Body Drift

A Posthumanist Perspective on the Politics of Wearable Technology

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1. Introduction

> *"And, for an instant, she stared directly into those soft blue eyes and knew, with an instinctive mammalian certainty, that the exceedingly rich were no longer even remotely human."*
>
> *William Gibson, Count Zero, p.24*

In Gibson's *Count Zero*, the antagonist Josef Virek wants to escape his dying body and become an all-encompassing, powerful artificial intelligence. In fact, he is partially one already, a digital being distributed across many interconnected networks – so distributed that keeping these different instantiations of himself in check is increasingly difficult. What he calls his "fiscal extremities" (in an aptly bodily metaphor) are even "in rebellion." This is another point of concern for Virek: He wants to control his virtual data-selves without the limits imposed by his body. In this sense, he embodies the futuristic dream of dis-embodiment and digital ascension. But ultimately he worries, like the less fortunate and less rich, about the body. When she meets him at the beginning of the book, the protagonist Marly is wrong. There is a shred of humanity remaining in Virek: his body.

As a being that wishes to overcome his mortality and physical limitations, however, Virek shows utter contempt for his own body, and absolute disregard for the bodies of others. As the antagonist and evil mastermind of *Count Zero*, his actions, plans, and plots – both in the physical world and in the digital realm of the Matrix – repeatedly put the lives of the protagonists at risk. Hundreds of thousands live and die due to the consequences of actions he barely registers as meaningful. Bobby, the eponymous "Count Zero," almost dies in the physical world due to a corrupt program of Virek located in the digital world of the Matrix. His own body – at one point described as "four hundred kilograms of rioting cells" - lives in a vast (and ever expanding) life support tank. He is kept alive by so much combined technological and financial effort as to make him "the world's most expensive invalid." Even while denying its importance, Virek's body is among his most well-kept assets. It lies at the heart of a technological network so extensive and advanced that the lines between technological and natural begins to blur. He is not only using technology to keep himself alive – he is the technology as well.

But the technology he uses, and ultimately is, is not neutral. Rather, it is an expression and product of his wealth and power – and Virek is wealthy and powerful beyond human comprehension. His contempt for the body – his own and that of others – can only come from a position in which his bodily existence is guaranteed well into eternity.

Josef Virek is a striking example of technological dis-embodiment run rampant in its quest for digital immortality. *Count Zero* is a story about the divide between the physical world and the digital Matrix, and about how these two different planes of existence interact with and bleed into each other. To ignore concerns with the body means to ignore a large part of this interaction. Like much of science-fiction, Gibson's *Count Zero* questions the present by projecting into the future. Virek is the ultimate, extreme example of an erasure of the body that is a central feature of contemporary modernity. But its roots can be traced all the way back to ancient times.

The body has indeed not been of much concern in traditional western philosophy until relatively recently. In fact, since the times of ancient Greek philosophy the body has been considered in a negative light; according to Plato, doing philosophy equates to "practicing dying." (Plato, *Phaedo*, 63e-65a). The idea of philosophy of a discipline of the mind, strictly separate from concerns of the body, has informed much subsequent thought. Neoplatonism and Christianity both marginalized the body in favor of the mind (or the immortal soul) (St. Augustine, *The City of God*, 22:13-17). But it is with Descartes that the body is completely separated from the mind. In his *Meditations*, he describes how the body as source of physical sensation can be the source of deception as well. It is only within the mind that truth can be found: "I think, therefore I am." The human being is reduced to a thinking mind. While Descartes argumentation has its roots in previous philosophy, it is his strict dualism, together with the developments in science and technology at the dawn of the modern age, that informs much of the contemporary understanding of the body in culture, society, and also philosophy. Retracing and uncovering this history of the body allows one to see, however, how the body has never truly been absent. Rather, theories critical of such strict dualism have highlighted the social and political consequences of the erasure of the body.

A number of such alternative theories have emerged over the course of the last roughly 50 years that take a different stance towards the body. Poststructuralist and postmodernist

accounts have critiqued traditional conceptions of the human being as disembodied, rational thinking agent. They have highlighted how contemporary politics rely on a rhetoric of rationality and scientific efficiency for the sake of what Michel Foucault called "governmentality" (Foucault, in Burchell, 1991). Other approaches, such as in Science and Technology Studies (STS) and phenomenology have argued that human and technological agency are closely connected (Pickering, 1996), that human experience is mediated by technology through mutual interaction in the lifeworld (Ihde, 1990), and that technology is human society made durable (Latour, 1991). Finally, a posthumanist approach exists that explicitly rejects traditional humanist conceptions, arguing that living in the lifeworld, enacted experience, is an integral part of what constitutes the human. At the same time, with the advent of modern technology that often lays claim, in one form or another, to the body, posthumanist writers have dealt with the implications of ICT (Gladden, 2015; Rose, 2017), advanced robotics and cybernetics (Hayles, 2008), surveillance (Sundberg, 2011 and 2014), medicine and human enhancement (Bostrom, 2005; Roden, 2014), and more. On a broader scale, the aim of posthumanist authors has been to re-center the picture and decentralize the human, instead arguing for a non-anthropocentric perspective which directly challenges humanist notions of a mechanistic universe and of human mastery over nature and the environment. Especially when such mastery can extend on or even into human bodies, a posthumanist focus on the importance of the body can open up different perspectives on what it means to be a human being living with technology. The posthumanist approach offers a novel way of looking at the politics of technological bodies by acknowledging not only the importance of the body, but also the role of technology in shaping lived experience.

However, posthumanism is part of a broad category of intellectual movements and theories often grouped together under the term of "posthumanities" (Ferrando, 2013). Posthumanism specifically emerged from, and still firmly roots itself in, literary criticism more than philosophy (Wolfe, 2010; Ferrando, 2013). It can be seen as part of critical theory, in that it critically assesses contemporary culture and society. Posthumanism often also critiques anthropocentrism and a vision of the human being as "the measure of all things," a vision steeped in modernist humanism. Finally, posthumanism embraces the importance of the body, while also acknowledging the role of technology in shaping human existence and human bodies (Hayles, 2005; Wolfe, 2010).

Such a posthumanist approach is not only cultural-anthropological. While acknowledging the importance of the body changes the understanding of the human being, embracing philosophical posthumanism also means delving into the interaction between the body and technology, to the empirical, the "here and now." The body is not merely a concept semiotically constructed, but the very real, tangible thing that interacts with technology on a material level. At the same time, the example of Virek shows how the interaction with technology co-shapes the human being – including the body. A posthumanist account of the body must therefore look at the many ways in which technology shapes the lives of human beings, including their physical lives. In many cases, this leads to a loss of meaning of what the body is.

In 2012, Arthur Kroker published Body Drift, in which he set out to critically review the work of three other posthumanist authors (Judith Butler, Donna Haraway, and Katherine Hayles) in light of the eponymous concept: It refers to the posthuman condition of the body, which is ubiquitous, but often distributed through technology (and different technologies, even). Body Drift

> *Body drift refers to the fact that we no longer inhabit a body in any meaningful sense of the term but rather occupy a multiplicity of bodies […] it is how we explore intimately and with incredible granularity of detail the multiplicity of bodies that we have become; it is how our bodies are inflected, intermediated, complicated.*
>
> *Arthur Kroker, Body Drift, p.2*

The term is used to identify, not to explain. With its roots in literary criticism and critical theory, Body Drift is a framework that is overwhelmingly descriptive. At the same time, Kroker is aware of the political implications of his work, and how they are connected to larger issues of power and politics (Kroker, 2012). The question of the body in technology and society is pressing because the multiplicity of bodies we have become are "inflected, intermediated, and controlled." No such inflection, intermediation, and control can be a-political. Starting from these political implications, the research question of this thesis is the following:

RQ: What does Body Drift (as a philosophical framework) reveal about the politics of technologically augmented bodies (specifically in the case of surveillance and control)?

The meaning of politics here is intended in a broad sense, in line with a more "Continental" philosophical tradition. "Politics" refers then not only to the formal political institutions of the state, but also, and especially, to intimately personal factors that are caught withing broader power relations within civil society, such as one's own body (be it their sex, their able-bodiedness, or the color of their skin)[1]. A possible definition could be Winner's "arrangements of power and authority in human associations as well as the activities that take place within those arrangements." (Winner, 1980). The use of Winner's definition is not arbitrary, since it comes from a seminal work of his titled *Do Artifacts Have Politics?*, in which he questions the instrumental and neutral view of technology. The use of Winner's definition already takes the non-neutrality of technology as a starting point. The insistence of power and authority also connects the issue of technology to Foucault's work on governmentality, and to how technologies are able to support and enforce such arrangements of power. While the political nature of technologies has been acknowledged, however, the body must be brought back into the light. Since technology is political, and technologies are "laying claim" to the body, the body itself becomes political.

While the question concerning technologically augmented bodies is broad and diverse, this thesis aims to establish a conceptual background and follow up with two case studies. The primary aim is to raise awareness about the political nature and importance of the body.

Chapter 2 will do so by retracing the history of the concept of the body throughout philosophy. As previously stated, the erasure of the body begins in ancient philosophy already, although it is not until Cartesian modernism and the enlightenment that such erasure becomes more clear, systemic, and of greater importance in society. The chapter also aims to expand and explain how the concept of "the body" is traditionally understood, and how more recent interpretations differ. Finally, once the history of the body has been traced back to the present day, a critical review of poststructuralist and posthumanist authors will serve to introduce the concept of Body Drift.

[1] This deeply personal perspective on what constitutes politics has its roots in feminist thought; Carol Hanish famously stated that "the personal is political." The phrase, popularized by feminist, gay, and student activism in the late 1960s, has been used as a way to reveal the connections between personal experience of marginalized groups and larger political structures.

Chapter 3 concerns itself with methodology, both conceptual and at the research level. As stated above, Body Drift is a descriptive framework that aims to identify patterns in culture and society. Its aim is neither explicitly political, nor is it explicitly normative. Kroker identifies the importance – both symbolic and actual – of the body in contemporary society, but often in terms that do not question the consequences. The purpose of this thesis, however, is to be both political and prescriptive. The framework of Body Drift will be further refined. The final aim is to use the framework to reveal issues about technologically enhanced bodies that are so far absent from the debate, and therefore increase awareness about politics and autonomy.

In addition, a rediscovery of the body should not stop at the conceptual level, but rather contribute significantly to how we view bodies in society, in a context of codes, rules, and relations of power and authority. As the thesis will show, expanding the horizon of concern in politics to bodies, and specifically to technological bodies, leads to an increase in awareness. Therefore, the second part of this chapter will introduce the methodology used for the case studies in the following chapters.

Chapters 4 and 5 are dedicated to applied philosophy in the context of two case studies. First, the use of smart wearable technologies by nurses, and second, the use of body cameras by law enforcement officers. Through a systematic review of previous literature these cases will be explained. Finally, by applying the insights gained from a more refined and practical definition of Body Drift, one can uncover the different codes and norms the body is subjected to through the technology.

Chapter 6 concludes with a review of the findings so far and formulates recommendations for the future. As the thesis will show, expanding the horizon of concern in politics to bodies, and specifically to technological bodies, leads to an increase in awareness. This awareness is the first step towards greater autonomy, especially for those who are most vulnerable.

2 Philosophy of the Body: Erasure and Rediscovery of Body Politics

In the opening paragraphs of the *Phaedo*, Plato has Socrates explain to his followers why they should hasten his death. Set in Socrates' cell during the final hours of his life, the Athenian philosopher explains how "he, who has the spirit of philosophy, will be willing to die" (Phaedo, 62c). Indeed, much of ancient philosophy – from Plato and Aristotle onward – has depicted the body as a distraction at best. Philosophy was, and remains, a discipline of the mind. Many of the terms used by early philosophers, such as perception, feeling, and knowledge, are completely separated from their bodily aspects and instead described as mental states or features. Furthermore, other terms appear to have no physical valence at all, such as sentience, cognition, or virtue. This dismissal of the body as object of philosophical inquiry has continued mostly uninterrupted through history. Even when, at the time of the scientific revolution, the body became an object of more precise study, such attempts were always scientific and detached, rather than philosophical in nature. Overall, concerns about the body have been glaringly absent from the western philosophical tradition.

Only relatively recently – over the course of the last century - has the body been re-discovered in philosophy. This rediscovery has led not only into an inquiry about the body itself. Rather, feminist and postmodern scholars and critical theorists have stressed the importance of the absence of the body itself as significant. Particularly in the context of feminism, this led to the (re)discovery of so-called body politics, which challenges assumptions about the body in society. In the contemporary debate, the issue of body politics is made more complex by the emergence of technology that exists in close connection to the physical body, sometimes even as part of it. This condition requires new philosophical frameworks for analysis.

2.1 Pre-Modern Philosophy: The Body as Prison

Throughout Ancient Philosophy, the body has traditionally existed in opposition to the mind (or the soul). This characterized the body not only as inferior to, but ultimately as the enemy of, the mind. Not only is the philosopher not concerned with the body, the very idea of caring about bodily concerns and needs is seen in a negative light. In the Phaedo, Plato has Socrates

explain how the wise man practices philosophy by renouncing their body, and likens philosophical practice to “practising death:”

> *Do you think that it is right for a philosopher to concern himself with the so-called pleasures connected with food and drink?*
> *Certainly not, Socrates, said Simmias.*
> *What about sexual pleasures?*
> *No, not at all.*
> *And what about the other attentions that we pay to our bodies?*
> *Do you think that a philosopher attaches any importance to them? I*
> *mean things like providing himself with smart clothes and shoes and other bodily ornaments; do you think that he values them or despises them--in so far as there is no real necessity for him to go in for that sort of thing?*
> *I think the true philosopher despises them, he said.*
> *Then it is your opinion in general that a man of this kind is not concerned with the body, but keeps his attention directed as much as he can away from it and toward the soul?*
> *Yes, it is.*
> *So it is clear first of all in the case of physical pleasures that the philosopher frees his soul from association with the body, so far as is possible, to a greater extent than other men?*
> *It seems so.*
> *And most people think, do they not, Simmias, that a man who finds no pleasure and takes no part in these things does not deserve to live, and that anyone who thinks nothing of physical pleasures has one foot in the grave?*
>
> *Plato, Phaedo (63e-65a)*

While the mind seeks the “ideal forms,” the body is a prison. Physical needs and necessities distract the wise philosopher from the practice of their art. The meaning if “practicing death” is that the philosopher should seek out these ideal forms over the pleasures and needs of the physical body. By overturning reality, the world of ideas becomes “true reality” and the body remains as necessarily imperfect, distracting vessel. Even this role stresses the subordinate role of the body: not constitutive part of the self, but a boundary that is inhabited.

