

Technical Mediation and Subjectivation: Tracing and Extending Foucault's Philosophy of Technology

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Abstract This article focuses on tracing and extending Michel Foucault's contributions to the philosophy of technology. At first sight his work on power seems the most relevant. In his later work on subjectivation and ethics technology is absent. However, notably by recombining Foucault's work on power with his work on subjectivation, does his work contribute to solving pertinent problems in current approaches to the ethics of technology. First, Foucault's position is compared to critical theory and Heidegger, and associated with the approach of "technical mediation" (Latour, Ihde, Verbeek). Next, a detailed study of *Discipline and Punish*, results in the identification of two distinct "figures of technical mediation". Finally, Foucault's later work on ethics and subjectivation is employed to elaborate an ethics of technology that focuses on care for the quality of the interactions and fusions with technology. Hybridization is central in the approach: it is not to be rejected, neither is it the greatest danger, but it does deserve the greatest care.

Keywords Michel Foucault · Technology · Ethics · Technical mediation · Hybridization · Subjectivation

1 Introduction

Michel Foucault would probably not have defined himself as a philosopher of technology. Still, his work does contain important insights for the field, which this paper aims to explore. Foucault's analysis of Bentham's circular prison project, the Panopticon, is well-known. The analysis is part of Foucault's analysis of how the human subject is governed and fashioned by "disciplinary power". The relation between the analysis of technology and power and Foucault's later work on ethics is barely considered, however. The elaboration of that relation opens the way for

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research into how people govern and fashion themselves through their engagements with technologies. This “extension” of “Foucault’s philosophy of technology” yields an innovative, fruitful approach to the ethics of technology. At the same time, it appears that the philosophy of technology constitutes an inspiring perspective for studying Foucault’s work.

My reading and interpretation of Foucault’s work in this paper differs in two respects. Firstly, Foucault is read through the lens of the philosophy of technology. Secondly, his earlier work is reassessed from the perspective of his later work. In this way I will recombine ideas of Foucault in a way that he has not done to any great degree: I will show how the “power of technology” can be recombined with the “aesthetics of existence” from his later work. The result is a new understanding of the human subject in relation to the influence of technology. It emphasizes how users of technology experience and operate transformations of their mode of existence by engaging with new technologies. This view on “subjectivation through technology use” offers on the one hand an alternative to the opposition between a technical and a genuine human sphere that figures in most ethical evaluations of technology (critical theory, Heidegger). On the other hand, while it has proven difficult to recombine research on “technical mediation” and “hybridization” (Latour) with ethics, this is precisely where “subjectivation and technical mediation” offers a new perspective.

The structure of the paper is as follows. In the next section I will introduce and position Foucault as a philosopher of technology. Foucault can be compared to critical theory and Heidegger, but is ultimately best associated with the “technical mediation” approach (Latour, Ihde, Verbeek). The third section explores and explicates Foucault’s contribution to the *analysis of technical mediation*. This entails a detailed study of *Discipline and Punish*, resulting in the identification of two distinct “figures of technical mediation”. The fourth and last section deals with the *ethics of technical mediation*. I discuss Foucault’s later work on ethics and his scheme of subjectivation. Next I employ this scheme for my own purpose of elaborating an ethics of technology, by using it as a framework to assess Foucault’s and other’s contemporary research into technology. The paper ends with a concluding section.

2 Was Foucault a Philosopher of Technology?

The question as to whether or not Foucault was a philosopher of technology was explicitly asked on at least two occasions, namely by Jim Gerrie (2003) and Edouard Delruelle (2003). Both authors conclude that Foucault’s work is indeed very relevant for scholars in the field of the philosophy of technology. Surprisingly, they both largely neglect Foucault’s analysis of concrete technologies, an analysis which I consider to be of central importance. The reason for this oversight appears to lie in their search for the term “technology” in Foucault’s work rather than looking for references to concrete technical objects. When Foucault speaks of “technology”, he does not mean concrete tools or machines but instead he uses the term in a broader sense, also denoting skills and methods or rationalities that govern people’s practices. Thus in *Discipline and Punish* Foucault writes about “disciplinary technologies” as methods of exercising disciplinary power. Similarly, the theme of “technologies of the

self" in his late work refers to practices by which people try to structure and stylize their way of living.

However, Foucault has on occasion explicitly explained his conception of the term *technology*,¹ as for example during an interview with Paul Rabinow on architecture. Foucault says:

(...) what interests me more is to focus on what the Greeks called the *tekhne*, that is to say a practical rationality governed by a conscious goal. (...) The disadvantage of this word *tekhne*, I realize, is its relation to the word 'technology', which has a very specific meaning. A very narrow meaning is given to 'technology': one thinks of hard technology, the technology of wood, of fire, of electricity. Whereas government is also a function of technology: the government of individuals, the government of souls, the government of the self by the self, the government of families, the government of children and so on. I believe that if one placed the history of architecture back in this general history of *tekhne*, in this wide sense of the word, one would have a more interesting guiding concept than by the opposition between the exact sciences and the inexact ones. (Foucault 2000a, p. 364)

In the bulk of Foucault's work the focus is on government, and technology is touched upon in that context. In the cited excerpt, however, Foucault begins with "hard technologies" and then explains the relation to "government". In doing so he defines an approach for a philosophy of technology: the study of hard technologies in relation to technology in the sense of government. The notable relevance of Foucault's work to the philosophy of technology is exactly this approach of revealing the role of (hard) technology for *governing and fashioning human subjects*.²

In order to bring out the relevance of Foucault's work for analyzing technology, it is important to recognize the detailed historical and empirical research—where concrete technologies play a role—which support his philosophical claims on how the subject is governed and fashioned. His work becomes all the more relevant when the shift in his work from power to subject constitution is taken into consideration. I will present such a reading of Foucault through the lens of the philosophy of technology, while at the same time combining his work on power with his later work on the subject.³

¹ I would like to acknowledge Grégoire Chamayou, who discussed this theme with me on the occasion of his (unpublished) lecture, "Foucault, philosophe de la technique", Séminaire Philosophie et sciences humaines CNRS-EHESS-ENS, Paris, January 2006. Willcocks (2006) also discusses the same excerpt from the interview with Foucault.

