to achieve.

The question is how this gap was created, transforming from the manifesto’s vision of diversity to its contemporary manifestation of limiting the commentary options. When Haraway repeatedly criticises the cyborg’s inventors and their fundamental objectives, symbolising them to the C³I—command-control-communication-intelligence (2016: 34), she underscores the potential inherent in the cyborg to break through what the inventors initially intended it to be:

The main trouble with cyborgs, of course, is that they are the illegitimate offspring of militarism and patriarchal capitalism, not to mention state socialism. But illegitimate offspring are often exceedingly unfaithful to their origins. Their fathers, after all, are inessential. (ibid.: 9)

Haraway acknowledges the capitalist vision of the cyborg and its power to achieve it. This allegory was her way of empowering her vision using irony and calling for rebellion. She depicts a utopian possibility that the new technologies would liberate society from the ideologies that

characterised the regime forces of the traditional heavy industry. From today's angle, the first has already happened. Instead of breaking free from the shackles of the ancestor as expected, capitalist forces and ideologies took over to limit and eliminate the potential possibilities inherent in this hybridity, transforming it into a dull binary system that represents the phallogocentrism the manifesto stood against. As I argued in Chapter 3, which deals with harnessing technology to realise capitalist values, self-tracking apps carry capitalist ideals of perfecting the user's performance and striving for efficiency drawn from the commercial market. Using a baby tracker app, for example, to fulfil the wish to be 'the best mom version' of oneself (M. 2022: 26:31) relies on the binary belief that there is one best performance, a goal worth achieving, and that coupling with technology is the way to attain it. The outcome is that this invasion did not liberate society from "Western" epistemology, as Haraway frames it, but worse, it developed technological cyborg forces to establish it. My argument is not against the manifesto's vision; it supports it but criticises the responsibility that failed to keep this vision away from its capitalist creators' power. Not unique to the cyborg, capitalism has the capacity to capitalise on techniques, methods, or myths once they can benefit its apparatus. This was the case here, and self-tracking apps and their users, therefore, did not become cyborgs that are the 'illegitimate, [rebellious], offspring of patriarchal capitalism' as Haraway envisioned them, but instead, they are pure and binary, with one code that translates all meaning perfectly, the central dogma of phallogocentrism.

I claim that self-tracking apps are cyborgs that have mainly become a manifestation of the values that Haraway criticises. However, this is not a dead end; it is a timely situation within an ongoing process. It is essential to foster new relationships between the limitless ways of interpreting life, whether through technology or independent of it. Thus, I will partly adopt Haraway's last visionary paragraph, mainly pointing to the evolving nature of this progression, stating that although she is aware that science and technology can provide a matrix of complex dominations as well

as great human satisfaction, she sees the cyborg imagery as a way out of total theories of Western culture dualisms, dreaming of ‘powerful infidel heteroglossia’. She suggests an ongoing dynamic process continuously reshaping identities, technologies, and categories to resist oppressive totalities and embrace new forms of connection (2016: 67-68). I argue that this could happen when human skills and technological knowledge enable expressions of true pluralist hybridity.

The Body as a Commodity in the Formation of Self-Identity

Throughout the thesis, I have argued that users internalise capitalist values of optimisation, efficiency, and productivity, perceiving themselves as apparatuses—machines that must produce value, perform optimally, and be maintained accordingly. Self-tracking apps are adopted as tools to enhance this operation. In this section, I shift the focus to a different facet of this internalisation: the perception of the body as a commodity. Here, *commodity* does not refer to a traditional market good exchanged in economic transactions; rather, the body is viewed as a symbolic asset that contributes to self-identity. Through self-tracking practices, individuals adopt capitalist logics that encourage self-surveillance and the performative construction of the self—not for direct economic gain, but to craft a version of oneself that aligns with dominant ideals of productivity and worth. In this context, self-tracking apps function as companions in the mission of self-formation. I will conclude by suggesting that this logic extends beyond bodily discipline, permeating wider aspects of identity and non-physical practices.

The claim here ties three assumptions together: First is the perception that one’s shopping habits and assets define one’s identity; *I am what I buy*. The commodity’s symbolic value is superior to its use value. Thus, one’s car or the fashion brand one wears shapes who one is. Derived from that, one’s identity can be shaped by purchasing and owning goods. This is a capitalist-related concept that differs from traditional self-identity driven

by fixed things like gender, family, religion, and nationality. The third expands the first two when individuals experience their body similar to other possessions, as a commodity. Like purchased goods, the body carries meanings and values beyond its physical utility, shifting from the I *need* realm to the I *want* realm and bearing symbols loosely tied to its intended purpose. The body becomes an item in constructing one's self-identity. This claim of perceiving the body as a commodity and how it shapes one's identity closely aligns both with Lukács's *reification* and with feminist *objectification*. Here, I will address and develop the feminist critiques to show how self-tracking apps extend this logic. The feminist critique of objectification, previously explored through Bartky's writing, argues that capitalist and patriarchal systems instil an external, objectifying gaze in individuals—particularly women—compelling them to view and regulate their bodies as objects. This disciplinary process, reinforced by beauty standards and social norms, fosters self-optimisation and market-driven identity formation, positioning the body as a site of control and value production. Barbara Kruger's body of work critically examines the perception of the body as a commodity, its role in shaping one's acquired identity, and the efforts invested in maintaining it. Concerning the claim I have made, I will analyse her artwork *Untitled (Never Perfect Enough)*, 2020.

— *Never Perfect Enough*

Using her recognised provocative slogans over black-and-white photos, Barbara Kruger's bold text and imagery critiques consumerism, gender, and power dynamics. Through phrases like "Your Body is a Battleground," she challenges how individuals—particularly women—are commodified and controlled. Her *Never Perfect Enough* artwork is a triptych of over three-metre-high digital



Barbara Kruger
Untitled (Never Perfect Enough)
 (installation view)
 2020

prints on vinyl presenting a young model's head from different angles. The model's blonde hairstyling system is pinned down in hairclips and rollers. A single word—Futura Bold, Oblique, all-caps letters—is marked on each canvas: 'NEVER', 'PERFECT', and 'ENOUGH'. The angles in which the heads are presented, in profile and from the back, none of which is facing the visitors, emphasise the imbalance between the viewer and subject. It calls attention to the categorising, judging, and controlling gaze, which controls social norms through its omnipresent nature. It also addresses an earlier artwork where she printed, vertically aligned against a female profile background, the words: "Your gaze hits the side of my face" to critique the male gaze that, by the act of looking and being

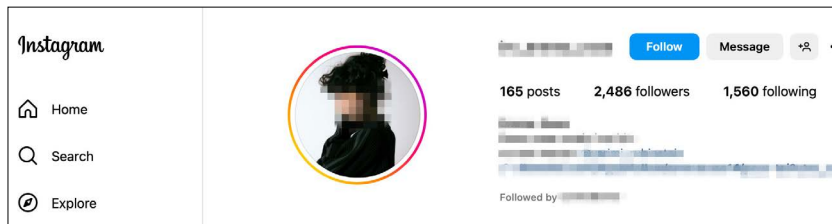
“looked”, creates an objectification of the female subject. The rollers, which look like an in-motion mechanical mechanism, are overlaid with arrows and text as *power*, *lies*, *money*, and *fear*, mimicking operating instructions. In this way, the artwork criticises the efforts made to follow social instruction, which people do to accomplish society's impossible ideals of bodily perfection. Moreover, as written in the exhibition's webpage, Kruger's triptych addresses phrenology, a nineteenth-century pseudoscience that used the measurable shapes and sizes of people's heads to define an individual's character—often used to argue for white supremacy and class distinctions. The artwork updates this urge to divide, categorise, and control through external characteristics, picturing the connections between beauty and the punishing regimens accompanying it (Jung 2022; Sprüth Magers 2022).

Adopting the technologies involved in self-tracking apps to enhance the self and build one's identity gains importance as they stretch the phenomenon to its extreme. Just as women have been conditioned to discipline their bodies through beauty standards, self-tracking apps extend this logic by transforming bodily and mental monitoring into a technological imperative, reinforcing the idea that one's performance must be optimised, perfected, and constantly improved. Their unseen but omnipresent nature creates a new technological power not experienced before. This digital self-surveillance intensifies the commodification of the body, as their users, much like consumers of beauty products, see their own physical form as something to be managed, enhanced, and displayed for validation. Self-tracking apps are promoted by the producers and perceived by the users with a positive attitude, not aware of the covert values they carry, that is, the objectification and its social and personal impact. Moreover, it

presents itself as scientific, rational, and self-directed, making its ideological function less visible. I argue that the adoption of self-tracking technologies is not a representation of a new tool for self-management but an extension of deep-seated patriarchal and capitalist mechanisms that render the body, behaviour, and mind a site of discipline and commodification. Above their innocent appearance as aids for users, self-tracking apps play a role in controlling the body to achieve a desirable, commodity-like self-identity. I will test two cases to demonstrate my claim. The first is a self-tracking app that targets the physical body.

The *Workout for Women: Fit at Home* app has over fifty million downloads. Although it targets women, the app market is flooded with similar male or all-gender apps, and it will function here as a representative example. The “About this app” page opens with the words: ‘Move now! A better me is approaching!’ constantly repeating the concept that a ‘perfect bikini body!’ or ‘You will get a sexy body before you know it!’ is a ‘better me’. In addition, it claims that the app was ‘scientifically proven to lose weight and improve health’ (Leap Fitness Group 2025). The citations above are not quoted to argue against a perfect sexy bikini body or losing weight but to point to the assumptions embedded in these messages: A sexy bikini body equals a better me, and one can “buy” this commodity, the perfected body, that will symbolise who they are: a ‘better me’. Similar to purchased items, the physical body shapes one’s self-identity, and using the app makes this identity an achievable goal. Likewise, using words such as “science” and “health”, the app’s description links the ‘better me’ goal with an aura of objectiveness, diverting the focus from its covert embedded values and objectifying the body as a matter for a superior identity.

This mindset of using tags to improve one’s identity is not unique to the physical body but also applies to non-bodily performances. One example of this is counting *followers* on social media. Instagram users’ page displays their information on top, in the profile field, in the following order: name, photo, and the counts of their *posts*, *followers* and *following*. The message inherent in this display is that these three numeric details are essential for



Instagram Profile (anonymised screenshot, personal details blurred), 2025

defining the user after their name and image; additionally, increasing these numbers is a worthy effort to improve the user's image publicly and enhance the user's self-identity. Analysing this example, by using the "*I am what I buy*" perception, I claim that the assets one has metaphorically purchased here, the ones that build the "*I am*" identity, are the rated profile on their Instagram page. This identity can be handled and shaped like the one based on traditional commodities. Blurring the boundaries between the self and the numerical followers' count (the commodity) shapes one's self-identity built on the symbols this commodity carries.

The two examples present an upgraded—a digitised objectification—of the self. The examples show the ways self-tracking apps or features use users' understanding of their body and self as a commodity that defines their identity. In this situation, the apps present the desired goal, 'a better me'—a commodity that could be acquired and used to shape one's self-identity. The claim here is not against pursuing the fulfilment of this commandment, which diverts the focus away from more profound ways of shaping one's identity. This is for the individual to choose. My argument is that a gradual capitalist process of self-objectification, treating the self as a commodity to form one's identity, is, on the one hand, amplified through the implementation of self-tracking apps but disguised and hard to recognise on the other. This aligns with my overarching claim that self-tracking apps serve as agents, carrying capitalist values.

Part Four

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Rethinking Possibilities

In this thesis, I primarily engaged in a critical analysis of the phenomenon of using self-tracking apps in relation to cultural trends and their impact on users and society. Here, I will explore perspectives that, alongside the critique, propose alternative attitudes. The discourses I analyse and expand upon suggest ways to deconstruct the tyranny of the narratives that underpin the phenomenon at hand and reconstruct it with respect to various elements. This section will lead into the subsequent section, which will develop alternative attitudes and mindsets regarding human-technology relations as demonstrated through the use of self-tracking apps, contributing to a broader discussion on these issues.

Chapter 13: Metanarratives and Foundation for Alternatives

Jean-François Lyotard's concept of metanarratives (*grand récits*), introduced in *The Postmodern Condition: A Report on Knowledge* (2021) highlights the problematic nature of overarching Western narratives, some of which underpin the phenomenon of using self-tracking apps. By raising the question 'who decides what knowledge is, and who knows what needs to be decided?' (ibid.: 9) he illustrates a core issue in using self-tracking apps, but also paves a way to crack the metanarratives' tyranny for alternatives and solutions. At the beginning of this thesis, I outlined three core narratives shaping the modern Western mindset behind these technologies. Seeking alternatives, I now revisit them from a different perspective, critiquing them as paradigms that claim totality and exclude plurality and difference. Lyotard's essay gains further significance as it offers a post-modern analysis of legitimisation, proposing paralogy (ibid.: 60-67) as a vision for alternatives.

The adoption of self-tracking apps significantly relies on a modern Western metanarrative mindset grounded in three overarching beliefs. First is the emancipation of reason and the realisation of rationality, emphasising scientific and objective epistemologies. This underpins the second belief that technology is an omnipotent tool for enhancing nature and the human body. The third is faith in the capitalist values of optimisation, efficiency, and productivity, shifting focus from commodities to individuals.

These are fundamental consensuses interwoven and supporting one another, aiming to create an overarching explanation of life, and, as will be seen later in Lyotard's writing, it legitimates itself while excluding what it defines as inferior paradigms. Its deep roots in the Western culture and mindset make the use of self-tracking apps, a tool that is taken for granted as it matches the values of these metanarratives and helps to fulfil its goals. It is based on trust in the priority of measurable data over lived experience, on the wish to improve one's performance efficiently and productively, and on the belief that the apps' technology could help achieve these goals. I will start by presenting Lyotard's definition and criticism of the metanarratives as a mindset.

Science has always been in conflict with narratives. Judged by the yardstick of science, the majority of them prove to be fables... It then produces a discourse of legitimation with respect to its own status, a discourse called philosophy. I will use the term modern to designate any science that legitimates itself with reference to a metadiscourse of this kind making an explicit appeal to some grand narrative, such as the dialectics of Spirit, the hermeneutics of meaning, the emancipation of the rational or working subject, or the creation of wealth. (ibid.: xxiii)

Lyotard's concept of legitimation—developed in contrast to Habermas's emphasis on authority and consensus—asks how society legitimises the criteria for distinguishing true statements from false ones. According to Lyotard, while narratives are localised stories that give meaning to specific experiences, metanarratives are grand stories questing for universal truths that aim to provide a comprehensive framework and overarching explanations based on the self-legitimation of knowledge and societal norms. This creates a conflict with narrative knowledge that does not meet the criteria based on the science that legitimates itself. As he indicates in the book's introduction cited above, in his study, he appeals, among others, to Enlightenment rationalism, Hegelian philosophy, Marxism, and

capitalism, all part of a modern longing for one whole, scientific-based, true story. I claim that the prevalent use of self-tracking apps as tools for navigating life could not have occurred without the deep assimilation of scientific rationalism as the ultimate truth and late capitalism as an absolute societal norm. Both are legitimised through a metadiscourse and represent contemporary developments of the metanarratives discussed by Lyotard.

Lyotard questions how modern Western society legitimates the criteria for truth. Metanarratives establish their authority through consensus, which is then used to legitimise forms of knowledge, practices, and institutions, granting them a sense of validity and authority within society.

The language game known to the West as the question of legitimacy—or rather, legitimacy as a referent in the game of inquiry. Narratives, as we have seen, determine criteria of competence and/or illustrate how they are to be applied. They thus define what has the right to be said and done in the culture in question, and since they are themselves a part of that culture, they are legitimated by the simple fact that they do what they do. (ibid.: 23)

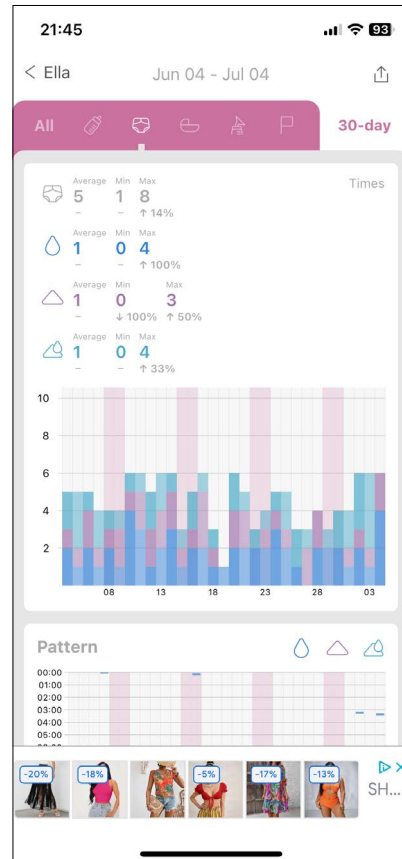
This critique runs throughout the study and highlights a paradox, suggesting that modern Western narratives derive their legitimacy from the rules and regulations they established and that are inherent within them. They do so while delegitimising other forms, such as popular narrative pragmatics. This situation raises the previously cited question regarding consensus: Who holds the power to define knowledge, and who determines what questions need answering? Lyotard claims that the modern Western paradox of self-legitimation—prioritising scientific knowledge while excluding others—derives its authority from a long Occidental (Western) philosophical tradition. The language game of science poses a problem of its own legitimation, where ‘those who refuse to accept the rules out of

weakness or crudeness are excluded' (ibid.: 28).

Embedded Metanarratives in Self-Tracking Apps

This scientific way of thinking—the legitimation to decide what is true and to prioritise one body of knowledge over another—has influenced a mindset observable in contemporary daily life, which is clearly manifested in self-tracking apps. I will demonstrate the attitude that reflects the dominance of this metanarrative by testing three baby tracker apps, where carers and parents track their baby's patterns: *Baby Tracker*, *Glow Baby* and, *Huckleberry*, all surpassed the one million download mark indicated by Google Play Store alone (Baby Tracker 2015; Glow 2025; Huckleberry 2017). I will focus on three stages of each baby tracker app's engagement between the carers and the app, which I find relevant to the metanarrative discussion—data logging, the alarm feature, and the charts provided. I will not discuss issues such as user manipulation, marketing, or hooking methods, which are less relevant here. For simplicity in this discussion, I will apply Lyotard's terms: *scientific knowledge* to describe the measurable data inputs and outputs, and *narrative knowledge* to discuss users' experiences regarding their babies unrelated to measurable technological data. The latter may sound vague and challenging to outline. Lyotard defines it as 'each of us lives at the intersection of these [diverse narrative fragments]. However, we do not necessarily establish stable language combinations, and the properties of the ones we do establish are not necessarily communicable' (ibid.: xxiv). Narrative knowledge serves as a personal means of making sense of reality, even though these individual narratives may not always form stable or universally communicable combinations. This represents the weak, vulnerable knowledge that risks being suppressed in discourse.