While criticizing Plato's theory of ideal forms, Aristotle seeks not to undermine it, but rather to perfect it. According to his theory of hylomorphism, while the body is granted some degree of recognition – as matter and form must coexist – priority is still given to the soul over the body. The soul is "that which makes a living thing alive" (On the Soul, 413), and the cause of a living thing. (On the Soul, 412). Much of subsequent western philosophy has argued in a similar fashion, establishing a hierarchy between the mind (or the soul) and the body.

However, the body is not completely absent from Ancient philosophy. Aristotle wrote a great number of books on natural phenomena, including works on animal and plant life as a form of pre-scientific biology. *On the Soul* is considered one of these biological works as well. Other ancient philosophers have similarly engaged in what was called "natural philosophy," applying the philosophical method of reasoning to the systematic study of natural phenomena. While such attempts at explaining the world were certainly part of ancient philosophy, one can also see them as early examples of natural sciences. Later, these works have been examined by biologists, physicists, and other scientists, thereby making them "early science" more than philosophy.

The Ancient Greeks and Romans did not draw such clear distinctions between the two disciplines of philosophy and the natural sciences; rather, this happened later with the formalization of a scientific method and various separate disciplines of the natural sciences. However, throughout this division, the body came to be seen as an object of science, not of philosophy. The body in a broad sense, its features, evolution, and inner workings, were part of early natural philosophy; but it never became the topic of philosophy in a more narrow sense until relatively recently[2].

The Ancient tradition has been carried over into much of pre-modern philosophy, including Christian philosophy. Early Christian thought certainly acknowledged the body – Christ itself is "God made flesh," and in a certain sense, he is an "embodied god." However, this embodied condition never serves to bridge the pre-existing divide between the body and the soul. Christian philosophy was also heavily influenced be neo-platonism, reinterpreting the

[2] This is especially apparent when considering how even Aristotle's books were mostly about animals and nature. The idea of the human being as inhabiting a body and as also a physical being, not only a thinking agent, became secondary. *On the Soul* is a notable exception. However, the historical trajectory of the body's erasure can still be traced back to Ancient philosophy.

platonic arguments in a religious manner. Christ is god made flesh, but the flesh is the part which dies. The "divine embodiment," if one were to call it that, serves the purpose of reinforcing the hierarchy between the human body and the divine soul.

Early Christian writers were also significantly concerned with the spirit and where it would go after death, leaving everything that belonged to the material world and the present aside – including the physical body. The Christian body is the source of vice and temptation. By the time of St. Augustine, the very idea that the body could be resurrected was absurd, even scandalous. And yet, Augustine wrote about bodies in The City of God. The image of the body returns, albeit in a similar fashion to Plato, and never as the flesh-and-blood, physical body of the present world. The resurrected, divine body in Augustine's "City of God" is tall, bearded, and male - a symbol to preserve earthly patriarchy even in the heavens. Female bodies do exist after resurrection, but are only mentioned in passing and in a contemptuous light: "[f]rom those bodies, then, vice shall be withdrawn, while nature shall be preserved." The female body is policed, the image of the flesh in resurrection used to make the laws for the flesh on earth.

Ancient Greek and Christian philosophy effectively set the precedents of a hierarchy between a "mundane" body and a "divine" mind or soul that would constitute a fundamental assumption of much of subsequent philosophy and lay the groundwork for a modernist mind-body dualism.

2.2 Cartesian Dualism, Positivism, and the Body as Object of Natural Laws

Contemporary understanding of the mind and body and their relation have largely been influenced by Cartesian dualism. In Philosophy, this so-called mind-body dualism has been an ongoing debate, with no clear resolution in sight. The field is divided between monists, hard and soft dualists, and anything in between. Ryle defined the dualist position as the dogma of "the Ghost in the Machine" (Ryle, 1949). Mind and body are strictly separate things, made of different substances even: the *res extensa* of the body, and the *res cogitans* of the mind. The human being is not the body, and neither is it the union of the two. Rather, the human being is the mind, which understands and conceives the body – its own body – as governed by the

mechanistic laws of nature. Such view, which originates in, and would be unthinkable without, the scientific revolution, puts the human being conceptually "outside" the body.

By separating mind and body so strictly, and identifying the human being with the mind only, Descartes' dualism leads to the erasure of the body. Philosophy ought to be concerned with the mind, since the body is not only secondary, but potentially the source of false information. In the Meditations on First Philosophy, he claimed that bodily sensations can be false and the result of deceit or mistake. In order for something to be deceived, however, something deceive-able must exist in the first place – an *a priori* self, an "I."

> *But surely I exist, if I am deceived. Let him [the deceiver] deceive me all he can, he will never make it the case that I am nothing while I think that I am something. Thus having fully weighed every consideration, I must finally conclude that the statement "I am, I exist" must be true whenever I state it or mentally consider it*
>
> *René Descartes, Meditation II*

Descartes thereby established a strict hierarchy between the body (which can be deceived and is the source of potentially false information) and the mind (which is the one thing he could be certain of). And furthermore:

> *But now that I am supposing there is a supremely powerful and malicious deceiver who has set out to trick me in every way he can—now what shall I say that I am? Can I now claim to have any of the features that I used to think belong to a body? When I think about them really carefully, I find that they are all open to doubt: I shan't waste time by showing this about each of them separately. Now, what about the features that I attributed to the soul? Nutrition or movement? Since now I am pretending that I don't have a body, these are mere fictions. Sense-perception? One needs a body in order to perceive*
>
> *René Descartes, Meditation II*

Descartes regarded the body, all its functions, sensations, and feelings, as potential deceits, tricks by a "malicious deceiver" that only pure reason could see through. The distinction between mind and body becomes insurmountable here[3].

But Descartes' philosophy does more than just establishing a hierarchy; and the Cartesian *Meditations* are tightly interwoven with the cultural and intellectual context of their time. Descartes, a mathematician and scientist as well as a philosopher, lived at the time of early modernity. His theories were largely precursors to the Enlightenment ideals of reason, scientific thought, and man's mastery over the natural world – including over bodies. The enlightenment claimed to free humankind from its "self-incurred immaturity" (Kant, 1784) and to elevate man above his natural shackles, indeed over nature. The world came to be seen, in time, as an intricate mechanism, akin to a very precise and complex clock. As science and technology advanced rapidly, so did the "rationalization of nature". If man were to become measure of all things, and master of all things, so, too, the body would conform to the dictate of the mind. In praising detached and scientific reason, modernity enforced the drastic split between the body and the mind, along a number of other radical dichotomies: between nature and man, and between subject and object. This form of thinking, together with rapid advancement in the natural sciences and especially medicine, led to a different understanding of the body as something to be studied, quantified, and mastered.

European positivism also arose at this time, emerging from the development of natural sciences, especially medicine, and in the context of European modernity and early pre-industrialisation, itself deeply interrelated with the ideas of the Enlightenment and rational organization of everyday life. Similarly, Cartesian dualism also proved to be an important antecedent to positivism.

The rise of positivism would have been impossible without the technological advancements and, more in general, the prominent place that modern science assumed in society following the scientific revolution. In the wake of the scientific revolution and the spread of the ideas of

[3] Sometimes, Descartes appears to attempt a reconciliation of the mind and the body – such as in his work on the pineal gland as a place where res extensa and res cogitans meet. Recent commentators have remarked how his work has been misunderstood and painted as a stricter dualism than intended, e.g. Baker & Morris (2005). However, the importance of the figure of Descartes in shaping modern philosophy and the body is fundamental.

Enlightenment, structures of governance and knowledge both changed throughout Europe. On one hand, the Enlightenment introduced the ideas of democracy and autonomy through higher education, as well as social contract theory (in the works of Hobbes and Rousseau), on the other the 18th century was the time of "enlightened monarchs" and the philosophers and scientists of the time advised and sided with absolutist rulers which sought to usher in a new age of reason and prosperity, but under their own absolute rule. Therefore, enlightenment saw the return of the platonic idea of the "Philosopher-King" with Voltaire explicitly using the term to refer to King Frederick the Great of Prussia, whom he advised. Such enlightened absolutism laid the groundwork of modern central government, and fostered ideals of education, prosperity, and reason, but assumed a rationalist, top-down approach not only to governance, but to the bodies of the subjects (or citizens), whose efforts were to be coordinated centrally[4]; the idea of power over the body will return in the second part of this chapter.

The "science of the body" took another form as well, first through the development of a "science of man" as Hume put it (in his *Treatise of Human Nature*, 1739), and later with the development of sociological positivism. According to Auguste Comte, one of the founding fathers of modern sociology, the "science of man" would follow from, and supplant, the previous system of religious belief. The sciences would not only liberate man from what Kant would call its "self-incurred immaturity" but also continue from the natural world into the realm of human activity. Later, Durkheim would define sociological positivism as "extend[ing] scientific rationalism to human conduct." (Durkheim, 1985). The human itself became object of detached and rationalist observation, an object to study from the position of an external, rational, and objective observer. Similarly, knowledge – even about the human being – came to be organized in a rationalist-scientific way; while such an approach worked well for the natural sciences, applying it to human action and behavior showed its limitations.

The effects of such political and social change, coupled with a shift in the organization and production of knowledge, further enforced a dualist mind-body split. Reason and science were celebrated – and rightly so, for their positive effects were undeniable – and extended to the

[4] The term "centrally" is of fundamental importance here. Previous institutions such as slavery, feudalism, and knightly warfare also "governed" the body. What is novel is the degree of central administration and absolute authority coupled with a scientific understanding of the body which makes such authority calculated, and detached.

human being; rather than a continuation of the sciences, as Comte stated, however, the effect was an extension of the idea of nature as an object of study, and therefore, in a surprising twist, a reduction of what it meant to be human: a rational agent, detached from concerns with the body. Anything bodily and material was considered somehow inferior. It is not by chance that this time saw the justification of European colonization and imperialism through the use of science, and the reduction of everyone and everything "inferior" to somehow related to the body[5]; similarly, scientists of the time further enforced this hierarchy between mind and body to enforce and support cultural norms and values, such as patriarchy[6].

2.3 Rediscovering of the Body: From Early Attempts to Systematic Recovery

Philosophy has so far been concerned with the mind more than with the body. Similarly, the cultural importance of dualism as well as of the scientific revolution led to an erasure of the body. In time, it came to be seen as a secondary component of the human being, the object of detached scientific study.

Despite this, there have been some attempts at rediscovering the body and making the physical existence of the human being the explicit object of philosophical inquiry. These attempts have originally been disconnected and far between. Even in ancient philosophy one can see different views of the body, such as in Xenophon's Memoirs of Socrates, in which he states that "The body is valuable for all human activities, and in all its uses it is very important that it should be as fit as possible. Even in the act of thinking, which is supposed to require least assistance from the body, everyone knows that serious mistakes often happen through physical ill-health" (Xenophon, p.172). Even Plato acknowledges the body briefly in the

[5] While the topic of European colonialism and the role of science at the time to justify violence towards native populations in outside the scope of this thesis, it is important to mention that the justification of colonization and imperialism were firmly rooted in scientific racism of the time; natives (whether in the Americas, Africa, or the far East) were considered "more body than mind," irrational and prone to violence; and in need of education (and a firm hand). Parallels can be drawn with the use of phrenology and scientific racism in Nazi Germany to police, monitor, and erase the bodies of Jews and other "undesirables." The effects are sadly well-known.

[6] The case of "female hysteria" is a compelling example. Throughout the 16th and 17th century, and well into the 19th century, the concept of "hysteria" was used to describe a number of physical and mental symptoms in women (including, but not limited to, epilepsy or anxiety), linking these issues to their inherently licentiousness (Hollick, 1853) and their inability to control their bodies, as opposed to rational, fully-functioning men, who were thought to be in full control of their bodies. Such a hierarchy – and the first explanations of hysteria as caused by a "wandering womb" - served also to stress the role of the female body as primarily child-bearing.

Timaeus: Even if still as an antithesis to the soul, the human is a "composite animal" and the body should be healthy. Karl Marx' *Capital* insists on the importance of the "working body." The poorest workers are called the proletariat from the ancient Roman term *proletarii* – those whose only possessions are their children (*proles*). The proletariat has nothing to its name but its ability to produce offspring, and lives by selling its labor-power – its physical ability to work (Marx, 1887). Nietzsche sees the body as "living body" governed by the rules of its physiology – and indeed he questions whether "philosophy has been no more than an interpretation of the body and a misunderstanding of the body" (Nietzsche, 1886). Additionally, German philosopher Helmuth Plessner developed the concept of "eccentric positionality" to explain the human condition of being at the same time a body – and in a body – as well as an outside observer of that body (Plessner, 1982). Plessner sees the human being as "being somewhere." This is a clear opposition to, for example, Martin Heidegger's concept of the human as "being at some time." The mind is preoccupied with time; the body, with space. While these early and diverse examples do not form a unified whole, they still show how the body has occasionally been the subject of attention from philosophy. In many ways, these concepts anticipated much of subsequent and even contemporary philosophy of the body.

In the late 20th century, new theories began to make the body their explicit topic of concern, including feminism, post-modernism, and post-structuralism. Historically, the opposition between mind and body has been problematic for feminists, who have equated it with the opposition between male and female (Grosz, 1994). Feminist critique to such dualism underlines how the erasure of the body carries social and political value. A larger "degree of corporeality" was attributed to women, people of color, and lower classes (McClintock 1995, Alcoff 2006). Therefore, feminist philosophy has highlighted the political significance of mind-body dualism. Post-modernism and post-structuralism are closely related, and both characterized by a critique of modern descriptions of reality grounded in fundamental dichotomies. For both accounts, mind-body dualism is untenable. Postmodernist and poststructuralist perspectives on the body vary, but they all recognize its importance in the formation of identity and the self. According to some – most notably Foucault – the discipline and erasure of bodies is indeed a central feature of modernity, for example in medicine and sexuality, and in how they interact with governance and belief (Turner, 2007). What these

different perspectives have in common is that the erasure of the body is seen in a critical light; not as some fortuitous accident, but as a feature of systems of thought that originate largely in ancient philosophy and Cartesian dualism. Not only is the body absent from philosophy – its very absence becomes a matter of concern. The following sections aim to investigate such systematic and critical theories further.