² "Governing" is a recurrent term in Foucault's work from his 1978 lecture on "Governmentality", onwards (Foucault 2000b). The term "fashioning" occurs in *Discipline and Punish* when Foucault speaks of the human body as "a formless clay" that is transformed—in the military—into a soldier: a "body", therefore, "that is manipulated, shaped, trained..." (Foucault 1977, pp. 135–136). In French it reads: "corps qu'on manipule, qu'on façonne, qu'on dresse (Foucault 1975, p. 138). Ian Hacking used the term in this sense in his lectures at the Collège de France from 2001 and 2005: "Façonner les gens".

³ Hans Achterhuis' call for an empirical turn in the philosophy of technology and his attentiveness to the concrete technologies in Foucault's work (Achterhuis 1998) as well as Hub Zwart's explorations of Foucault's later work in his essays on Foucault's ethics of "discontent with technocracy" (Zwart 1995) have been formative in the development of my approach (cf. Dorrestijn 2004, 2006). I gratefully acknowledge Peter-Paul Verbeek for his enduring support and collaboration on Foucault and technology, as well as his work on the theme (Verbeek 2011).

To begin, I will now compare Foucault's understanding and evaluation of the relation between the human being and technology to other approaches in the philosophy of technology. First, I will set Foucault's thinking about technology apart from a line of thought that tries to maintain a human sphere free of intrusion from technology. Next I will argue that a fundamental hybridization of technology and humans does not constitute the kind of greatest danger for Foucault as it does for Heidegger. Finally, I will show how Foucault's work on technology can be used to formulate a philosophy of "technical mediation", in line with contemporary thinkers such as Bruno Latour and Don Ihde.

2.1 Struggle Between Spheres—Critical Theory

In *Discipline and Punish*, Foucault confronts the ideal of modernization as liberation from irrational beliefs and power structures with an historical analysis that reveals instead the rise of a *disciplinary society* made up of *disciplined individuals* (Foucault 1977, p. 218). The thesis of the spread of disciplinary power clearly resembles other critiques of society and technology from the 1960s and 1970s.⁴ Many of those critiques arose, in one way or another, from neo-Marxist thought and they often evoke metaphors of struggle and radical transformation. Typically, a genuine human sphere is seen as being threatened by a sphere in which power, consumerism, and technology are prevalent. A "struggle between spheres" can be found in the classic works of Marcuse (1964), and Habermas (1970), and also in more recent works (explicitly acknowledging Foucault) by Poster (1984), Feenburg (2002), Negri and Hardt (2000), and Stiegler (2008).⁵

Foucault's analysis of disciplinary power does demonstrate some resemblance to such a two spheres approach. His concept of "discipline" as a quasi autonomous system of power is similar to a rushing sphere of technology. What sets Foucault apart is that his moral stance towards the rise of discipline remains unclear. He neither explicitly rejected the rush of discipline, nor did he formulate a program for stopping it. This moral ambiguity confused and annoyed many readers.⁶ In his following book, the first part of his *History of Sexuality* (which appeared in 1976) Foucault stated "where there is power, there is resistance" (Foucault 1978, p. 95). This immediately became a popular reference for showing that Foucault did have some kind of critical political project.

However, in one of his last texts (from 1984), "What is Enlightenment?", it becomes clear that Foucault's position is not (or at least is no longer) in accordance with the conception of a struggle between spheres. He distances himself from "projects that claim to be global or radical", instead expressing his preference for

⁴ For example Andrew Feenberg, for the purpose of his "critical theory of technology", compares Foucault's disciplinary power with Marcuse's thesis of "one-dimensional man". He considers Foucault's historical approach a "useful corrective" to Marcuse's insights that remain "very general" (Feenburg 2002, p. 67). Remarkable about Stiegler is that he does extensively refer to Foucault's later work; however, in the end he remains much closer to a Marxist scheme than Foucault does.

⁵ Other critiques of technology, for example the call for a "red line" as a limit to technical development by Fukuyama (2002), as well as the work of Ellul (1964) and Jonas (1984) employ a similar strict distinction between a human and technical sphere, however without sharing the neo-Marxist background.

⁶ Among them most notably: Jürgen Habermas, Charles Taylor and Nancy Fraser; see O'Leary (2002, p. 160).

“specific transformations” like those he had witnessed taking place in the 1960s and 1970s, for example in the relation between the sexes (Foucault 2000c, p. 316). He also offers a reformulated account of the danger:

And we have been able to see what forms of power relation were conveyed by various technologies (...). What is at stake, then, is this: How can the growth of capabilities [*capacités*] be disconnected from the intensification of power relations? (Foucault 2000c, p. 317)

The danger of “discipline” as a quasi autonomous system has been replaced by critical attention to “disciplinary tendencies”. The tone is clearly more optimistic than in *Discipline and Punish*. This is not, however, due to a simple reversal of winning chances on the front line of the struggle between spheres. Instead, Foucault makes explicit that power relations are inescapable; however this does not mean that humans are merely victims of power. I will further elaborate this point by comparing Foucault with Heidegger.

2.2 Ontological Deception—Heidegger

Martin Heidegger's philosophy of technology offers the most substantial example of an analysis where the relation between humans and technology tends to be fixed at a fundamental, ontological level. In *The question concerning technology* (1977) Heidegger asserts that our world is not only full of technical objects, but moreover, on a deeper level our way of perceiving and interpreting the world has been reduced to framing everything in technical terms. The contemporary understanding of Being, termed *Enframing*, makes the world appear as a stock of recourses at the command of man.

Heidegger's position is beyond the model of a struggle between spheres, because there is no place for a human sphere which is not yet affected by the technology. In a similar way, Foucault affirms in *Discipline and Punish* that the human subject is fundamentally marked by disciplinary power.

The man described for us, whom we are invited to free, is already in himself the effect of a subjection much more profound than himself. (...) The soul is the effect and instrument of a political anatomy; the soul is the prison of the body. (Foucault 1977, p. 30)⁷

Moreover, in “What is Enlightenment?”, following his position against radical transformations, Foucault formulates a doubt that sounds like Heidegger's “gloomy view”:

(...) if we limit ourselves to this type of always partial and local inquiry or test, do we not run the risk of letting ourselves be determined by more general structures of which we may well not be conscious, and over which we may have no control? (Foucault 2000c, p. 316)

⁷ While Plato has Socrates argue in the *Phaedo* for the existence of a “soul” to be liberated from imprisonment by the “body”, Foucault suggests that the soul is only constructed in the imprisonment. The soul is produced by discipline on the body, and then also serves discipline by monitoring the body.