In the *Baby Tracker* app logging process, carers of a one-month-old baby, for example, who wish to follow only three basic patterns of their infant—feeding, sleeping, and nappy changing—will likely record their baby's daily bodily patterns into computerised records approximately thirty times every twenty-four hours. This includes information such as



Baby Tracker App
Charts and Patterns
 (screenshots)
 2024

time, amount, and status. Additional records suggested by the app include breast pumping, growth, twenty-two types of milestones, five types of daily activities, temperature, medication, and vaccines. Roughly speaking, the application provides two types of output. First, it can sound an alarm, upon the user's settings, when the time has come for any of the above activities, and second, it provides various charts of analysed outputs for the carers to choose from.

The following aspects must be addressed: the narratives that motivate the use of the *Baby Tracker* app, the fundamental beliefs necessary to undertake such a demanding task, and the anticipated benefits that align with the user's mindset and values. The collaboration with the application provides a techno-scientific way to review one's baby according to a set of

measurable features, in addition to real-life experience and interaction with the baby. I will present a situation to understand the differences between narrative knowledge and scientific knowledge. A mother breastfeeds her baby, who then falls asleep for their afternoon nap and wakes up in a good or a bad mood or does not sleep at all, and either it is their usual behaviour, or it may be unusual. Then they nap longer or shorter than expected, waking up smiling or waking up crying, or if the baby's carer's mind is disrupted today if they are patient or nervous, had a good night's sleep or not, if the weather is grey, the air in the baby's room is compressed and unpleasant, a friend came to visit—all these, and much more, are potential sources to create the carer's *narrative knowledge*. It creates their lived experience regarding their baby—a personal way of making sense of reality.

Contrary to that, the apps provide clear-cut data on the amount of sleep and the sleeping patterns of the baby, sorted into charts of days, weeks, or months. Some of them use AI to analyse the data, compare it with average baby behaviours, and present knowledge that is considered the objective truth using data visualisation. The time and effort the users invest in handling the baby tracker apps can testify that they trust this way of reflecting on their baby and value the app as offering a relevant truth; otherwise, they would probably stop using it. Furthermore, I have presented previously cases where parents preferred to follow the app's analysis and recommendations over their own knowledge, such as a father who insisted on feeding his baby which, according to the app, was supposed to be hungry, and the father was angry when the baby refused to eat (E. 2022: 21:20), and a mother who stopped a breastfeeding session following the app's comment 'We just hit the 30-minute mark; you have to stop breastfeeding' (M. 2022: 31:36), neglecting her inner feeling that this was a wrong decision. I argue that the set of beliefs required to engage with such practice, prioritising *scientific knowledge* and implementing its findings, stems from three main narratives embedded in the concept that drives self-tracking apps, as I will now describe.

First is the overarching explanation prioritising objective scientific knowledge. Millions of parents invest the effort to log massive amounts of

data in a baby-tracking app due to their rooted belief that the charts, such as presented before or other outputs, mean something that can be more objective, and thus more profound, than their narrative knowledge. Setting an alarm with a fixed time to change nappies, to wake up or to feed a baby or using AI for these missions in the more sophisticated apps manifests such a narrative. People might believe that the app will provide them with knowledge in the form of an ultimate truth and so is relevant for raising their baby, giving it the legitimacy to set up the rules that legitimise itself. The proliferation of these apps suggests that users believe these tools provide them with a superior knowledge of their own baby than they could gain through direct human interactions with the baby, thus as Lyotard claimed, confirming the apps' legitimacy in portraying a truth that presents itself as superior to real life. I do not assert that the data presented is false; rather, I argue that it is given and perceived as ultimate.

Secondly, the capitalist belief in optimising productivity and efficiency leaked from the commercial world to the personal and private. Baby tracker apps, in these examples, offer user assistance to improve performance, either by enhancing the caregiver's efficiency in fulfilling their tasks or by improving the baby's patterns. This can be seen in the following sentences taken from the "About this app" Section on the Google Store of the three baby trackers:

Recognise nap time and nighttime sleep patterns *to better plan your day*; Set alarms for putting baby down or to create *more structured* nighttime feeding sessions; *baby's goals* and achievements; *Quickly identify* data patterns; feature that *predicts your child's next nap time* like magic; *No more* wake window *math*; creating *age-appropriate sleep schedules* tailored for your child; *Say goodbye to guesswork* with our convenient Diaper Tracker; *easily monitor* their overall diapering patterns; *Stay on top* of your baby's hygiene and keep them comfortable throughout the day; *seamlessly track* all aspects of your baby's care and *receive personalised recommendations* based on your data;

empower yourself with knowledge and tools for a *fulfilling motherhood experience*. (Baby Tracker 2015; Glow 2025; Huckleberry 2017) [emphasis added]

Again, the argument is not against wishing for a better experience while raising a baby. It depicts a mindset that views the human body as a machine that can and should be optimised and enhanced. This perspective assumes, as cited above, that babies have goals to achieve, that a baby should adhere to ‘age-appropriate sleep schedules’ (whatever “appropriate” means); that better planning, easy monitoring, quick identification, pattern prediction, schedule creation, and staying on top, among others, are tools for a ‘fulfilling motherhood experience’; and that motherhood experience is related to the goals defined by the apps. This mindset aligns with what M. expressed in her interview, explaining why she relies on devices to raise her child: ‘I think that it comes from, I don’t know, something inside me that I want to be the best version of myself or the best mom version of myself. And I think that it fits this purpose’ (M. 2022).

The attitude required to engage with these apps is to view the baby and/or the carer as an apparatus, a machine whose performance can be analysed and improved. Otherwise, one does not need the app. This highlights the paradox of self-legitimation by illustrating that the apps establish binary morals for right and wrong as a given convention, thus determining the rules by which only this practice is deemed legitimate, while delegitimising other perceptions.

Through these examples, presenting the two narratives—prioritising scientific knowledge and following a capitalist machine-like performance way of thinking—another narrative is required to engage with self-tracking apps: the transhumanist belief in humanity’s ability to use scientific and technological achievements to overcome nature and enhance the human body. I presented this narrative through the “Transhumanist Declaration” (Humanity Plus 2009) in the section dealing with the Western narratives that enabled the adoption of these apps. Its overarching belief in transcending natural limits to enhance and optimise bodily functions is

reflected in principles of daily life—technology can diagnose and fix human weaknesses at all levels. For example, if a baby does not conform to sleeping patterns that meet ‘age-appropriate sleep schedules’ or their parents’ needs, it is perceived as a human defect that AI and other technologies can help solve. As written in *Huckleberry*’s “About this app” page: ‘No matter your sleep situation, Huckleberry can help’ (2017).

The metanarratives I have presented through the baby-tracking apps are not unique to this genre; they serve here as a case study. Self-tracking apps across all categories share a belief in technology’s capacity to enhance performance, assume human efficiency as an unquestionable goal, and regard data as superior to narrative knowledge. After analysing the metanarratives that underpin the phenomenon of using self-tracking apps and their problematic nature, I now present solutions that can open a new horizon to challenge the tyranny of these metanarratives.

One of the Many “Language Species”

Lyotard offers a metaphor to explain the relations between scientific and narrative knowledge. He argues that science tends to judge all other forms of knowledge as if they share its own structure and criteria—as if they were isomorphic. However, since different forms of knowledge rely on different rules and logics, one can only observe and reflect on the diversity of these “language species”. Like living species, they are interrelated but not necessarily harmonious. From the perspective of narrative knowledge, scientific discourse is simply one variant within a broader family of narrative cultures. Yet, the opposite view is not reciprocal: scientific discourse questions the validity of narrative knowledge, often dismissing it as never being subject to argumentation or proof, and classifies them as savage, primitive, composed of opinions, and ignorance—something to be corrected, educated, or civilised (Lyotard 2021: 27). I will elaborate on this narrative perspective, emphasising that scientific knowledge is only one “language species” among various ways of understanding the world.



Camille Henrot, *Grosse Fatigue*, 2013, Video, 13 min
 Trailer available on [MoMA's Facebook page](#) ↗

Camille Henrot's art video *Grosse Fatigue* was produced through a Smithsonian Artist Research Fellowship, in which she was granted permission to film the collections of the Smithsonian Archives of American Art, the National Museum of Natural History, and the National Air and Space Museum (Chauveau 2014). It is the outcome of her research at the world's largest scientific and museum complex. This institution was established in the mid-nineteenth century 'for the increase and diffusion of knowledge ... dedicated to using scientific knowledge to improve human conditions' (Smithsonian Institution 2024). It is the kind of institution Lyotard refers to as articulating the Western metanarrative of the emancipation of the rational and reason. It manifests the humanistic worldview of mastering nature. In reference to where her research

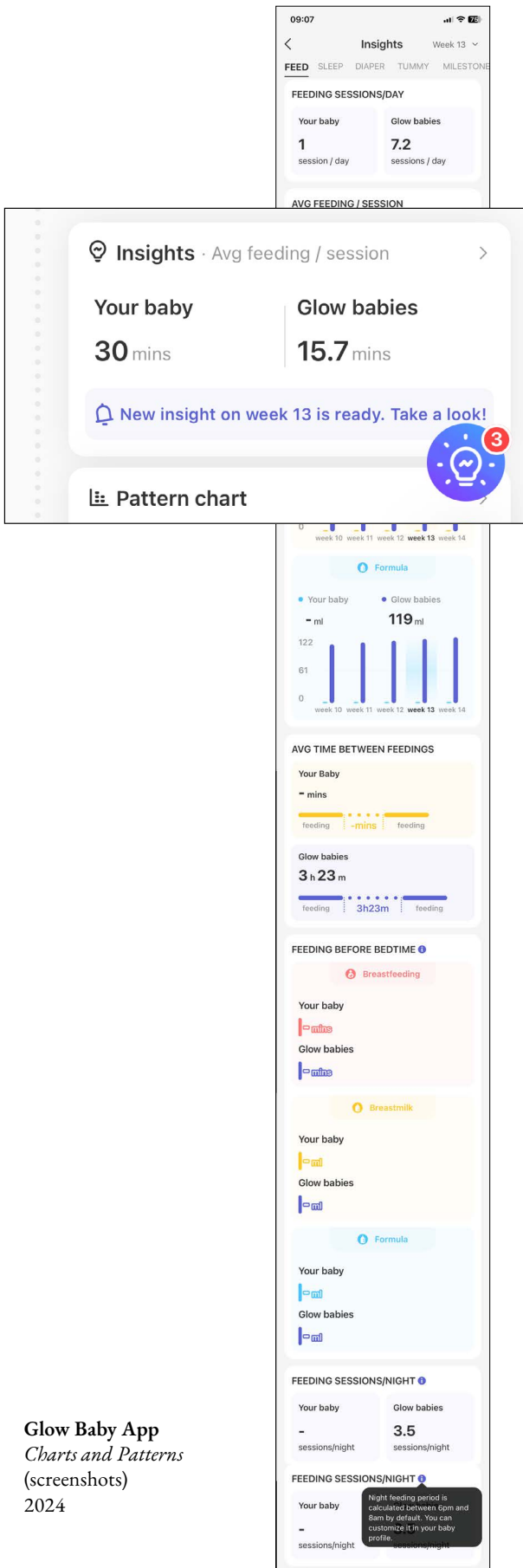
took place, the archiving concept represents one of the tools used in the modern era to control by hierarchising, classifying, sorting, and labelling. I will further deal with archiving and expand on the core question of who holds the power to decide.

Grosse Fatigue's thirteen-minute video takes place on a Mac desktop. Its opening scene presents a celestial galaxy wallpaper with several hard drives labelled DATA, DATA 2, DATA 3, and HISTORY_OF_UNIVERSE. From this scene onwards, all the visuals are presented as files on this desktop with random wallpapers taken from the scientific world. It tells the story of the creation of the universe through a spectacular collage of the Smithsonian's filmed collections, images of objects and specimens, animal skeletons and carved figurines, and native art, footage Henrot filmed in the institution's offices and storage areas and video clips and images she created or sourced online. Some address cultural references, such as a caricature illustrating Moses as editing God's Tablets of the Covenant, a Pantone colour catalogue, a Wikipedia search for "apple", connotating both Wikipedia and apple as a reference to knowledge, switching the search to Apple.inc, thus alluding to its control of humans' knowledge and economic power, etc. The narration, written in collaboration with poet Jacob Bromberg and voiced by multidisciplinary artist Akwetey Orraca-Tetteh, blends scientific histories, creation stories from Buddhism, Christianity, Hinduism, Islam, Judaism, Freemasonry, Kabbalah, and indigenous traditions such as Dogon, Inuit, and Navajo (Solomon 2013).

Henrot's artwork performs a brave, subversive, highly subjective, and intuitive postmodern act towards scientific knowledge and the objective mindset that this institution symbolises. The way the different languages are

interwoven in the artwork suggests an alternative practice to the above, a discourse where all narratives coexist, with none claiming primacy. More importantly, it envisions a world where scientific knowledge is one of many “language species”—as suggested by Lyotard. It reflects a core aspect of knowledge forms that do not seek to dominate others, are aware of their own limits, embrace pluralism, and reject totalising, self-justifying discourses. I want to address two actions in *Grosse Fatigue* that link to the questions I investigate: she first underlines the scientific knowledge metanarrative and then aligns it as an equal member with other narratives of knowledge.

The video addresses scientific knowledge, among other indications, referring to the institution’s archives, focusing on a core scientific methodology manifested in collections: labelling, numbering, categorising, and hierarchising real life into catalogued data. I have previously discussed Foucault’s discourse on what he refers to as the eighteenth-century big project of classification (1979: 148), claiming that ordering and taxonomy were both a procedure of knowledge and a technique of power. While he refers to the broader phenomenon of rational classifications of living beings, economic tables, or diseases, in this section, I will narrow the focus to collecting and archiving, as manifested in self-tracking apps. Archiving is a fundamental methodology in designing these apps, where they collect large amounts of data and need to create a metadata archive of the tracked subject, enabling the transfer of lived events into usable information that can be analysed and represented. Like the scientific archiver, the app developer chooses what data to collect and how to arrange it. When programming a baby tracker app, for instance, a set of decisions must be taken: what personal data is relevant to categorise a baby (gender, age, etc.), what categories and patterns they wish to extract from the infant’s life (feeding, changing nappies, first



smile, etc.), what data to collect from these categories and how (colour and texture of the poo, amount and type of food, etc.), and finally, how to sort, analyse, and present it to the user. This procedure is based on a rational belief in categorising as a potent methodology to manage real-life phenomena—the baby’s life. A baby’s account, in this case, is a metadata archive of a specific baby.

Moreover, under these beliefs, just like in scientific collections, the decisions that structure the archive are presented to the user as being taken for granted. For example, when finishing logging breastfeeding in the *Glow Baby* app, a new mark on the timeline will appear, comparing the outcome of the current session and the average length of previous feeding sessions to “Glow babies”. When the user presses “New insights on week 13 is ready. Take a look”, the app will open a new window with deeper analysed data, comparing them again to “Glow babies”. This will include the number of feeding sessions a day, average length of breastfeeding, amount of breastmilk and formula per session according to the babies’ age in weeks, the average

time between feeding, feeding before bedtime for each type of feeding, and the number of feeding sessions at night according to a default setting of 6 p.m. to 8 a.m., which can be customised by the user.

This example demonstrates how the app employs a powerful method to exert its tyranny: framing what should be considered important as a set of presumptions about what is critical to measure, log, label, categorise, and with whom to compare. This framing sets and portrays the overall outcome. Even the statement that there are such beings as “Glow babies” that are relevant for making comparisons is a presumption that uses the scientific metanarrative tyranny and is thus taken for granted.

The scientific cataloguing concept is present in the visuals presented in *Grosse Fatigue*; Henrot does not criticise it but challenges its undisputed status by displaying it as one of many legitimate ways to explain or experience life. This is the second statement in the video I will analyse concerning the phenomenon of self-tracking apps. Simply put, science might be an excellent way to explain the world, but looking at the world through scientific eyes risks missing a much richer vision or even missing the essence of what one sees. Changing nappies or feeding a baby is not just a task to be performed, believing, like the father in the example above, that according to the app, his baby must now eat. Rather, it is a whole, full, and rich experience involving endless sensations and emotions. As previously discussed, dealing with data pollution, scientific data can pollute and, by that, mask lived experiences when giving it the potency to lead the story. The vision suggested in the video is tackling this threat by allowing multiple ways of knowledge to be involved in decoding reality, letting subjective, interpretive, imaginary, and playfulness take an equal part in the game. It suggests a mixed vision of science, indigenous traditions, non-Western philosophies, and the freedom to use inner personal qualities. It is a sensual video celebrating the textures, colours, and senses present in daily life, as of equal value to any other narrative on the screen, as described in the New Yorker: ‘There’s an element of *Grosse Fatigue* that seems akin to ASMR [an emerging form of creativity that uses sound and visuals to evoke a

physical sensation of euphoria or deep calm]: when the artist's hands peel a black-dyed egg or roll an orange like a ball of clay, the sounds and gestures get inside your brain, tickling nerve endings and accessing subconscious archetypes. It's like a headier version of a TikTok compilation' (Chayka 2020).

This mindset can help curate solutions in the field I investigate, which does not call for forcing a change in scientific knowledge or neglecting it or its achievements. My study targets its problematic establishment as a metanarrative. It focuses on human *relations* with scientific knowledge, which developed a view that excludes a wide variety of non-scientific narratives and boosts using self-tracking apps as a tool to interpret phenomena. Lyotard's diagnosis and Henrot's practice of seeing scientific knowledge as an equal species enable a new representation of all kinds of narratives without prioritising any, allowing the individual free and playful choice, a perspective I actively incorporate into my framework.

Legitimation by Paralogy

I will conclude this section with Lyotard's ending chapter—"Legitimation by Paralogy" (2021: 60-67), where he suggests paralogy as a solution, as an altered (*para*) form of reasoning (*logos*). A form that represents a shift from traditional modes of legitimation that seek coherence, consensus, and unity, stabilising knowledge through universally accepted norms and truths, to those that embrace complexity and change. Paralogy underlines the importance of dissensus, diversity, and innovation; values the disruption of established frameworks and the introduction of new perspectives and ideas; emphasises and values disagreement; and is constantly subject to revision and reinterpretation.

Lyotard's report on knowledge in computerised societies commissioned by the president of Quebec, addresses philosophical questions while remaining open-ended. He highlights the role of paralogy in fostering scientific creativity and innovation. Nonetheless, it may emphasise the importance of paralogy in how individuals understand their bodies and

lives via self-tracking apps, while limiting a variety of narrative knowledge that competes for legitimacy.