2.4 Body Politics in Feminism

Early feminist writers were concerned about the body, and about the difference between male and female bodies. The difference was not only biological, but also social. British feminist Josephine Butler led a campaign against the Contagious Diseases Act in the late 1860s. The act permitted the forceful examination of women for venereal diseases, subjecting their bodies to explicit patriarchal control. Butler extended the liberal political idea of individual rights to women's bodies, attempting to wrestle control from male and medical appropriation (Jordan, 2001). Writing at the same time, Elizabeth Stanton addressed how the body was part of systematic oppression. By drawing a parallel between sex and skin color, she stated:

> *The prejudice against color, of which we hear so much, is no stronger than that against sex. It is produced by the same cause, and manifested very much in the same way. The negro's skin and the woman's sex are both prima facie evidence that they were intended to be in subjection to the white Saxon man.*
>
> *Elizabeth Cady Stanton, Mrs. Stanton's Address to Legislature in 1860, in History of Woman, vol. 1, p.681*

Feminism identified the importance of the body's absence itself. The tradition of mind-body dualism supported a system if oppression and control based also on the body. By relegating the role of the body to a secondary position, such oppression and control could be justified as "reason."

A more systematic and complete analysis of the body in society can be found in the first part of Beauvoir's The Second Sex. She lists and recounts biological differences between men and women; at the same time, she explains how those differences "take on meaning […]

dependent on a whole context. […] society alone is the arbiter." (De Beauvoir, 1949, 66-67). While physical differences do exist, their significance is merely cultural and social. Moreover, she suggests that living a different body leads to a different view of the self and the world, the body being "the instrument of our grasp on the world." This particular view anticipates and has informed much of later feminism. At the same time, it is an explicit and powerful acknowledgment of the importance of the body, and saying that bodies matter.

Feminist phenomenology emerged in the late 1970s. Largely influenced by De Beauvoir's claims about the body as "instrument to grasp the world," feminist phenomenology claims that the body is a fundamental aspect of human experience. The condition of embodiment is our mode of *being-in-the-world* (Young, 2005). Young specifically detailed experiences of female embodiment, showing how social norms shape the experience of embodiment, and how distinctive ways of embodiment lead to distinct ways of being-in-the-world. Alcoff expands the phenomenological framework of Merleau-Ponty to explore "body images." Human beings construct such images of their own body, and they form the basis of our pre-reflective interaction with the world. The body becomes the center of a very specific way of understanding oneself, and is given a greater importance.

More than just an interpretation of the body, this process of re-affirmation understands itself as a process of political and social change. Hence the feminist claim that "the personal is political"(first appeared in the anthology *Women's Liberation* in 1970); the very bodies of women became the subject and place of political action and contestation.

2.5 Postmodernism, Biopolitics, and Embodiment

In the mid-20th century, alternative theories began to emerge as a critical response to modernism. Specifically in France, a number of philosophers have argued against modernist views, such as epistemic certainty and binary distinctions so characteristic of modern thought, and instead embracing multiplicity of being, paradox, and relativism. Their work is characterized by a denial of the existence of objective reality (or the idea that human beings could ever access such a reality), the idea of reason and logic as nothing more than artificial constructs, and "[s]implifying to the extreme, […] incredulity towards meta-narratives"

(Lyotard, 1979). These diverse theories have traditionally been grouped together under the name of post-modernism. Post-modernist thinkers included, among others, Jean-François Lyotard, Jacques Derrida, and Michel Foucault. Many of these have also written more or less extensively about the body, ushering in a rediscovery of the concept in mainstream western philosophy.

The field of postmodern philosophy is vast, and some would even be reluctant to call it philosophy at all. Michel Foucault, for example, considered himself primarily a historian. While postmodernism in general is characterized by incredulity or skepticism about grand, unifying narratives of reality, individual postmodern thinkers have made specific aspects of reality their focus; Foucault for example set out to investigate the issues of power and knowledge, and their connection, throughout human history. He coined the term "governmentality" (a term derived from "government" and "mentality", or, in French, *gouverner* and *mentalité*) in his lectures at the Collège de France, referring to the "art of government" in a broad sense – not merely national politics, but all modes of control and discipline, including schools, psychiatric institutions, and even hospitals. While the term referred to all types of such practice, Foucault often explicitly referred to neoliberal government, and to the active role of citizens in self-governing under such a government.

In his lectures, Foucault also defined Governmentality as "[t]he process, or rather the result of the process, through which the state of justice of the Middle Ages, transformed into the administrative state during the fifteenth and sixteenth centuries, gradually becomes 'governmentalized" (Foucault, in Burchell, 1991). This definition refers to the transformation of the medieval and renaissance state into the modern state at the dawn of modernity. As government became increasingly centralized, it also became increasingly concerned with central authority and power, intended as the "disposition" of things (Burchell, 1991). Such disposition also notably included the very bodies of the citizens, increasingly understood as resources to nurture – and indeed Foucault coined a term for such governing of bodies as well: Biopolitics.

In his lecture series at the Collège de France on "Security, Territory, and Population" he defined biopolitics as:

> *[…] a number of phenomena that seem to me to be quite significant, namely, the set of mechanisms through which the basic biological features of the human species became the object of a political strategy, of a general strategy of power, or, in other words, how, starting from the 18th century, modern Western societies took on board the fundamental biological fact that human beings are a species. This is what I have called biopower.*
>
> *Michel Foucault, Security, Territory, and Population, p. 1*

Biopolitics is, then, the influence of the modern state on all areas of human live, up to and including the power over life and death, but on novel ways. It is not only the power over ending life, but the power to *allow to live*. The state makes decision about the bodies of its citizens. In a way, the union of biopolitics and governmentality anticipated many contemporary concerns about surveillance, security, and state power. Notably, such a precise, centralized, and effective control would be impossible without the use of technology, and at the same time the regulation of human activity also leads to the regulation of research and development of new technology. Most notably, Nikolas Rose has argued the existence of specific "technologies of power" that instill in the citizen a sense of self-government according to the rules and norms of the states (Rose, 1996).

It is also around this time that the term "embodiment" begins to be more widely used in order to refer to "the condition of being a mind situated within a body." Embodied cognition also holds not only that the body matters, but that bodies matter; as they are always part of a broader socio-cultural context:

> *By using the term embodied we mean to highlight two points: first that cognition depends upon the kinds of experience that come from having a body with various sensorimotor capacities, and second, that these individual sensorimotor capacities are themselves embedded in a more encompassing biological, psychological and cultural context.*
>
> *Francisco J. Varela, Evan Thompson, & Eleanor Rosch: The Embodied Mind: Cognitive Science and Human Experience, p.172-173*

The condition of embodiment, together with the concept of biopolitics and of self-regulation, anticipates contemporary concerns with the body. Biopolitics is the regulation of all aspects of the body and of life by the state; embodiment stresses the importance of being-in-a-body (or being-a-body) when it comes to life and experience. The body is not only regulated, its existence and regulation itself become fundamental.

2.6 From Bodies and Technology to Technological Bodies

The instrumental and subordinate view of the body presents itself in new forms thanks to technology. The body of the scientific revolution is subject to systematic study from the natural sciences. Positivism brought about the distancing of the self from its body, while science has been used in the past to justify colonial, exploitative, and eugenic practices. Such rationalist reasoning, and how it informs the "disposition" of the citizen's body, is the subject of Foucault's discussion of governmentality. However, more recently, this instrumental view of the body rests on the possibilities of, and is enforced through, modern technology. From the comparatively primitive "technologies of the self" in Foucault and Rose to contemporary attempts at enhancing, augmenting, and controlling bodies through technology, to the futuristic examples like Virek's rioting mass of cells kept alive through technological means: technology becomes part of, even lays claim to, the body.

There appears to be a similarity in how bodies and technology are perceived. Both are often seen as instrumental – as merely tools, as "just there" and rarely questioned. Technology does not matter, just as the body does not matter. One is like the other. It all depends on the user, on the mind, the rational agent making the decision. However, many of those who have criticized the strict mind-body dualism have also argued against such an instrumental view of technology. Some have gone so far as to ascribe to Technology – with capital "T" - its own aims and intentions (Ellul, 2003). According to Ellul, while a technician can claim that their "research, quite simply, *is*" by dividing research from its results, technology constantly moves from its "amoral domain" into the everyday lives of ordinary people, and therefore, technology's aims become the aims of humanity. Others, in the field of postphenomenology, have shied away from such strong overarching claims, but still challenged the instrumental view of technology by looking at so-called "human-technology relations." Instead of

analysing Technology in its entirety, as an all-encompassing system through which human beings make sense of the world, postphenomenologists instead go back to the lived world. It is not a coincidence that their "manifesto" is to go "back to the things themselves" (as first stated by Husserl) and into the human lifeworld – lifeworld itself being a word that features predominantly even in the title of Don Ihde's *Technology and the Lifeworld*, and which has been picked up by Hayles as well in *How We Became Posthuman*. Postphenomenology seeks to unravel individual interactions between human beings and technological artefacts, and how this interaction changes both sides of the equation. For many postphenomenologists, technology is "multistable" which means that a single artefact – a single tool – can be used in multiple ways, and only through its use does the artefact become stable.

Writing in 1990, Langdon Winner clearly identified that new technology always has a political nature, sometimes even quite explicitly. Even when technology and its use is claimed to be merely instrumental, "[s]carcely a new invention comes along that someone does not proclaim is the salvation of a free society." (Winner, 1990). Winner critiques both the instrumental view of technology, as well the notion that technology holds some political properties in itself. He attempts to strike a balance between recognising the politics of technological artefacts on one hand, and avoid the determinism implicit in both Ellul and Latour on the other. Instead, Winner argues that it is through their embeddedness in a social and political context that technological artefacts acquire certain political properties. He defines politics thus:

> *"By 'politics,' I mean arrangements of power and authority in human associations as well as the activities that take place within those arrangements.*
>
> *Langdon Winner, Do Artifacts Have Politics? p.4*

And indeed, Winner shows a number of examples of technologies whose development was spurred or influenced not by unbiased logic and a desire for efficiency, but by a "panoply of human motives, not the least of which is the desire of some to have dominion over others." (Winner, 1990). One such case are pneumatic molding machines, added to the McCormick manifacturing plant in 1880 for a price of then $500.000 a piece. The machines produced inferior castings at higher costs, and were in fact abandoned after three years. But their

development and use must be seen in the larger social context of late 19th century Chicago, where Cyrus McCormick II was fighting a battle against the National Union of Iron Molders. The new machines were manned by unskilled workers – and therefore eliminated the necessity for those skilled workers that led the Union in Chicago at the time. The decision to use the new molding machines was neither technical nor economical (although there was a certain reason to it); rather, it was political.

Winner's argument is to look at technology neither in its totality, as a specific way of making sense of the world and the entirety of human existence, nor in such specific cases as human-technology relations in postphenomenology. Instead, technological artefacts should be analysed in their social and political context to uncover which politics they embody and enforce, and how such enforcement takes place through development and use. At the same time, Winner's definition of politics as "arrangements of power and authority" has an important precedent in Michel Foucult's work on biopolitics, and in Rose's further analysis of biopolitics, governmentality, and technology (Rose, 1996). Technologies are one of the ways through which such "arrangements of power and authority" are created and enforced, and often these are imposed top-down on the citizen – including, in many cases, on the citizen's body.

The insistence on both technology and the role of the body is also a central feature of critical trans- and post-humanism. Despite taking two different approaches – transhumanism is noticeably more in line with traditional enlightenment humanism – both frameworks insist on the role of the body, and in how human bodies are hybridized with technology. Technologies mediate the ways in which we understand and live our bodies. Sometimes they change our bodies directly – either in glaring ways (such as prosthetics, pacemakers, body camera), on in less visible ones (smartphones). In either case, the body is not just its biology. Rather, the trans- or post-human body is a complex multiplicity of biology, technology, and social construction, and assumes a more explicitly prominent role.

However, then technology becomes part of the body, the politics of the body also change. If, as Winner stated, technological artefacts do indeed have politics, then technology on (or in)

the body carries these politics onto (or into) the body. The technological body therefore possesses its own distinct, technologically mediated body politics.

2.7 Artificial Bodies in Trans- and Post-Humanism

In 2001, Steven Best and Douglas Kellner published "The postmodern adventure: Science, technology, and cultural studies at the third millennium." The book set out to analyse and critically evaluate transformations in culture and society, as well as in science and technology studies, at the beginning of the third millennium. According to the authors, topics that were once the domain of science-fiction have entered mainstream social and political debate. When it comes to emerging technologies such as advance cybernetics, human-machine interfaces, portable devices and ubiquitous computing, traditional ways of doing politics fail. So, too, do traditional body politics often fail when faced with the possibility of technologically augmented bodies. The artificial and artefactual body requires new frameworks of analysis. Two notable, and diverse, frameworks are transhumanism and posthumanism.

Transhumanism is an international movement which "advocates for the transformation of the human condition" in order to "greatly enhance human intellect and physiology." (Bostrom, 2005). Although it is rooted in biology – the term was widely publicized by biologist Julian Huxley in a 1957 article, and early transhumanist thinking insisted on gene-line modifications and the promises of genetic engineering – the movement has since then split into different, smaller groups, in part due to differences in political and economic stances, but also with the advent of different technologies which each hold their own promises and risks for the future. Transhumanism is generally favourable towards technology – sometimes to the point of techno-utopianism – and openly acknowledges its enlightenment roots. As such, it carries, as a whole, the heritage of enlightenment thinking, including the strict hierarchy between body and mind.. Individual transhumanist writers acknowledge the importance of humanism in transhumanism. Bostrom states explicitly that "Transhumanism has roots in rational humanism" (Bostrom, 2005). He cites Condorcet, Darwin, and Offray de La Mettrie, who have not only been influential scientists in their own right, but have also served as an inspiration for philosophers and scholars who have argued for rationalism, social darwinism, and in general a mechanistic understanding of the human. According to Offray de La Mettrie,

in *L'Homme Machine* (the machine man), "man is but an animal, or a collection of springs which wind each other up." (Offray de La Mettrie, 1750).