Ultimately, however, Foucault's evaluation following this insight differs from Heidegger's. While affirming the deep, ontological connection that Heidegger draws between humans and technology, Foucault nonetheless rejects the gloomy conclusion and asserts that humans have to accept the impossibility of a sovereign position. In a note in his working papers, written when he was working on his final books, Foucault explicitly sets out the difference between himself and Heidegger.

For Heidegger, it was on the basis of Western *tekhnē* that knowledge of the object sealed the forgetting of Being. Let's turn the question around and ask ourselves on the basis of what *tekhnai* was the Western subject formed and were the games of truth and error, freedom and constraint, which characterize this subject, opened up. (cited in Gros 2005, p. 523)

Contrary to Heidegger, Foucault holds that there is no genuine subject that is free of constraints or not yet affected by technology. In "*What is Enlightenment?*" Foucault asserts that, for him, the discovery of the historical conditions of the subject is a problem that characterizes the stakes of modern philosophy. What he calls the "attitude of modernity", is the will to address the history of how the human subject has been governed and fashioned. Foucault then unfolds an approach to philosophy that he terms "critical ontology of ourselves", which he conceives as being:

an attitude (...) in which the critique of what we are is at one and the same time the historical analysis of the limits imposed on us and an experiment with the possibility of going beyond them. (Foucault 2000c, p. 319)

Thus Foucault advocates philosophical research following a double-sided formula: on the one hand promoting historical investigations into the ways in which modes of existence have been conditioned so far, and on the other hand, suggesting practical and experimental activities aimed at changing one's mode of existence.

2.3 Hybrid Relations—Philosophy of Technical Mediation

Foucault's critical ontology of the self distinguishes itself in its attentiveness to the emergence and constitution of new modes of human existence. This corresponds with the approach of "technical mediation" in recent philosophy of technology. Reacting to the abstract and gloomy views of Ellul and Heidegger, scholars such as Don Ihde and Bruno Latour have promoted a more empirically orientated philosophy of technology. Their work is interdisciplinary, incorporating empirical and historical research, and is associated as much with the field of Science and Technology Studies as with Philosophy. Building on the work of Ihde and Latour, Peter-Paul Verbeek (2005) has outlined a practice oriented philosophy of technology with "technical mediation" as its main theme. He endorses research into "what things do": the role of concrete technologies as mediators of human experience and action.

A basic notion in the mediation approach is that human existence is always influenced by technology. There is no original, and certainly not a clear cut distinction between humans and technology. Instead what is of interest are the different kinds of human-technology relations (Ihde 1990). Humans are always *hybrids* of supposedly human and technical aspects (Latour 1993). A problematic aspect of this account of humans as hybrids is that it undermines the ethical stakes that inspired

much of the philosophy of technology. Or, as Langdon Winner complained, research on technology in the style of Science and Technology Studies had become “depoliticized” (Winner 1993).

Paraphrasing the form of Winner's conclusions, the following could be said with respect to ethics in relation to technical mediation. While the approach of critical theory was directed towards confining the sphere of technology in order to protect a core human sphere, this attempt now appears infeasible, as the presupposition of clear boundaries and limits are deemed illusory. In an approach like Heidegger's, hybridization is recognized as the greatest danger, while mediation theory just emphasizes the inevitability of it. The cost of a more detailed account of technical mediations and the hybrid form of human existence seems to be the loss of a solid ground for ethical claims.

Bruno Latour's position is very interesting in this respect as he has endeavored to bridge the gap between his descriptive analysis of technical mediation and ethics. Latour asserts that technologies often guide or constrain human action. Car drivers' slowing down for a speed bump does not occur as a result of their willingness to obey the law but is the result of the intervention of a technical object. According to Latour's analysis, the action was “delegated” from humans to technology. This does not mean the end of ethics, he thinks. Instead, he claims that those (sociologists) who see a decline of morality (under postmodern conditions), would find the “missing masses of morality” by recognizing that action is often delegated from humans to artifacts (Latour 1992).

Usually, human agency and freedom are seen as necessary preconditions for ethics. Only free subjects can respond to the call of a moral principle or law. Latour's approach does not address ethics in this framework; indeed his approach addresses quite the opposite, that is, determination by external forces. Latour does not discover the “missing masses of morality”, but rather reveals the “missing masses of disciplinary power”.⁸ Foucault criticized the understanding of the autonomous subject by revealing the history of disciplinary power in governing and fashioning human beings. Latour's research extends Foucault's historical method with a method to reveal how the mundane technologies of today constrain humans.

Thus far an understanding of the subject and of freedom and agency in relation to technical mediation is lacking. As long as this understanding is lacking, every instance of the influence of technology on human action can only appear as a constraint to freedom and thereby a negation of ethics. Foucault's turn from the analysis of power to ethics helps to address this problem. While Foucault's earlier work is rightly seen as a dramatic attack on the autonomous subject presupposed in modern ethics, his later work is concerned with developing an alternative ethical framework wherein “the subject” is not eliminated by revealing its external conditions. Foucault begins to understand ethics as the active engagement of people with governing and fashioning their own way of being in relation to conditioning circumstances. An extension of that framework to the problem of technical mediation opens up a new perspective for ethics in relation to technical mediation.

⁸ A similar case is made by Soren Riis (2008) for Heidegger and Latour. In his exploration of the similarities between the two, he affirms that Latour does not depart from Heidegger, but instead, that Latour's *actor-networks* can be interpreted very much in line with Heidegger's *Enframing*.

2.4 Technical Mediation and Subjectivation

Although the similarities between Foucault's analysis of modern society and the analysis of critical theory or Heidegger have been often observed, I claim that a more important and lasting contribution centers on the relation between Foucault's work and the mediation approach in the philosophy of technology.

Foucault's contribution to a philosophy of technical mediation is twofold, following the double-sided approach of his critical ontology of the self. First, his historical analysis of disciplinary power addresses the role of technical mediation in how the subject is governed and fashioned. His work complements the work of other researchers with original examples and an analysis of the transformative power of technology. His particular contribution, which is the subject of the next section, is visible in the distinction between two different "figures of mediation".