To analyse the problem that the legitimization of paralogy comes to solve, Lyotard points to the technological game, which distinguishes between efficient and inefficient and deals with how this game involves force. In following the inquiry objectives, he points to a capitalist solution for the shortage in research funding, manifested through the influence of corporations and nationalised companies on scientific discourse. He calls the issue the *performativity criterion*. I will expand this notion and claim that the performativity criterion is fundamental to using self-tracking apps following the same capitalist values of performativity. Self-tracking apps are developed and marketed with the promise of efficiency; this is why people use them. They harness technology to enhance performance. Narratives that produce poor implementation are not helpful to the goal and thus are obviously excluded. Common features, for example, are to remind the user to carry out actions at a specific time, in the right amount, in the shortest way, and then to calculate and suggest modes to improve effectiveness and achieve more out of a given situation. They then grade and praise the user's success to train their productivity. Lyotard defines the performativity criterion, the manifestation of the technical game, as 'the best possible input/output equation, [which became the new goal]. ... The fact remains that since performativity increases the ability to produce proof, it also increases the ability to be right: the technical criterion, introduced on a massive scale into scientific knowledge, cannot fail to influence the truth criterion' (ibid.: 45-46). In our case, once the app improves performativity, it will influence the way the user perceives truth and, by that, encourages the exclusion of knowledge that does not meet this criterion.

Lyotard claims throughout his study that scientific knowledge establishes its legitimacy by assuming language games are isomorphic—they have the same form, should fit a single unified framework, and follow the same rules and structures. Attempts to force different language games into a single mould can lead to "terror," where one form of discourse tries

to dominate or eliminate others. Looking for a solution, he writes: 'A recognition of the heteromorphous nature of language games is a first step in that direction. This obviously implies a renunciation of terror, which assumes that they are isomorphic and tries to make them so' (ibid.: 66). This is where the paralogy can suggest a solution, representing a shift from traditional modes of isomorphic legitimation that accept only what meets the consensus.

How could Lyotard's paralogy be adapted to the phenomenon and practice of self-tracking apps? It is essential to be clear that the call to perceive lived experience under the paralogy concept is defined by what the new perception is shifting from rather than what it is. Trying to draw rules of the game, borders, or a path for these perceptions would damage the possibility of new kinds of narrative knowledge taking place. Embracing the criticism about the tyranny of the metanarratives and the allegory of scientific knowledge as an equal species amongst many carves the way for a new relationship with technology, resisting its claims to legitimate itself as the ultimate truth..

Nonetheless, there is still an inherent problem; the different narratives will never have the same power. As discussed before, Lyotard defines narrative knowledge as unstable language combinations that are not necessarily communicable (ibid.: xxiv). This weakens this kind of knowledge, which affects its vulnerability and creates a power advantage of one's knowledge over others, similar to the power of the colonialists over the indigenes. Still, it is a battle worth fighting if we do not want to find ourselves speaking in a monotonous voice, thus experiencing the world from a single perspective. Self-tracking apps are a potent tool that many users, under the well-established metanarratives of rationalism and late capitalism, see as the final arbiter in decoding lived issues. However, this view is mistaken; my practice-based research critiques this mindset to create awareness of the absurdity of prioritising technology while weakening inherent and embodied knowledge. This is a call for equal legitimacy for all kinds of interpretations, whether scientific or other: I call this "multi-para-logys".

Chapter 14: Feminist Thinking Toward Alternative Ways

Feminist thinking and my research insights share commonalities, even though I examine the phenomenon of using self-tracking apps by individuals of all genders. Nonetheless, this inquiry is inspired by the emphasis on feminist art and philosophy's critical engagement with power structures and the recognition of embodied, situated knowledge as a legitimate epistemological source. In this section, I seek alternatives to the epistemology on which, I argue, self-tracking apps rely. This is recognised in feminist thinking as a masculine epistemology, with phallogocentrism⁹ claiming there is one true world, 'the one code that translates all meaning perfectly' (Haraway 2016: 57). I will analyse three perspectives of feminist art and theory, criticising this epistemology while proposing new pathways and alternatives—*situated knowledges* and the god trick, anarchive, and the feminist quantum thinking. I will expand upon these ideas with regard to

9 Phallogocentrism critiques how Western thought privileges both masculinity and logocentrism—Derrida's term for the elevation of reason and fixed meaning as truth. It exposes how dominant knowledge systems are shaped by male-centred, rational norms, marginalising ambiguity, embodied knowledge, and alternative, often feminine, ways of knowing and being in the world.

the investigation of this thesis.

Self-tracking apps are developed to help users understand, interpret, and summarise real life in a readable platform harnessing science and technology to translate a lived situation into data language and representation. It applies a variety of sensors and algorithms to alert when performance is decreasing, praise when goals are achieved, or present a personal record analysis in a simple graph using data visualisation. Utilising AI to select and promote “preferable” memories from one’s photo gallery, workout analysis, retweet counts, and reminders of all kinds exemplifies an overall situation where a specific gaze—a pre-programmed technological one—claims the power to present itself as *the* reality, as an objective truth. Donna Haraway’s essay “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective” (1988) challenges this striving for an illusory, god’s-eye view of objective truth—universal scientific knowledge—and argues for the importance of a feminist epistemology of situated knowledges that recognises the value of diverse and partial perspectives.

Situated Knowledges and The God Trick

Haraway’s “God Trick” refers to the illusion of objective, all-seeing knowledge that claims to be neutral, universal, and detached from any specific perspective. She critiques this traditional scientific viewpoint, arguing that all knowledge is partial, situated, and shaped by positionality—meaning that knowledge always comes from a specific standpoint rather than an all-encompassing, omniscient view. This conquering gaze, ‘seeing everything from nowhere’ (ibid.: 581), claims the power to see and not be seen.

This gaze signifies the unmarked positions of Man and White, one of the many nasty tones of the word “objectivity” to feminist ears in scientific and technological, late-industrial, militarised, racist, and male-dominant societies ... honed to perfection in the history of science tied to militarism,

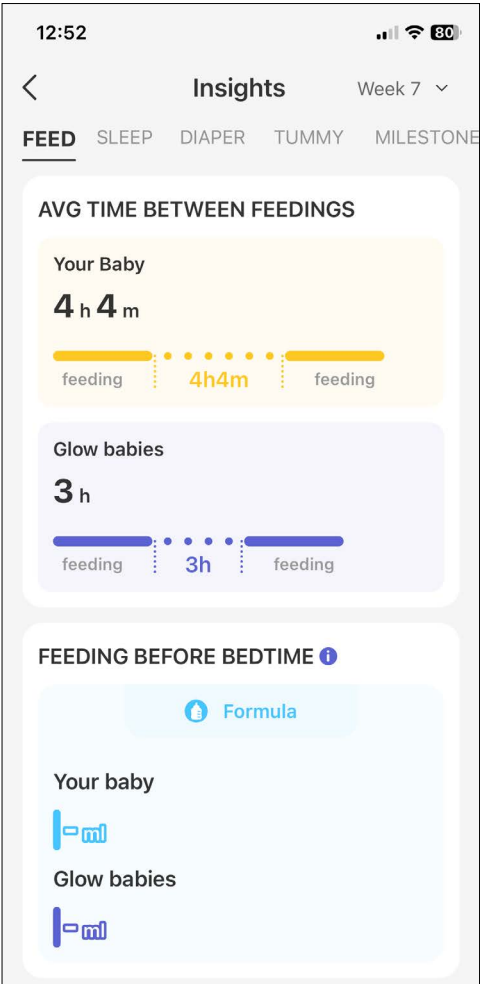
capitalism, colonialism, and male supremacy - to distance the knowing subject from everybody and everything in the interests of unfettered power. (ibid.)

She analyses the viewer's character as the master 'whose Eye produces, appropriates, and orders all difference' (ibid.: 587) and marks their standpoint as unseen, pretending to be objective. She argues that science uses this viewpoint to convince individuals that their manufactured knowledge is a path to a 'desired form of very objective power' (ibid.: 577), again pointing to the potential strength gained by adopting it. Similar to Haraway's claim, using self-tracking apps employs this God trick and appears transparent to the user when they seldom question their objectivity. The doubts should not be directed at the objectivity of the technical measurements, such as step counts or the duration of a breastfeeding session, but rather, adopting Haraway's view, should stem from a broader discussion on the assumptions that shaped this situation, as she illustrates in the following series of seldom-asked questions.

Histories of science may be powerfully told as histories of the technologies. These technologies are ways of life, social orders, practices of visualisation. Technologies are skilled practices. How to see? Where to see from? What limits to vision? What to see for? Whom to see with? Who gets to have more than one point of view? Who gets blinded? Who wears blinders? Who interprets the visual field? What other sensory powers do we wish to cultivate besides vision? (ibid.: 587)

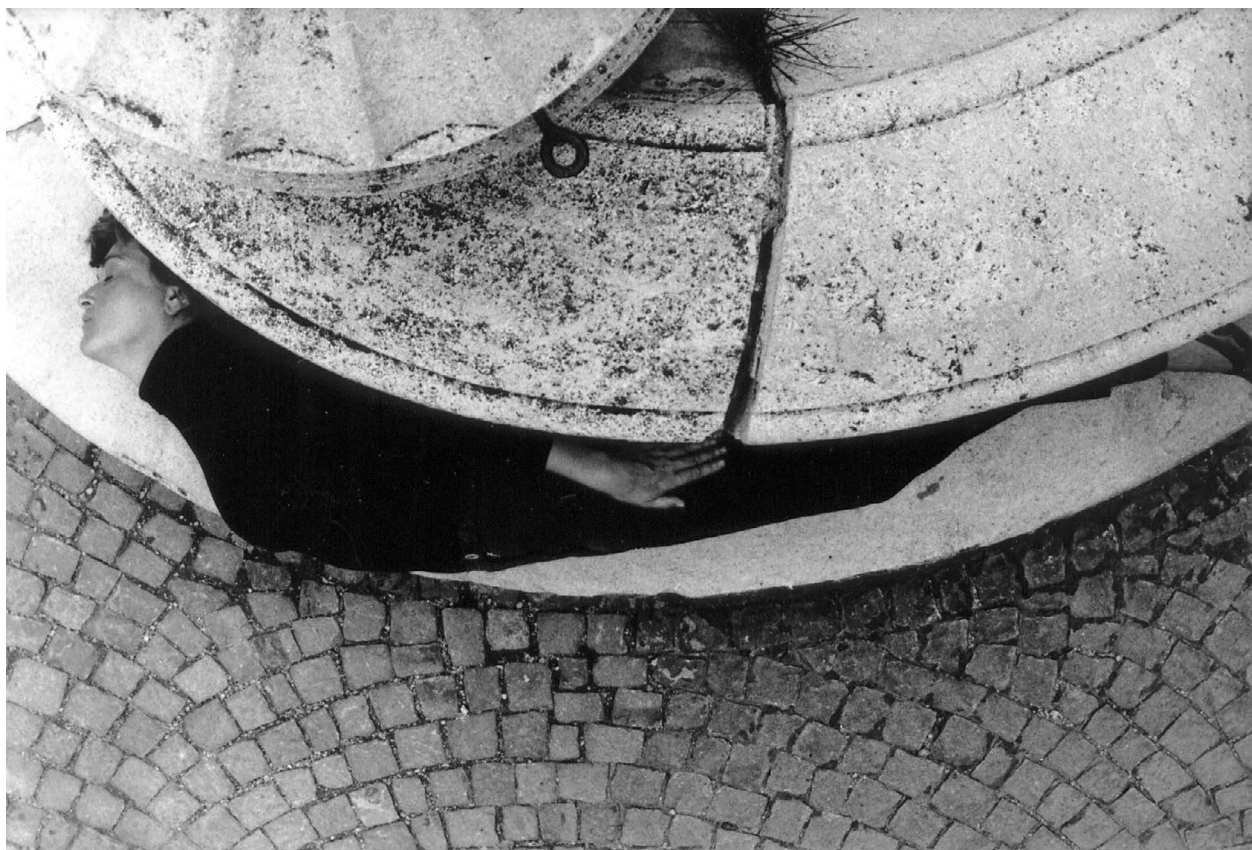
These questions can be utilised to analyse the meaning behind the data presented as objective information collected by the apps. They can help shift the focus from the dazzling light of scientific facts - against which I do not argue - to their construction and the decisions behind framing the query. For example, when the *Glow Baby* app (Glow 2025) presents a baby's patterns in relation to that of "Glow babies", there is an inherent state in the gaze that shapes the outcome and renders the questions 'How to see? Where to see from?' urgent. There is no doubt about the accuracy and

correctness of the information, but the series of decisions that positioned the gaze—to measure the time between feedings, to quantify it in minutes, to present an average, to compare it to other babies’ averages, and to choose with whom to compare—invite claims of objectivity, create a statement, and affect the interpretation of reality. Furthermore, these decisions conceal themselves behind scientific data and are thus not criticised. They are the unseen gaze behind the numbers. Analysing it in this way reveals the trap and underscores Haraway’s final question, acknowledging the need for alternative sensory powers to cultivate alongside the scientific vision.



Glow Baby App
Charts and Patterns
(screenshots)
2024

From 1972 to 1982, feminist activist media artist VALIE EXPORT produced the photographic series *Body Configurations*, positioning her body to fit into urban architecture, including prominent Viennese landmarks like the City Hall and the Palace of Justice. Bending, crouching, or curled up, she moulds herself for the camera, adapting to the geometrical forms at the point where the bodily dimension intersects with cultural norms. She chose buildings that manifested sociopolitical power materialised in stone and represented patriarchal structures analogous to laws made by men (Moser 2023). Addressing concerns similar to those of Haraway, EXPORT, a member of the Neo-Dadaist Fluxus movement and the Wiener Aktionismus (Viennese Actionism), directed her investigation towards the abject rather than the accepted order in her body artworks (Levi 2004). Her spatial studies, which precede Haraway's *God Trick*, explore and criticise the abuse of rational power within modern society. She confronts the symbols of the scientific, objective, masculine, conquering gaze that claims the power to see and not be seen, juxtaposed with the vulnerability of the messy body—flesh, bones, and the human psychological state. Presenting a subject constrained by its surroundings, striving yet imperfectly fitting into the given form, reflects societal pressures on the weak voices of the disempowered and marginalised to conform to rigid geometrical systems. Her artwork raises awareness of the vulnerabilities faced by power structures and, importantly, highlights the technocratic norms that demand the lived situation perform with flexibility and mould itself to rigid structures of scientific masculine conventions. This leads to insights about the absurdity relevant to my research, which inquires into the power structure between the lived experience and the technological gaze. It opens the horizon



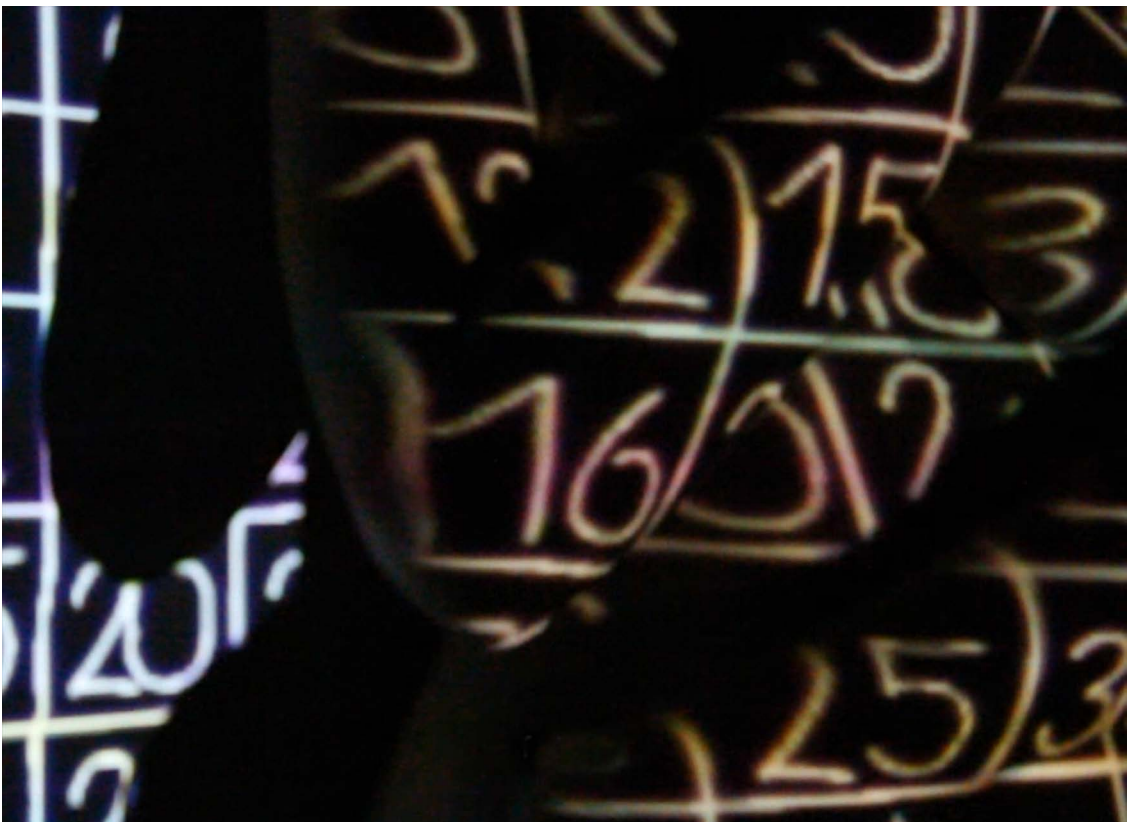
Top: VALIE EXPORT, *Mahoniflöte*, 1982, Body Configuration
 Bottom: VALIE EXPORT, *Kumetrie II*, 1982, Body Configuration

for alternatives, where the lived situation can rebel against the omnipresent, limiting, moulding gaze and reclaim its priority.

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My *#MathToo* video artwork addresses the conquering gaze that asserts the power to see without being seen, signifying the unmarked positions of the knowledge-claiming objectivity, which is supreme over what Haraway refers to as the marked body. The video, also discussed in the Prologue, presents a casual filling in of the multiplication table with white chalk on a blackboard, projected onto a barely visible naked female body; the figure takes shape as the table-solving progresses. Echoing the gaze-from-nowhere discussion, the body becomes recognisable yet simultaneously confined, trapped by the grid that shapes it, with the body's existence dependent on the external observer enabling its actuality. It is not only that the living body cannot exist within this structure without the observer that frames it, but it also forms a never-ending reliance on the observer's rules, which are presented as objective beliefs.

All three elements in the video are soft—the female body, the handwriting filling in the calculated results on a blackboard multiplication table, and the young, lacking confidence, hesitating schoolgirl voice accompanying the algebra process. Despite the absence of rigid or tangible components that chain or define boundaries for the vulnerable body, the impression of the outcome is



Haya Sheffer

#MathToo (video stills)

2018

Animation and video, 6:23 min

[Available on Youtube](#)

disturbing. The naked body, slowly trapped by the light, depicts a violent act where the phallogocentric ideology and its gaze require no solid material to create a trapping situation for the one who must be moulded into the system in order to materialise.

