History, philosophy, and actuality of the utopian view of technology: On Pierre Musso's critique of network ideology

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1 Introduction

In this article I will explore the importance of the utopian conception of technology by looking into the history of technical utopias, its significance in the philosophical understanding of technology, and its relevance in actual debates. If "technical mediation" is considered a general term for the ways in which technology influences and co-constitutes human existence, then this essay is about the optimistic, utopian outlook on this affair. As this utopian view is somewhat neglected in the field of contemporary philosophy of technology, reconsideration of this viewpoint is both necessary and important.

Pierre Musso's work on network ideology provides the occasion for this project. My text offers a commentary on Musso's essay and will especially explore it's contributions to the field of the philosophy of technology, around the theme of technical mediation. From this viewpoint there are several relevant aspects to Musso's work. Firstly, it offers a historical perspective. It covers a larger time span than is common in most contemporary philosophy of technology, and the emphasis is on an early period that is otherwise largely neglected. While the writings from the 1950s onwards by for example Heidegger and Ellul are commonly acknowledged as major points of reference, the nineteenth century is rarely mentioned. Musso's work with a focus on the technocratic pioneer Saint-Simon (1760-1825) looks into the earlier history of thinking about technology. Secondly, the enlarged time span also lends itself to an alternative philosophical analysis. Musso's work contributes to a better understanding of what could be called the *utopian view* of technology in early philosophy of technology and, as such, could offer a more profound and pertinent understanding of what is otherwise often referred to as the neutrality and instrumentality of technology. Thirdly, Musso's work has implications with regard to contemporary questions concerning technology as well. The

utopian conception may have prevailed in the early period but appears still to be wide spread. In particular with respect to discourses about the Internet, Musso offers a critical assessment of the utopian aspects.

The following section first introduces some central themes from Musso's essay. In the extended middle part I will further elaborate the *utopian view of technology* from 1) the perspectives of historical technical utopias, 2) as one figure of technical mediation in the history of the philosophy of technology, and 3) with regard to actual problems and stances regarding technology.

From there I will further comment on the contribution of Musso's work to the philosophy of technology. Here, I will also elaborate questions and points of critique, focusing on two major themes. The first theme concerns Musso's suggestion that it is possible to distinguish between an appropriate and desirable social utopian striving and technical utopianism, which would be worn out. It is a question whether such a distinction is feasible, and indeed whether it is desirable. The second theme concerns the network. To what degree does the network indeed occupy such a central place in the ideology around technology? Is the network to blame for the ideological exaggerations of techno-utopianism? Or is the network notion more ambivalent, and could it also offer a framework for critical approaches to technology?

2 Musso's critique of network ideology

In order to discuss the contribution of Pierre Musso's work to contemporary philosophy of technology, this section will provide a short summary of his analysis of the network and the utopian ideology connected to it.[1] Musso argues that in the early eighteenth century, the social and political importance of technology and engineering began to attract philosophical and political attention of which the work of Saint-Simon offers an outstanding example. It was the era of the building of large technical networks: the telegraph and railways. Together with the emergence of such concrete network technologies the network notion also became important as a thought concept. The network concept was soon invested with amplified meaning, namely the universal association between people and radical social improvement. Such exaggerated hopes and beliefs in the network amounted to a technical utopia. Today's discourses about the Internet, the "network society" and "cyberspace", are marked by similar and by now "worn out" utopian beliefs about network technology. Musso apparently concludes that the "social utopia" of Saint-Simon remains desirable, even essential, but the excessive utopian expectations concerning network technologies that followed in the wake of Saint-Simon are best abandoned.

While the specific importance of Saint-Simon will be discussed later on (in the historical section about technical utopias), I will here give a concise account of Musso's analysis of the network and of the utopian ideology he sees connected to it.

2.1 The network as concrete technology and as thought-model

In Musso's research on the impact of technology the focus is on the network character of technology. He analyses the network in a double sense, as a concrete technical phenomenon

1 This section summarizes some of the important points of Musso's text in this volume. It seems unavoidable that this summary may seem unnecessary, or alternatively too brief, depending on acquaintance or not with Musso's essay.

and as a thought-concept for interpreting our world. Firstly, as a technical phenomenon, the network-structure is an important characteristic of many inventions of the modern time: the railway, telegraph, electricity, and recently the Internet. Secondly, we have also come to see and think in terms of networks. We interpret the world and ourselves in terms of network structures. The network functions as a "technique of the mind", an idea that carries and frames our thoughts.

We have not always interpreted the world in terms of networks. Musso recounts that prior to the use of the network model, longtime the prevailing model was that of the tree. The main difference between these models is that the network conceptualization involves a grid with connections in all directions, while the tree model involves branches growing out of a central trunk. Such different conceptualizations affect ideas about the structure of reality.

In a development that started long ago the network model has replaced the tree model. Musso's archaeology of the network model shows variants of the network model which relate to the history of technology. Beginning in Antiquity, the concept of the network was related to weaving – to threads and knots. Later, in the modern time the network became a notion for understanding living organisms; blood vessels and later the nervous system, for example. Then, finally, came the arrival of the technical inventions that we understand as network technologies: the railways, electricity, and recently ICT networks. The network as a thought model became dominant with the spread of concrete network technologies such as the railways.

Musso's argument is that the material, technical network cannot be separated from its other modality, namely as thought-model. The network functions as, what he calls, an "inter-world" between technology and the human body (which could be understood as a place containing both, or as a linkage between the two). The network offers images that enable a combined understanding of the human body and of technology, by explaining the one by reference to the other, in both directions. For example, in Antiquity Galen compared the human brain to network-technology, namely a fisherman's net. And today the computer and the Internet are often compared with the brain and the nervous system.