Second, Foucault's call to complement historical analysis with experiment points towards an ethics of technical mediation. The analysis of how technologies govern and fashion humans becomes integrated into a broader philosophy of subjectivation. The influences of technology no longer appear by definition as a negation of human agency and freedom, but technical mediations becomes a concern and what is at stake human practices of governing and fashioning oneself and others. With this Foucault's ethical perspective brings something new which has so far been largely absent from the approach of mediation theory.

3 Figures of Technical Mediation

In order to explicate Foucault's contribution to research in technical mediation, I will turn to an analysis of the exact role technology plays in the way people are governed and fashioned in *Discipline and Punish*. A detailed account of several parts of Foucault's study reveals two different figures of technical mediation.

3.1 Technical Determination of Power Relations

In order to investigate in detail the figures of technical mediation that Foucault discerns, I first turn to the Panopticon and Foucault's analysis of it. The Panopticon is Bentham's plan, dating from the end of the eighteenth century, for a circular prison. A tower in the center allows the guard to inspect the cells which have been laid out as an annular building around the tower. The cells have windows on the outside and on the inner side, facing the tower. The tower is equipped with a net curtain so as to allow the guards to inspect the cells without being seen themselves by the prisoners. This is the essential architectural feature that generates a specific power relation between guard and prisoners. Following Bentham, the technically supported regime of continuous inspection would have an effect comparable to a strong form of moral conscience, self-inspection. It would make a prisoner "lose the power to do evil and almost the thought of wishing it" (Bentham 2002, p. 14).⁹

⁹ The quote is from a French edition, originally from 1791, a condensed translation and of the English text that was also first published in 1791. Cf. Bentham (1995) for a contemporary English edition.

The relevance of this “simple architectural idea” (p. 11) is not restricted to the prison. Bentham claims that his idea is a great invention that can be used wherever a number of people have to be observed. He excitedly deliberates on the idea of ubiquitous surveillance as a general model for society, in which everyone inspects everyone else (Foucault 1977, pp. 200–209). Foucault was equally excited about the idea, but for him, as for other critical thinkers, Bentham's utopian image of a panoptic society rather represented a dystopian nightmare.

The Panopticon is the most famous example of a technological object analyzed by Foucault. Foucault was attracted to it because it represented such an emblematic example of how modern institutions exercise power over people. Technology in the sense of a material object is never Foucault's main focus. However, even when Foucault approached the Panopticon from the broader perspective of the government of people, the remarkable architectural and material features pushed themselves to the fore. At times, Foucault does single out the material aspect of the Panopticon and he makes explicit the figure of technical mediation that he sees at work. The following fragment is particularly illustrative:

Power has its principle not so much in a person as in a certain concerted distribution of bodies, surfaces, lights, gazes; in an arrangement whose internal mechanisms produce the relation in which individuals are caught up. (p. 202)

In the context of modern, disciplinary society, power does not mean having the authority to govern others. The effect of governing and influencing people has now become integrated into the material and procedural layout of disciplinary institutions. This is particularly evident in the Panopticon, in which the configuration ensures that someone in the central tower can see everyone in the surrounding cells without being seen. Technical mediation here takes the form of strong compulsion, albeit not by direct mechanical force, but via an inescapable play of power relations. Once the panoptic configuration is installed, the specific power effect takes effect. I will therefore characterize this first figure of technical mediation as the *technical determination of power relations*.

3.2 Training of Technically Mediated Routines

The determination figure related to the Panopticon is appealing for reasons of clarity and strength. Interestingly, Foucault does not use the Panopticon to discover the structure of disciplinary power. The Panopticon only serves as the summit of his claims about disciplinary power. After 50 pages of historical description and analysis of discipline in the military, schools, factories, and hospitals, Foucault concludes by doubting that it may be “somewhat excessive to derive such power from the petty machinations of discipline” (p. 194). The Panopticon is introduced only then so as to remove any doubts about the importance and scope of the claims about disciplinary power. Prior to the turn to Bentham's Panopticon, the section on discipline is concerned with the structure of discipline in institutions. These pages are equally important for the philosophy of technology as the pages on the Panopticon, because Foucault develops another figure of technical mediation. The research is focused mainly

on documents from the archives containing directives and instructions. One example of such an instruction concerns the training of writing at school:

(...) the part of the left arm from the elbow must be placed on the table. The right arm must be at a distance from the body of about three fingers and about three fingers from the table, on which it must rest lightly. The teacher will place the pupils in the posture that they should maintain when writing, and will correct it either by sign or otherwise, when they change this position. (p. 152)

Another example concerns directives for shooting from the military:

Bring the weapon forward. In three stages. Raise the rifle with the right hand, bringing it closer to the body so as to hold it perpendicular with the right knee, the end of the barrel at eye level, grasping it by striking it with the right hand, the arm held close to the body at waist height. At the second stage, bring the rifle in front of you with the left hand (...). (p. 153)

It is not the case in these examples that once the technical object is introduced, a certain effect of power is necessarily imposed. However, this is not to say that these practices and the technologies used do not have any impact on the subject. Foucault emphasizes the training of routines which are involved in the assembling of the human body and technologies:

This is an example of what might be called the instrumental coding of the body. It consists of a breakdown of the total gesture into two parallel series: that of the parts of the body to be used (...) and that of the parts of the object. (p. 153)

As practically all gestures of the body depend on some sort of association with technologies, these fusions or hybridizations of humans and technology structure our mode of existence.

Furthermore, what is specific to Foucault's analysis is that it becomes clear that these fusions between humans and technology are not just given, but have to be forged by training. The revelation of the aspect of training (drilling in the military context), facilitates awareness of the transformative mediations of such mundane technologies, the use of which seems very natural and not morally significant. The mediation effect in these examples does not have the form of an inescapable coercion, but takes the form of a structuring of routines. By drawing attention to the degree of training necessary for these routines to function, Foucault makes clear that the pencil and rifle are not just used, but become integrated into the user's mode of existence. This second figure of technical mediation in Foucault is adequately described as the *training of technically mediated routines*.