However, the body is explicitly acknowledged in its importance as a limiting factor. The body imposes limitations that should be overcome; in the words of Ray Kurzweil, the pace of technological progress has only one limit: the computational capacity of the human brain (Kurzweil, 2006).

For some transhumanists, the technological body holds the promise of freedom not only from external, but also from internal limiting factors and from biology itself. Morphological freedom is "the right to modify oneself according to one's own desires" (Sandberg, 2013). According to transhumanists, morphological freedom is the logical conclusion of a liberal humanist tradition that has its roots in Locke and one of its main modern theorists in Nozick (Fuller, 2016). "Whereas Nozick presumed that we are free to do whatever we want […] transhumanists presume that we are also free to be whoever we want.[7]" (Fuller, ibid., p.2). Sandberg has stressed the importance of morphological freedom as not only desirable, but necessary (Sandberg, 2013). According to Sandberg, the possibility to free oneself from undesirable limits is not only a personal net benefit, but promotes equality in society by "leveling the playing field." At the same time, morphological freedom is also the freedom from modification: no one may modify my body without my explicit consent. This negative formulation is much closer to traditional feminist body politics. The enhancement aspect of morphological freedom is clearly separated from therapy (Allhoff et al., 2009). Szabados traces the history of the concept, from extremist extropianism to the transhumanist bill of rights (Szabados, 2017). Despite transhumanists roots in enlightenment humanism, the concept of morphological freedom can be a useful concept both for analysis and action. On one hand, it expands the realm of body politics to human enhancement and technological augmentation. On the other, negative morphological freedom can be the catalyst of political resistance.

[7] Transhumanists fail to account, however, how identity and the self are also formed relationally and in context. Unfortunately, there is not much literature on what we might call a "relational approach to transhumanist existence."

Other authors have been more radical in their erasure of the body. Matthew Liao, author of *Human Engineering and Climate Change*, seeks to tackle environmental issues through a radical re-design of the human being. In his view, altering humans to be more environmentally sustainable is a better alternative to geoengineering[8]. Such environmental engineering of the human can take multiple forms, such as genetic modification to make human beings unable to eat meat, or obligatory pills that increase empathy and reduce aggressive behavior. In Liao's proposal, the body is considered again as the root of all evil. In a return to the platonic idea of mind over body, and of the body as a cage, Liao – and others, such as John Harris (Harris, 1992), Patrick Linn, and Fritz Allhof (Lin & Allhof, 2008) – are engaged in a debate around human enhancement and human engineering that enforces a strict mind-body dualism: The body is seen merely as a tool, something to use; and a bad tool at that, one that needs work, refinement, and improvement to overcome its own limits. But in doing so, they unwillingly reaffirm the importance of the body, for it shows the limits we must strive to overcome.

Posthumanism, however, is more markedly cultural in its analysis, focused more on the human being as unit of analysis rather than on concepts; where postmodernism deals with ontology and epistemology, cultural posthumanism deals with the human being and its place in a world that is no longer modern. And indeed, the overcoming of modernist dichotomy and the realization that there can be no strict division between the mind and the body necessarily means that we must think differently about the human being. Posthumanist authors have sought to redefine what it means to be human, especially in a time of rapid technological advancement, in which the line between technology and the human is increasingly blurred. Posthumanism rejects cartesian dualism and the polar opposition of *res cogitans* and *res extensa*, and instead argues that human experience consist of *hybridity* and *complexity*. Hybridity refers to the impossibility of cleanly separating any dichotomies (between body and mind, observer and observed, human beings and the outside world), while complexity refers to the condition of having to manage many complementary, and sometimes conflicting, aspects of being.

[8] This non-anthropocentric stance apparently breaks with traditional humanism, but the author's efforts are undermined by an omnipresent – yet never explicitly acknowledged – utilitarianism. Human engineering is only better than geoengineering because it is cheaper and easier.

Sometimes, posthumanism and transhumanism are seen as complementary, as two sides of the same coin or as lying on a continuum. Specifically, transhumanist authors often argue that transhumanism is a step towards "posthuman modes of existence" (Bostrom, 2005). On the other hand, posthumanist authors tend to affirm the opposite and to break quite explicitly with the humanist tradition that informs transhumanism. At the same time, posthumanism is sometimes grouped together with a number of intellectual movements and currents that share certain aspects, but differ in other, such as meta- and anti-humanism, or radical feminism and new materialism (and indeed, many posthumanists are also feminists, such as, for example, Donna Haraway and Judith Butler). Francesca Ferrando has set out to distinguish and explain the various intellectual movements usually grouped together under the term of "posthumanities" and to offer an explanation of their history, main points, and concerns (Ferrando, 2013). According to Ferrando, the most important difference is that transhumanism does nor fundamentally challenge a historical legacy of what it means to be human, and merely looks forward, towards the possibilities of human enhancement, augmentation, and alteration through science and technology; it does not, therefore, expropriate rational humanism. Posthumanism, on the other hand, has its roots in postmodernism – already a critique of modernist humanism – coupled with insights from feminism and literary criticism in the 90s. Posthumanism has since developed in different ways, including critical posthumanism, cultural posthumanism, and philosophical posthumanism. In line with Gianni Vattimo's statement that postmodernism implies a "dissolution of the new" (Vattimo, 1988), posthumanism also implies a dissolution of the old and an inquiry (literary, cultural-anthropological, and philosophical) into different modes of "being human." Posthumanism, too, is deeply connected to technology, and both critiques modern technology and seeks to analyses how novel technologies (especially information technology, robotics, and cybernetics) fundamentally alter the human experience.

2.8 Multiplicity: The Body and Bodies in Drift

When technology comes to be part of the body, traditional body politics are challenged. Not only is technology external, it is also political. While historically bodies have been controlled and erased through the politicized use of science and a rhetoric of reason, contemporary bodies are controlled and policed through technology. Winner's technological artefacts and

Rose's political technologies of the body return and are expanded. And other technologies "distribute" the body through a number of interactions and realms. Writing about MUDs (Multi-User Dungeons) and the construction of the self in 1994, Sherry Turkle expressed the idea that different realms of online interaction offer windows to different visions and constructions of the self (Turkle, 1994). Similarly, the sharing and liking of pictures (edited, photoshopped artefacts in themselves) on social media offers vision of different bodies, and different bodily identities: who we are, what we want to be, how others see us. The contemporary body is not a single one; as claims about the purity of the body resurface in conservative politics, the unity of the body as cultural symbol appears lost. Rather, we speak about bodies: socially, relationally, even technologically constructed bodies. This multiplicity of bodily existence is the central subject of certain posthumanist writings.

Multiplicity in this context refers to the condition of "being more than one body." For some, particularly transhumanists, this means literally being more than one body. Martine Rothblatt suggests a transhuman regime in which consciousness (as a neural substratum) can selectively be transferred to, and between, bodies that transcend traditional conceptions of gender performativity (Rothblatt, 2014). Others, such as Cerullo, suggest that after non-destructive mind uploading, identity "branches" (or "forks," to use a more technological term) and continues separately in the biological body and in the machine (Cerullo, 2014). According to a less literal interpretation, one can be or inhabit different bodies according to context. The difference between being or inhabiting a body is the degree of identification; many of these bodies are technologically created or constructed from the outside. Facial recognition groups people along lines of race, sex, and gender. Border surveillance helps drawing lines of "in" and "out," of citizen and non-citizen, by augmenting the traditional geographic border. Measuring worker's physiological markers, such as stress or exertion, categorizes them as efficient or not efficient, placing them on a spectrum of working bodies that are constantly scrutinized and evaluated. In our everyday lives we constantly live the partial construction of our bodies through technology.

This multiplicity of technological and artefactual bodies can more broadly be captured through the framework of Body Drift. In his 2012 book, Arthur Kroker argues, through a systematic review of three other authors (Butler, Hayles, and Haraway), that the "specter of

the body" has left, even through its absence (or rather, non-presence) deep marks in society, culture, and politics. Not only is "the image machine […] itself haunted by memories of the body" but a single, unifying conception of the body is disappearing vis-à-vis a multitude of imagined, codified, and distributed bodies. The surface and boundaries of the body have begun to drift:

> *Body drift refers to the fact that we no longer inhabit a body in any meaningful sense of the term but rather occupy a multiplicity of bodies—imaginary, sexualized, disciplined, gendered, laboring, technologically augmented bodies.*
>
> *Arthur Kroker, Body Drift, p.2*

Body drift is the circulation – conscious or not – between multiple aspects of the body, between different bodies even, each of which has its specific code, norms, and conditions. It is no longer meaningful to differentiate between the "one true" body with which we identify, and the partial constructions and images produced by ubiquitous technology. Turkle likens online experience to a house with many windows, each opening on a specific part of one's identity. Similarly, Body Drift seems to suggest that contemporary society is like a photo album, or an art gallery, capturing different aspects, moments, and interpretations of the body, none of which can be said to be "false" – and neither is it possible to differentiate between the human body and technological artefacts that produce these images. From Latour to Foucault to Kroker, bodies seem to have bridged modernity. But the concept of Body Drift is useful not only to explain the cultural phenomenon of how we navigate a multitude of different bodies. Rather, it also offers a useful framework to analyse power relations in society, and the interactions between the body and technology that go beyond the individual.

When modernist assumptions about clear boundaries are challenged, one cannot look at these elements in isolation. Rather, understanding that technology, politics, and bodies are closely linked, their confines often blurred, raises the question of how these parts co-shape each other. There is a need for new politics of technological bodies. Kroker addresses the politics of the body explicitly in the epilogue of *Body Drift*, titled *Bodies and Power*, where he states:

> *At the same moment, the penetration of the regime of computation into the skin of humanity, including its order of perception, affect, social networks, and most intimate activities, carries with it […] the "terrorism of the code." Could it be that what is really disowned, excluded, and repressed by the regime of computation is the possibility of a more general human grief concerning that which has been lost with the radiating triumph of computation?*
>
> *Arthur Kroker, Body Drift, p.139*

Or, again:

> *For example, consider the relationship of bodies and power.[…] Already there are euphoric estimates that the human species is on the verge of being technically augmented into something dramatically new—a transhuman species. Of course, to this order of body drift, there is only silence in the face of the question, are we ethically prepared for the full consequences of power over life?*
>
> *Arthur Kroker, Body Drift, p.141*

Kroker's argument about bodies, technologies, and power echoes the concerns of Foucault, Winner, and other post-structuralist and post-humanist authors. When the body is augmented and made artefactual through technological means, suddenly it cannot escape the politics inscribed in its technological nature, nor can the body be thought of as separate from a social and political context which is also technological in nature. The body becomes an artefact, with its own – often conflicting – politics, and biopolitics finds its latest incarnation not in systems of governmentality, but in the very bodies of the citizens.

3 Methodology

Body Drift can capture the experience of augmented and technological bodies. With its insistence on multiplicity and the role of technology in shaping the body, it can be established as a useful perspective for exploring the politics of these bodies. When the meaning of "body" changes, so do its politics. At the same time, Body Drift as-is remains partially inconclusive. With its roots in critical theory and literary criticism, Kroker uses Body Drift to describe how bodies drift, and less the consequences of this movement. This chapter seeks to overcome the limits of Body Drift as-is and establish a methodology with a clear goal. The aim is to formulate a more precise and useful definition of Body Drift, which can serve as a contribution to posthumanist philosophical frameworks as well.

3.1 Body Drift as Philosophical Lens

Body Drift as a conceptual lens is descriptive. In the conclusion "Bodies and Power," Kroker acknowledges the political implications of contemporary, technological bodies, and questions the direction this drift goes. By relating Body Drift to Foucault's biopolitics, Kroker justly analyses how the body is a contested space of power. Overcoming the dichotomy of power over life and death, Body Drift identifies power over the body in multiple forms: the politics and ethics of the transformation into the "transhuman," the resistant body as subject of control – be it torture or technological surveillance – or the resurgence of conservative body politics as reaction to technological bodies that seem to question our understanding of the human. However, while Body Drift manages to capture these transformations, the analysis stops at a conceptual level. Despite its political implications, Body Drift so far remains a-political.

This is by no means a problem of Body Drift alone, but is rather a stable of discussions about human technological enhancement and its applications. In fact, the debate surrounding traditional humanist and transhumanist views on human enhancement, for example, has remained mired in uncertainty and inconclusiveness. Both Dupuy (2004) and Béland et al. (2011) have argued that ethical deliberations surrounding human enhancement in general, and nanotechnologies specifically, have become so routine that "one could number the arguments constantly deployed and observe that when one person invokes Argument Number Ten,

someone else invariably replies with a corresponding counterargument" (Béland et al. 2011). As Béland et al. point out, both sides of the debate have remained focused on overarching conceptual arguments. Rather, the focus needs to shift away from the conceptual level in favor or more empirical work on specific cases.

As Béland et al. point out in their conclusion, ethical deliberation cannot be confined to conceptual arguments, but is rather done "on the ground" during social and political discussion and deliberation. Similarly, Body Drift should not confine itself to a conceptual level either. To avoid being stuck in the same impasse, Body Drift as an applied framework must be applied to specific case studies. Furthermore, it must be formulated in a way that allows drawing conclusions and recommendations for the future. It is not enough to identify when and how bodies drift – one must also learn from it.

With this new, prescriptive role in mind, I adopt a pragmatist approach to body politics. This requires reformulating the concept of body drift in a way more useful in the application to case studies:

> *A situation in which different roles and politics are inscribed on a body through technological artefacts (both inside and on the body), and not necessarily with the subject's full awareness.*

This definition captures the technological component of contemporary body politics. At the same time, "roles and politics" refers to the expectations placed on the body, its function and appearance. Finally, the issue of awareness is of fundamental importance. This definition of body drift and the use of case studies serves to draw conclusions and formulate recommendations. A larger awareness of body politics, and of the politics of technology, is seen as fundamentally desirable and empowering. In following the pragmatist approach and the idea put forth by Béland et al., having more dimensions to raise during deliberation is bound to expand the discussion. Such awareness comes at different levels – namely personal (or micro-level) and societal (or macro-level) awareness. Personal awareness means understanding the way one's own body is shaped and coded through the use of technology. Societal awareness refers to a shared understanding of citizens and policymakers alike of the importance of the body and the role of technology in coding the bodies of citizens. Both levels

intersect (for example, societal awareness relies at least in part in individuals understanding and sharing that awareness), and both are important in understanding of how the body is political, and how its politics are technological. Body Drift can therefore lead to a larger degree of autonomy and political action.