The network thus understood as linkage (inter-world) of body and technology shows a development in stages, which Musso analyses as follows. At first, the network envelopes the body (woven clothes). The next stage involves the network making up the body (vessels and nerves). In the final stage the network spreads beyond the body. In the form of the railways and electricity grids, the network envelopes the territory of the whole earth, all of nature. The network now transports the body over the earth and connects it with, ultimately, the universe.

2.2 Network Ideology

Using the network model to understand the place of human beings in the world is, as Musso's research shows, not simply an analysis of how things are, but is loaded with value. The network-concept gives "meaning and direction" and the tendency is towards a very positive belief in the benefits of technology. Musso speaks of "techno-messianism" and of "techno-utopianism".

In Musso's account this techno-utopian merger between technology, as concrete phenomenon and its value or meaning, first came about in the utopian, technocratic movement of Saint-Simon and his followers (in the nineteenth century). At that time the network fully acquired its modern sense of a web covering the territory of the earth. In

addition, the Saint-Simonians were the first to consider the connection between technology and social issues. Engineers began to imagine the construction of an ideal social body. They began to see their work of building railways and telegraph networks as a political undertaking.

This established a technocratic view in which engineers have the means and the task of building technical networks and thereby promoting the inherent values of democracy, freedom and equality. The political task connected to the network grew, as the network became the symbol of "universal association". This attitude towards network technology and imaginary is characterized by Musso as a "cult of the network", or "network fetishism". Within the Saint-Simonian movement itself it was not uncommon to speak of a "new Church".

Ever since the network has retained these utopian connotations, as Musso illustrates this with examples from politics: Lenin's insistence on the importance of the electricity network for the construction of the Soviet Union almost a century ago, and Al Gore's more recent enthusiastic commitment to the "information highway", or Hilary Clinton's exclamation in relation to the Arab Spring in 2011 that "the Internet is freedom!". Every technical innovation tends to revive the "myth" of humanity being connected and united by network technology.

3 Technical mediation and the figure of utopian technology

Musso's analysis of the role of the network as simultaneously a concrete technology and a thought model that allows humans to understand themselves in relation to their material environment can very well count as an instance of research into technical mediation. The term *technical mediation* is frequently used to denote the influences of technology on human existence. This usage is evident in the works of contemporary philosophers of technology such as Don Ihde (1990), Andrew Feenberg (2002), Bruno Latour (1994), and Peter-Paul Verbeek (2005). And technical mediation was also a pivotal term in the research on the cultural effects of technologies by media studies pioneer Marshall McLuhan (2003 [1964]). The notion of technical mediation refers to the phenomenon that the human way of existence and ways of living are mediated by technologies. It may also refer to a further claim, or general idea, that human existence is essentially dependent on and marked by technology.

Seen from this angle, Musso's research focuses on the nineteenth century and the network technologies emerging at that time and recounts how these had a mediating impact on human existence and culture. His work helps to show the relevance of the technical mediation concept in the history of thinking about technology, even before the term itself became popular in the philosophy of technology.

There is a tendency, notably in the work of Verbeek (2005; 2011), to conceive of technical mediation as a novel and improved theory of technology and humans that has developed with the move towards an "empirical philosophy of technology" (Achterhuis 2001). In this way Verbeek attempts to take distance from earlier approaches, such as the referential philosophies of technology of Martin Heidegger and Jacques Ellul which are now deemed too all-embracive and negative. At the same time the technical mediation approach intends not to fall back to the pre-philosophical, ordinary understanding of technology as mere neutral instruments, which was the outlook both Heidegger and Ellul explicitly reacted against.

It is however questionable whether it is fair and if it is necessary to reject other (earlier) approaches to technology because of their supposedly incorrect understanding of the technically mediated character of human existence. It is not the analysis of technical mediation

that is so very different. Søren Riis (2008) claims, for example, that contemporary thinker Latour and classical philosopher of technology Heidegger are very much comparable on the level of understanding the interdependency of humans and technology, And Robert Scharff (2012) argues for acknowledgement of the comparability of the human-technology complex as conceptualized by Heidegger and that described by the nineteenth century French philosopher and sociologist August Comte. The connection from Latour to Heidegger to Comte by Riis and Scharff suggests continuity in the understanding of the theme of mediation of human existence by technology.

Moreover, Scharff argues that the contemporary empirical approach may even suffer from "too much concreteness", which may hinder a critical stance. And I think that that could just as well be seen as a failure to see the mediating power of technology, contrary to the claim of the discovery of mediation in the empirical approach.

The understanding of technical mediation is not exclusive to research of the empirical turn. The most important difference between periods and schools is not whether technical mediation in itself is theoretically acknowledged but rather concerns the ethical evaluation that accompanies and feeds the analysis of mediation.

The classical philosophers of technology did see a deep correlation between technology and human existence (which means an analytical, theoretical acknowledgment of technical mediation). What is so distinctive of their time is that they viewed this correlation as very dangerous.

And the ordinary view of technology as neutral instruments is not the essence of all thinking about technology before classical philosophy of technology. Rather an ordinary view and a more profound philosophical understanding always coexist. In early philosophy of technology the deeper meaning was that technology is indispensable to the viability of human existence. Humans are born faulty and technology is necessary to make them viable and complete. This view definitely does acknowledge mediation of human existence by technology, only is this mediation somewhat obscured because it is seen as naturally good and not at all problematic.

The present essay is meant to contribute to a broad cultural philosophical approach to technical mediation. The adopted perspective is historical and hermeneutical. It is not opposed to, but includes earlier conceptions of the influences and meanings of technology. The difference between our favorite contemporary conceptions and earlier ones is not whether the mediated character of technology is already discovered or not yet. Instead the question is just how people have conceived of the influences of technology. There may be a variety of conceptions reflecting the persuasions of people or the historical or cultural circumstances and dominant views. Such a hermeneutical historical approach considers which different "figures of technical mediation" have been "discovered", "configured" or "conceptualized" in thinking about and coping with technology (Dorrestijn 2012b; 2012a).