3.3 Figures of Technical Mediation

It appears that *Discipline and punish* does not conclude with one ultimate theory about the power of technology, but rather two different exemplary mediation effects, or "figures of technical mediation" can be discerned. The first, elaborated in the context of Bentham's utopian project of the Panopticon, can be characterized as the *determination of power relations*. Looking closely at Foucault's analysis of concrete,

existing disciplinary institutions leads to the discovery of a second mediation figure, where the impact is less coercive, only imposed by *training of technically mediated gestures*.

In the aforementioned interview on architecture, Foucault stresses that the determination figure of technical mediation should not be seen as the ultimate one. In the discussion, he refers to a study on the social effects of the emergence of the chimney in houses:

It is certain, and of capital importance that this technique [the chimney] was a formative influence on new human relations, but it is impossible to think that it would have been developed and adapted had there not been in the play and strategy of human relations something which tended in that direction. What is interesting is always interconnection, not the primacy of this over that, which has never any meaning. (Foucault 2000a, p. 362)

As discussed before, Foucault's analysis of disciplinary power and the Panopticon does show similarities with the figure of a struggle between spheres that can still be won (critical theory) or appears to be lost (Heidegger). However, here Foucault clearly advances an understanding of the importance of technology in line with the approach of technical mediation: affirming that interconnections are important, and not the primacy of either a technological or a human sphere.

Discipline and Punish—the book in which Foucault most extensively takes technology into account—contributes to the understanding of technical mediation by showing how the human subject is fashioned and governed by technology. I identified two exemplary effects, two figures of mediation that are explicitly mentioned and elaborated by Foucault. These are only the principle figures; a more detailed account would show more variations.¹⁰ In my interpretation, Foucault does not offer one ultimate theory about technology, but he does suggest that an exploration of the multiple figures of technical mediation is the appropriate continuation after the acknowledgement of hybridization.

4 Subjectivation: Ethics and Technical Mediation

With the double-sided formula of a critical ontology of the self, Foucault promoted historical research into the conditions of the subject and a reflection on and experimentation with new forms of existence. Until *Discipline and Punish*, Foucault's work was concerned with how the subject had been governed and fashioned. The second part, of governing and fashioning one's own existence, was largely absent. Moreover, if it was present, it was treated in a biased way, as the formation of modes of existence was presented as resulting exclusively from disciplinary power. Only in his later work

¹⁰ For example, using the approach of technical mediation figures, it is possible to trace (in *Discipline and Punish*) the references that enabled Foucault to learn to acknowledge the importance of technology. Foucault (1977, p. 141) cites Ariès (1960) from whom he may have learned that *social and technical change accompany each other*. He also refers to Canguilhem (1966) (Foucault 1977, p. 184), who affirms that *normalization processes as found in technology development also effectuate normalization of social relations*. Finally, Bentham's Panopticon allowed Foucault to elaborate on the notion that the influence of technology can be all pervasive and determining.

did Foucault begin to take into consideration people's own concerns about the conditions of their existence. Research into ancient arts of existence provided inspiration to Foucault with respect to how to give expression to this theme and to develop it in relation to moral philosophy. In this section I will introduce Foucault's turn to ethics and the theme of subjectivation. I will then apply Foucault's framework of subjectivation to the domain of technology, in order to work towards an ethics of technical mediation.

4.1 Ethics of Subjectivation

Foucault worked on a series of books on the history of sexuality. The first part from 1976, *The will to Knowledge*, gives a programmatic outline of the project, very much in line with the approach followed in *Discipline and Punish*. However, the project took a very different direction. In later books, *The Use of Pleasure* and *The care of the Self* from 1984, the focus is no longer on modernity but on ancient Greece and Rome. Rather than studying the mechanisms of power that subjugate people, Foucault focuses on how people govern and fashion themselves. The resulting books are about the history of sexuality, but also have much wider relevance as a genealogy of ethics.

Foucault's earlier research into power seemed incompatible with ethics. Indeed, it was from beginning to end a vehement critique of that basic assumption in modern philosophy which is the notion of the free, autonomous subject. In Antiquity, Foucault discovered that ethics rather concerned the "art of living". This ethics did not employ the figure of a free subject called to respond to the duty of moral law. Instead, the emphasis was on the practical skills and exercises of governing and fashioning oneself. This practical knowledge was concerned with how one achieves mastery over one's own course of action and way of living. In this framework, the subject does not function as a necessary presupposition, but is itself the issue at stake. Thus, Foucault discovered a conception of ethics where the central concern is with the constitution of the subject, the emergence or formation of a self with self-reflexive experience and the competence of self-conduct. Foucault uses the term *subjectivation*, denoting the process of "becoming a subject".

This extension of moral theory, from reflection on free subjects responding to law, to the formation of specific instances of subjectivity, makes it possible to link Foucault's work on power to ethics. In retrospect, subjectivation can also be seen as the main theme in Foucault's earlier work. In fact, Foucault showed that disciplinary practices *shape* the kind of subject that modern philosophy takes for granted.¹¹ This earlier research is now being reconsidered and complemented by research into how people engage in shaping their own mode of being. As noted before, Foucault expressed this himself with the double-sided formula of a critical ontology of the self (exploring historical conditions and experimenting with changing the conditions). This formula can therefore be seen as an attempt to integrate the discovery of the ancient ethics of subjectivation with a contemporary critical philosophical approach. The experimental approach to transforming one's own conditioned mode of existence converges with Foucault's call for a new "aesthetics of existence".

¹¹ Similarly, Foucault's work on knowledge was implicitly concerned with the kinds of subjects that are evoked when people *define* themselves and others as subjects through everyday and scientific discourse.

Foucault asserts that subjectivation is fundamental to any ethical system. His genealogy of ethics reveals how, during the course of history different understandings of the subject and different experiences of being a subject have prevailed. In structuring this genealogy, Foucault distinguished four dimensions of subjectivation and investigated how different ethical systems differ along these dimensions. The scheme of subjectivation comprises ethical substance, subjection mode, ethical elaboration, and telos (see Foucault 1992, pp. 25–32; 2000d, pp. 262–269).¹²

The same scheme can also be employed for tracing and articulating shifting ethical experiences of today. Foucault himself suggests—particularly in interviews—that a contemporary renewal in ethics could be inspired by the ancient aesthetics of existence. In the following paragraphs, I will follow up on Foucault's suggestions and apply the four dimensions of subjectivation to the contemporary problem of the relation between humans and technology. I will reconsider the influence of technology on humans from the perspective of subjectivation. How have humans perceived the influences of technology and accommodated them in elaborating themselves as hybrid beings, attached in many ways to technologies? I will introduce an analysis of figures of technical mediation in a broader approach, that is, an ethics of technical mediation.