This new, more precise definition, then, helps in conducting case studies. These case studies are important because neither politics, not the critical analysis of the debate about technological enhancement should stop at the conceptual level. While a solid conceptual background is important, it should not come at the expense of empirical work. Béland et al. argue that overarching moral arguments are often ineffective because they can support either side of the debate. Instead, most regulation arises from the organic interaction between groups of users and the technology. In offering a novel lens on wearable technology, it is therefore important to look at the technology in use and at precisely these interactions.

3.2 Aim of the Case Studies

The second part of this thesis will use the framework of Body Drift to analyze two distinct situations: the case of nurses in hospitals wearing a device that measures their stress levels, and the case of body cameras for police officers.

It is necessary to clarify some of the terms used here in specific ways; enhancement technologies are a broad field, and can range from pharmacological (pills and drugs) to prosthetics and artificial limbs. The technologies relevant to this analysis can be considered so-called wearable technologies, that is, small devices that are worn on the body and connected remotely to a wider network for the storage, evaluation, and analysis of data. Wearable technologies have a long history of use especially in healthcare, and they have seen increased use especially since 2013 (Gao et. al., 2015). In light of these particular technologies, the meaning of “technological body” or “enhanced body” is used throughout this thesis to describe bodies that are the subjects of such monitoring devices.

Following this, the meaning of “body politics” is also specific. The term can be applied to a number of realms, from sexual liberation to issues of racial justice, from the practice of torture

to bioethics. In the context of this thesis, of wearable technologies and Body Drift, body politics here refers to the body itself as subject to power relations and orderings of authority, specifically in the workplace where precise expectations are placed on the body.

The case studies for the second part of this thesis have been chose by keeping in mind what Body Drift can effectively contribute to this formulation of body politics.; therefore, both cases concern situations in which multiple norms are inscribed on a body through technology. Body cameras and the issue of "embodying justice" have been a subject of concern for technology ethicists (Healey & Stephens, 2017; Dubbeld, 2003) and legal scholars (Freund, 2015). Similarly, there has been work on the acceptance of measuring devices in healthcare, both for patients and healthcare providers (Mort et al., 2015; Gao et. al., 2015). As Body Drift shows, these two roles can sometimes overlap. In both cases, there are multiple roles inscribed on the body at the same time. Only by understanding the importance of the body can one become aware of the political implications of turning the body into a tool of surveillance, or into a patient-and-caregiver.

Both case studies also deal with body politics and technology in the workplace. This aspect is important because the workplace is already a place of politics and formalized power relations. Often, when new technology is introduced in the workplace, it is done so "top down" by management, and therefore already bears a distinct political character: it serves to exert control over the worker. Concerns about the politics of technology already exist. However, such research has traditionally focused more on worker's rights, for example in the context of privacy and justice (Introna, 2000), or on ease of use and access (Jonge et al., 2001; Kim & Shin, 2015) as factors of technological acceptance. Overall, the existing literature is concerned more with acceptance of technology – that is, according to which factors and considerations the technology is deemed acceptable for use (see also Van de Poel, 2016). While the discussion of acceptance and acceptability of technology in the workplace is certainly important, the discussions seems to largely ignore concerns with the body. Rather, much of it is seen through the lens of surveillance and distributive justice (Introna, 2000).

Body Drift can offer a novel perspective and expand the discussion surrounding social acceptance and acceptability of technology by revealing additional factors that so far have

largely been ignored. Discussion about body politics and the political nature of technology allow for more nuanced discussion and deliberation about the acceptance of technology, and thereby lead to regulation (be it formal or informal). In a place already heavily influenced by power relations, raising awareness about yet another political dimension allows one to overcome a purely conceptual analysis. Rather, using Body Drift should actively challenge existing discussions surrounding the use of technology in the workplace and give those involved the awareness of the politics of the body. The aim is not only to gain new insights from the case studies mentioned, but also to stress the importance of the body in posthumanist philosophy. As such, Body Drift seeks to contribute to a relatively recent discussion about philosophical posthumanism.

3.3 Conducting the Case Studies

The case studies will both be conducted in four steps. Two preliminary steps will serve to analyze the discourse, both academic and in the media, surrounding the technology, its use, and the issues connected with it. Special attention will be given to the social acceptance of the technology. Subsequently, the main part of the case study will focus on applying the framework of Body Drift to uncover (1) the role of the body in the networks of technology, politics, and power relations in the workplace, and (2) how these technologies change the way the people relate to their bodies. Finally, a conclusion will summarize the findings and offer suggestions for future use.

The first step is to analyze academic discourse surrounding the specific technology: wearables for nurses, and body cameras for law enforcement officers. The use of such wearable technologies has been a matter of philosophical and legal debate (Woodside, 2015; Sanders, 2017; Grew & Svendsen, 2017). The body is certainly a matter of concern in such debates, but only marginally. The issues connected to wearable technologies are mostly analyzed still through the lens of either traditional ethical issues such as autonomy and coercion (Woodside, 2015; Karkazis & Fishman, 2016) or of privacy and data security (Ching & Singh, 2016; Freund, 2016). While relevant the insistence on these frameworks risks obscuring concerns with the body specifically.

Following this academic overview, the case studies will attempt to uncover the relevance of concerns with the body through secondary, non-academic data. Such data is qualitative in nature and takes two forms. The case study on wearable technologies for nurses relies on a number of interviews to nurses, doctors, and other personnel at a research hospital in Italy. The interviews were collected by Dr. Stéphanie Gauttier over a period of multiple days for a study concerning the acceptance of wearable technologies. It is necessary to point out that none of these interviews featured concerns with the body as a main topic. However, will be shown, the issue does show up occasionally in the nurses' concerns. Similarly, the data for the case study on body cameras consists in a number of articles, testimonies from both police officers and civilians, and the results of influential pilot studies. None of those articles explicitly concern themselves with the role of the body, either. While this is certainly a limitation, it does not ultimately invalidate the point of the case study. The aim is to expand the areas of concerns about wearable technologies, and therefore, opening up a new area of discourse not addressed before still constitutes a reasonable goal.

In examining the data and presenting the findings from the first two stages of the case studies, it is important to note that the data is qualitative, comes from a number of different sources, and is in all cases secondary data. Deciding how to present this data in a unifying, understandable, and effective format is an important part of conducting the case study itself. This thesis follows the argument of Reay et. al. that "one size does not fit all" when it comes to presenting findings (Reay et al., 2019). After a systematic review of other research articles, Reay et. al. identify a number of possible ways of presenting qualitative research. "[E]ach approach has advantages as well as limitations, and […] the type of data and theorizing is an important consideration in determining the most appropriate approach for the presentation of findings." Most articles fall somewhere in between two or more of these ways and distinctions are not always clear-cut. Therefore, this thesis aims to use a mainly anthropological approach, relying however on short "quotation vignettes" for nurse's cases where necessary. This vignette approach highlights narratives of interest, structuring the data into small chunks (or "vignettes") with the aim of providing a rich contextual experience of the data. Persuasiveness is a feature of a coherent and deep narrative that evokes salient issues in a discursive way. This approach is best suited to the many interviews in the case of nurses and wearable stress-measurement devices. Having direct access to the interview recordings and transcript means

that a clearer, cohesive picture can be gained from such extensive quotes. The anthropological approach has a similar insistence on qualitative over quantitative data but focuses on a holistic representation of the data. The living experience of the research makes up the focal part of the data itself – an approach particularly suited to the case of body cameras, in which contrasting interests of civilians and police officers and the obscure bureaucracy of the law often make navigating these situations complex. Choosing a more narrative approach to the presentation of the data also has another reason. A more quantitative or systematic approach featuring tables and long data excerpts would risk to undermine the aim of the studies, and of the thesis itself. When the body risks being erased by an insistence on data and quantification, the use of qualitative narratives contributes by giving a voice to those who will not be reduced to mere data.

The third and arguably central step of these case studies is, then, to apply the perspective of Body Drift in its new, more precise formulation. This part aims to show how, with the use of wearable technologies in the workplace, the body itself becomes the subject of political forces, but also the epicenter of political struggle. If the implication of Body Drift is that "we explore intimately and with incredible granularity of detail the multiplicity of bodies that we have become" (Kroker, 2012), then the politics of wearable technology in the workplace shows that often these are not bodies "we have become" but "bodies we should become." This leads to a new relation to the body, which lies at the heart of any further discussion regarding body politics and technology: Body Drift is able to capture this new relation.

The case studies, however, will not go into overarching details about the nature of technological bodies and Body Drift in society, which is rather the goal of the final chapter of this thesis. Instead, the final paragraphs of the case studies will serve to summarize the findings and explain what Body Drift contributes to each specific case. The highlight of these short conclusions will be to raise awareness of the different roles inscribed on a single body in these cases.

4 Physiological Measuring Devices for Nurses in Hospitals

Wearable devices to measure stress levels and its physiological markers are a recent development, but have gained a lot of attention in a relatively short time. While the idea of wearing clothing or accessories with additional functions is not new, modern wearable technologies themselves are a recent phenomenon, having first gained traction around 2013 (Kaewkannate & Kim, 2016). An early example were Fitbit products, which focus on activity tracking for amateur sports enthusiasts. Samsung released its smart watch, the Galaxy gear, in 2013, followed by Motorola, Appple, and Pebble also announcing their own smart watches between 2013 and 2015. The rise of ubiquitous computing goes hand in hand with the development of wearable technology: wearables are examples of pervasive technology in everyday life. Some have embraced the possibility of constant (self)monitoring. The concept of Quantified Self (QS) refers to "an individual engaged in self-tracking of any kind of […] information." (Swan, 2013). According to Melanie Swan, Deborah Lupton, and members of the Quantified Self Movement, the ubiquitous availability of such detailed data allows for a greater degree of autonomy and control over one's own life (Swan, 2013; Lupton 2016).

While the range of envisioned applications is broad, health- and patient care have always been an important topic in wearable technology. This application is markedly different from the QS approach because it is tracking rather than self-tracking. The advantage is that, being so close to the body, the device can easily collect all the necessary data. The disadvantage is that the wearer might have limited control over the device; might not know how to use it properly, or might not even want to be monitored constantly. In this context, the role of the body changes – it is not a technologically mediated self-experience of one's own body, but rather of a different body. In some cases, the person being monitored might never have access to the data. Their body is turned into an object of measurement, distinct and separate from the person. And yet, the body is never the prime subject of analysis. Even in the case of wearable technology – that is physically located on the body – the physical seems to disappear. Failing to take the body into account is a consequence of dualist thinking that reduces its importance – data flesh is more important than real flesh. Instead, this chapter attempts to start its analysis from the body, and from the concerns that technology users feel about their embodied experience being reduces or cast aside by the device.

This case study deals in detail with a specific type of proposed wearable device: a wearable sensor for nurses, not patients, in hospitals. The device attempts to measure stress levels of nurses based on various physiological measurements (heart rate, skin conductivity, breathing, and more). Since the focus is shifted from the patient to the nurse, the device comes with additional challenges and concerns, since nurses are already subject to intense scrutiny during their work. While largely ignored in academic literature, these concerns sometimes resurface in the interviews.

4.1 Academic Research

Academic research in the field of wearable technologies for healthcare has become more mainstream in parallel with the greater diffusion of such technologies. Mainly, the philosophical and political debate is focused on the ethical challenges of constant (patient) monitoring (Al Ameen et al., 2012), and on concerns about privacy and surveillance (O'Connor, 2015). Overall, the research builds narratives and models about society's acceptance of technology vis-à-vis its intended and expected use as well as its perceived usefulness.

On the usefulness and potential benefits of wearable technology for health care, Darwish and Hassanien write about "the important role of body sensor networks in medicine to minimize the need for caregivers and help the chronically ill and elderly people live an independent life, besides providing people with quality care." (Darwish & Hassanien, 2011). Body Sensor Networks refers to "wearable and implantable body sensor networks" (WIBSN), that is, the entiretiy of technological devices that can be worn or implanted that provide measurements about the body. The promise of using such sensors is not new (Stanford, 2002; Mcfadden & Indulska, 2004). However, the rise of ubiquitous computing and the capacity to handle large amounts of data more easily means such sensor networks can be more pervasive and detailed. While the main application predicted by Darwish and Hassanien is still taking care of patients and especially the elderly, they also suggest the possibility of tracking and monitoring doctors during their time at the hospital. The mere possibility of measuring something makes it a possible avenue for further research, in a race for more data.

However, the production, evaluation, and eventual use of such vast amounts of intimately personal data has been a matter of debate as well. According to Al Ameen et al., health data is always private in nature (Al Ameen et al., 2012). Furthermore, failing to take privacy concerns into account at an early stage may cause backlash and mistrust, thereby undermining the positive promises of the technology. In a way, this argument echoes the gap between acceptance and acceptability of technology, yet it is still framed through the lens of privacy. This gap is further complicated by a lack of information and transparency. Sometimes, people make trade-offs between privacy and the perceived usefulness of the data. Only later, when subject to unanticipated consequences, do they realize the true trade off (Gauttier, 2019). This asymmetry of information further enforces existing power structures through technological control. Others have attempted a more constructive approach of outlining a privacy framework for wearable devices and sensor networks in healthcare (Avancha et al., 2012). They use the definition of privacy put forth by the National Committee for Vital and Health Statistics (NCVHS), which states that control of the data is essential. Their framework consists in a number of points, such as "openness and transparency" or "use limitation," meaning that the purpose of such devices must be clear to the user and limited in scope. Unfortunately, there is no similar framework for concerns besides privacy. The issue of wearable devices has consistently been framed as an issue of data use and surveillance, rather than an issue of bodily autonomy[9]. Furthermore, the literature is concerned mainly with wearable monitors for patients rather than for nurses. In such a scenario, additional factors (such as pressure from HR departments or a boss) complicate the issue further. Nurses might perceive the technology as initially helpful to their already stressful job, only to later deal with negative repercussions (Gauttier, 2019).