The question is, therefore, not if technical mediation is already or not yet fully acknowledged and understood, but what different figures of technical mediation are prominent. In a very general and sweeping historical overview three figures appear. Firstly, a utopian view of technology; where technology means the way towards perfection or completion of human existence. Secondly, a dystopian view of technology in which technology appears to accumulate into a system that threatens to take command. Thirdly, a prominent conception today is that technology is neither ultimately positive nor negative but always

ambivalent. In this view the challenge is to acknowledge the hybridity of human existence and technology without dystopian despair or utopian belief.

To present these figures of technical mediation in a historical progression does make some sense, because they reflect the prevailing conception of an era. At the same time, all three figures are present together at any time. They obviously also form an ever present dialectical triangle, where the ambivalent view combines and relieves the opposing utopian and dystopian conceptions.

Of these three general views, the utopian view of technology and the *early stage* in the philosophy of technology are underrepresented in the philosophy of technology. Read against this background, Pierre Musso's work appears as a contribution to the understanding of the utopian figure of technical mediation. Saint-Simon and his network-enthusiastic followers are important thinkers who articulated the typical understanding of how technology mediates human existence in what could be called early philosophy of technology. Musso's work thus contributes to acknowledgement and elaboration of utopian technology as a historical stage in the philosophy of technology, and also as a living view on technology today (both in the form of explicit utopian belief and as an implicit deeper layer under the instrumental conception of technology).

4 History, philosophy, and actuality of utopian technology

Utopian technology as one main *figure of technical mediation* deserves more attention in the philosophy of technology. The following elaboration will successively pay attention to the history, philosophy and actuality of the utopian view on technology.

For this I will draw on Musso's work, but also introduce other historical and philosophical material. As we have seen, Musso extensively elaborated the meaning and development of the notion of the network. Utopianism, the other prominent notion in his research, is not treated as extensively. I will start with providing some background to the concept of utopia and recall a few historical examples of technical utopias (where Musso recurs because of his work on Saint-Simon). Next I will look into the philosophical analysis of technology, which underlies or accompanies the techno-utopian projects (this provides a context for Musso's analysis of the network). Lastly, the actuality of tech-utopian thinking is (concisely) discussed with reference to Musso's critique of the network society and cyberspace.

4.1 Technical utopias in history[2]

The term utopia was introduced in the book *Utopia* by Thomas More from 1516, the theme of which revolved around a new society built on an Island. The book started a genre that has produced many novels (from *New Atlantis* by Francis Bacon to *The possibility of an Island* by Michel Houellebecq) and movies (*Blade Runner, The Matrix*) (there is clearly an overlap with *science fiction*). Thomas More coined the term utopia himself. The scholar of utopias Thierry Paquot (2007) explains that More used a pseudo-Greek rendering of the Latin term *Nusquama* (which was the title of an earlier draft and means *not existing place or land*, as nusquam means nowhere/on no occasion). More's construction utopia was meant to refer to both *ou-*

2 This section on technical utopias uses parts from the chapter "The Legacy of Utopian Design" of my PhD thesis (Dorrestijn 2012a).

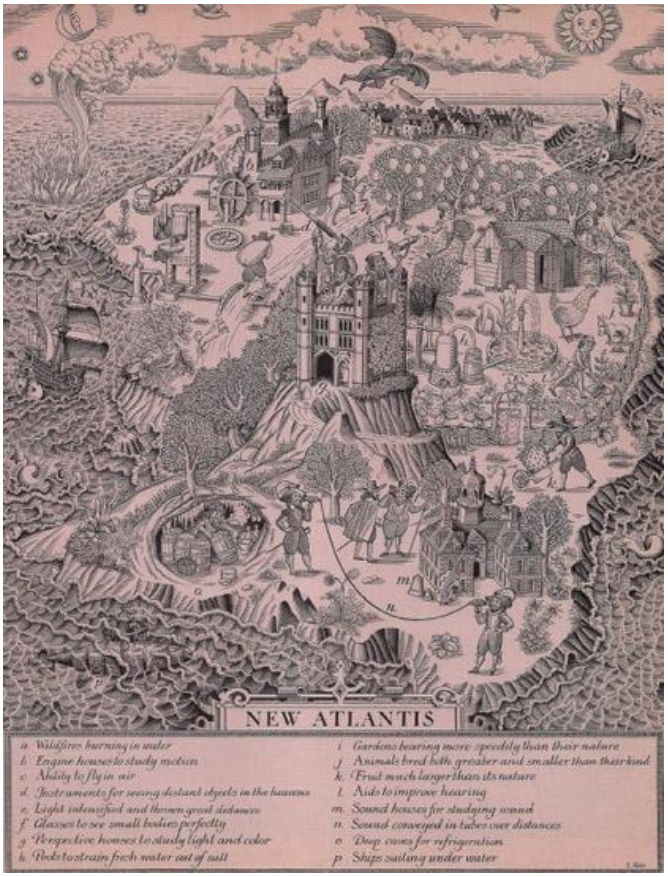
topos and *eu-topos* giving it a double sense. Utopia is simultaneously "a *land that doesn't exist on any map (outopia)*, *and would be the best on the world (eutopia)*" (Paquot 2007: 6).

Claeys and Sargent (1999), editors of *The Utopia Reader*, emphasize that utopias are characterized by "human contrivance". This distinguishes utopias as a modern genre that is distinct from "myths", dreams of "Arcadias" and "earthly paradises", as well as from the temporal transformation of society during "festivals". Utopian thinking thus refers to the tradition that started with Thomas More, which concerns not dreams of "sensual gratification", but is about a radically different society, "humanly contrived" and intended to be realized (ibid.: 2-3). Moreover, it is this activist utopian tradition that is very relevant for the philosophy of technology, because it is in this tradition of utopian thinking that technology often plays an important role.