In the next four paragraphs, I will discuss the four dimensions of subjectivation separately. First I will explain what Foucault refers to with each specific aspect. Next, I will sketch how Foucault himself used it for his history of ethics and for a renewal in contemporary ethics. Finally, I will explain how the subjectivation aspects can be used in the project of elaborating a contemporary ethics of technical mediation.

4.2 Ethical Substance: the Hybrid Self

With the *ethical substance*, Foucault designates the part of the self where people's concern and efforts of improvement are directed, the substance that is being fashioned. Foucault's genealogical research addresses how different ethical systems operate with different conceptions of the self. In the case of sexual ethics, the point for the Greeks was to make appropriate use of the range of possible acts of pleasure, thereby fashioning one's moral character in confrontation with the opinion of others. Later, in Christianity, the self was identified with intentions that had to remain free of inappropriate desires, or seductions by an evil power. The will is also the center of Kantian ethics. In ancient sexual ethics, acts of pleasure and their social consequences functioned as the ethical substance, while in Christian and modern ethics this shifted to the will which must be adjusted to God's will or to universal reason. Ancient ethics

¹² As Deleuze (1988) first noticed, Foucault's scheme retrieves the Aristotelian fourfold of material, formal, efficient, and teleological causation. In Heidegger's essay on technology, the same causality scheme structures the argument. Foucault's ethics, as combined with technology in this paper, and Heidegger's approach to technology thus share the reference to the Aristotelian modes of causation. This offers the possibility of comparison. For Heidegger, engaging with technology implies reducing the multiplicity of causation to efficient cause alone, which means the "forgetting of Being", he thinks. Foucault's late work implicitly replies to Heidegger, claiming that by turning attention to how the subject engages in the causation of itself (subjectivation), the various dimensions of causation can still be found. This means that technology is indeed always involved in the constitution of the subject like Heidegger feared, but at the same time it means that technology is not as one-dimensional as Heidegger suggested. Cf. the earlier quotation from Foucault in Gros (2005).

functioned without this notion of a will, just focusing on actual acts and their consequences for a person's virtuous, respectable moral character.

Whereas Foucault studied subjectivation in relation to sexuality, I want to investigate the relation between subjectivation and technology, in order to elaborate a contemporary ethics of technology. The question is then how people perceive and conceptualize the influence of technology on themselves (and others, human beings in general). The different "figures of technical mediation" that Foucault and other scholars have discovered are such problematizations. Articulations of the mediating effects of technology are simultaneously ethical problematizations of how one's own mode of existence is affected by technology. Whereas the ancients tried to make sensible use of pleasure, today's challenge concerning the ethics of technology is to carefully engage with technologies because of the implied self-transformations. The ethical substance, the self as it appears as a matter of concern and care, can be defined as *hybrid self*, or the *technically mediated self*. In this way, I can transfer research on technical mediation into the framework of subjectivation. The influences of technology on humans become an integral part of ethics, as they constitute the matter that ethics cares about and gives form to (ethical substance).

My conception of the hybrid self as ethical substance differs from the ethical substance functioning in critical theory and Heidegger. Critical theory's conception of the rush of a technology against which a genuine human sphere must be defended, employs an idea of human existence that is essentially free of technology but threatened with erosion by technology as ethical substance. A subject equally unaffected by technology figures in Heidegger's thought, although he fears the erosion is beyond the point of return. I argued that, in line with the approach of technical mediation, Foucault argues against a fundamental dividing line between what is human and what is technical. Ethics of technology does not entail defending what is genuinely human, but caring for the quality of one's hybrid mode of being.

The recombination that I make here between Foucault's analysis of technology and his ethics of subjectivation opens up a new space in the philosophy of technical mediation. Thus far, technical mediation research has focused on describing "what technologies do". In the framework of subjectivation and technology, the focus is on "how technologies change what I do, what humans do". The analysis of technical mediation becomes a hermeneutic activity of exploring the influences on human existence that are part of the broader, ethical project of governing and fashioning one's own existence. This does entail "a return to the subject". However, this hybrid self is very clearly not a return to the modern conception of the free, autonomous subject.

4.3 Subjectivation Mode: from Law to Style

The second aspect which Foucault discerns as part of the structure of subjectivation is the *subjectivation mode*. It denotes the way in which people feel forced, invited, or encouraged to engage in ethics. For centuries, the main motive for ethical engagement was the acknowledgement of a duty, stemming from divine or rational moral laws. In Antiquity, Foucault finds, the motivation for moral behavior rather had an aesthetical character, a will to style. With respect to sexual ethics, the ancients hardly acknowledged absolute codes, but felt that they had to make proper, moderate use of

acts of pleasure, because their behavior would establish a style of living and their publically visible character. The modern configuration of the subject as free will called to obey absolute law is confronted here with the ancient alternative of a moral character to be configured from multiple possible behaviors where the motive to do so is to attain style.

In the modern West, ethics was identified with obedience to such a degree that the process of subjectivation was concealed. It was largely overlooked that the modern free but obedient subject was not given, but, as Foucault had tried to reveal, was fashioned by disciplinary practices. Initially, Foucault had contested code-based modern ethics, by revealing its hidden complement of disciplinary power. He went on to consider the decreasing authority of absolute laws as a broader phenomenon that prompted the articulation of an alternative to obedience for a contemporary ethics.

... the idea of ethics as obedience to a code of rules is in the course, at the moment, of disappearing, has already disappeared. And the answer to this absence of ethics is, must be, a research of the kind of an aesthetics of existence. (Foucault 2001, II, p. 1551.)

Foucault's genealogy of ethics shows that abandoning compelling law implies the end of a certain kind of ethics, but does not need to be the end of ethics altogether. In the ancient arts of living, the reason for engaging in ethics was not duty but the wish to give style to one's existence and to earn the respect of peers. This ancient model served Foucault as an example when he tried to consider an alternative ethics encountering challenges raised by today's changing ethical experience.