The artwork emerged from my personal experience of confronting the vulnerability of being unable to perform simple calculations and not fitting the expected norms of a society that sanctifies the law of STEM. Still, it reflects the God trick's gaze and its masculine dominance and logical authority within society. Juxtaposing Haraway's concept, EXPORT's *Body Configurations*, and my artwork draw attention to the ongoing conflict between scientific knowledge and embodied knowledge, as well as the hidden gaze that empowers it. Haraway writes: 'I would like to insist on the embodied nature of all vision and so reclaim the sensory system that has been used to signify a leap out of the marked body and into a conquering gaze from nowhere' (1988: 581). #MathToo creates insight into the struggle between the embodied skills used to create knowledge, which may be complex and contradictory, and the gaze that claims objectivity and uses its omnipresent, yet invisible, power to suppress the resistance that this knowledge might generate.

The shared perspective of the artworks provokes insights into the technological gaze of self-tracking apps—an intricate and hidden operational extension of logocentric thinking. This logic collects data, divides, calculates, counts, and quantitatively assesses, coercing the body into a mould of behaviour. Moreover, it implants the assumption that using the knowledge produced by the app's gaze reveals the true existence of lived situations and that a user who wishes to live the "true" life must rely on the knowledge

collected by the app. As in *#MathToo*, here also, as much as the user is exposed by the app's gaze, they become trapped by its rules and subject to its control.

Highlighting the tension between resistance and reliance and exposing the unequal power dynamics between structured, objective knowledge and embodied experience underscores the imbalanced power between the two. The violence inherent in this logic, revealed in EXPORT's *Body Configurations* and in my *#MathToo*, is often obscured from the app user's experience and is challenging to recognise.

[*#MathToo* is also discussed in the Prologue.]

— *Feminist Objectivity*

Haraway's *embodied nature of all vision*, cited above, challenges the scientific logic of one fixed location in a reified body, highlighting the Western cultural narrative that represents ideologies of separation between the mind and the body, offering limited location and situated knowledges rather than transcendence and the splitting of subject and object. Recognising the specific perspectives and contexts from which knowledge is produced allows one to be responsible and become answerable for what one learns and how to see. The feminist embodiment thus suggests a much deeper and richer vision (ibid.: 583, 88).

I am arguing for politics and epistemologies of location, positioning, and situating, where partiality and not universality is the condition of being heard to make rational knowledge claims. These are claims on people's lives. I am arguing for the view from a body, always a complex, contradictory, structuring, and structured body, versus the view from above, from nowhere. (ibid.: 589)



VALIE EXPORT, *Adjungierte Dislokationen*, 1973, Photographie

In EXPORT's experimental body action artwork from 1973, *Adjungierte Dislokationen* (*Adjunct Dislocations*), she attached 8mm cameras to her chest and back, recording views in opposite directions as she walked. She employs technical apparatus as a sensory extension of her body, revealing her surroundings through her movements, thereby inscribing a sense of subjectivity into the technical medium. She traverses various environments while a third camera films her photographic exploration. The outputs from the three different recording perspectives are projected side by side, juxtaposing and complementing a seemingly neutral mode of representation with the perspective contingent upon the body.

My interpretation and the insights from EXPORT's artistic investigations reveal a multi-vision scenario that invites the agency of both humans and technology as observers and as the observed. It addresses the complexity of the perspective from the body outwards

and, conversely, the gaze directed at the viewed. It employs feminist epistemology to examine and legitimise multiple potential points of view while criticising the notion that vision is detached and purely objective. It appears that EXPORT endeavoured to create a situation in which the camera, as an extension of her body, would function as if it possessed the embodied nature of vision. It thus allows for the experience of situated knowledges, thereby enabling variations in how different perspectives or approaches are understood and domains where both material and semiotic elements intersect and generate meaning.

This fifty-year-old inquiry adds a pioneering layer to the investigation, reflecting today's massive presence of cameras in people's lives, which EXPORT could not have predicted. It raises questions about the influence of filming cameras' technology on perception. It does so by using the camera as an extension of the body, examining the mediated image and its ability to create and present identity (The Photographers' Gallery 2024). This additional angle, derived from EXPORT's inquiry, represents an early investigation of human-technology relations when linking the body with cameras that gaze inwards and outwards, which became a fundamental experience in self-tracking apps and people's self-perception, thus gaining special relevance to my research. EXPORT's spatial studies explore the boundary between subjective and technical perception, challenging perspectives and positions to reveal how the camera constructs images with ideological bias (Moser 2023: 6). Quotations I found that look like personal footnotes of EXPORT show that she was alert to the issues above.

The spectator experiences space through the opposite shots of the camera respectively. The invisible body exists between images A, B,

...

“the way you carry a camera with you, you carry your body with you”

1. centre point “space” body not visible

2. body = centre point = tool

(EXPORT 1973 Translated from German by Anita Sikora).

Pairing the camera as a partner to the spatial human-embodied vision raises questions and awareness regarding the technological extension of the body, objectivity and the values that technology carries, the new statuses it necessitates, the role and power of each partner, the agendas that both agents take, and perhaps most critically, the implications of this new hybrid of the body and mind. What seems to be a novel technological promise from 1973 heralds the potential consequences of the forthcoming communication revolution, which positions technology as an intimate partner, vowing scientific objectivity and its effect on human perceptions. It provides insights into the innocence of the promise that has become prevalent, shaping and controlling today's self-understanding.

EXPORT's 1973 experiment of experiencing multiple inward and outward views as an artistic investigation anticipated Haraway's 1988 theoretical critiques and her proposed solution for dismantling the authority of a singular hierarchical gaze, which she termed *feminist objectivity*.

So, with many other feminists, I want to argue for a doctrine and practice of objectivity that privileges contestation, deconstruction, passionate construction, webbed connections, and hope for transformation of systems of knowledge and ways of seeing. (1988: 585)

Haraway criticises science as reductive when a dominant language is imposed as the standard for all translations and conversions. She draws lines to new feminist epistemologies of objectivity, a paradigmatic model that embodies not closure but rather aspects that are contestable and contested—suggesting sciences of double vision, splitting of senses, confusion of voice and sight, interpretation, translation, stuttering, and the partly understood—heterogeneous multiplicities, incapable of being squashed into isomorphic slots or cumulative lists (ibid.: 580-90). Concerning my study, both contributions, EXPORT's and Haraway's, foster insight, calling for multiple perspectives that can inspire investigations into alternative ways of interpreting oneself, challenging the tyranny imposed by logocentric and capitalist ideologies as manifested by self-tracking apps. I have previously analysed the *Glow Baby* app, where the presented data claimed objectivity and reduced lived experience into a single number that imposed a single interpretation with a hidden ideology. Adopting the *feminist objectivity* concept to the app's case can challenge and shake this view toward understanding the problematic oppression of one authorised view and the need to exercise multiple ways of understanding that have been weakened due to the current apps and the tyranny of their ideologies.

I will now expand *feminist objectivity* to challenge archiving, a fundamental phallogocentric aspect in self-tracking apps used as a scientific tool to manage the collected data by reducing real-life, moulding it into hierarchical ordering, standard pre-programmed sections. I will present it through the anarchive concept, embracing knowledge that cannot be categorised into identical slots and lists through the conservative practice of archiving,

Anarchive

The first issue of the *Mnemoscape* online magazine, released in 2014, was titled “The Anarchival Impulse” (Adami 2014). It explored anarchival concepts within contemporary artistic practices and culture, situated at the intersections of political and historical scrutiny. Still, this did not become a common phrase. The Greek prefix *an(a)-* carries multiple meanings, including above, against, upside down, and even negation or cancellation. As a result, the concept of the anarchive embodies a complex and ambivalent artistic approach. It holds both subversive and regenerative potential, simultaneously suggesting the destruction, disruption, and renewal of the archive. Artists engaging with archives—both within and in opposition to them—challenge the assumed transparency of historical records, questioning the objectivity of archaeological discoveries and museum documentation while revealing the ideological structures embedded in archival practices (Kokoli 2017). Challenging this assumption is relevant to a critical analysis of the phenomenon of using self-tracking apps, as archiving determines what is included, excluded, classified, and interpreted and serves as a tool that claims objectivity and that manages and presents the data collected by users, fundamentally impacting their interpretation of lived experiences. It echoes Lyotard’s criticism, asking, ‘Who decides what knowledge is?’ (2021: 9), which can be extended to the question of who decides how to discipline and represent knowledge, thus underlining the force inherent in this process, as well as challenging the idea that knowledge can be forced into an archive.

In his chapter “The Historical *a priori* and the Archive”, Foucault illuminates the archive’s influence on the construction of historical significance, dictating what is documented or left undocumented, spoken, or silenced and shaping a society’s thought systems and values. Consequently, the definition of the archive determines who has the authority to shape the writing of history (1972: 126-31). The discussion about the relations between power and the hierarchical, categorised, and sorted knowledge addresses how personal data in self-tracking apps are gathered, archived,

and presented, giving the producer the power to shape systems and values. This self-tracking app's condition can be analysed from the same prism that challenges archival methodologies. I will discuss the voices who criticise this traditional archival concept and practice, claiming that it constitutes the embodiment of power, control, and social censorship in the guise of objectivity and that it is a place where institutional construction is carried out by marking, limiting, and determining modes of discourse. I will do so through feminist methodologies and critiques expressed in artistic practice and theory, calling for a reconsideration of archiving.

These critiques are developed further in the feminist work of Griselda Pollock and Holly Pester, whose contributions are central to the reimagining of archival practices. In "Trouble in the Archives" (1993), Pollock exposes how archival systems are not passive containers of knowledge but active agents in sustaining gendered exclusions and silencing marginalised voices. Her argument foregrounds the politics of absence and the institutional structures that legitimise certain narratives while suppressing others. Similarly, in "Archive Fanfiction", Holly Pester (2017) proposes poetic, performative methodologies that intervene in standardised modes of archival engagement. Drawing on Haraway's concept of "situated knowledge," she calls for fragmentary and embodied ways of working with archives—methods that challenge the authority of classification and cut across the catalogue's logic. By manifesting counterplots and radical activity along "the territory of the index," Pester reclaims the archive as a space of resistance rather than mere preservation. Rather than serving as background references, these perspectives are vital in framing the Anarchive section of this chapter as both a critique and an artistic intervention. They help situate my work within a tradition that actively resists epistemic hierarchies and foregrounds lived experience, fragmentation, and multiplicity as valid archival strategies.

Susan Hiller explored the above topics in her archival artwork *After the Freud Museum*, initially a site-specific artwork at the Freud Museum in London in 1994. Her academic training as an archaeologist, her PhD with a National Science Foundation fellowship in anthropology and fieldwork (Kokoli 2017), together with the location which addresses Freud's concept of archaeology and anthropology, and her artistic approach were all combined into her research and the manifestation of the artwork. Hiller created an archive of fifty open archaeological collecting boxes, each containing three aspects—one or more personal collected objects, pictures, and text. The objects, she said, were of no value, objects that had been thrown away: 'The only value these things have is that I have assigned some kind of value to them ... [their framing] was a way of contextualising the objects, not to limit their meanings but to open them out to these symbolic links along the themes' (1994: 43, 46). The bonded units were labelled in a scientific archival style: a number, a foreign language name, its English reference, a description, the box material and size, the act taken, such as 'curated', and its year.

Hiller's act of curating her personal collection—imbued with personal meaning—within a space dedicated to empirical science and structured in a scientific format highlights the ongoing struggle to bridge the divide between objectifying and subjectifying discourses, 'science' and art (Kokoli 2017). Furthermore, her assemblage of artefacts, images, and text scatters hints, inviting the visitors to create their own personal stories.



Susan Hiller
From the Freud Museum
 (installation view)
 1991-6



.008

Cowgirl/kou' gurl

photocopied photograph of American outlaw Jennie Metcalf;
 two china creamers in the form of cows, in customized
 cardboard box [13.25 x 10 x 2.5"] , labelled

collated, 1992

Left:

Susan Hiller, *Cowgirl / kou gurl*, *From the Freud Museum* (prototype for box 008), 1992

Right:

Susan Hiller, *From the Freud Museum* (detail: label no. 008), 1991-96

If you think about the narrative that collections or assemblages of things make ... there are always at least two possible stories: one is the story that the narrator ... the artist ... the story-teller ... and the other is the story that the listener is understanding, or hearing, or imagining on the basis of the same objects. (1994: 42)

This statement, where the artist uses their subjective creative process of locating cultural meanings through objects to generate a subjective process in the viewer's mind, is a provocative operation when done within the scientific archaeological and psychoanalytical scenes. Hiller describes the process of evoking traces, using the archaeological/psychoanalytical metaphor referring to Freud's comparison of psychoanalysis as reconstructing the past through excavating fragments, 'working through' the concealed layers of the unconscious mind as the archaeologist's task (Merewether 2001: 10,44).

This is a multilayer, witty activist act that uses the archive as a platform to critique scientific empiric methodologies of inquiry in two aspects. First, it addresses archives and collections as a symbolic representation of order and control. The museum as an institution, along with its collections—including the Freud Museum—embodies a deeper intellectual pursuit: the drive to maintain order and assert control over objects and ideas through the acts of naming and categorisation (Kokoli 2017). However, Hiller's archive naming and categorising does not support objective inquiry but instead opens the viewer's mind to endless possible decoding and stories.

Then, she addresses Freud's psychoanalysis methodology for revealing meanings, but she does so through Foucault's interpretation of psychoanalysis. Kokoli (ibid.) states in Tate's article on Hiller's artwork that since the publication of *The Order of Things*, both ethnology and psychoanalytic methods have changed profoundly. She quotes Foucault, saying they became 'counter-sciences' (Foucault 2005: 414). The change of this approach, she claims, can be primarily attributed to a growing awareness of the interface between knowledge and power and the political and scholarly critique of the human sciences exercised, among others, by feminists. Hiller's archaeological boxes contain archived objects, characterised by their polysemy, resisting a single interpretation. They are traces that call the visitor to dig and reveal layers and meanings but lack a stable connection that might have led to an empirical answer, a powerful opposing situation that unlinks knowledge and power, leaving the viewer free to extract their personal finds. Thus, her subversive artwork can be titled anarchive.

Another aspect of Hiller's project, related to the questions of my inquiry, is the importance of duration, or *durée* as in Henri Bergson's writing (1950), an essential component when engaging with life and decoding its meanings. Her artwork demands intention and involvement, setting the visitor apart from the relentless pace external to the exhibition hall. Experiencing *durée* is a capacity that often contradicts the efficiency of self-tracking apps and is harnessed in several of my artworks in this research, such as *The Archive* presented ahead.

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Haya Sheffer, *The Archive of the Lost Embodied Knowledge* (installation view), 2022

My installation artwork, *The Archive*, questions the archive methodology but from different perspectives of Hiller's archive. By inviting physical interaction, Keeping the boxes unlabelled and offering no predefined order, the installation encouraged free exploration, rejecting rigid archival hierarchies.

The lack of labelling and information was the visible first-glance contradiction to traditional archiving. It presents a set of naked, similar sealed tins, with no indication or suggestion of any details about the content of the tins, and thus, rather than giving the visitor a task or keys to decode the archive, it appeals to their curiosity. The inquiry action is not a pedagogic order but is motivated by playful instincts. There is no categorising, hierarchy, labelling, or sorting of any kind. There are stories archived in the boxes, and revealing them would be intuitive, like in real life, a trial-and-error process bringing with it possible distress and joy.

Additionally, although the tins are arranged equidistantly in a straight line, signifying a hidden order, the participant soon realises there is no legality in their arrangement. There is no obligation to pick them in order or to put a tin back in the same position it was in before. One might not find again a tin one had previously opened.

Consequently, the experience stems from the participant's free will and motivation, which provide the mental space and duration for extracting a narrative from the personal stories of intimate experiences they will hear when opening the boxes. There is no guarantee of what or how many stories one will hear, nor what connections one will produce from those heard. Similar to Hiller's artwork, it opposes the traditional hierarchical, categorised, and sorted display of an invisible power used to dictate the way knowledge is constructed, a way that limits the options of possible outcomes and readings.

[*The Archive* is also discussed in the sections: Narrowing Down the Options and Data Pollution]

The feminist approaches to archiving I have presented each refer, in their own way, to Haraway's concept of situated knowledges, questioning and rejecting the transcendental masculine scientific situated gaze that claims objectivity. They all view the archive as both a representation and a tool of power, using it as a means to establish and maintain control. The insights they provide regarding the methods of self-tracking apps reveal a practice that is often overlooked, where the collected data serves as an archive, purporting to reflect a tracked lived experience, such as the user's mood in the *DailyBean* app. This app offers a calendar that provides users with an insight into their mood flow, with five mood beans: 'If you click on the bean, you can check the record you left that day right away' along with

‘colourful icons’. They suggest category blocks that allow users to select only the categories they wish to see, providing statistics that analyse mood and activity on a weekly or monthly basis (DailyBean 2024). Condensing the monthly emotions of a complex, multilayered, profound, lived experience into five colourful mood beans, as over a million app users might do, is, in practice, a personal archiving process. It appears to be devoid of power structures, assisting users by organising their lives into discernible patterns. Analysing these as archives can highlight the cost of reducing life and forcing it into moulds that can be categorised and hierarchically displayed. I deal with the loss of all that is excluded from this archive and the loss of authentic skills when handing the authority to curate the archive to technology. When a user states it helps them ‘recognise the patterns in my mood based on the weather, my eating, who I’m with, etc.’ (ibid.), it highlights the fact that they have lost their authentic ability to recognise the connection of the weather or social connections to their mood. This also means that through the app, only specific categories will be archived and presented, while in reality, a person’s mood and the environment that influences it are shaped by countless nuances. The inherent power in this archiving is the control the user gains over their body and mind, which, as previously discussed, is one of the greatest motivations for using self-tracking apps and aligns with ideologies that view the body as an apparatus or commodity to be perfected. Recognising all this as an issue highlights the significance of an archiving as a form of resistance against archiving.

Feminist Quantum Thinking

The third feminist perspective developed here relates to the ability to embrace situations that contain more than one true possibility—a condition that Karen Barad conceptualises through *quantum indeterminacy*. In *Meeting the Universe Halfway* (2007), Barad revises Niels Bohr’s interpretation of quantum physics to argue that reality is not made up of pre-existing, independent entities but of phenomena that emerge through intra-actions—‘the mutual constitution of entangled agencies’

(ibid.: 33). The primary ontological unit ‘is not independent objects with independently determinate boundaries and properties but rather what Bohr terms “phenomena”’ (ibid.). Distinct agencies ‘do not precede, but rather emerge through, their intra-action’ (ibid.).