The debate is mainly framed through the lens of privacy and security. The data generated by these devices should not be accessible to everybody; it should be anonymized, and the sensors should only provide the data that is necessary for the stated goal. However, framing the issue in this manner is not sufficient for two reasons. First, existing guidelines about privacy are not sufficient and still subject to formal and informal negotiations, largely shaped by the politics of the workplace. Weston suggests that companies that monitor their employees tend to be

[9] To a certain extent, surveillance literature is also concerned with autonomy, even with bodily autonomy. In those cases, however, the autonomy is framed as "being able to do freely." Body Drift insists instead on what one might call an "existential" bodily autonomy as "being able to 'be' freely." The focus is not on being able to move around as one wishes, but rather of not having one's body co-opted by technology.

market leaders (Weston, 2015). They also aim to increase productivity and maximize returns (Doshi, 2009, in Weston, 2015). Therefore, companies might feel at least tempted to engage in, even push for, surveillance. In the workplace, the issue of surveillance is often dealt with through meetings and consent forms. However, as Gauttier suggests, consent is not enough, because employees cannot adequately assess the consequences of such surveillance practices (Gauttier, 2019). This is true even for employers to some degree, who might not have no frameworks (legal or other) in place to decide how to best use the data. Furthermore, there is yet another hurdle in the availability and effectiveness of literature, which might not be readily available to nurses; Even non-academic literature, like training manuals, healthcare magazines, and other, are not always helpful. Even when the nurses are informed about state-of-the-art technology, their hierarchy in the hospital means they cannot easily make decisions. administration, however, has easier access to the data once the technology is adopted. This drives a further wedge between technology acceptance and acceptability, made even wider by existing power structures. The second reason privacy is not enough is that issues of privacy are essentially framed as issues of data. Such an approach risks obscuring concerns with the body. According to this view, the use of such devices is controversial not because they do something to the patients' bodies, but because the generated data might be misused. Another reason for this framing might be that these wearable sensors are mostly intended for patients – people whose bodies are already subject to some form of control in any way. However, when the wearables are intended for nurses, privacy is not the only concern. Autonomy and the expectations of worker's bodies, both at work and outside of it, must also be considered. Such concerns about bodily autonomy and the disregard for nurse's bodies emerges quite clearly from the interviews. These "traces" of concerns about the body then serve as a starting to point Body Drift, and to frame wearable stress monitoring devices for nurses through the lens of body politics and embdiment.

4.2 Concerns Arising From Interviews

These interviews have been collected mainly from nurses, but also from other hospital staff. They were part of a research project on the ethics and acceptability of wearable technology in the workplace, by Dr. Stéphanie Gauttier. The wearable is a sort of "smart shirt" worn beneath or as part of the uniform, and aims to assess stress levels through a number of physiological

measurements (heart rate, skin conductivity, breathing, and more). The explicit aim of the research project is to identify possible ethical challenges in the introduction of wearable technologies in the workplace. The interviews show that concerns are markedly different for the nurses themselves compared to those of other staff (doctors, HR, legal departments). Unsurprisingly, the nurses seem to understand their own stress – and the possible issues with wanting to technologically measure and monitor it – better than these other persons. Additionally, concerns about bodily autonomy surface much more in their accounts.

For the legal office at the hospital, for example, the issue of wearable technologies is still framed mainly through the lens of privacy. Particular attention is given to existing regulation and to specific cases in which the device might track data which is sensitive yet not strictly necessary to the functioning of the technology. As the legal office stated:

> *It is important that before the period of the study, before you start the pilot… that you inform the nurses. That [they] sign a consent form. If you have consent, you can do it, no problem. You just need the authorization […] No ethical problems. […] periodically, we perform examinations on the health status of people. So it can be intended – this is the question: Adding something, registering, monitoring, can it be intended as an extension of this process of assessment of health conditions. So it cannot generate particularly critical situations according to us.*

The additional control provided by the wearable device is seen as essentially an extension of existing practices of control and surveillance; and it only constitutes a problem, then, if it goes beyond what is deemed acceptable under current rules and regulations.

Similarly, during an interview, a doctor also reduced concerns with the technology to a privacy issue, easily overcome through giving formal consent. When asked about possible conflicts of interest, and whether hospital administration could make use of the technology to further control its employees, her replied:

> *If it's a tool that they [HR] can use to control if the employees are stressed. And if that is a problem. Well, I think that the nurses need to consent to that. Then you could do that. You can certainly suggest it. Then we will see… We can make a proposal to the director of HR, but I*

don not think there will be many issues.

Not only are possible concerns of nurses easily dismissed; the idea espoused is to deploy the technology in a "top-down" approach, with a consent form prepared by the legal department, HR, or both. The hospital administration would be in charge of deploying the technology, gathering, and using the data, and, more importantly, to frame certain issues as significant. The device is intended for nurses; however, it is not them who frame the discourse on potential issues. The administration needs to "objectify" the subjective experience of the nurse's stress, but by doing so, they reduce stress to only those situations and effects measured by the device. While the aim is to understand and manage stress better, the concern of the administration is not the bodies of the nurses; it is rather the use of the data they generate.

Unsurprisingly, the concerns of the nurses themselves are markedly different. It is not that they are not concerned about privacy at all – they express uneasiness at the idea of unchecked surveillance – but their manner of approaching the issue is different. The condition of being part of a larger network of sensors assumes a different light since their concern is not the data they generate, but rather their work in itself. The insistence on data regulation and privacy concerns puts their own, very real and physical work in the background. When what matters to the hospital is the information, the practice itself – what constitutes the core of the nurse's work – fades into obscurity. Meanwhile, the nurse's interviews and statements demonstrate how their own work, their bodily autonomy, and the control they have over their own environment is important on both a professional and personal level.

A nurse's work involves a lot of stressful and physically exhausting aspects. This is particularly true in this particular hospital: The structure specializes in intensive care, and patients require quick diagnosis and help as well as careful around-the-clock monitoring. Through their physically demanding work, nurses acquire a very specific form of "embodied" knowledge, being able to realize how stressed they are and even being able to address such a situation by themselves to some degree. This specific knowledge is based largely on individual discretionality. The addition of technology seems to complicate the situation. As the head of the nurses on the oncology ward states:

There is a situation where the needs and the discretion of the individual can contrast with the obligations of the organization. And on that level there are many issues – at least as of today.

The needs and the knowledge of the individual nurse, as a worker, might contrast with the needs of the hospital organization. HR might need (or want) precise biometric data to regulate stress and change working hours or the distribution of shifts; however, the head nurse describes her work as already that. She talks to the nurses, asks them about their stress levels, and relays the information to the administration. Her testimony (and the embodied knowledge of nurses) is not sufficient, however. The hospital needs precise, quantitative data in the form of technological measurements[10].

Not only is their own embodied knowledge dismissed, but the body of the nurses is made to support a technological, top-down approach as well. With the introduction of such a measurement device, a rift opens between the nurse's own experience and the data produced by their body. Many of the nurses feel that the technology might actually increase stress in some scenarios, as they have autonomously developed means of dealing with stress and organizing their work that might be disrupted through the device: either directly (through a notification, a sound alarm, or other means), or indirectly, when the administration dismisses their work based on feedback gained from the data. This dismissal is not only a reflection of power dynamics in the workplace (in which nurses frequently occupy the lower levels), but instrumental in how their bodies are constructed and used through the technology, and the effects thereof.

4.3 Body Drift: Reversal and Control

Research so far has only highlighted issues of privacy, data control, and the perceived helpfulness of wearable technology in the workplace. Consequently, debates about social acceptance and use of the technology have rested on these cases. However, as demonstrated

[10] One could see the need for "objective" measurement data as an issue of trust in the workplace. However, the consensus among scholars of philosophy is that trust always involves some sort of calculated risk, while the measurement data aims at eliminating that risk (which exists instead when dealing face-to-face with the workers). For on overview of how technologies mediate and change the meaning of trust, see Stuart and Lucio, 2002; and McKnight, 2005.

by the interviews collected, something more is at stake. The issue of wearable sensors for nurses cannot be adequately captured through these lenses alone. Instead, other areas of concern remain largely unaddressed: the role of "subjective" judgment calls as opposed to "objective" sensor data, and possible workplace repercussions, for example, all remain outside the discussion of privacy, data use, and even of helpfulness. After all, the device might be helpful to nurses while also posing significant challenges that need to be addressed, thereby broadening the divide between acceptability and acceptance of the technology. Body Drift can capture such concerns, as they emerge from the data, and express them fully. As they arise from the interviews in a weak, largely unstructured form, Body Drift reveals these concerns as intimately connected to the body, and how the technology inscribes different, even conflicting roles in the bodies of the nurses. These roles are expressions of existing power relations in the workplace, and therefore both personal and political in nature. In this specific case, the technology politicizes the body on two distinct ways: through role-reversal, and through control.

In the case of role-reversal, the technology codes the bodies of the nurses as analogous to patients' bodies. Just as the bodies of the patients in the hospital are subject to continuous technological scrutiny, so are the nurses' bodies. Effectively, the nurses inhabit more than one body: their "working body" as caregiver, and their "monitored body" in need of care. Their own body and the technology are not separated, but rather form a continuum in which these different roles coexist and sometimes clash with one another. The concept of privacy alone cannot sufficiently capture the complexity of this situation. Even if privacy concerns are respected (such as anonymizing data, or leaving the nurses in control of the data itself), this change still happens. The nurses' bodies are still subject to observation through the technology, and thereby a "different" body is created: one made of physiological data, measurements, averages, information, but still embodied, flesh and blood, in the "working body." Drifting through two different incarnations of themselves, the nurses in this case are truly subject to the condition of Body Drift. Their own physical selves are the source and the axis of this drifting movement.

This role-reversal represents an imposition of what the "ideal" body of a nurse should be like in terms of physiological data; and it therefore represents yet another dismissal of the nurses'

embodied knowledge. Their own, subjective assessment of their status is dismissed in favor of data produced by the wearable device, and that data originates from their own body. In such a perspective, the device is a part of the body; and both combine to make a normative statement about what is deemed acceptable, healthy, and workable.

A possible counterargument to this position may hold that this role-reversal is not necessarily negative. Rather than a dismissal of subjective knowledge of nurses, it represents an effort at additional care towards them. According to such a view, wearable stress-measuring devices can be seen as specific expressions of care ethics in the workplace. It is certainly true that this role-reversal should not be denounced per se. Body Drift is indeed everywhere, and it serves as a framework of analysis, not as proof of some deep-seated moral slight. The condition of being caught in this drift is itself not normative. However, it reveals the competing politics inscribed in the body. In this case, the nurses' body is treated in an instrumental way, and so is their wellbeing. The very definition of wellbeing here, defined through measurable parameters and through a top-down approach, is inseparable from efficiency in the workplace. Where the ethics of care is about meeting and promoting the needs of care-givers and care-takers (as first outlined by Carol Gilligan in 1979), nurses and their needs are here entirely determined from the outside. Rather than representing a technologically mediated form of care, the device represents are technologically enforced norm.

Role-reversal manifests in yet another aspect, in that it supports a specific view of medicine that relies heavily on technological monitoring and large amounts of data. This approach, called Evidence-based medicine (EBM), has developed in clinical practice since the 1980s (Sackett et al., 1996). EBM favors objective science in clinical decision-making over the personal judgement of healthcare professionals. However, EBM defines such "objective science" in a uniquely narrow manner. With its insistence in large-scale randomized clinical trials, quantitative data, and technological measurements, EBM dismisses the subjective knowledge of both doctors and patients in favor of strict guidelines.The stress-measuring device for nurses seems to support such a narrow view of medical practice by dismissing the intimately personal knowledge nurses might have of their body and their needs. Many of the interviewees – both nurses and doctors – state that they already report high stress levels, but their personal judgments are not taken into consideration as they are not objective. EBM is

not without its critics[11]; and much of that criticism can be expanded to the case of stress-measuring wearable devices.

Control, on the other hand, manifests in more visible and impactful ways, as a direct consequence of technologically enforced power relations in the workplace. The issue of autonomy, control, and the power the administration has over workers emerges also more clearly from the interviews when the nurses show concern about the consequences of wearing such a device. A nurse who is too stressed, whose heartbeat spikes too often, or whose device suggests additional breaks during work hours, might be seen as a liability or simply as a bad worker. It is not unreasonable to believe that there would be consequences to such a situation, ranging from personal reprehension all the way to being laid off; "ratted out" by their own body. On the other hand, interpersonal conflicts might arise, when nurses who are identified as "more stressed" take more or longer breaks as compare to others. The body becomes a tool of control of the nurses' work, and it is a tool that does not fully obey them any longer. The body might "actively work against" the nurses' wellbeing, if the physiological data suggests they should be let go. In the meantime, subjective differences as well as other sources of stress (in nurses' personal lives or arising from interpersonal conflict in the ward) are largely dismissed, since they cannot easily be captured by the device.

4.4 Conclusion

Role-reversal and control are the two ways in which Body Drift manifests in the case of wearable stress monitoring devices for nurses. Both are expressions of those "arrangements of power and authority" that Winner defined as politics. Caught in the movement of Body Drift, their bodies are at the same time coded as care-givers and care-takers, controllers, and parts of a large and networked system of sensors in the hospital. The body is at the center of this movement, but not *a body*; the idea of a single, unifying body disappears and is subsumed by this drifting movement. The nurses are all of these different bodies at the same time, and yet always themselves, experiencing contrasting roles in their daily lives. Revealing this condition also reveals how technology enforces and expands these structures of power. Such revealing

[11] A full overview and critique of EBM would be outside the scope of this chapter. However, see van Baalen, S., & Boon, M. (2015) "An Epistemological Shift: From Evidence-Based Medicine to Epistemological Responsibility" in Journal of Evaluation of Clinical Practice, vol. 21

is the first step towards an increase in awareness and, ultimately, autonomy through political action. These will be described in detail in the final chapter.