Utopias where technology is explicitly applied as a means for contriving a new society can be called "technical utopias". A form of utopian thinking about technology and government can be traced as far back as Plato in ancient Greece. However, Francis Bacon's *New Atlantis* from 1627 is the archetypal modern technical utopia. Two more examples, that I will refer to, are the utopian plans and strivings of Jeremy Bentham and of Henri de Saint-Simon, both active in the decades around the turn of the nineteenth century. Saint-Simon will also lead us back to Musso whose work on Saint-Simon will be a main reference.

Bacon's New Atlantis

New Atlantis (1627) is a posthumous published book by Francis Bacon (1561-1626), English philosopher, statesman and natural scientist who remains famous for being an early advocate of the modern, empirical method of scientific research at the time of the Scientific Revolution. The book, which has become the archetypal *technical utopia*, tells about the adventures of the crew-members of a ship who after a storm at sea find shelter on an island that apparently sustains a very advanced society. The novel starts with a long description of how the shipwrecked visitors meet with the islanders, a virtuous people with a pious Christian faith.



Ultimately the visitors to New Atlantis hear everything about Salomon's House, the state agency for scientific and technical research and state government. The technical inventions conceived in Salomon's House include: food conservation caves, industrial production of foods and beverages, health conservation and life prolongation centers, breeding of

modified species, light from new sources in all possible colors, distant seeing devices, artificially produced materials, instruments that produce artificial sound and music, etc. (Bacon 1999).

Readers of today are often impressed to see how accurate many of Bacon's forecasts have proven to be. Our world, in many ways, resembles the utopia of *New Atlantis* (Lintsen 2002). It seems as if Bacon's plans have actually played a guiding role in the construction of the modern industrial world.

Benthamism and the Panopticon

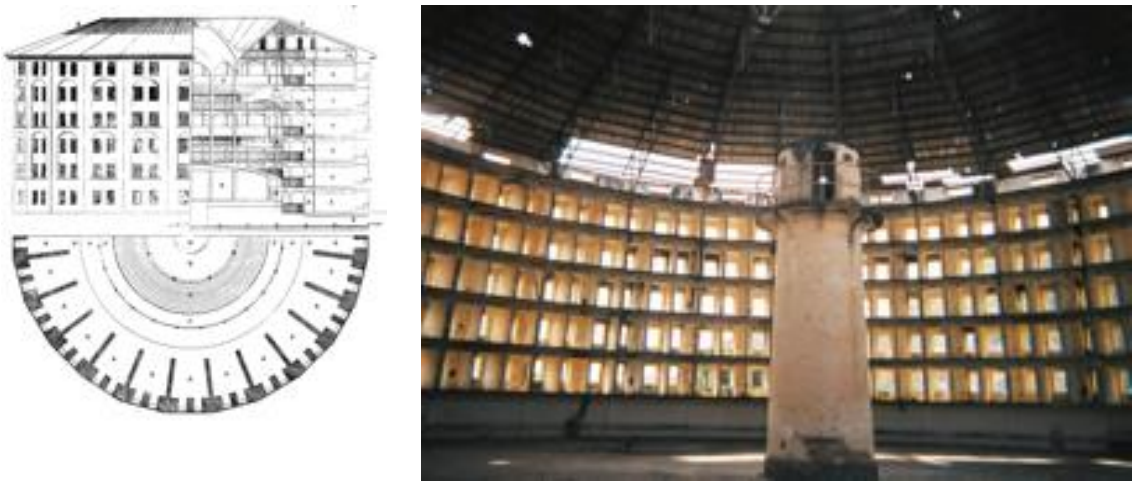
A second influential technical utopia is the Panopticon plan (from around 1791), created by the English jurist, philosopher and social reformer Jeremy Bentham (1748-1832).[3] The Panopticon is a circular building, which allows for continuous inspection (the combination "pan-opticon" alludes to "all-seeing"). The Panopticon, which Bentham's brother, an architect, helped design (Bentham 1843, IV: 40), consists of cells in a circle, six floors high, built around a central watch-tower. On the inside, directed towards the lodge, the cells would be largely open; only a light iron grating was planned. The central watchtower itself would be covered with a transparent curtain "that allows the gaze of the inspector to pierce into the cells, and that prevents him from being seen" (Bentham 2002: 12-13; cf. Bentham 1843, IV: 44).

This "simple architectural invention" (Bentham 1843, IV: 39; cf. Bentham 2002: 11), would make possible efficient surveillance and control of people in prisons, asylums, schools and ultimately society at large. In a Panopticon people have no possibility of doing wrong, and as Bentham was convinced, this would eventually also remove the will to do wrong. "Benthamism" refers to a rationalist vision on ethics and government, based on the principle of "utility" (utilitarianism), to which the Panopticon plan is intricately connected. In the existing world people cannot always know the consequences of their actions. And actions that go against the principle of promoting happiness for the community may go unpunished or even prove beneficial in the short term for the actor. In the ideal world one would always immediately experience the right consequences of one's deeds. The Panopticon design shapes such a world where everything and everyone is always visible. In that ideal world people will always act rationally, in accordance with the rational moral principle of utility (maximizing happiness and preventing pain).