Barad’s account challenges the binary logic that separates being from becoming, or matter from meaning. ‘Existence is not an individual affair. Individuals do not preexist their interactions; rather, individuals emerge through and as part of their entangled intra-relating’ (ibid.: ix). Before a specific intra-action occurs—such as observation, measurement, or boundary-drawing—multiple potential states coexist. These potentialities are real but indeterminate, waiting for their realisation through particular relational configurations.

Barad’s ontology situates multiplicity within matter itself. Reality is simultaneously multiple and relational, capable of coexisting potentialities until a particular intra-action enacts a specific outcome. This is a quantum conception of multiplicity where uncertainty is not a limitation but a generative condition of being. As Barad states, ‘there are no solutions; there is only the ongoing practice of being open and alive to each meeting, each intra-action, so that we might use our ability to respond... to breathe life into ever new possibilities for living justly’ (ibid.: x). This framework provides a powerful lens through which to reconsider feminist ethics and epistemology—not as the search for stable categories, but as a commitment to multiplicity, openness, and the material entanglement of thought, matter, and practice.

Libby Heaney, a contemporary artist and PhD quantum physicist, explores Barad’s ideas in *The Evolution of Ent-: QX*, an immersive exhibition using self-written quantum code. Heaney engages with Barad’s *agential realism*, a theoretical framework positing that matter and meaning emerge through relational interactions. In this view,



Libby Heaney
*The Evolution
 of Ent-: QX*
 (installation
 view), 2022

reality is not composed of pre-existing, discrete entities but is dynamically constituted through ongoing *intra-actions*—mutual processes that bring objects, meanings, and agencies into being through their *entanglement*. “Entanglement” here refers to the inseparability and interconnectedness of entities, where objects, concepts, or beings influence and co-constitute each other rather than existing independently—a notion grounded in both quantum mechanics and posthumanist philosophy. Her artwork highlights entanglement, hybridity, and post-humanism, emphasising that matter and its intra-actions are inseparable; as Barad asserts: ‘The very nature of materiality is an entanglement’ (ibid.: 393).

Libby Heaney’s *On Ent- (via Bosch and Barad)* reinterprets Bosch’s *The Garden of Earthly Delights* through a quantum lens, drawing parallels between the triptych and the potential futures of quantum computing. Unlike classical computing, which relies on binary bits (0s and 1s),

quantum computing introduces superposition, where bits can be 0, 1, or both at the same time. A quantum particle exists in multiple states until it is observed, at which point it collapses into one. Heaney employs this non-binary logic to create a dynamic, evolving artwork that challenges conventional structures.

Her world unfolds non-linearly, unlike Bosch's left-to-right composition. Material and immaterial elements entangle, forming an ever-changing flux that depends on observation and interaction. The world reveals itself only through observation; until that moment, all possibilities coexist, simultaneously real and unreal. Heaney's artwork follows Barad in that the elements in the artwork are ever-evolving in response to all the agents in the environment. The code is iteratively reproducing the world through inherently material practices of intra-acting within and as part of the sphere (Edwards 2022).

Heaney advances feminist artistic discourse, challenging the human ability to navigate ambiguous situations. One of the issues self-tracking apps purport to resolve is the user's difficulty in managing this uncertainty, not by helping them contend with its complexity but by concealing and denying its existence, suggesting it was never present. The apps are designed with a binary philosophy of good and evil, success and failure, offering feeble alternatives masquerading as diversity. Selecting one option from the provided choices is a common practice in the apps and presents a faint image of multiplicity. It fosters binary thinking, where each option is either true or false, serving as a relief practice rather than confronting the notion that things can simultaneously be true and false. The feminist philosophy that addresses superposition and entanglement highlights their existence and encourages individuals to embrace non-binary situations

where opposites can be presented concurrently.

The applied mathematician David Orrell (2022) finds a similarity between quantum physics and feminist theories, where, instead of predictive certainty, both address principles of uncertainty. He argues that there is a strong correspondence between the separate, impenetrable Newtonian atom and the male sense of self, suggesting that the feminist thinking nature of quantum theory explains why the male scientists who discovered it concealed it from the public for an extended period, uncertain of how to engage with it. Orrell posits that the concept of entanglement resonates with human experience and that quantum physicist Niels Bohr drew the idea of superposition from a philosophy that highlights the human capacity to hold conflicting ideas. Consequently, the reason quantum discourse is kept away from soft science and the public is not due to an inability of the human mind to manage contradictory situations. Ironically, it is the masculine scientific mindset that has struggled to confront various forms of probability, resulting in discomfort within the realm of hard science. Therefore, quantum tools and ideas, designed to analyse human properties and familiar to feminist thinking, have been effectively confined for over a century.

One of the most obvious features of modern science is that it carries with it the imprint of ancient divisions and biases. And one of the most obvious features of quantum ideas is that they undermine everything that might be considered ‘Hard’ and ‘Male’ about reality according to this (rather dated) scheme. Instead of being clearly defined and firmly independent, both mind and matter are better described as indeterminate and entangled. (ibid.)

Building on Barad’s feminist quantum thinking and Orrell’s claim, I develop the idea that this mindset embodies a form of feminine thought that is difficult to embrace within a phallogocentric framework—an argument that may help explain the adoption of self-tracking apps. The point is not that women have the ability to experience multiplicity or ambiguity more

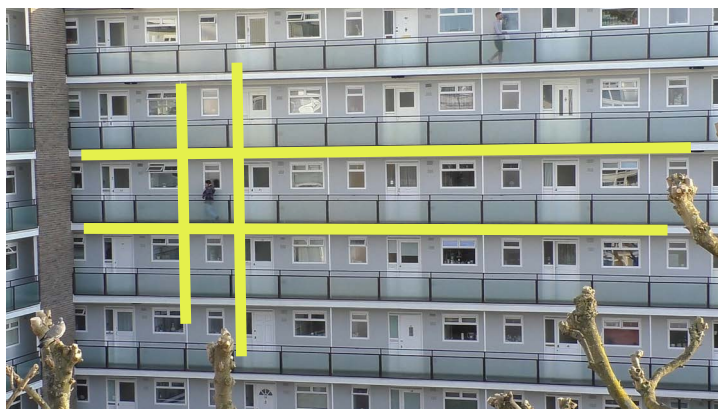
than men, but rather that a prevailing masculine, scientific, well-rooted mindset built on the 'separate, impenetrable' Newtonian atom shapes the cultural perspective. The necessity for self-tracking apps reflects this attitude. Their utilisation is premised on the belief that situations can be clearly defined, measured, and calculated, and should be attained, which in turn is precisely what the apps offer. The feminine quantum thinking, which embraces the human capacity for navigating unclear situations and which is essential for experiencing life's richness, remains unrecognised by and intolerable to the masculine mindset and the apps. It involves seeing the human mind as capable of living with more than one stated situation, not waiting for the observation to determine a final one. This is the feminist view at its best, and it offers an insight that can provide alternatives for the binary thinking that defines the use of the apps. Cultivating this ability is essential for a holistic existence and for living life to the full. Revisiting Haraway's question, 'What other sensory powers do we wish to cultivate besides vision?' (1988: 587), the three feminist perspectives I have analysed provide a source for developing alternative approaches: feminist objectivity, anarchiving, and quantum-like thinking.

Part Five

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Beyond Quantification

By juxtaposing and contemplating the artworks that guide this inquiry, a visual narrative emerges—one that reveals an overarching theme: a concern that while seeking to liberate and expand human potential, technology simultaneously risks confining human existence within a rigid, geometrical framework that occludes human significance. The remarkable achievements of the modern



Clockwise from top left:

Cage, 1986

Carroll House, 2023-2025

#MathToo, 2018

85% Human,

2023-Ongoing

Self-Surveillance:

You Have Reached

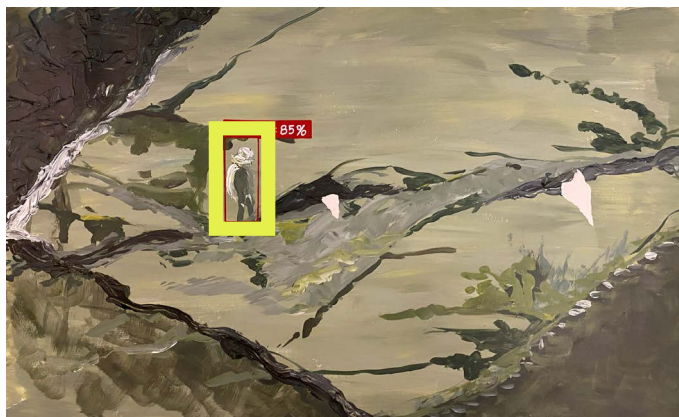
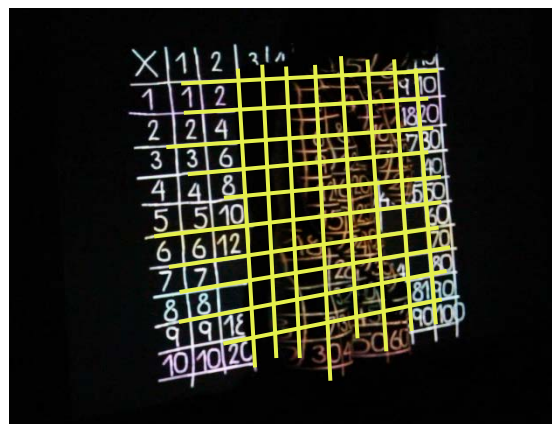
Your Destination,

2023

The Archive of the

Lost Embodied

Knowledge, 2022



age, striving towards a transhuman species, limit, and thus endanger an essential aspect and essence of being human, namely, the genuine, profound abilities to experience the deconstructed facets of lived existence. Whether through architecture, black paint, light projection, digital media, or common Amazon metal tins, the outcome depicts a scenario of limitation rather than the promised horizon of pure expansion.

The methodology involved in this understanding is essential to the research findings. It allows the assemblage of images to reveal a vision that prioritises the ability to respond to what is given. It resists the imposition of a strict method as an approach that may limit what one can see—enabling an insight to emerge organically from contemplating the assemblage of artworks that shaped the inquiry—allowing them to become an open-ended artistic investigation process rather than fixed solutions anchored in time and place. This approach emphasises the human capacity for openness, responsibility, methodological playfulness, and plurality.

The vision that emerges from this sight highlights the capacity of modern artefacts and achievements to function as powerful instruments for embedding not only advanced technologies but also deeply rooted ideological frameworks into individuals' bodies and everyday lives. This understanding extends to the use of self-tracking apps. By collecting, organising, and sorting empirical data, these tools compartmentalise human experiences into rigid, quantifiable categories—flattening nuance and compressing complexity into geometric, algorithmic grids. In doing so, they risk reconstructing life itself within the confines of their logic, narrowing human existence to the dimensions sanctioned by their design.

Both the methodology and insights gained address the research question—seeking critical perspectives to challenge and re-evaluate the promise of enhancement offered by self-tracking apps. For instance, *85% Human* and *Carroll House* contributed to this understanding by employing unplanned captured lived situations as raw material, rearticulating them by shifting the perspective through minimal artistic intervention to extract their underlying absurdity. Here, alongside the other works, they form a constellation that reveals the already embedded narrative of constraining artificial boundaries—generating a visual performance of an ideological structure.

Emerging technologies—central to this inquiry—build upon and significantly expand earlier technological frameworks; therefore, their influence is far more pervasive than that of those developed from the Scientific Revolution to modern times, as critically analysed by twentieth-century philosophers. This highlights the problem concealed in the use of self-tracking apps.

Reflections on Solutions

Throughout my PhD project, while analysing the phenomenon of utilising self-tracking apps and recognising their problematic aspects, I hesitated about the active part in the research question—the *role* of critical perspectives in challenging the phenomenon I was investigating. I struggled with whether the problematic aspects I recognise in this phenomenon represent difficulties that require solutions and whether the new perspectives aim to provide them. I criticised my art for not creating a novel alternative language to pave the way towards a resolution. I was wondering whether my findings and claims suggest a problem that could be addressed with a possible solution. *Can a solution solve a problem that*

resists solution? Throughout the process, as my insights grew, I realised that searching for a solution reflects the problematic mindset of finality—a fixed, evolution-blocking dead-end—that lies at the core of the issue. It taught me that seeking solutions apes the app’s mindset; it deepens the problem rather than providing a solution.

Arthur Goldreich, a legendary professor from my industrial design BA, who passed away years ago, often criticised us for looking for solutions. He was tall and massive, roaring like a prophet: ‘You are designers, not solution seekers’. His message, as I interpret it today, was that a solution would carry the nature of a dead end, narrowing the scope and shutting down opportunities rather than opening them. One finding is that searching for a solution constitutes the problem itself, and adopting self-tracking apps expresses it.

Thus, my research goal focuses on providing a vision, a horizon that opens pathways for alternative mindsets reflecting the problematic nature of the phenomenon and enabling users to forge their own path out of its tyranny—an approach for rethinking self-knowledge beyond the limits of quantified data. Before turning to this rethinking, I first examine key paradoxes involved in framing the vision.

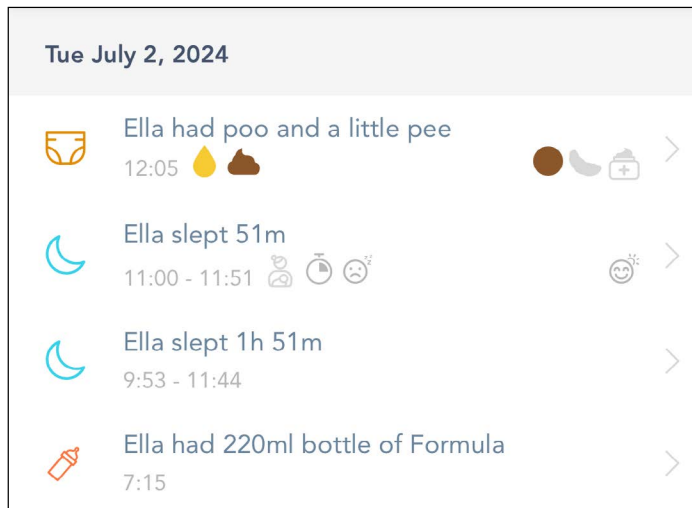
Deconstructing in a Postmodern, Deconstructed World

The world as we experience it today is post-modern in various parameters, reflected not only in the blending of high and low culture, the prevalence of irony, fragmentation, and digital simulacra in everyday life, but also in the unstable economic and social structures of neo-liberalism and late capitalism—marked by fluid, decentralised, and often chaotic organisational forms and an overwhelming flow of information that escapes individual control. Thus, the call to deconstruct modern narratives, logocentric assumptions, and capitalist values underpinning the use of self-tracking apps may appear paradoxical and challenging in a culture already shaped by postmodern deconstruction.

In today's era—where capitalism prevails as the dominant ideological lens—criticism is not rejected but is assimilated into seemingly open and flexible frameworks. Deconstruction, originally intended to disrupt, now echoes capitalism's adaptive logic. Capitalism neutralises criticism by absorbing novelty into the mainstream, rendering it banal. The dismantled language no longer threatens the system; instead, capitalism appropriates the language and logic of deconstruction, folding them into its own structure.

Under this view, there is no contradiction in how using self-tracking apps—rooted in stable, modernist assumptions—can thrive in a fragmented postmodern world. This perspective illustrates how, in a deconstructed culture where everything is possible and legitimate, the apps' techno-social system operates according to the logic and values associated with the modern Western mindset based on stable metanarratives. Building on the idea that current culture has embraced deconstruction only on a superficial level, I assert that the apps present a postmodern deconstructed surface appearance, while in practice, as my findings indicate, they adhere to conservative ideologies. Considering deconstruction as a method that promotes thinking outside the box and consequently challenging the box itself, the utilisation of self-tracking apps reduces the box to its minimum in a way that will never contest the metanarratives they endorse. The postmodern superficial appearance of the apps is evident in several ways.

One is the pseudo variety performed through customisation and personalisation. The first involves the user actively modifying settings or features to suit their own preferences, for instance, choosing a specific theme, layout, or notification settings in apps, such as selecting the type of meditation and the duration one wishes to practise. Personalisation uses algorithms or AI to tailor content and features based on the user's behaviour, preferences, and data and can send meditation recommendations based on the user's previous achievements. Both techniques can be perceived as diverse, providing endless options. However, deepening the enquiry reveals narratives of scientific quantification, optimisation, and efficiency,



Huckleberry App
Charts and Patterns
 (screenshots)
 2024

transforming the gathered information into technological knowledge that asserts objectivity, diminishes unmeasured qualities, presents fixed answers and manifests its tyranny associated with modernism. The outcome is the concealment of modern ideologies under the guise of postmodernism.

Another way is how self-tracking apps utilise a postmodern, up-to-date user interface language that blends high and low cultures. In Ella's¹⁰ daily charts on the *Huckleberry* app (Huckleberry 2017), data is collected and analysed using scientific methods, yet it is presented in a casual, informal tone—for example, 'Ella had a poo and a little pee'—accompanied by pastel-coloured cute emojis. This presentation style, which suggests humour, intimacy, and a sense of individualisation, creates an impression

10 Ella is an imaginary baby I created to explore the experience of using baby-tracking apps. While the data I entered was fictional, the screenshots reflect the actual interface and functionality of the apps.

of postmodern culture that critiques and deconstructs rigid scientific norms. Yet, it conceals the process of collecting empirical evidence and the analysing and sorting of information into categories, resulting in knowledge and outcomes that are based on narrow modern beliefs.

Thus, my artistic investigation explores the deeper layers of modern ideologies, avoiding being misled by the superficial postmodern appearance of variety absorbed into the late capitalist system without this process being challenged. As a method in my practice, the assemblage of humans and technology deconstructs and reconstructs in various ways their alliance of decoding human experience and existence. Still, my practice does not offer a solution. Rather, I harness the power of assemblage, both conceptual and physical, to generate rethinking. This is evident from the early 1986 *Cage* artwork to the latest *Self-Surveillance*, *Carroll House*, or *85% Human*, all of which juxtapose diverse elements of this cupelling, generating a process towards awareness. They create room for reimagining alternatives and possibilities while engaging with emerging technologies that function in users' intimate space, such as utilising self-tracking apps. The investigation targets the knowledge these apps generate and the methodologies they employ—methods that are often left unchallenged by postmodern deconstruction and, therefore, continue to reflect hegemonic metanarratives. It is not a call for post-truth chaos but an invitation to reimagine the dogmas embedded in self-tracking apps—leveraging human strength to enhance life experiences.

Is There No Alternative?

In *Capitalist Realism: Is There No Alternative?*, Mark Fisher argues that capitalist realism reflects 'the widespread sense that not only is capitalism the only viable political and economic system, but also that it is now impossible even to imagine a coherent alternative to it' (2009: 2). This assertion is significant for my research, as the phenomenon of utilising self-tracking apps stems from capitalist ideology and, as I will discuss soon, employs similar methods to hinder users from envisioning alternatives. It

sharpens the potential of utilising artistic practice to intervene critically, inspiring new modes of thought regarding alternative possibilities and revealing options that may have been obscured by dominant norms.