5 Police Body-Worn Cameras

Wearable video-recording devices first became a reality in the 1980s with the mass production of microchips, which allowed for much smaller and lighter devices. The first examples of such wearable cameras were Mark Schulze's helmet cam and Steve Mann's EyeTap. Schulze, a mountain-bike enthusiast, used a bike helmet with an attached camera and custom mounting to produce the 1987 Great Mountain Biking Video, a now famous instruction video for bike enthusiasts. Steve Mann developed an early version of EyeTap, a wearable augmented reality (AR) camera, also in the mid 1980s. It originally consisted of a computer, placed in a backpack, wired up to a bulky camera covering the wearer's right eye. Both models have since gone through multiple iterations. The original helmet camera was a forerunner of today's widespread GoPro's, a line of small, wearable cameras marketed mostly at people in extreme sports. EyeTap continues its development still. Modern models are thin, elegant frames worn on the face not unlike regular glasses, with cameras, AR functionality, and a plethora of other possible uses.

Police cameras, also called Police Body-Worn Cameras (PBWCs), are a special type of these wearable video-recording devices. Police departments first experimented with body cameras in the late 1990s, but the devices were bulky and heavy, and too impractical to use. Their use only became more wide-spread in the late 2000s after technological advances allowed more smaller, more lightweight cameras, sometimes with additional functionality. For example, British police first tested PBWCs in 2006 (Associated Press, 2006). After a national pilot in Cornwall and Devon, over 40 police departments followed suit in 2010. In 2016, the Metropolitan Police Service (MPS) of London issued helmet-mounted PBWCs to all its armed officers, a policy particularly welcome because of the rise of both violent crime and fatal police shootings, including the high-profile death of a protester, shot by police in 2011 (Lydia Willgress in The Telegraph, 2016). In the US, about 95% of police departments either already use, or intend to use PBWCs (Maciag, 2016; Yokum, Ravishankar, & Coppcock, 2017). It is safe to say, then, that body cameras are becoming a reality.

The use of PBWCs is two-fold. On one hand, they are supposed to both protect police officers against unfounded accusations while also holding them accountable for unlawful behavior.

Registered video can be requested as part of an investigation and provide useful information when needed. On the other hand, the mere fact of wearing a body camera is already an attempt at preventing such problematic situations. A wide range of research suggests that both police officers and civilians behave differently when they are aware of being observed (Cambridge, J, Witton, J.,and Elbourne, D. R.. (2014). Observation tends to shift behavior towards what is deemed socially acceptable (Farrar, W., and Ariel, B. (2013); Ariel, B., Farrar, W.A., and Sutherland, A. (2015). Therefore, a discussion of body cameras cannot be separated from the broader debate on surveillance and social cooling; that is, the tendency of preventing behavior deemed unacceptable through the mere threat of repercussion, such as through observation. Academic research on the ethics of police cameras and the accompanying issues is therefore largely centered on the practice of surveillance, and how these devices enable ubiquitous and covert observation.

However, when the focus is shifted to the role of the body, Body Drift can add to the discussion by revealing how the police officers' bodies themselves become tools of surveillance. Body cameras effectively code the body as a tool of ubiquitous surveillance; they are effectively inseparable from the officer's body – or at least from their uniform, which marks them as a law enforcement officer. PBWCs therefore differ significantly from other similar technologies (such as CCTV cameras). These devices seem to share the gaze of the officer; in some ways, they even subsume it, making it part of the larger "augmented gaze" of a technological surveillance apparatus. This way, technological surveillance is not limited to fixed technology any more: it becomes as ubiquitous as the bodies of police officers. In the absence of a unified framework in privacy and surveillance legislation, a critical assessment of PBWCs that starts from the body can contribute to a larger discussion about surveillance, technology, and the bodies of both the citizens and the law enforcement officers. The aim is to shed new light into how PBWCs politicize bodies themselves.

5.1 Academic Research

Compared to wearable technologies for nurses, police body-worn cameras have received major attention. This can be due to their more immediately political nature, the already existing social discourse on police and state surveillance, a number of high-profile

controversies, or all of these combined. In fact, a number of such high-profile cases have exacerbated the debate surrounding police surveillance and accountability. Such cases include the death of British protestant Mark Duggan (along with four others), following a police shooting in Tottenham on August 4th, 2011, as well as the death of Michael Brown, shot by police on August 9th, 2014, and which instigated the Ferguson riots. Such controversial cases, and the resulting civil unrest, have sparked a debate about police accountability, surveillance, and justice, and have been instrumental in pushing the discourse about body cameras.

For scholars, the debate around body cameras is connected to, and lies at the intersection of, larger issues: justice (especially social and racial justice), police brutality and accountability, but also the lawful use of force and concerns about ubiquitous state surveillance. Therefore, the topic has attracted scholars from multiple fields. However, the debate can broadly be divided into two main categories: Ethics (whether PBWCs are permissible, and if so, under which conditions), and critical (deconstructing PBWCs and police surveillance as components of systematic oppression). A substantial amount of research is furthermore devoted to empirical studies attempting to evaluate the actual usefulness of PBWCs; however, this actual empirical usefulness is only of secondary importance[12].

The ethics of PBWCs is tightly connected to the ethics of surveillance. Arguments usually focus on the potential goods and harms of the technology, trying to strike a balance. However, in the words of Macnish, "there have been few attempts to develop a systematic normative ethics of surveillance." (Macnish, 2014) This scarcity of a coherent "all-purpose" normative framework extends from surveillance into the field of PBWCs. Therefore, recommendations about the ethics of PBWCs apply different, sometimes competing frameworks. Such frameworks can vary considerably (for example, a deontological against a utilitarian framework), in which chase what constitutes a harm or a benefit can vary quite drastically. Others are more similar, and represent different approaches within a more or less unified framework (for example, different lines of utilitarian thought), arguing which harms are accaptable and which are not, and under what conditions. Macnish himself refers to the just war tradition as a guideline for a framework of surveillance in general. Thomsen argues that

[12] In addition, the divide between empirical and philosophical evaluation further drives a wedge between the acceptance of technology and its acceptability; even when empirical studies suggest positive outcomes along specific goals, the moral "opportunity cost" may be too high.

PBWCs are fundamentally permissible, but the goods must outweigh the harms in the specific context. For example, reducing use of force might be seen as a good, but there is evidence that cameras might lead officers to act too cautiously, not applying necessary force even where it would be permitted and useful (Thomsen, 2019, forthcoming). According to Adams and Mastracci, on the other hand, PBWCs pose a threat. The increased transparency brought by their use has the potential to expose victims of violence or otherwise endangered persons (Adams & Mastracci, 2017). Overall, the debate has not yet stabilized around a single dominant framework. This may well be because of the lack of agreement between ethical frameworks of surveillance in general. As the use of PBWCs increases, ethical deliberation so far remains inconclusive[13].

The critical approach to PBWCs sees them as part of a larger system of oppression and control. This larger system includes all forms of technological surveillance – from data collection to governments spying on their citizens' emails, to security cameras in public spaces. According to Beutin, the promise of counter-surveillance and transparency of PBWCs has effectively been captured by the state in order to support a system of pervasive surveillance (Beutin, 2017). Focusing her critique in racial justice and the history of African-Americans and the police, which shows how even documented cases of racial injustice and police brutality have been largely ignored. "The United States has witnessed a cycle of hopefulness pierced by disappointment." Beutin's critique suggests that PBWCs cannot be separated from the social and political context in which they are developed and deployed. Despite the transparency, the police officer is still "in power." Goold seems to support this concern when he states how police officers on patrol had been "warned" by their sergeants that they were being watched by cameras (Goold, 2003). This privileged access to the knowledge of being watched is not without consequences; and neither is it isolated from a broader political context. In many cases, police departments have placed restrictions on how and when recordings may be requested and viewed by private citizens, further establishing a hierarchy of power.

[13] "Inconclusive" is not meant as a devaluation of scholarly contribution towards the field; rather, it refers to the lack of a singly unified framework that not only emerges from the literature, but is broadly accepted by citizens, policymakers, and police departments themselves.

At the same time, the officers interviewed by Goold started being more aware of the cameras (in this case, CCTV cameras), and then of their own actions. One officer was suspended after an unlawful arrest. According to camera footage, he had used his baton to make a simple arrest, and had applied excessive force. In the words of the officer, "I believe that because they [the magistrates] didn't understand the techniques they saw, they misunderstood the amount of force that had been used." Following this incident, the other police officers became more aware of being watched, and more wary of their own actions. The system of pervasive surveillance controls not only the citizens, but also its own enforcers. In this perspective, PBWCs can be seen as what Nikolas Rose called "technologies of power." According to Rose, these are technologies that, rather than enforcing a desired behaviour directly, push the subject towards self-policing (Rose, 1996). In a similar vein to the previous category of research, the critical perspective sees PBWCs as tightly connected to surveillance. However, it does not stop there, and rather sees PBWCs as expressions of political power – the power to take counter-surveillance back into the hands of the state.

5.2 High-Profile Cases and Pilot Studies

This entanglement of surveillance, technology, and power resurfaces more prominently – and in more dramatic detail – in some high-profile cases. These cases were selected based on their historical importance for the spreading of PBWCs (such as the Ferguson and Tottenham cases), as well as their importance in shaping the discourse surrounding such devices. Some are also taken from Beutin's account, thereby offering a critical look on PBWCs. These cases highlight both the subversive promise of body cameras as a form of citizen surveillance, and the potential abuse by law enforcement. Many of these cases were also widely debated and brought increasing attention to the topic of PBWCs, and helped shape the discourse in important ways.

Before 2014, body cameras for police were largely considered a thing of the future. Few police departments had experience with the devices. "Controlling the controllers" fell largely to citizen counter-surveillance through handheld cameras and smartphones. PBWCs were brought to national and international attention in the months following the Ferguson riots in Ferguson, MO. The riots began on August 9th, 2014 after the fatal shooting of an 18-year old

African-American man by a white police officer. Riots persisted for well over three months, and picked up in intensity in November (after a grand jury did not indict the officer(Davey and Bosman, 2014). While the unrest saw mostly peaceful protests, it turned violent on occasion, and police resorted to military tactics; the situation escalated. According to protesters and reporters, police smashed or confiscated the phones and cameras of civilians attempting to document the events. These events sparked a debate about the right to counter-surveillance and the need of body cameras for police officers. Already by the end of August did the Ferguson police department issue body-cameras to some of its officers (Gutierrez, 2014). Max Ehrenfreud of the Washington Post confidently stated that "body cameras for cops could be the biggest change to come out of the Ferguson protests," rather than, say, a nation-wide discourse on racial justice in the United States. On December 2nd, less than half a month after the jury's decision, he wrote:

> *President Obama wants to help local police departments equip their officers with cameras to record interactions with the public. The White House's proposal, announced Monday along with several other law-enforcement initiatives, is the latest indicator of a technological shift in policing that civil rights advocates hope will prevent incidents like the shooting of Michael Brown in Ferguson, Mo. in August.*

Body cameras were framed, in the post-Ferguson era, as the next step of counter-surveillance. Where citizens were increasingly scrutinized by police, there had to be a counter-movement: the demand was for more accountability and transparency. Framed as a way to extend citizen surveillance, these body cameras were hailed as "leveling the playing field."

It is no surprise, then, that initial reaction to body cameras was generally positive, even among those people that were opposed to other forms of surveillance. Healey and Stephens compare, for example, public reaction to police body cameras as opposed to Google glass (Healey & Stephens, 2017), showing that public opinion about PBWCs was generally positive even two years after the Ferguson unrest. Through an analysis of public discourse and media coverage, they reveal how public perception of, and discourse about, the two technologies was fundamentally different, despite being two apparently similar devices. The use of Google Glass was seen as "selling out" or at least uniting one's own vision to that of a private company. The use of Glass meant seeing the world through the eyes of a sinister private tech-

giant. Instead, PBWCs were seen as useful technology that could increase transparency in controversial criminal cases and accountability of the police. The push for PBWCs was framed as a grassroots movement, a solution emerging from the problems revealed by the Ferguson unrest. This stood in stark contrast to Glass, perceived more as a top-down fashion trend for the wealthy imposed by tech elites[14]. Nevermind the substantial pressure put forward by then-president Barack Obama (as reported by Ehrenfreud), or by other police departments who had already experimented with the devices: PBWCs were a device "for the people.[15]" Healey and Stephens conclude that, even in 2017, PBWCs were mostly framed as a useful technology. It requires regulation and support, yes, but it is essentially beneficial.

However, some other cases have shown how the entanglement of politics, power, and technology is too not solved by PBWCs. Instead, these technologies serve as a symbolic form of accountability, while not challenging existing structures of power at all. According to Beutin, the rhetoric of police self-monitoring aligns discursively (albeit not politically) with with citizen's demands for more accountability. Police began to circulate a narrative of "officer safety" in parallel to the adoption of body cameras. This rhetoric of "objective truth" through video recording "oversimplifies how visuals are made meaningful within social contexts, while overstating their potential effectiveness." (Beutin, 2017). She gives the example of cases in which counter-surveillance has been instrumental in bringing to light police injustice, but has ultimately failed its promises. On more than once occasion, counter-surveillance itself proved to be insufficient, and it took protests or significant legal action to enforce consequences (when at all). In such a critical view, the self-monitoring of police is seen not as increased transparency, but as an attempt at taking back control of police monitoring, by placing the power of recording, storing, and evaluating the video within the police itself.

Control over surveillance data is an important concern for Beutin. As long as the police controls who has access to the footage, and under what conditions, they find themselves in a position of power over civilians. Privacy concerns are then also handed over to law

[14] This perception might be in part motivated by the steep price tag of Goggle Glass ($1500)

[15] However, even public discourse did not (always) see body cameras as the best course of actions. Many also insisted that issues of racial justice required dialogue and an understanding of historical and cultural context. The US Justice Department tied funding for body cameras to to the implementation of good policing policies. More about this in the 2015 report by the President's Task Force on 21st Century Policing.

enforcement – for example, the privacy of a police officer might be protected, but footage exposing a perpetrator might be made available. Control over footage also means control over when and how such footage is released. Often, police departments withhold video recordings by saying they are part of "ongoing investigations;" multiple times, private citizens had to sue (or threaten to sue) departments in order to obtain footage. And even then, once footage is released, it is framed as something extraordinary: the case of a single bad officer, rather than of an entire system of policing.