The idea of the *bios* as a material for an aesthetic piece of art is something that fascinates me. The idea also that ethics can be a very strong structure of existence, without any relation with the juridical per se, with an authoritarian system, with a disciplinary structure. (Foucault 2000d, p. 260)

Foucault thus considers how contemporary ethics can once more find its motive in an aesthetics of existence, where the subjectivation process could again take the form of care of the self instead of institutionalized disciplinary practices under the authority of law.

With respect to one's engagement with technologies, attaining *style* can also be a motivation as an alternative to the now problematic notion of absolute law. Ethics can comprise care for the style and the quality of our hybrid modes of existence. This seems a logical but as yet hardly elaborated extension of the philosophy of technical mediation.

A comparison with Latour can illustrate this point. When Latour used the notion of delegation as a means of solving the problem with morality and technology, his vocabulary remained caught within the modern framework of code-based ethics. For 'delegation' meant the transfer of 'obligation' from 'our hearts' to our 'apparatuses' (Latour 2002, p. 253; 1992). Moreover, although Latour further declared that the form in which one usually recognizes morality, that of 'obligation', 'does not properly belong to it' (Latour 2002, p. 254), he has not yet offered an elaboration of what ethics can be if it is not obligation. Foucault's proposal for an aesthetics of existence offers such an ethics that is not code based, and is therefore helpful in further elaborating an ethics of technical mediation.

The decisive point is that behavioral constraints by technologies should not be seen as replacing moral law, but as part of the hybrid character of the self that one can problematize and actively shape. Technical mediations should thus be understood under the aspect of the ethical substance and not of the subjection mode. Ethics is then not about obeying, subjecting to technology, but about concern for the influences of technology and the wish to give style to our hybrid form of existence.¹³

4.4 Ethical Elaboration: Training Practices for Hybridization

Moral laws or aesthetic choices of style may define a mode of existence, but effort and exercise is required to adjust one way of being to this form. Foucault calls this *ethical elaboration*. This aspect of ethics has been neglected in theories of ethics which focus on compelling codes, but was at the forefront of the ancient aesthetics of existence. Foucault emphasized the importance of what he called *technologies* (in the sense of method) or *practices of the self* in ancient ethics, such as meditation, diet, and consultation with a mentor. In modern times, these exercises have become separated from ethics. The practice of the care of the self has become progressively delegated to disciplinary institutions.

With respect to technology, studying ethical elaboration involves exploring the activities whereby people get attached to technologies and accommodate mediation effects in their existence. For a contemporary ethics of technology, ethical elaboration can be defined as *training practices for hybridization*. In *Discipline and Punish*, Foucault extensively treated the training of routines, but exclusively in the context of disciplinary institutions. At best, training took on the character of education, but mostly that of drilling. The study of subjectivation in relation to technology use, inspired by the late Foucault, must be disentangled from the exclusive focus on drilling, to focus instead on how every day practices of using technology implicate subjectivation. For example, training of technically mediated gestures is necessary even to be able to sleep in a bed. It may seem convenient, comfortable, and very natural, but it has to be trained. Children frequently drop out of their beds. In addition, they need training and habituation to stop them wetting their beds. Once these skills have become routines, one tends to forget ever having learned them. However, every day experience and behavior is dependent on these basic skills and related technologies.

In my view, three domains appear privileged for research on the constitution of subjectivity through technology use. The first domain is the *domestication* of technology as studied by historians of technology and researchers in Science and Technology Studies. Historian Edward Tenner (2003), for example, has emphasized how the innovation of technologies is accompanied by and depends on the development of techniques of use. Tenner follows up on Marcel Mauss' concept of *body techniques*. He describes how the development of technologies (for example specific footwear, from flip-flops to running shoes) and techniques of using (particular walking gaits, up to foot adjustments) mutually influence and support each other. Knut Sørensen—a proponent of “domestication studies” in Science and Technology Studies—focuses

¹³ In this respect, Verbeek (2011) remains closer to Latour than to my interpretation of Foucault, when he identifies the constraining power of technology as the mode of subjection.

on the way in which users actively “tame” new technologies. According to Sørensen (2005), the domestication perspective “adds subjectivity” to Latour’s actor–network approach, where users are approached as mere effects in networks of relations. Foucault’s framework helps to bring out the ethical relevance of this addition of subjectivity. Such taming should be seen as exercising work, carried out in order to accommodate the effects of technology, whereby people transform their own mode of being. In Foucault’s framework this can be rephrased as the *ethical elaboration*, and thus is an integral part of ethics as subjectivation. Combining these existing research traditions with Foucault’s framework of ethics as subjectivation makes the relevance for ethics much clearer.

Pilots and usability tests in design and engineering comprise a second domain in which Foucault’s ethics can help to articulate the ethical relevance of current practice. Tests are normally performed to examine the technical functioning of new products. These moments also offer a privileged possibility to observe technologies in use for the first time. From the perspective of subjectivation, it should be stressed that testing must not be seen as a last check moment, which marks the transfer of a product from its design phase to its use phase. Instead, pilots and tests offer the possibility to see how the accommodation of technology by users takes place, in an experimental setting, and with the possibility of making adjustments to the technology (for an example see Dorrestijn 2009).

Artistic explorations of technology comprise a third domain in which training practices for hybridization can be studied. Petran Kockelkoren (2003) has shown that artists have often dealt with the confusion caused by new technologies. Following Helmuth Plessner, Kockelkoren analyses the user’s confused experiences as a “decentering” of the subject. As artists explore the challenges of new technologies, they contribute to a cultural learning process, that, again after Plessner, can result in a “recentering” of the subject. Therefore Kockelkoren is interested in art and fairground installations where visitors can experiment with new technologies. At the time of the introduction of the train, one could find train simulating installations at fairgrounds, where panels with painted landscapes were moved by at high speeds while visitors were seated in a train wagon. Such installations, as well as poetic descriptions and paintings of landscapes blurred by the rapid movement, Kockelkoren analyses, allowed people to get their senses accustomed to the high speed experience. Not all art is concerned with training practices for hybridization, but Kockelkoren (2007) affirms that this “research activity” is an important cultural role that artists can play today.