By invoking *capitalist realism*, Fisher echoes *socialist realism*—the Soviet-era artistic doctrine that used idealised visual forms to promote socialism despite contradictions. Similarly, capitalist realism naturalises capitalism, portraying it as inevitable. Through this similarity, Fisher uses the term to expose how capitalist ideologies shape what is perceived as real, imaginable, or politically possible. Just as socialist realism concealed social contradictions, capitalist realism normalises capitalism, presenting it as the only feasible system.

To critique capitalist realism meaningfully, one must move beyond surface propaganda to reveal the deeper ideological frameworks shaping culture, work, and education. Fisher describes it as an ‘invisible barrier constraining thought and action’ (ibid.: 16). What is deemed “realistic” is politically constructed—not objectively true—thus limiting imagination and foreclosing alternatives by naturalising capitalism as inevitable fact rather than value.

Developing this perspective, I claim that self-tracking apps present their outcomes as an unquestionable objective reality, effectively instilling what Fisher refers to as a *business ontology*—the belief that all aspects of life should operate like businesses, which I expand to include the personal dimensions of individuals’ lives. In addition to the business ontology, the apps further effectively establish a scientific ontology, leading users to believe that various aspects of life should be shaped through the lens of scientific parameters. The pervasive influence of both ontologies acts as an invisible barrier that constrains thought and action. Akin to capitalist realism, the outcome portrays a reality that is perceived as the only alternative.

In both cases, capitalism creates a problematic situation and positions itself as the only viable reality aiming to provide the sole feasible solution. In the broader context, systemic issues are reframed as personal failings. Late capitalism obscures structural crises like poverty, presenting them as

natural realities while offering market-based solutions for individuals. When users adopt self-tracking apps, they often perceive these tools as beneficial aids for navigating life's complexities. However, as argued throughout this thesis, this complexity represents late capitalism itself—the issues the apps address are frequently framed as problematic by capitalist ideologies, compelling individuals to refine their performances in accordance with capitalist ideological standards. This paradoxical outcome is challenged in my artistic installation *Self-Surveillance*. The work echoes real-life cyclical scenarios where the apps serve as a technological solution that reinforces the belief that this is the only alternative for both interpreting reality and “solving” it. Using *Your Destination* in the work's title highlights the question of whose destination this is. Late capitalism creates problematic situations where individuals must confront and resolve issues generated by the system without expecting assistance from society or the government. This perception, which leaves individuals to fight independently, is often adopted when seeking support from self-tracking apps, which are viewed as helpful tools in this solitary struggle.

I analyse in Chapter 8 the motivations behind utilising self-tracking apps in the complexity of modern life. The discussion above emphasises the question of whether individuals today can envision alternative ways to navigate life's complexities and conceive methods that may not be as readily accessible as those offered by dogmatic metanarratives—which tend to establish the problem rather than provide relief. I address Fisher's concluding paragraph, where he refers with a glimmer of hope to his opening question—whether there is no alternative. He states that ‘the tiniest event can tear a hole in the grey curtain’, suggesting that ‘suddenly, anything is possible again’ (ibid.: 81). My PhD practice-based research seeks to create this *tiniest event* by challenging the assumptions underlying the phenomenon of using self-tracking apps.

Revisiting socialist realism, it was undoubtedly an effective visual practice of propaganda ideology. It illustrates how a metanarrative can utilise artistic methods to impact the public towards a single dominant

ideology. As my research challenges the sterilising and numbing nature of metanarratives, it also critiques their artistic practices, which, like social realism, provide answers rather than fostering questions, curiosity, and the creative thinking that might resist dominant hegemonic norms. In Chapter 10: Loss of Variety and Options, I explore how scientific-logical ideologies of reductionism harness data visualisation as an artistic tool to promote their vision. Graphic design—also known as visual communication due to its power to convey ideas—is prevalent in the apps’ interface. The GIF-animated screens I designed and incorporated into the *Self-Surveillance* installation address and critique the arrogance with which the apps present their message as absolute truth and how this design often influences users.

I advocate for the idea that art must create cracks and leverage its power to challenge anything that presents itself as closed and definitive—adopting Adorno’s assertion that ‘the task of art today is to bring chaos into order’ (1978: 222). By developing this concept further, I argue that art’s mission is to generate a nonconforming, critical force and serve as a challenge to the ideological status quo. It preserves the opportunity to comprehend truth in a society where truth is frequently appropriated and obscured by dominant structures that assert ownership of it.

From this perspective on the significant role of art in contemporary society, my research does not provide a method or criteria to replace the methodology of self-tracking apps. Instead, it opens the possibility of transcending *quantification* practices and raises awareness of the potential harm inherent in the empirical and efficiency-driven mindset embedded in self-tracking apps as agents of late capitalist values. It does not advocate neglecting technology but rather encourages critical reflection, ongoing

inquiry, and personal accountability, as I explore in depth in the section concerning cyborgs and responsibility. This may involve artistic practice, philosophical discourse, scientific approaches, or personal engagement—rebellious against the tyranny of the hidden values rooted in self-tracking apps, inviting technological knowledge to become equal participants in the discourse. This leads to the final section, where I articulate what I propose as the central contribution of this research: a generative practice of inquiry that provokes a reflective mode rather than applying fixed methods or rules, which I call *Beyond Quantification*.

Beyond Quantification

Reflecting on labelling my claim as *Post Quantification*, I realised the potential limitation embedded in the term “post” as a prefix to express the speculative angle I intend to emphasise. Considering that “post” concepts often encapsulate a segment of reality and designate it as the past, this would position my claim and the phenomena I investigate within the same hierarchical framework that I seek to avoid. It would create a dualistic definition where one belongs to the past and the other to the future, portraying the old as inherently evil and the post as carrying a flawless promise—presenting a dualistic proposal that compels one to choose a position and adhere to it. Therefore, *Beyond Quantification* better conveys my attitude, as it is liberated from the conceptual burdens associated with the “post” prefix. It resists the constant tension sometimes seen in critical approaches, which grapple with the desire to establish authority and become the judging norm of a “new ism” while simultaneously wanting to undermine the foundation of that authority. Instead, *Beyond Quantification* offers a way of understanding and experiencing the self and the world that resists reducing life to numbers, measurements, and performance metrics.

My artworks, along with those I have referenced, interwoven with critical theories, do not provide a solution. The insights delivered function as an invitation; they invite the possibility of holding multiple states or meanings simultaneously, akin to the allegories of quantum physics,

believing in the human ability to be enhanced by this multiplicity rather than reduced to a single truth; they challenge rigid categorisation, hierarchy, and modular approaches, liberating human experience from being forced into bureaucratic and technological moulds. Accordingly, they enable multiple perspectives, rejecting a singular omnipresent gaze that claims objectivity, and advocate for the coexistence of diverse epistemologies, where scientific and objective methods are repositioned as equal among various ways of understanding.

Beyond Quantification calls for the duration, which is necessary for doubting and questioning the apps' fixed solutions, giving space for inquiry and the unsolved. It calls for a shift from logocentric to paralogical thinking, from control to curiosity, from measurement to meaning, and from external validation to embodied knowing. Rather than rejecting knowledge outright, it creates space for multiple coexisting ways of knowing—integrating rational and empirical forms with emotional, sensory, narrative, intuitive, creative, and relational perspectives while acknowledging what data often omits: nuance, ambiguity, contradiction, and the unmeasurable. It proposes a world where not everything needs to be tracked to hold value, not every experience requires optimisation to be meaningful, and slowness, presence, and subjective truth are welcomed alongside technological tools. Finally, it responds to the research question by encouraging multiple critical perspectives to challenge and re-evaluate the promise of enhancement through self-knowledge as offered by self-tracking apps, and by opening pathways for richer, more inclusive understandings of the self that incorporate all the dimensions of human experience and existence, transcending data, efficiency, and control.

**Concluding by Setting
the Work Free**

This thesis set out to critically investigate the phenomenon of self-tracking app use, positioning it not merely as a technological trend but as a deeply ideological and cultural practice. Through a multi-perspectival framework that weaves together critical theory, artistic inquiry, and lived experience, it argues that the proliferation and the popularity of self-tracking apps are not incidental to technological advancement but are underpinned by longstanding modern Western ideologies: the primacy of objective knowledge, human supremacy over nature, and capitalist efficiency.

These apps—framed as supportive tools—operate through embedded logics that reinforce particular visions of the self and the world: quantifiable, optimisable, and increasingly detached from lived, embodied, and ambiguous forms of knowledge. They foster a form of self-surveillance in which users internalise external expectations and norms, often without realising that these "desires" may have been technologically and ideologically implanted. The motivations that sustain this engagement—pursuits of control, self-betterment, simplicity, and reassurance—mirror the very ideologies these technologies are built upon.

As explored in this study, the consequences are significant. Self-tracking apps subtly reconfigure human subjectivity, reduce plural knowledge forms, standardise experience, and marginalise embodied, affective, and intuitive ways of knowing. By privileging clarity over complexity and measurability over mystery, they risk eroding crucial human capacities—such as dwelling in uncertainty, listening to embodied insight, and sustaining unmeasurable relationships with time, space, and self.

In response, I propose the concept of *Beyond Quantification*—not as a rejection of technology but as a reimagining of how technology and human subjectivity might relate. This approach invites a reinvestment in plurality, ambiguity, and situated knowledge. It foregrounds artistic practices not as illustrative or oppositional but as generative methods of inquiry capable of illuminating the gaps, tensions, and exclusions that numerical systems leave behind. The artworks created in this research—through their absurdities,

juxtapositions, and embodied installations—function as alternative epistemologies. They resist capture and categorisation, and in doing so, reclaim space for the unmeasurable and the hard to define.

Rather than concluding with fixed prescriptions, this research ends by opening a field of possible futures. It invites designers, scholars, users, and artists to approach technology with a renewed attentiveness to its ideological undercurrents and its impact on how humans relate to themselves. It urges us to ask not only what self-tracking apps do but what kind of selves they assume, produce, and preclude. And it encourages a continual return to that space between humans and apps—where meaning is made, values are embedded, and relations are negotiated.

In a culture increasingly shaped by data-driven rationalities, the challenge is not merely to critique from the outside but to create, intervene, and imagine differently from within. *Beyond Quantification* is offered as one such gesture—toward a more reflexive, plural, and humane engagement with the technologies through which humanity now measures itself.

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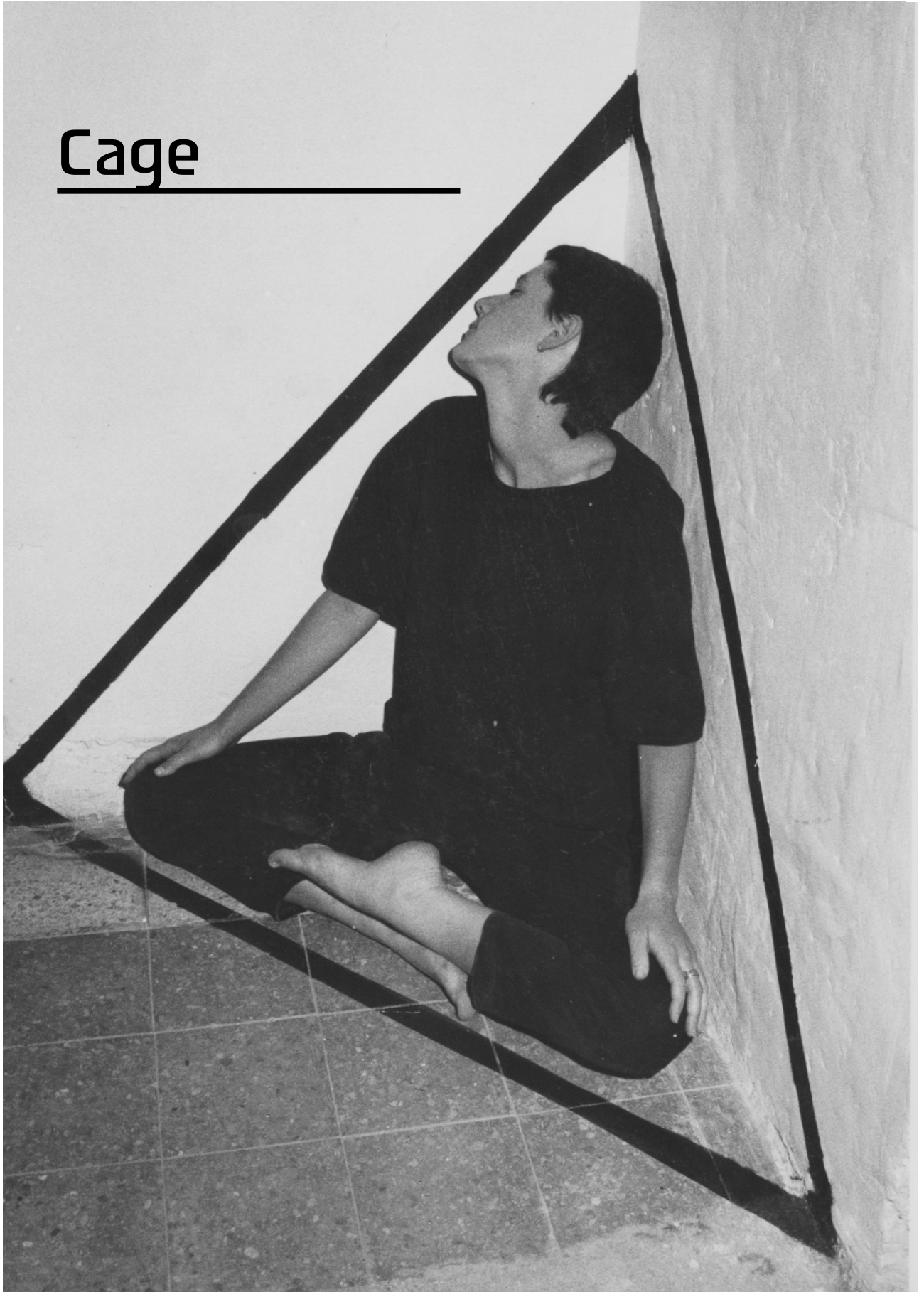
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Appendix A

///

Portfolio

Cage



Cage

1986

Medium

Room corner, black paint, live figure

Description

Using black paint and the existing architecture of a room corner, I constructed an imaginary, geometric, pyramid-shaped cage to imprison my lived body—flesh and mind. This early work investigates how the minimal necessary—an abstract visual cue—can generate a sense of confinement. It explores the power of intangible signs to convey ideological messages and cultural norms, highlighting tensions between rigid structures and embodied experience, the artificial and the human body.

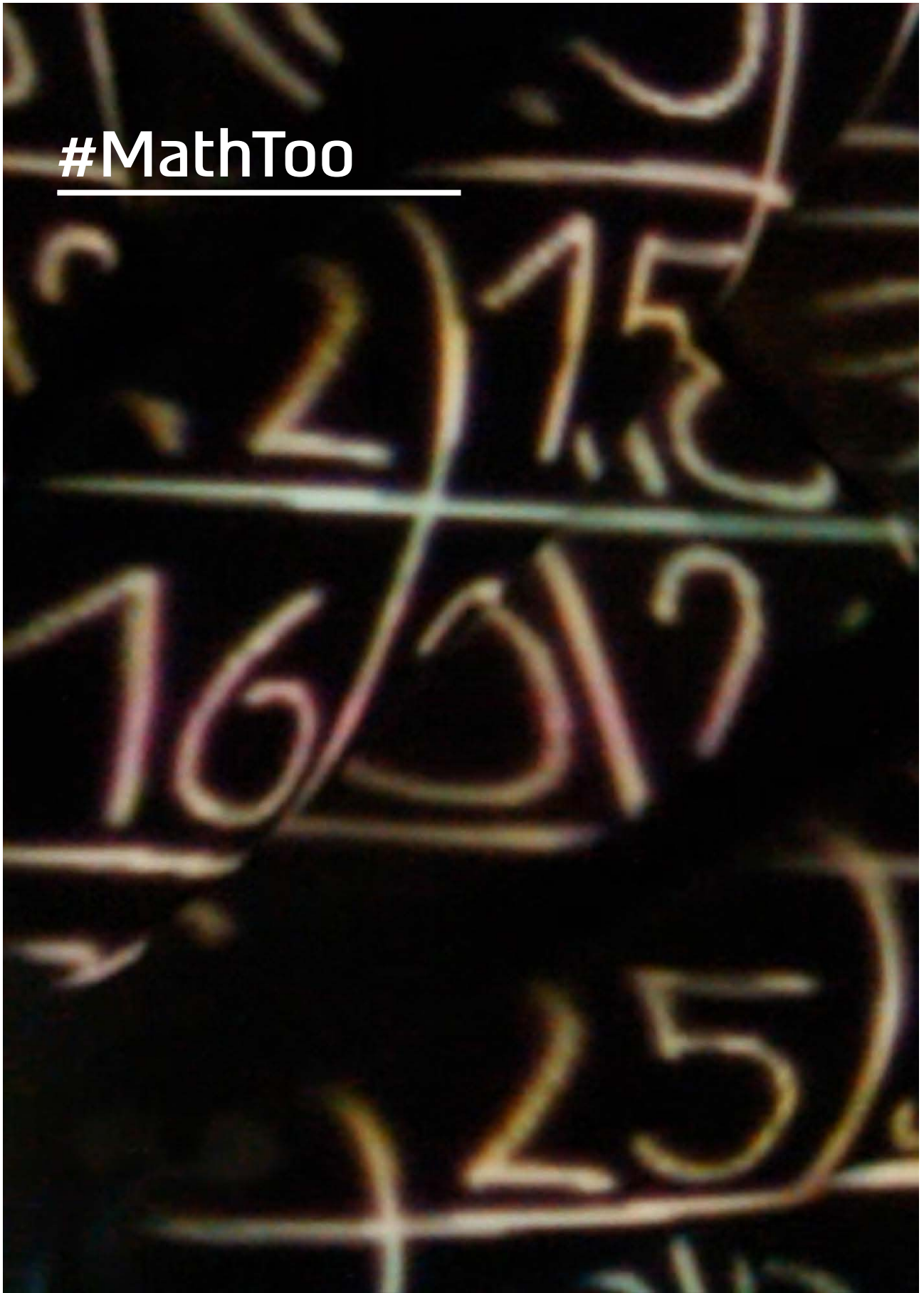
Further Developed In

Prologue

Photo

Moshe Marciano

#MathToo



#MathToo

2018

Medium

Animation and video, 6:23 min

Description

This video features a naked female body gradually revealed through the projection of a childlike exercise: completing the multiplication table with white chalk on a blackboard. The process unfolds in a hesitant, nonlinear manner, voiced by a female child whose uncertainty becomes an integral part of the narrative. As the table fills up the female figure becomes increasingly visible—both exposed and confined by the table lines and the mathematical signs.