Bentham's plans are not written as a novel, but are presented in letters and reports including detailed technical drawings directed at prison owners and national governors. These were clearly created in the hope that they may be realized. Although it is a matter of debate to what degree Benthamism has become a reality, it is certain that this way of thinking has been influential. There are many examples of dome prisons inspired by the Panopticon. Moreover, the ideal of ubiquitous inspection has spread in our societies in new technical forms like surveillance cameras. Also, citizens around the world now all walk about with smart phones with cameras, which can be used to record any incident the smart phone carrier may

3 Bentham began to write about the Panopticon in a series of letters during a stay in Russia in the year 1787. A book edition of these letters appeared in 1791. Later the texts were republished together with extensive "postscripts" in Bentham's collected works (Bentham 1843, IV). A concise edition of the Panopticon appeared in 1791 in French (Bentham 2002). This French text was an abbreviated version of the English manuscript, including some ideas from the postscripts, edited by Étienne Dumont, a friend of Bentham. It was prepared for the French National Assembly (that was established after the French Revolution of 1789). Cf. Bentham (1995) for a contemporary English edition of a selection of these texts.

encounter. One could say that all the smart phone carriers are in a position to inspect each other, and are thus in accordance with Bentham's ultimate ideal, namely ubiquitous mutual surveillance of people without guards.



Panopticon plan and prison built after Panopticon model on Isla de la Juventud, Cuba, 1926

Saint-Simonism

Definitely influenced by Bentham, and displaying a similar activist attitude of reform, is the third utopian thinker to be addressed here: Claude-Henri de Rouvroy, Comte de Saint-Simon (1760-1825). For an overview of his work and life, Pierre Musso's scholarship is significant, for example his monograph *Saint-Simon, l'industrialisme contre l'État* (2010). Henri de Saint-Simon (as he is usually referred to) was born into a Parisian aristocrat family and became a philanthropic socialist thinker and political publicist.

Today Saint-Simon is considered a pioneer of technocratic government. He proposed a reorganization of the state according to the principles of industry. He believed very much in the benefits of science and technology, properly employed, and called for "industrialism": industry delivering the principle for the construction and government of society at large. After his efforts to convince the leading liberal political movement of his ideas about the "industrialization of politics" failed, he radicalized his ideas and strived for a "politicization of industry" (Musso 2010: 127): engineers were to enter politics, and the state should be transformed after the model of a factory to be managed according to principles of efficiency and economic profit (ibid.: 106). Saint-Simon proposed a reorganization of parliament with the instauration of three chambers: a "Chamber of Inventions" consisting of engineers that would design public works, complemented with chambers for control and execution (ibid.: 138).

The musings about an industrial society not only concerned production and economy but included spiritual and religious life as well. Science was hailed by Saint-Simon as a new religion; the successor of traditional religion. This theme returns in the work of Auguste Comte. He saw the emergence of a positivistic scientific stage in civilization that would replace the previous metaphysical stage, which likewise had displaced a religious stage (Comte, early in his career, served as Saint-Simon's secretary). However, Saint-Simon himself chose not to abandon religion, for later in life he called for a "new christianism". In so doing, he tried to associate himself with traditional religion with the hope of bringing about a revolution from the inside. On the one hand this shows that for Saint-Simon technocratic government was

connected to an ethics, and not just concerned with cold economic computation. Indeed, Saint-Simon's project was driven by very strong social and humane, philanthropic values (ibid.: 151). On the other hand, it also shows again Saint-Simon's radical, utopian aspirations: after calling for radical transformation of the state he embarked on what could be considered the even more ambitious project of revolutionizing religion.

Saint-Simon is widely recognized for his utopian ideals and his work is an emblematic example of utopian social engineering. The writings of Saint-Simon influenced Karl Marx and Friedrich Engels as well as Auguste Comte. This makes Saint-Simon a pioneer of sociology, the then new science of social relations and the arrangement of society. His views were socialist and technocratic. He asserted that society should be reorganized following the principles of technical design and production. The communist principle of work according to capacity, reward and need, also stems from Saint-Simon. He had a large following of *Saint-Simoniens*, who after his death endeavored to "Saint-Simonize" France (Paquot 2007: 41-42). Musso's essay on the network ideology illustrates just that by recalling the Saint-Simonian's engagements with building technical networks and spreading the ideals of universal association.

These are three characteristic examples of technical utopias from the modern time. Utopian thinking has lived on through the twentieth century and until our days. In literature and film the utopian genre has changed in so far that the utopian dreams have become problematized by the danger of a reversal into dystopia. Famous examples include Aldous Huxley's novel *Brave new world* and George Orwell's *1984*. Outside literature, real world examples of twentieth-century utopianism include the utopian city planning by architects such as Le Corbusier. Another more recent example is the *transhumanist* movement, the members of which believe that by technically enhancing ourselves we will evolve into a cyborg kind of being, no longer human but post-human. And of course, the topic of Musso's work, the networked world of the digital age also nourishes utopian views.

4.2 Early philosophy of technology: the utopian figure of technical mediation

After having looked at historical examples of technical utopias, I will now philosophically elaborate the conception of technical mediation in this utopian view. Philosophy of technology has become an increasingly acknowledged branch of philosophy, starting with the classical works of Heidegger, Ellul, Mumford and the like. Prior to the work published by these scholars, philosophy of technology was marginal and not a main topic for most well-known philosophers. It is, however, very useful to look at the few examples that did appear and explore how this early philosophical research on technology connects to the cultural meaning of technology that we have seen expressed in technical utopias. This section will provide a further elaboration of a theme that already came to the fore in Musso's analysis of the network, namely of technology as extension of the human body and simultaneously as enabler of self-understanding. And we will see how this can be understood in terms of both an analysis and evaluation of technical mediation.

For a concise discussion of early philosophy of technology I will refer to Ernst Kapp and briefly to Karl Marx. This is not an unusual choice as these philosophers recur frequently in historical overviews (Mitcham 1994; Ihde 2009). Different is the focus on technical mediation. Verbeek, in his version of a philosophy of technical mediation, claims that recognition of technical mediation is the accomplishment of the contemporary empirical approach. He

positions his approach against classical philosophy of technology, as well as against the pre-philosophical idea of neutral technology (Verbeek 2005). When he does mention Kapp and early philosophy of technology (Verbeek 2012), he adds Kapp to the list of approaches unable to grasp mediation because Kapp's work is based on dialectic philosophy.