5.3 Drifting Between Observer and Observed

These high-profile cases, the discourse surrounding them, and the pilot studies show how the issue of body cameras is complex and cannot be reduced to an issue of the surveillance of data alone. Rather, the technology sits at the complex intersection of surveillance, social justice, and citizen resistance. However, in both the scholarly research and the pilot studies, the technology has not been analyzed so far through the lens of the body. The framework of Body Drift can help to elucidate the role of the body in PBWCs, and thereby contribute to societal discourse. Specifically, Body Drift brings together concerns present in both the ethical and critical account, but focusing on the body of the police officers. Body drift reveals how PBWCs code the bodies of police officers as both enforcers of surveillance and subjects of that same surveillance; these two modes can be called outward- and inward-looking surveillance, respectively.

Outward-looking surveillance manifests itself in the more immediately recognizable way of police surveillance. However, this specific coding of the body differs significantly from traditional accounts of surveillance. The observer's gaze is subsumed by the disembodied eye of a larger system of state surveillance and control. While CCTV cameras have fixed positions, body cameras go wherever the police goes. Being in the presence of the police officer effectively means being in the watchful eye of the state – surveillance becomes more distributed, yet less visible. This changes the way citizens relate to and perceive the presence of law enforcement. While uniforms might once have invoked a feeling of security (or, in some cases, anger), now they produce a considerable chilling effect[16]. The idea is that

[16] There are certainly cases in which this chilling effect happens in the absence of technological surveillance. For example, the presence of police at political rallies or protests serves this exact purpose. However, there

someone else, something bigger, is always watching. The explicit threat of surveillance is now superfluous: Just being in the presence of a police officer leads to significant social cooling. Police officers find themselves personifying – embodying – the pervasive powers of the modern surveillance state. Their body is not fully theirs any more.

PBWCs also represent a dismissal of police officer's embodied knowledge, in a similar manner to the case of nurses. An important part of police training is to recount past events as accurately and objectively as possible. It would be naive to claim that such testimony is always honest. However, one must be equally skeptical of received narratives of PBWCs as "augmenting" the officer's gaze, as Healey and Stephens do. Seen through the lens of body drift, the device rather replaces it. The gaze of the officer becomes the gaze of state surveillance. This poses a threat both because of the chilling effect on society, and for the autonomy of the officer.

The latter is the case of inward-looking surveillance through PBWCs. Not only is the body of police officers coded as a physical embodiment of systematic surveillance – that same surveillance encompasses and controls even the officer. PBWCs offer the unique opportunity to control not only citizens, but also police officers wherever they may go. This control is not necessarily a form of public accountability. Instead, it is often a way to further extend surveillance by weeding out nonconforming officers. Goold shows how police officers were warned by their sergeants that they were being watched; In other cases, PBWCs might be used to fire or demote problematic elements within the police hierarchy, such as those that have strong privacy concerns, sympathize with protesters, or union leaders (Goold, 2003). This is particularly relevant since police departments often decide autonomously to work with companies that provide PBWCs. Economic concerns might play a role, as might the political interests of higher-ups. Goold also argues that law enforcement is a unique work structure, because lower ranks are usually associated with a larger degree of discretionality. Therefore, if one looks hard enough, and at enough footage, they are bound to find something, eventually. PBWCs make it impossible to escape such surveillance.

seems to be a difference between the idea of being watched by a police officer (or a group of officers), and the idea of having one's every move potentially be recorded and stored. Existing literature on the social cooling effect of technology seems to confirm this.

Finally, inward-looking and outward-looking surveillance combine combine to offer a bleak look at the future of law enforcement. PBWCs can be used to produce a chilling effect on society: one knows that, in the presence of an officer, they are being recorded. At the same time, they force the police officers into a narrow role for fear of repercussion: Their on actions are being recorded by the inward-looking nature of the camera. Effectively, both parties to the interaction know they can act only in ways deemed acceptable by the law – even when the law might be considered unjust. One can think of, for example, a situation akin to the Ferguson riots that represented the first push towards more police counter-surveillance in the US. With PBWCs in place, officers might find themselves face to face with a group of protesting, but peaceful citizens, but might have received the order to round up and arrest any protesters. PBWCs risk taking the human "out of the loop" by producing such a chilling effect that both parties can do nothing but act in a way that conforms to the law, or the footage can and will be used against them.

5.4 Conclusion

Outward- and inward-looking surveillance are not only augmented modes of control through cameras, but specific ways through which the bodies of police officers are coded. In one case, they become a physical embodiment of surveillance; in the second, their bodies themselves become tools to control them and make sure they follow orders. Surveillance effectively colonizes police officers' bodies for the sake of furthering itself. Such tight and pervasive control would be impossible without PBWCs, and can only work when surveillance follows the body. Body drift reveals this condition of being a body that both controls and is controlled, and can serve as a starting point for a more constructive discussion about PBWCs: one that brings together the need for stable ethical frameworks, a critical approach to surveillance, and an attention to police officers' bodies.

6. Conclusion: Body Drift and the Body Politics of Wearable Technology

Body Drift reveals how power is enforced on the body through technology. This power takes different shapes, as seen in the case studies, but proceeds through coding and norms. As stated in the chapter on methodology, these two terms constitute a central point of the re-formulation of Body Drift as a philosophical framework. “Codes” refers to the ways in which a body is seen in society, what role it is seen to fulfill: The bodies of nurses are coded as patients in a hospital-wide sensor network, for example. “Norms” refers to the rules and expectations associated with these positions within society: Police officers wearing body cameras cannot act in ways that would go against the norms laid out by the law and the regulations of their profession. In doing so, Body Drift goes beyond Foucault’s concerns of biopower as “power over life and death.” As Kroker states in his conclusion, “[a]n immediate casualty of the concept of body drift is Michel Foucault’s justly famous claim […] that power […] operates now according to a different normative standard – power over life” (Kroker, 2012). Body Drift is, rather, power over transformation. More specifically, it is power over the transformation of the body (its codes and norms) through technology that enforces politics.

Revealing this power over transformation has political consequences. As stated previously, an aim of Body Drift in this thesis is to improve public deliberation about technology by extending it to the area of the body. An example is the debate about technology acceptance and acceptability. Here, an increased awareness is a key factor – indeed, awareness if also fundamental in the new definition of Body Drift. While there are philosophical frameworks that consider the role of the body in technology, Body Drift reveals additional aspects: How the body is caught in this drifting movement of multiple, overlapping codes, and how technology lays claim to the body. As demonstrated in the case studies, privacy-based frameworks are not sufficient to reveal the full extent of these politics; neither are such frameworks sufficient to formulate normative judgments for or against the use of such wearable technologies. The reason is twofold. First, privacy concerns focus mainly on the data rather than on the subject. While the position and rights of the data subject are certainly important, “privacy” is still understood as a feature of the data, not of the subject itself. By doing so, frameworks that focus on privacy exclusively risk reinforcing a division between the data and the body that generates it. Second, on a political level, privacy frameworks may

remain inconclusive. If, according to Béland, overarching meta-arguments are largely moot points since regulation arises from organic deliberation in society, then the failure of privacy frameworks to be effectively implemented by law- and policymakers is emblematic: As long as there is a desire to implement technologies despite privacy concerns, privacy-based frameworks alone cannot be sufficient. Gauttier also remarks how people often make compromises on privacy only to have second thoughts later, once the agreements are already in place. The issue of privacy-only frameworks is not that they serve no use, but rather that they can safely be ignored by those who have an interest in doing so, and pressure to conform to existing intrusive surveillance practices is already high. Their usefulness is thereby limited until such frameworks can both become more binding, and enter public discourse more prominently. Concerns with the body show existing technologies and practices in a new light, from a standpoint that is both intimately personal and less burdened by existing practices. Body Drift can expand the areas of possible public deliberation "back to the people themselves," to their bodies rather than to their data.

A first, direct example of how Body Drift can contribute to deliberation can be found in the case studies. The workplace is already a political environment: it is a place of direct hierarchies and power relations, and these also reflect larger structures of power in society at large. Many of these are also maintained and enforced through technological means. Management can easily enforce certain positions. By outfitting every worker with a wearable stress monitoring device or a camera, the aim of "increasing efficiency in the workplace" is ubiquitously and pervasively enforced – with higher-ups having easy access to research on the usefulness of the devices, and lower-level workers often being unaware of the associated risks. Even with the best intentions, concerns only go so far as academic and especially public discourse. If the focus is always exclusively on privacy, then concerns will not be extended to other aspects, such as the body. This allows for a certain degree of persuasion which attempts to make technology accepted even if not fully acceptable, such as promising to "keep data collection to a minimum" or saying that "it ultimately benefits the worker." Concerns with bodily autonomy and control over one's own body are absent. Body Drift is, then, an attempt at broadening the discourse. The case studies in this thesis can serve then not only as demonstrative exercises of a philosophical framework, but as first examples of what such a framework might contribute to public deliberation.

Already in the case studies, then, does Body Drift assume its normative character. As stated in chapter 3, the aim of Body Drift is also to demonstrate how the body can become the "epicenter of political struggle:" from philosophical concern with technology and the body to an active movement for the autonomy of technological bodies.

However, Body Drift also has its limitations. Firstly, it is rooted firmly in posthumanism, and it assumes that a posthumanist stance towards the body and technology is not only useful, but ultimately desirable. However, other theories that have been critical of mind-body dualism have not always been posthumanist. Body Drift does in no way replace, for example, feminist philosophy of the body (nor could it ever hope to do so). Furthermore, posthumanism is a broad and diverse field which is still maturing in many ways. Even talking about "the posthumanities" is sometimes difficult, because it is unclear. This is particularly important because Body Drift is used throughout this work with a normative aim. However, posthumanism is not always normative. In fact, it is overwhelmingly descriptive – including Kroker's own work. While the attempt of turning posthumanism normative is not unique, it is still philosophically novel. This means there are less preexisting works to ground normative judgments on. At the same time, this novel character means that Body Drift positions itself as a foundational perspective, one that can be used and refined by other posthumanist authors in order to complement more fully fledged philosophical frameworks.

6.1 Politics of the Future: The Body and "Insideables"

The case studies in this thesis concerned themselves with the politics of wearable technology. These technologies were chosen specifically because of the immediacy of the concerns associated with them. PBWCs are becoming a reality for many police departments, especially in the US. Wearable stress monitors are already widespread in use, and while the nurse case is a specific case of such devices, it is by no means unique. The explicit aim of the case studies was in fact the concern with present, not future bodies; with there here and now. However, Body Drift can look at the future of technology as well. Rather than serving as an analysis of existing technology, the framework can be used to question the future. Even Josef Virek, the

inhuman mass of rioting cells, still had a body he cannot escape. Even the world's "most expensive invalid" is caught in Body Drift.

It is possible, for example, to look at the future if so-called "insideables" through the lens of Body Drift. These "insideables" are devices so small the can be implanted inside a person's body. Examples of such devices range from RFID chips that can open automatic doors or process payments, to magnets implanted into the fingers in order to "sense" electromagnetic fields. Such devices exacerbate the drifting movement of the body through multiple, fragmented experiences by virtue of being both more ubiquitous, but also "more embodied." While wearable devices can, at least in theory, simply be taken off, such is not the case with insideables. They are always there. However, they are also "less there" since they are effectively invisible: they become part of a "whole body," even more so than wearable devices. By being "more embodied" in this way, insideables can become more personal. People with magnetic implants in their fingers actually report that their tactile perception changes, and that they are able to weakly feel electromagnetic fields (for example, those emitted by security scanners). However, this also opens the door for more intrusive politics. For example, Epicenter, a startup hub in Sweden, offers RFID chip implants to its employees. The devices can be used to open locked doors in the office buildings of pay for food. However, some might see this as carrying a piece of company equipment within their own bodies. The fact that such devices disappear from view makes these politics even harder to detect. Body Drift still offers a useful framework, however, since it takes the human body and technology already as a whole, rather than looking at them as separate entities. There is no question the future of technology will be "more embodied," but posthumanist perspectives are uniquely suited to deal with such developments. The body does not "disappear" and neither does the technology; rather, they find their unity in their shared embodied existence. It is a more fluid drifting, a smoother movement, but political still.

6.2 Drifting Through the Past: Bodies and Work

As previously acknowledged in the limitations, the use of Body Drift assumes that a posthumanist approach to the body is fundamentally desirable. However, there are some fundamental differences between Body Drift and other approaches, which reflect the

differences between posthumanist conceptions of the body on one hand, and the other, "early" philosophies of the body on the other. Such theories might acknowledge the importance of the body while still drawing a clear distinction between the embodied self as opposed to technology: not a technological body, but a body with technology. Such theories might call into question the politics of the body in the workplace in fundamentally different ways.

A Marxist approach, for example, might focus on how any sort of work under capitalism is also always a politicization of the body. Technology is the means through which this is achieved, but its role is much more marginal. Relating Body Drift – as a phenomenon in society, not as a framework – to Marxism reveals the occupation of the proletariat as body-selling. Without the philosophical burden of posthumanism, which sees man and the world as connected and co-shaping each other, Marxist body drift reveals the world as subject to technological change by capitalism. The body is important still, but the single technology becomes less determinant. One need not go to wearables or insideables: street lights tell the body there is a work-sleep rhythm, machines (such as production lines) prescribe physical movements. Even bodily functions are closely monitored and policed[17]. Marxist body drift offers a view of a bleak future: one in which the proletariat sells its own body into techno-slavery for work. They need not even be conscious: technically, a powered exoskeleton or brain implants could take over the necessary functions.

Of course, such an analysis it outside the scope of this thesis. However, it is worth mentioning here because, while Posthuman Body Drift framework differs quite radically from what a Marxist Body Drift framework might look like, they have also things in common. Marxism was developed with the explicit intent of changing the material conditions of the world: "[p]hilosophers have hitherto only interpreted the world in various ways; the point is to change it" (Marx, 1969). The aim of Body Drift as a philosophical framework (if not of this thesis) is to serve as a starting point for public deliberation and discussion of technology and its politics.

[17] An example is the situation of packaging workers in Amazon warehouse. Even their toilet breaks are policed, and time limits closely enforced.

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