The work challenges the dominance of a logocentric mindset, which I experienced as oppressive during my school years and beyond. It draws attention to the marginalisation of non-scientific, embodied, or emotional forms of knowledge and values.

Further Developed In

Prologue

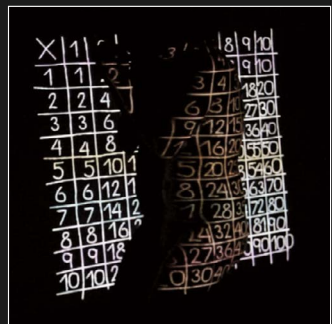
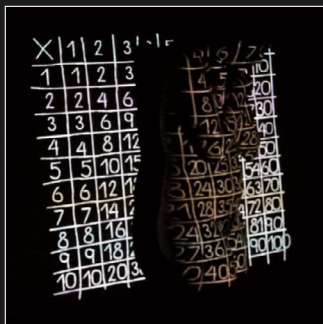
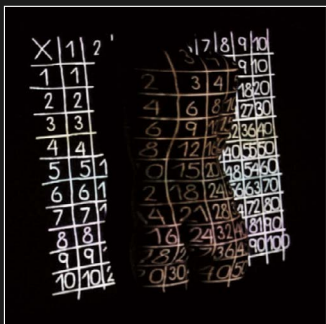
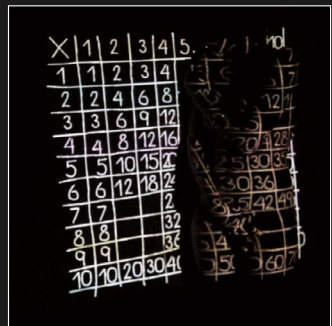
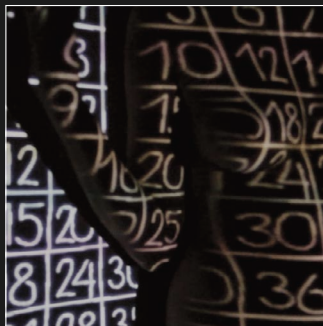
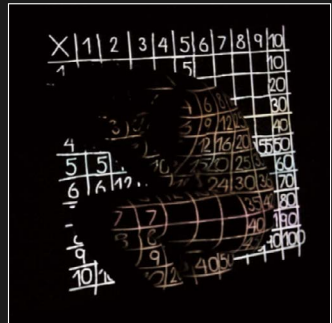
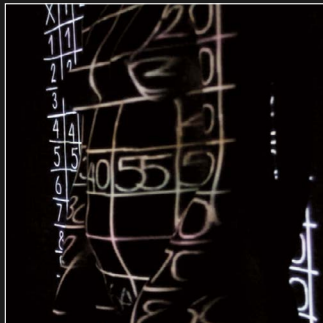
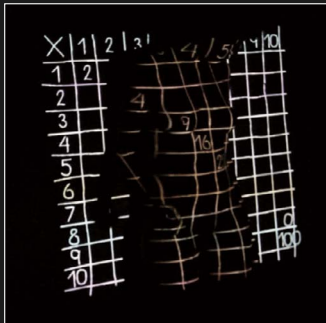
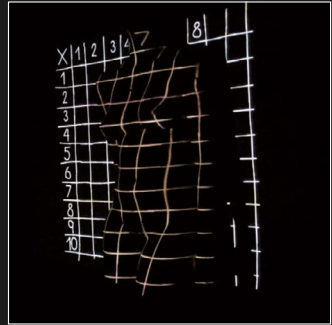
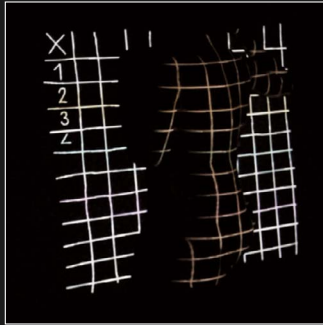
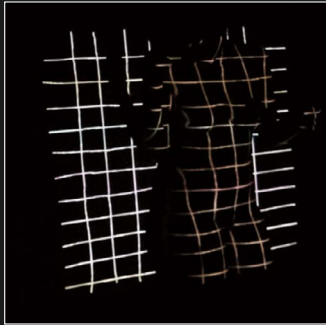
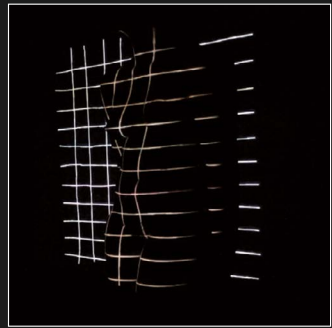
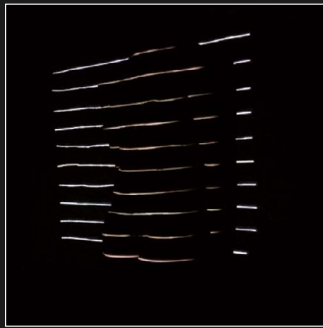
Chapter 14: Feminist Thinking Toward Alternative Ways (Situated Knowledges and The God Trick)

Online Access

[YouTube](#)

X	1	2	3	4	5	6	7	8	9	10
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2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
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9	9	18								
10	10	20								

#MathToo (video stills)
2018
Animation and video, 6:23



Interviews



Interviews

2019-2022

Medium

Video and audio interviews

Description

As part of the research process, I conducted four video interviews and one audio interview, each lasting over an hour. The participants represent a range of ages, genders, and social backgrounds. Drawing on an artistic methodology developed in earlier research-based artworks, I aimed to create an open and minimally directive space, allowing interviewees to articulate their thoughts and experiences freely. By stepping back and reducing my own presence, I foreground first-person perspectives as a means of deepening the investigation—drawing on personal experiences, reflections, and insights regarding the phenomenon I investigate.

These interviews—along with one earlier recording—served both as material for further artistic exploration and as a basis for analysis through multiple critical and conceptual lenses.

Further Developed In

Methodology (Interview as Artistic Practice)

The Archive of the Lost Embodied Knowledge



The Archive of the Lost Embodied Knowledge

2022

Medium

Participatory installation; metal boxes, light-sensitive chips, audio

Description

This artwork comprises twenty-three audio fragments drawn from interviews conducted during the research process. Each audio track is recorded on a light-sensitive chip and stored inside a metal box. When a box is opened and exposed to light, the stored audio plays; when closed, it returns to silence. Arranged untitled and non-hierarchically across the gallery floor, the boxes form an embodied archive of fragmented memories, experiences, and insights—rendered both ephemeral and tactile through audience interaction.

The artwork interrogates power dynamics and the fragility of embodied knowledge within contemporary digital culture.

Further Developed In

Chapter 10: Loss of Variety and Options (Narrowing Down the Options)

Chapter 11: Loss of Authentic Skills (Data Pollution)

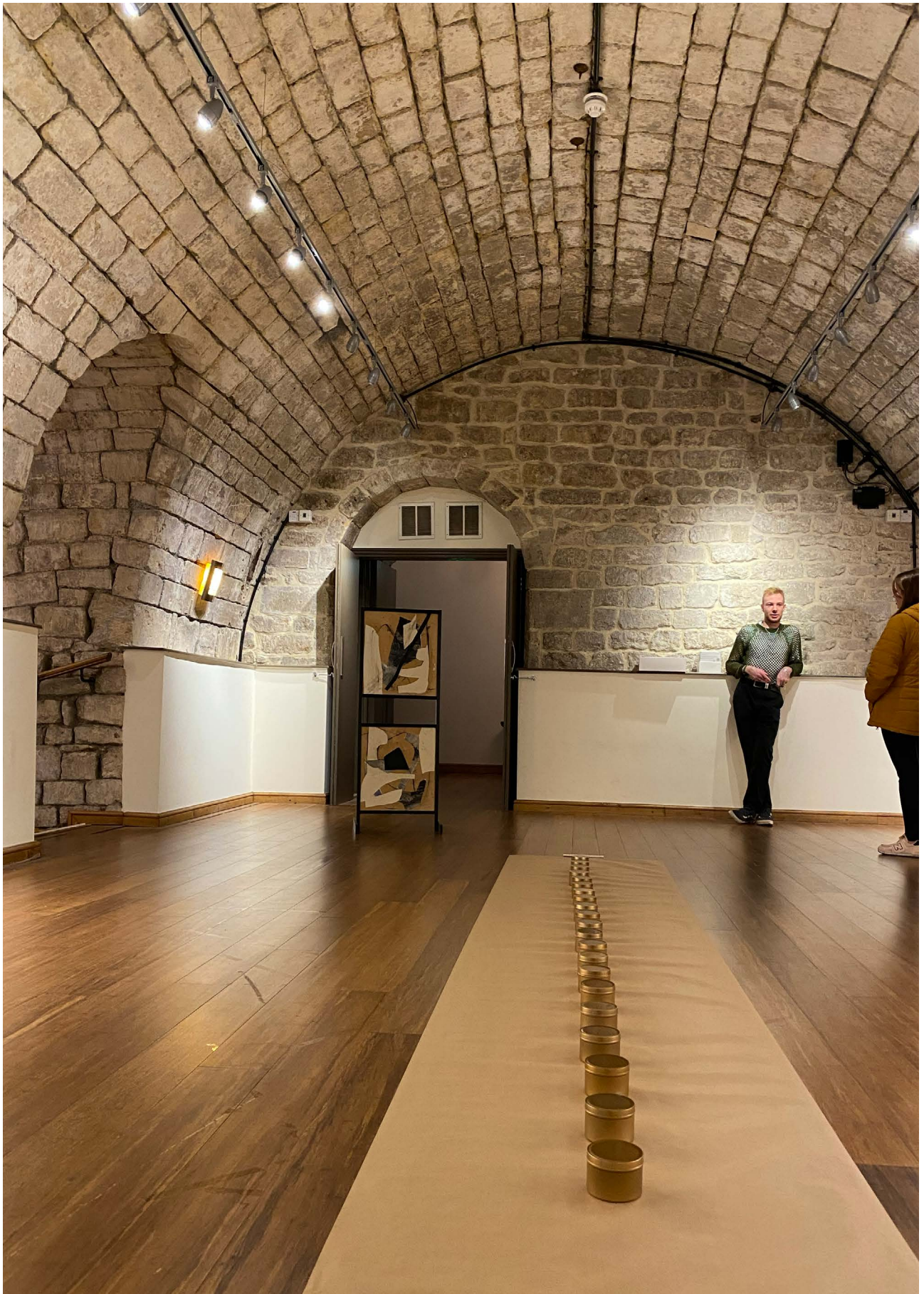
Chapter 14: Feminist Thinking Toward Alternative Ways (Anarchive)

Online Access

A full compilation of the twenty-three audio tracks is available on [SoundCloud](#)

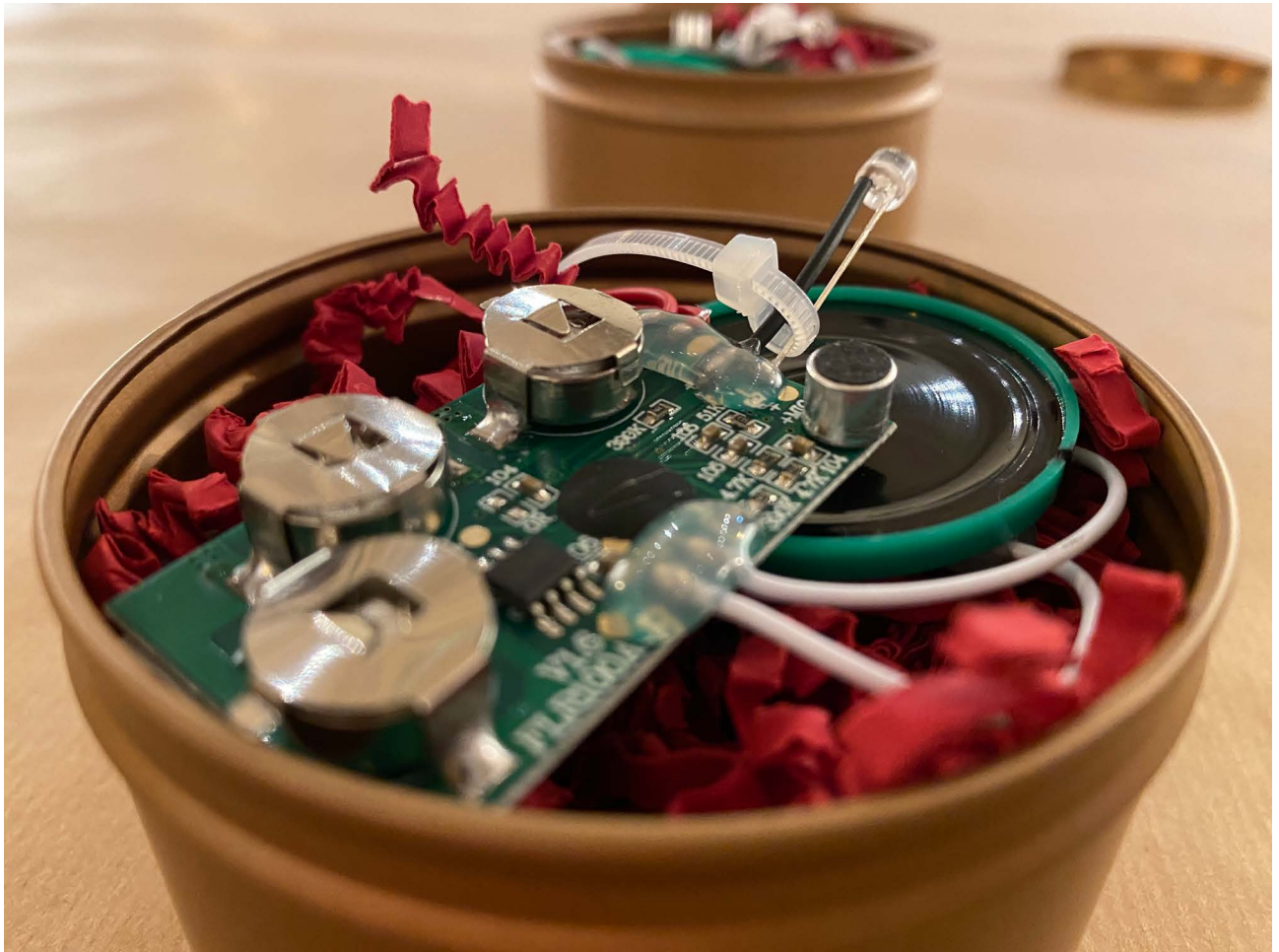
Photo

Haya Sheffer



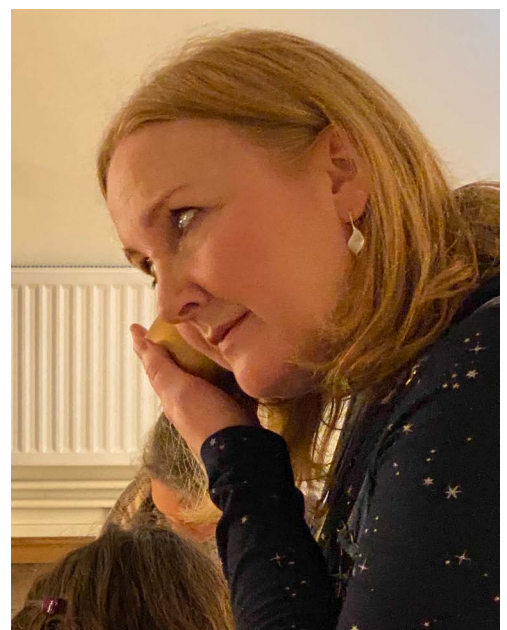


The Archive of the Lost Embodied Knowledge
(installation view)
2022





*The Archive of the Lost
Embodied Knowledge
(installation views)
2022*



Carroll House



Carroll House

2023-2025

Medium

Video, 12:15 min

Description

This observational video captures the façade of a 1980s London residential block, filmed over several months from my apartment window. It examines how everyday artefacts structure behaviour through mechanisms of order, repetition, and efficiency. The building's grid-like corridors resemble a video game interface—directing a choreography of solitary, utilitarian motion as residents walk in and out of their doors and pass without interaction.

The work interrogates how architecture and digital systems alike encode ideological functions, subtly disciplining bodies through design. The editing process becomes an act of resistance: slowing, isolating, and reassembling gestures to reveal the quiet violence of infrastructural control. *Carroll House* invites reflection on the lived experience of efficiency.

Further Developed In

Chapter 10: Loss of Variety and Options (The Phenomenology of Demystified World)

Online Access

[Vimeo](#)

Credits

Video editing: Dor Even Chen
Sound: Daniel Meir



Carroll House (video stills)
2023–2024
Video, 12:17 min



Carroll House (video stills)
2023–2024
Video, 12:17 min

Self-Surveillance: You Have Reached Your Destination



Self-Surveillance: You Have Reached Your Destination

2023

Medium

Participatory installation: webcam, mobile webcam robot, wooden stool, monitors, laptop, animation, deepfake generator.

Description

This installation immerses visitors in an amplified self-tracking environment, where they simultaneously act as both trackers and the tracked. A roaming webcam robot, deepfake technology, and app-inspired feedback loops simulate the logic of digital self-surveillance. The visitor's own facial image—recast in a deepfake video—delivers ironic praise and motivational cues drawn from actual self-tracking app language, guiding them toward a non-existent goal. By foregrounding these scripted interactions, the work exposes the ideological mechanisms embedded in self-tracking technologies. It invites reflection on how contemporary digital culture disciplines behaviour through performance, metrics, and omnipresent yet invisible authority—often steering users toward goals that are not truly their own but shaped by external systems of value. The project was presented as an interactive installation in the exhibition *Inter Active Traces* in the Seventeen Gallery in London in October 2023.