From my standpoint dialectic philosophy is not a stumbling block. To me it seems that the dialectic philosophy of Hegel, especially as used *upside down* by philosophers like Marx and Kapp, could be considered prototypical philosophy of mediation. The early philosophy of technology may be rather abstract and overly optimistic – but there is little question that it is a philosophy of technical mediation. Any cultural historical and hermeneutical approach to technical mediation should consider the different ways in which the mediation effects of technology have been grasped and expressed. So, the question is what was the prevailing *figure of technical mediation* in early philosophy of technology?

Ernst Kapp's *Grundlinien einer Philosophie der Technik* of 1877 is commonly referred to as the first study explicitly titled a philosophy of technology (Kapp 2007 [1877]). Kapp's most famous insight is that every technology can be considered an "organ projection", an exteriorization of some function already found in the human body. A hammer is the extension of the human fist, a wheel of the legs, the telegraph of the nervous system. Kapp systematized this theme of technologies as extensions of human functions, even if the idea's roots can be traced to Plato, and Samuel Butler's *Erewhon* (see Chamayou 2007).

Athough the details and scope of Kapp's claims have always met with severe doubts, the analysis of technologies as extensions of man and the question of social and ethical consequences has remained a classic theme. It recurred in a variety of approaches to thinking about technology: in philosophical anthropology (Gehlen 1980), media studies (McLuhan 1964), futurology (Kelly 2010), and philosophy of mind (Clark 2008). Next to the *functional analysis* from the outside perspective there is also a tradition of *experiential analysis* of technical extensions from the user perspective. Here I am thinking of the research focusing on the *embodiment* of technologies and *body techniques*, from the classic work in anthropology by Mauss (2006 [1936]), and in phenomenology by Heidegger (1996 [1927]) and Merleau-Ponty (1962 [1945]), to contemporary elaborations and applications (Ihde 1990; Warnier 2001; Tenner 2003; Kockelkoren 2003; Dant 2005; Noland 2009).

The analysis of technologies as extensions of humans by and after Kapp is relevant in the context of the mediation of human existence, because the technical extensions are conceptualized as indispensable parts of human existence. If technologies are in the ordinary view neutral, innocent add-ons that we deliberately design and use, than Kapp's analysis can surely not be reduced to that. The distinctive point of Kapp is precisely that he sees technology as an indispensable mediator for the constitution of human existence whereas we ourselves do not altogether see through nor control this.

The technical mediation character of Kapp's philosophy of technology becomes clear if one considers its dialectal scheme. Following Kapp, in the act of producing artefacts, humans imitate, unconsciously in the first instance, their own organic functions. This is for Kapp the first step of a dialectic development. The second step is that after imitating their own organs in technological mechanisms, humans begin to think of themselves in terms of these mechanism. The heart was understood as a pump, for example. And today the brain is understood as a computer. We cannot think about ourselves otherwise than by using concepts and insights gained from technical inventions. Technologies are not simply innocent, neutral enhancements

of the materialistic conditions of human life, but technology is essential for the emergence of consciousness. In addition, technologies are not, initially, invented and employed deliberately by humans, but it is technology that constitutes human self-understanding in the first place.

The reason why the deeper grasp of technical mediation in the early philosophy of technology might be overlooked is the absence of a critical ethical concern about the effects of technology. Kapp was clearly more concerned with what technology is and how it develops than with ethical evaluations of the effects of technology. Or, rather, in its essence technical progress was imagined as essentially good. This seems characteristic of the time.

Karl Marx, definitely also a relevant thinker in the context of an early philosophy of technology, adopted plainly a more critical perspective towards the industrialization process of his time. But for Marx too, technology itself is not problematic. The problem was the inequality between the class of capital owners who fare well and the mass of working class people who only suffer from bad working and living circumstances without profiting from industrial products themselves. The ethical concern is about fair distribution, of making everybody share in the wonders of technology.

Therefore, in the early philosophy of technology the prevailing conception of the effects of technology combined with the accompanying ethical concern can be summarized as follows: *technology is the miraculous means for human completion; only need scarcity and unequal distribution to be overcome*. This can be called the dominant figure of technical mediation of early philosophy of technology.

Following this insight into the early philosophy of technology it is possible to look back and see variants of the general mediation figure in the historical technical utopia projects. In Bacon's New Atlantis technology is presented as the miraculous means by which humans conquer more and more of their faults and reach perfect lives. Bentham offers a variant that focuses on technology as a means for bringing human morality to perfection. Technology helps to illuminate the right associations between actions and their consequences, which may be flawed in real society because of the long chains of consequences and the difficulty of overseeing the interactions between all individuals. Typical of the techno-utopian discourse, technology itself hardly becomes an ethical issue. It is considered a helpful and even essential support for the correct functioning of morality. The Panopticon will correct the morals of those imprisoned, and the same principle could likewise perfect the morals in society at large. For Saint-Simon and his followers technology in the age of the network fosters solidarity between all inhabitants of the earth. The network with its inherent social and moral qualities is conceived of as a "lever for political action", as Musso writes in his essay (ch. 2) *[in the same volume where the present text is published]*.

In the technical utopias of the modern time the discovery of this dependence of human development on technical progress was met with enthusiasm. And it was turned into a challenge to take up and speed up this development as a conscious process. The technologies promise a society where there is an abundance of material goods, where the suffering caused by illness and pain may be alleviated, and where crime no longer exists. A perfect human being and a perfect society are not given from the beginning, but the promise is that they will be gradually realized. While the human being is as yet incomplete, its fulfillment, completion, or perfection lies ahead in the future as a cultural and technical project.