4.5 Telos: Our Own Devices

The last aspect of the subjectivation scheme is the *telos*. In any configuration of ethics, subjectivation proceeds in the light of a goal. This is especially clear in Christianity, where the hope for an afterlife serves as a telos for ethics. Kant, who attempted to make ethics independent of religious belief, left the telos merely implicit as he emphasized duty regardless of any reward. Foucault’s view is that the telos of (sexual) ethics in antiquity was self-mastery, as opposed to being slave to one’s passions. The point was not to be independent of external powers, but to achieve the attitude and skills to actively cope with those influences, so that one conducted

oneself. This capacity is what Foucault came to understand as freedom: not a state of independence, but a “practice” of conducting oneself by actively coping with external powers. The ethics of Antiquity thus had a telos inside this world and inside the lives of people, a vision about what kind of subject one wanted to be.

Those who have commented on Foucault’s late work have conjectured that, in Foucault’s proposal for a renewed aesthetics of existence the telos would be “freedom” (O’Leary 2002) or “disassembling the self” (Rabinow 2000). These visions clearly reflect Foucault’s view that the subject is not a fixed entity, nor that it can be cast in a universal mold. Both notions are negative, presenting continual transformation of oneself as a goal in itself. This is definitely in accordance with Foucault’s thought: criticism of universal norms in place and a hesitance to propose alternatives. Still, Foucault has also stressed that “liberation” remains a hollow phrase if it is not complemented by innovation of alternative modes of existence. On a concrete level, facing concrete problems, it should be possible to give more flesh to the vision of the self that ethics aims to achieve. The interaction and fusion with technology is such a concrete domain of problems. The telos in an ethics of technology is a guiding vision for the design and use of technology that mediates human existence. This vision can be articulated as the aim to design and accommodate technologies so that they become *our own devices* (cf. Tenner 2003). The point is not to remain free of the influences of technology, but instead to achieve the experience of freedom, agency, conducting oneself, by actively coping with the effects of technologies.

Relevant in this respect is the notion of “libertarian paternalism”, proposed by Richard Thaler and Cass Sunstein (2008) as an ethical vision that can guide the design of technologies that influence (“nudge”) human choices and actions. With the term “paternalism”, they take into account the constant mediating effect of technology on people’s behavior, and argue that the point is not to try to avoid this, but to make good use of it. With the term “libertarian”, they stress that nudges should be designed in such a way that they are not compelling, but still leave people the choice to refuse them. Pragmatically, this seems a feasible and helpful position with regard to freedom and technical mediation. Philosophically, there remains the problem that there is no clear distinction between nudges that set people free and nudges that compel. Foucault’s understanding of freedom as a practice helps better understanding what libertarian nudging could be. The kind of freedom that Thaler and Sunstein want to preserve is not as they themselves somewhat suggest a clearly determined disposition (between coercion and respect for freedom). Rather it must be understood as the situated experience of people of having mastery over their own actions in Foucault’s sense.

A better philosophical understanding of freedom in relation to technical mediation is offered by Carrie Noland. The point of departure in her study *Agency and Embodiment* (2009) is dissatisfaction with the dissolution of the subject in Foucault’s work on power. Without reference to Foucault’s later work, but definitely congruent with his work, she searches for a new understanding of the subject and of agency, one that accounts for external influences rather than being opposed to them. Noland comes to understand agency as the experiences of (new) “I can’s” arising from performing gestural routines and improvising new variations. This experience of an “I can”, does not appear in the absence of technologies, but arises as a sense of mastery in performing technically mediated gestures.

The telos of an ethics of mediation is the achievement of hybrid modes of being, such that technical devices become our own and are not experienced as constraining or alienating. This does not imply being free of technologies, but having achieved mastery in interaction with technologies. Limiting the intensity of technology matters less than caring for the quality of interaction, be it with primitive or highly advanced technologies. As design and usability theorist Donald Norman (2007) puts it, the challenge is to achieve technologies that allow for “natural” or “symbiotic” interaction. However, what should be added is that the experience of natural interaction is not an original, pre-technical state of being, but rather is an achievement at the end of a process of successful training and fashioning oneself in relation to technologies. Norman does not acknowledge or explicate this. In the same way, the telos set by Thaler and Sunstein, libertarian paternalism, should not be understood as “nudges that still let people free”, but as a mode of interaction that has the quality of allowing for the experience of mastery.

5 Conclusion

Foucault's work is relevant for thinking about technology because he considered the role of technology in the way in which the human subject is fashioned and governed. At first sight, his work on power seems the most relevant. In his later work on subjectivation and ethics, technology is absent. However, by recombining Foucault's work on power with his work on subjectivation, his work contributes to solving pertinent problems in current approaches to the ethics of technology.

In order to do this, Foucault's earlier work must be reassessed from the perspective of his later work. The focus is no longer exclusively on disciplinary power that produces the human subject. Instead, the focus is on how people are themselves involved in becoming subjects. Foucault advocates philosophical research that is a critical ontology of ourselves: simultaneously investigations into the historical conditions of ourselves as subjects, and practical experiments of transforming one's existence. The work on power, including the role of technologies, appears to have dealt only with the first half. In *Discipline and Punish*, I identified two principal figures of technical mediation: the determination of power relations and the training of mediated gestures. Next, I showed how the analysis of figures of technical mediation can be extended and complemented by research into how people govern and fashion themselves through their engagements with technologies. In order to this, I used the four-dimensional scheme that Foucault used to study subjectivation.

The result is a contribution to an ethics of technology inspired by Foucault's proposal for a contemporary aesthetics of existence. In this ethical perspective, technical mediation and hybridization are not seen as opposing what is genuinely human, but as the very material of ethical activity and reflection. The motivation for this ethics is not absolute law, but a will to give style to the way one is transformed through engagement with new technologies. The practical efforts and skills needed to accommodate and integrate technologies into our modes of existence become a pivotal aspect of ethics. As an alternative to mere resistance against intruding powers (which seemed for a long time the typical ethical attitude one could derive from Foucault's work), this approach explores the active form-giving activities of subjects

with respect to their hybrid mode of being. The aim of this ethics of technology is to establish interactions and fusions with technologies in such a way that they are experienced as one's own, not obstructing but becoming part of one's experience and performance of freedom and agency.

The ethics of technology developed here after Foucault focuses on care for the quality of interactions and fusions with technology. Hybridization is central to the approach: it is not to be rejected, neither is it the greatest danger, but it does deserve the greatest care.

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