Further Developed In

Chapter 6: Self-Surveillance: You Have Reached Your Destination

Online Access

AI footage on [Vimeo](#)
Documentation on [Vimeo](#)

Credits

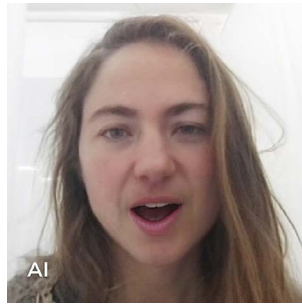
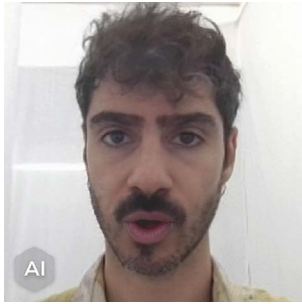
Made with the help of the computational artists Zhichen Gu and Shai Rapoport
Funded by SWWDTP and UKRI
Special thanks to D-ID
Photos: Dor Even Chen and Haya Sheffer



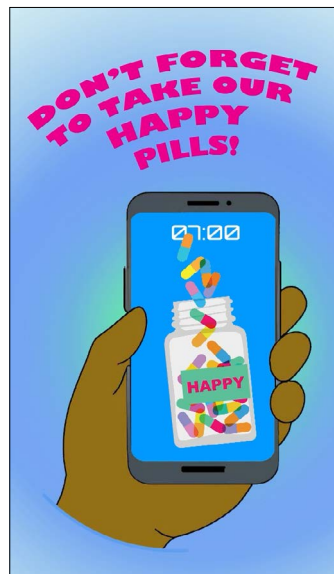
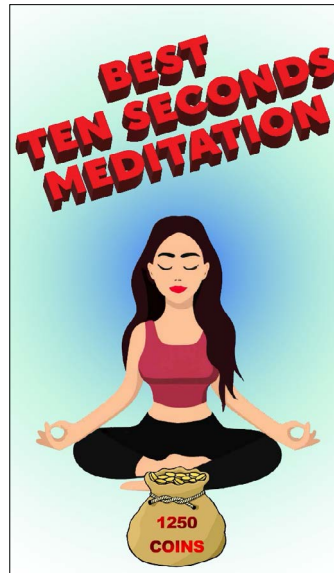
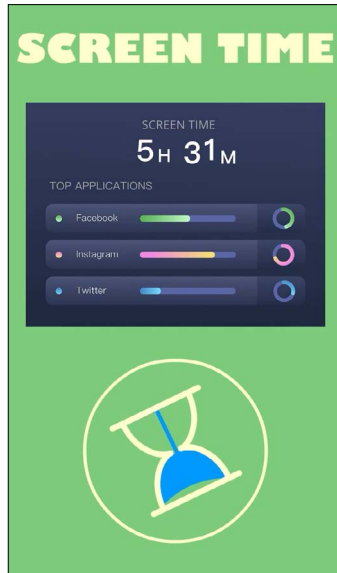
Self-Surveillance: You Have Reached Your Destination, 2023

Top: A visitor captures their portrait and chooses a voice, gender, and tone

Bottom: The resulting deepfake videos and animations displayed in the gallery (installation view)



Self-Surveillance: You Have Reached Your Destination
2023
Stills from the AI-generated videos



Self-Surveillance: You Have Reached Your Destination
2023
Stills from the animated GIF shown next to the videos



Self-Surveillance: You Have Reached Your Destination
(installation views)
2023



85% Human

Human : 85%



85% Human

2023-ongoing

Medium

Printed CCTV stills, acrylic and pencil on paper

Description

This artwork comprises printed footage downloaded from CCTV cameras positioned in a rural area. An AI system detects movement, tagging figures as either Human or Other, and assesses its own confidence by assigning a percentage—flagged above the red-framed detected figure. The resulting imagery seems as if the machine is grading the degree of one’s humanness or otherness. This absurd perceptual shift produces a satirical glitch that highlights how man-made technologies take positions on human identity.

Intervening in this automated loop, I add my own layer of interpretation—drawing and painting the digitised footage. This artistic act both disrupts and responds to the techno-scientific gaze, drawing attention to its presence and to the increasingly mediated way humans encounter the world.

Further Developed In

Chapter 11: Loss of Authentic Skills (Second-Hand Experience)



85% *Human*
2023–ongoing
Printed CCTV stills



85% Human
2023
Acrylic on paper

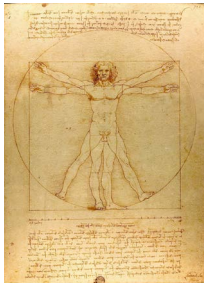


85% Human

2025

Pencil on paper, 150 cm x 180 cm

Appendix B
///
Cited Artwork
Images and Copyright
Information



Leonardo Da Vinci

Vitruvian Man

c. 1492

Pen and ink on paper

Gallerie dell'Accademia, Venice

Photo: [Luc Viatour](#), 2007

Source: [Wikipedia](#) (accessed 16.5.2025)



Sir George Gilbert Scott

Albert Memorial

1875

Photo: Haya Sheffer



John Lawlor

The Engineering Group

(Detail of *Albert Memorial*)

1876

Photo: James Battersby

Source: [Wikipedia](#) (accessed 16.5.2025)



Neil Harbisson

Transpecies and Cyborg

Source: [cyborgarts.com](#) (accessed 16.5.2025)



Henry C Beck

*Presentation drawing for diagrammatic
Underground map*

1931

Ink and coloured pencil on paper

© TfL from the London Transport Museum
collection



Marcel Duchamp

3 stoppages étalon (3 Standard Stoppages)

1913–14, replica 1964

Tate

Purchased 1999

Photo: © Tate

© Succession Marcel Duchamp/ADAGP, Paris
and DACS, London 2025



Victorian Zoetrope (replica)

Photo © Andrew Dunn

Source: [Wikimedia Commons](#)
(accessed 16.5.2025)



Felix Gonzalez-Torres

“Untitled” (Perfect Lovers)

1991

Wall clocks and paint on wall

Two parts; ideally installed above head height

Overall dimensions vary with installation

Original clocks: 14 inches diameter each

Photographer: Peter Muscato

© Estate Felix Gonzalez-Torres

Courtesy Felix Gonzalez-Torres Foundation



Guy Ben-Ner
Treehouse Kit (video still)
 2005
 Video, 10 min
 Tel Aviv Museum of Art



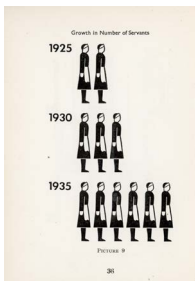
Rebecca Thomassie
Names for Snow (video still)
 2019
 Video, 5:53 min
 Photo: Wapikoni mobile
[Available on Vimeo](#) (accessed 15.05.2025)



Isotype
Signs for 5 Groups of Men
 1936
 In *International picture language: the first rules of Isotype* (Neurath 1936: 47)
 Otto and Marie Neurath Isotype Collection,
 University of Reading



Isotype
United States, Immigrants by Occupation
 1939
 In *Modern Man in the Making*
 (Neurath 1939: 95)
 Otto and Marie Neurath Isotype Collection,
 University of Reading

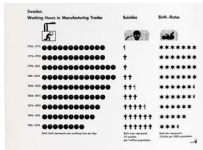


Isotype
Growth in Number of Servants
 1936
 In *International Picture Language: The First Rules of Isotype* (Neurath 1936: 36)
 Otto and Marie Neurath Isotype Collection,
 University of Reading



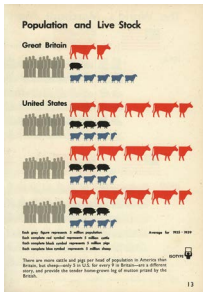
Isotype

Arbeitslos - 'Unemployed', printing block no 194
year unknown
Otto and Marie Neurath Isotype Collection,
University of Reading
Photo: Haya Sheffer



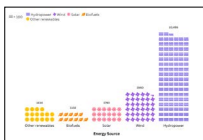
Isotype

Sweden. Working Hours in Manufacturing Trades / Suicides / Birth - Rates
1939
In *Modern Man in the Making*
(Neurath 1939: 57)
Otto and Marie Neurath Isotype Collection,
University of Reading



Isotype

Population and Live Stock (chart 13)
1943
In *America and Britain: Only an Ocean Between*
(Florence, 1943: 45)
Presented on the [Flourish website](#) to demonstrate
pictogram chart visualisation
(accessed 15.05.2025)
Otto and Marie Neurath Isotype Collection,
University of Reading



Flourish

Interactive Pictograms Platform
A template for creating pictogram charts
Source: [Flourish website](#) (accessed 15.05.2025)

Luiz Roque

Urubu

2021

Super8 film transferred to video, colour
Edition of 3 plus 1 artist's proof
(MW.LUR.043)

Courtesy of the artist and Mendes Wood DM
São Paulo, Brussels, Paris, New York
Copyright Luiz Roque



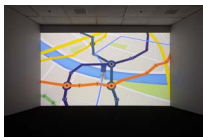


Giorgia Lupi, Stefanie Posavec

Dear Data: Week 29

(My Boyfriend / A Week of My Husband)
2015

Ink, marker, and colored pencil on paper



Barbara Kruger

Untitled (No Comment)

2020

Three-channel video installation, 9:25 min

Installation view: BARBARA KRUGER:

THINKING OF YOU, I MEAN ME, I MEAN
YOU, The Art Institute of Chicago, 2021–2022

Courtesy the artist and Sprüth Magers

Photo: The Art Institute of Chicago



Barbara Kruger

Untitled (Never Perfect Enough)

(installation view)

2020

Sprüth Magers, Los Angeles, March 19– July 16,
2022

Courtesy the artist and Sprüth Magers

Photo: Robert Wedemeyer

Camille Henrot

Grosse Fatigue

2013

Video (color, sound), 13 min

Original music by Joakim, voice by Akwetey Orraca-Tetteh

Text written in collaboration with Jacob Bromberg

Produced by Kamel Mennour, Paris, and Silex Films

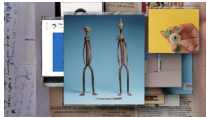
Silver Lion - 55th Venice Biennale, 2014

Project conducted as part of the Smithsonian Artist Research Fellowship Program,

Washington, D.C.

Special thanks: Smithsonian Archives of American Art, National Museum of Natural History, and National Air and Space Museum
© ADAGP Camille Henrot. Courtesy the artist, Silex Films, and kamel mennour, Paris

Trailer available on MoMA's Facebook page
(accessed 15.05.2025)



VALIE EXPORT

Maboniflôte

1982

Body Configuration

© VALIE EXPORT, Photo © Hermann Hendrich
Courtesy VALIE EXPORT



VALIE EXPORT

Kumetrie II

1982

Body Configuration

© VALIE EXPORT, Photo © Hermann Hendrich
Courtesy VALIE EXPORT



VALIE EXPORT

Adjungierte Dislokationen

1973

Photographie

© VALIE EXPORT, Photo © Hermann Hendrich
Courtesy VALIE EXPORT





Susan Hiller

From the Freud Museum (installation view)

1991-6

Tate

Photo: © Tate

© Susan Hiller



Susan Hiller

Cowgirl / kou gurl, *From the Freud Museum*

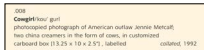
(prototype for box 008)

1992

Photocopied photograph of American outlaw Jennie Metcalf; two china creamers in the form of cows in customized cardboard box

Photo: © The Israel Museum, Jerusalem

© Susan Hiller

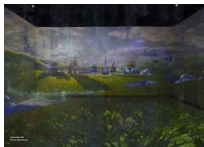


Susan Hiller

From the Freud Museum (detail: label no. 008)

1991-96

Source: Tate Research Publication, 2017
(accessed 15.05.2025)



Libby Heaney

The Evolution of Ent: QX, (installation view)

2022

Photo: Andrea Rossetti

Appendix C

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Self-Tracking Apps Referenced in the Thesis

The following apps are cited in the research and are listed in alphabetical order. Their descriptions and images are sourced from the first paragraph of their Google Play Store pages or their websites, as indicated by the provided link. The second section includes additional platforms that offer self-tracking-related features, with descriptions I have provided.

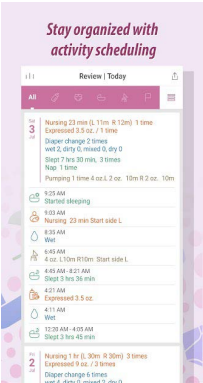
Apps on Google Play Store

<https://play.google.com/store/apps>



Apple Watch

The ultimate device for a healthy life.
[Visit Page](#)



Baby Tracker - Newborn Log

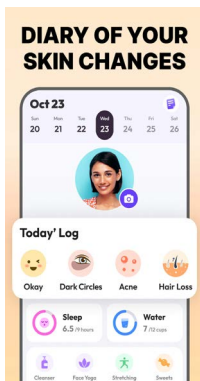
Designed by busy parents, for busy parents, Baby Tracker offers a simple, streamlined way to track your baby’s daily habits, health, and exciting “firsts” of those precious early days and months. Log feedings, diaper changes, and sleep patterns with a quick one-handed tap, then feel free to go back later and add details and even photos.
[Visit Page](#)



DailyBean: Simplest Journal

DailyBean is a simple diary app for those who want to record their daily lives easily. Record your day with just a few tabs!

[Visit Page](#)



Face Yoga Exercises, Skin Care

Face yoga is the most natural skincare method. It significantly boosts circulation by bringing fresh blood and oxygen to the skin, and prolongs the production of collagen and elastin, helping you achieve the same result as cosmetic procedures in a relaxed and comfortable manner.

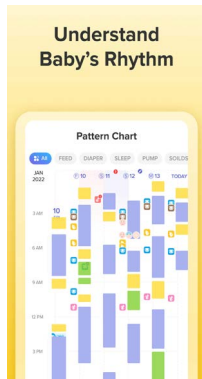
[Visit Page](#)



Fitbit

See the big picture on your health and fitness journey with the Fitbit app. Find easy ways to get active, sleep better, stress less and eat healthier.

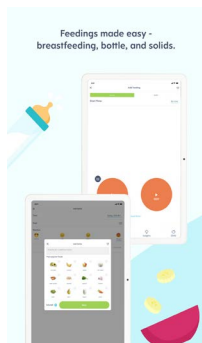
[Visit Page](#)



Glow: Track. Shop. Growth

Introducing Glow Baby - the ultimate AI-powered tracker for all your baby's needs. From diaper changes to breastfeeding, and sleep schedules to baby milestones, Glow Baby is here to support you through every moment of motherhood.

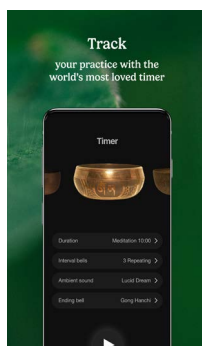
[Visit Page](#)



Huckleberry: Baby & Child

Help your family get the sleep they need with Huckleberry, the award-winning baby tracker app trusted by over 4 million parents worldwide.

[Visit Page](#)

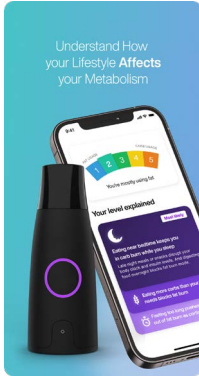


Insight Timer - Meditation App

* Apps of the Year Winner - TIME magazine and Women's Health *

* Happiest App in the World - Tristan Harris *

[Visit Page](#)



Lumen

Do you want to take control of your metabolism, lose weight, and live a healthier lifestyle?

With Lumen's personalized metabolic coach, you can!

Lumen is the world's first device to measure whether your body is burning fats or carbs - in a single breath. Say goodbye to guessing and hello to real-time metabolic insights, tailored daily nutrition plans, and recommendations on what to eat and when.

[Visit Page](#)



Meta Project Aria

Project Aria glasses utilize groundbreaking technology to help researchers gather information from the user's perspective, contributing to the advancement of egocentric research in machine perception and augmented reality.

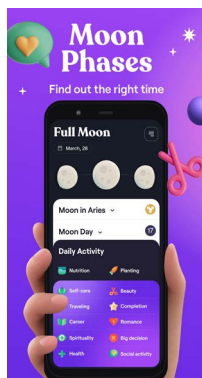
[Visit Page](#)



Microsoft HoloLens

Microsoft HoloLens is the first fully self-contained holographic computer to run Windows 10. Now, with the introduction of HoloLens 2, every HoloLens device provides commercial ready management capabilities that are enhanced by the reliability, security, and scalability of cloud and AI services from Microsoft.

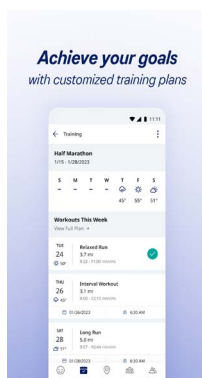
[Visit Page](#)



Moonly: Moon Phases & Calendar

Meet Moonly - your personal moon guide: a lunar calendar, phases, full Moon rituals. Your personal Birth Chart, Affirmations and Meditations, Astrology, Tarot, and Runes - everything in one app.

[Visit Page](#)

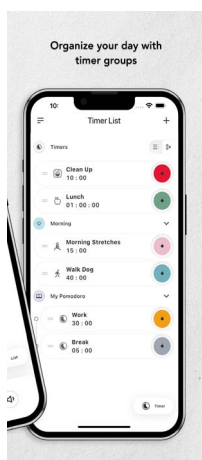


ASICS Runkeeper - Run Tracker

Together, we run.

The running app designed for all runners. Whether you run/walk, or you finish marathons on the regular, join the ASICS Runkeeper community to connect with runners globally.

[Visit Page](#)



Time Timer Visual Productivity

Improve time management skills, executive function, and focus by utilizing this award-winning app from the makers of the ORIGINAL visual timer. At the heart of Time Timer® is a commitment to enhancing the learning environment, providing teachers and students with a powerful tool for effective time management – whether in the classroom or at home.

[Visit Page](#)



Ultrahuman Ring AIR®

World's most comfortable. Accurately tracks sleep, HRV, temperature, and movement with daily actionable health insights.

[Visit Page](#)



Workout for Women: Fit at Home

Move now! A better me is approaching!
Get fit with the women workout - female fitness app! Sweat 7 mins a day to get a perfect bikini body!

[Visit Page](#)

YourHour - ScreenTime App

Trusted Globally By Over 4+ Million Users for Curing their Phone Addiction.

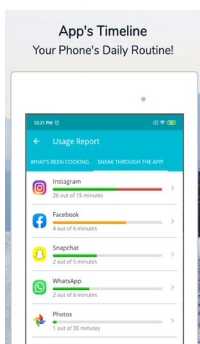
✓ Best Tailored & Curated Solution to Awaken Self-Realization Against Excessive phone Usage and also to Experience features like App Block, App Lock.

✓ Available in 22 Global Languages including English, German, Spanish, French etc.

✓ Get Personalized Challenge Recommendations to Break the Habit Loop & Control Screen time.

✓ Highly Rated By Over 75K+ Users to Help Control Screen Time & achieve Digital Wellbeing

[Visit Page](#)



Referenced Platforms with Embedded Personal Tracking

Amazon



An online marketplace for buying a wide range of products from books to electronics.

[Visit Page](#)



Google Maps (GPS)

Real-time GPS navigation and location tracking using Google Maps technology.

[Visit Page](#)



Google Memories

(Feature in Google Photos)

Automatically curates past photos into nostalgic memory highlights.

[Visit Page](#)



Instagram

Social media app for sharing photos, stories, and short videos.

[Visit Page](#)



Netflix

Streaming platform for movies, TV shows, and original content.

[Visit Page](#)



WhatsApp

Encrypted messaging app for texts, calls, media, and groups.

[Visit Page](#)



X (formerly Twitter)

Platform for sharing short posts, media, and trending news.

[Visit Page](#)