Characteristic of the technical utopias is the unquestioned commitment to the advancement of this project of progress. This may, by the way, suggest a view that technology

could always be consciously applied and controlled. That view would remind of the ordinary *instrumental conception* of technology (which neglects mediating effects). But again, particular to this utopian view is that the mediating effects of technology do not conflict but converge with the common sense instrumental use. The use of technology is innocent, or always good, because it is in the nature of technology that it brings progress to humanity. The function of human consciousness is to accommodate this natural process of progress rather than that it can claim to be the intentional actor. In this respect there is a difference between Kapp's philosophical analysis of technology and the activist utopian plans, for Kapp explicitly debunks the assumption of awareness and control. Kapp thinks that technologies are always the projection of a function of the human body: That is the nature of technology; it could not be otherwise. But this does not mean that the human inventors are aware of this. And also they are not fully aware of the transformation of themselves that is the result of their inventions.

Recognition of technical mediation is not an achievement of the newest current in the philosophy of technology. From the beginning of the philosophy of technology, the phenomenon of technical mediation has been grasped, and this grasp has never been lost. In every period there is a more ordinary and more profound philosophical understanding of technology, which acknowledges the radical constitutive role of technology for human existence. What is the comparison between the utopian technical mediation figure of early philosophy of technology and later views? And what is still the relevance of the utopian view?

4.3 Utopian, dystopian, ambivalent

The utopian conception of technology has long ceased to be the prevailing mediation figure. By the mid twentieth century, a critical ethical concern about technology took precedence. The conception that came to the fore was that instead of being in itself good, technology rather turned out to be a great danger. The nuclear bomb is the emblematic example: a human invention but so dangerous that it can annihilate humanity. The urgency of this experience prompted many prominent philosophers to start to analyze the dangers connected to technology. Philosophy of technology was no longer a marginal field. In this period of classic philosophy of technology the dominant conception of technology turned dystopian as compared to the utopian view of the earlier period. Summarized in one sentence the dystopian figure of technical mediation in classical philosophy of technology is that *technology threatens to accumulate into a system that takes control and against which limits need to be set.*

The change of conception of technical mediation, both as analysis of and as ethical concern about the impact of technology can be illustrated by looking at the interpretations of Kapp's analysis of technology as organ projection. In my interpretation of Kapp a progressive technical extension of humans is only natural, and a critical ethical questioning of technology had not yet started. However, a recent commentator of Kapp, Benoît Timmermans, does think that there is an ethical message to be derived from Kapp's work, namely that "everything has to be done to prevent technological projection (…) leading to alienation, mechanical dependency, or resistless subjection to what we have produced, but what has become irretrievable foreign to us" (Timmermans 2003: 105)[4]. Indeed, this is an eloquent expression of a fear that we can recognize today. It is the ethical concern that emerged in the era of the

4 My translation.

classical philosophy of technology. But I think it does not actually represent the thought of Kapp and his time. In early philosophy of technology the ethical concern only referenced technology indirectly, namely from the economical perspective of scarcity and distribution. In itself the accumulation of technology was welcomed. This changed with the reversal towards a dystopian view of technology. Technology, or modern technology, is accumulating into a large system that gets out of control and threatens human values.

Today neither the dystopian nor the utopian view is the dominant figure of technical mediation in the philosophy of technology. In the last few decennia there has been an "empirical turn" (Achterhuis 2002) towards a more practice and application oriented style of research. Technology has not one essence given once and for all (Ihde 1990), but always holds positive and negative possibilities both at the same time. The way in which technology is implemented does matter, and it is possible to correct for negative effects of technologies. The meaning of technology is now seen as always *ambivalent* (Borgmann 1984; Feenberg 2002; Lemmens, forthcoming). In the conception of technology that is now gaining prominence the fundamental mediation of human existence by technology is acknowledged but it is evaluated in ambivalent terms, beyond the utopian hopes and dystopian fears. Insight into dependency on technology is now interpreted as a call to take care of the quality of the fusions and interactions with technology in a pragmatic way. Expressed in one sentence: *human existence is ambivalently mediated by technology, which prompts to take care of our hybrid existence*.

Interpreted in this way, technical mediation is not an approach that replaces earlier more essentialist analyses of technology. Technical mediation is an enduring theme that has always been grasped, but within this theme there is a wide variety of conceptualizations and evaluations of the effects of technology. In the most general terms there is a historical development from early, to classical, to empirical philosophy of technology, where the prevailing figure of technical mediation went from utopian to dystopian to ambivalent (Dorrestijn 2012a; forthcoming).

But while there may be difference in dominance, all three figures do also coexist at any given time, forming a dialectical triangle. This is one more way of seeing how within the current conception of the impact of technology as ambivalent, the utopian and dystopian views of technology can still be acknowledged and valued. In a historical and hermeneutical approach to technical mediation, one need not denounce earlier approaches in favour of a newer and better theoretical grasp of technical mediation. Instead, the tension between the divergent conceptions and ethical evaluations of technical mediation makes the current ambivalent view all the more interesting.

4.4 Actuality of utopian technology: Cyberspace and network society

So far we have looked at the history and the philosophy of the utopian view of technology. Pierre Musso's work on the utopian projects of Saint-Simon and his followers helped in both respects: remembering the history as well as philosophical explication. Now I will use Musso's work to show, briefly, how the utopian figure of technical mediation remains important today. Musso discusses the utopian ideas about the network at work in our age of information networks. He sees two main figures in today's network utopia: cyberspace and the network society.

Cyberspace refers to the hybridization of man and machine to the point that a form of life emerges that is disembodied (in the sense of a biological body), while re-embodiment in a

liquid, electronic, information network-space. This implies a distributed-networked body as well as a networked, interconnected, distributed intelligence. The network society as proclaimed by Castells denotes a view that reminds Musso of both Marx and McLuhan and in which the Internet forms a new material basis, namely an Internet Galaxy that creates a new society and a new economy.

Musso is critical of the meaning given to technology in the network utopias of Cyberspace and the network society. He thinks that more than ever before technical objects turn into thought models. The idea of ubiquitous connectedness becomes a spiritual belief. The networks of the industrial had a physical bodily connotation, and represented the possibility of universal contact and displacement. While techno-utopianism always had a religious and moral meaning, the network in our digital era has acquired a still more spiritual connotation. This seems to imply for Musso a leap into a fantasy world at the cost of a sense of the concrete. Musso fears that a belief in technical utopias relieves people of the burden of commitment to social and political action.

Indeed technical utopias are not of the past. Cyberspace and the network society with their focus on network technology may be complemented with other technical utopias. One example is the aforementioned movement of transhumanism that is committed to technically enhancing the human being to the point of accomplishing a new species beyond what used to be the human being. Space travel is another domain that fires utopian imagination. The view of earth from space has proven to mediate the growth of ecological consciousness, but equally the forging of utopian scale plans of geo-engineering (Grevsmühl 2014). Leaving the earth behind is of course another utopian possibility. *Mars One* is a project that recruits pioneers who are prepared to embark on a one-way voyage to mars and start a new settlement there to relieve the planet earth of its overpopulation.[5] In connection to Musso's critique, above, it seems difficult to decide whether leaving the earth for mars means the highest commitment to the cause of humanity or rather a literal example of escapism into a utopian belief − a way for the participants to run away from the concrete challenges they face on earth.

At this point I will end my elaboration of technical utopianism in history, philosophy and actuality. In the remainder of the chapter I will raise two questions, namely about the way in which Musso seems to preserve a desirable form of utopianism against the exaggeration of techno-utopianism, and about how Musso identifies the network character of technology as the factor leading to the trap of techno-utopianism.

5 Save the good from the bad utopia?

One important aspect of Musso's work is that it helps to bring to the fore a historical perspective and the utopian figure of technical mediation in the philosophy of technology. In the final two sections I discuss Musso's own stance regarding utopian thinking. He is very critical about the utopian connotation of technology, especially network technology. But Musso's solution is not to say goodbye to utopia. It seems rather that he wishes to restore a positive form of social utopian thinking and distinguish it from the exaggerated form of techno-utopianism. In the present section I will discuss if such a demarcation between good and bad forms of utopia is feasible. This allows us to see what an ambivalent position,

5 Available at: http://www.mars-one.com/

somewhere in the tension between utopian and dystopian, looks like in the case of Musso, and to situate his position among current philosophers of technology.

5.1 Good and bad utopias?

According to Musso the point that demarcates the good and the bad forms of utopianism lies between Saint-Simon and what came after. It seems that he credits the Saint-Simonians for "theorizing the Industrial Revolution", and to a large extent also for attempting to "socialize the major technical networks". But when it comes to the identification of the technical network with an ideal organism and social organization Musso appears quite critical. Musso is not altogether explicit, but my reading is that he claims that network technologies are indeed important. His concern is that instead of a concrete analysis of the actual transformations, good or bad, a network ideology (or "retiology") became prevalent. The social semi-utopia of Saint-Simon (as discussed by Musso) was turned into a full-blown technical utopia by the later Saint-Simonians (right up to Proudhon and Kropotkin). They turned the concrete network technology into a "technology of the mind", conveying the myth of radical social and political transformation through the technical network. This techno-messianistic or utopian network ideology has prevailed ever since from Lenin to Al Gore and Hillary Clinton.

This raises interesting questions in the context of the ambivalent view of technical mediation and Musso's stance. Musso contests the exaggerated form of techno-utopianism, and is aware of the antagonism of the utopian and dystopian views. He does mention, although he does not elaborate, that the dystopian and the utopian views are akin, that utopia can reverse into dystopia. Now the question is if the way out of this position is to give up utopian thinking altogether, or if restoration of a moderate utopian inspiration is more desirable. Is it possible to save a moderate utopian vision from the worn out utopianism that becomes antagonistic and deceives rather than inspires concrete social and political commitment? Also, is social engagement actually dependent on utopian inspiration, or can utopia be dismissed without a loss?

Philosopher of utopian thinking and technology, Hans Achterhuis (1998; 2001), has more explicitly than Musso elaborated the notion of the antagonism between utopian and dystopian views. Achterhuis speaks of a "utopia/dystopia syndrome". When we think or debate in terms of ideal situations the result is often an insoluble dualism of the extreme positions of utopia and dystopia. For Achterhuis this antagonism is inevitable. Any utopian plan will reveal its dystopian side on the way to realization. Partly, Achterhuis would agree with Musso that utopian thinking leads away from engagement with concrete reality. But whereas for Musso the loss of concrete social engagement is the danger of a wrong kind of utopian thinking, according to Achterhuis any form of utopianism brings the inherent risks of totalitarian repression.

This marks a difference in conceptions of utopia. Some would say that it is necessary to cherish the picture of utopia, in the same sense as that it is important to have ideals. Even if utopia can reverse into dystopia, in itself the meaning of utopian thinking is innocent and even necessary. This is for example the position held by the scholar of utopias Thierry Paquot (2007) and seems to be implied in Musso's view. By contrast, Achterhuis' study on the legacy of utopia (Achterhuis 1998) expresses a much more suspicious and critical position. Beyond motivating people to improve societies, utopian thinking has also led to some of the crudest regimes on earth. The belief that a radically different world, purified from crime, laziness,

inequality, etcetera could be constructed has made people engage in forcefully and cruelly purifying societies: the totalitarian aberrations of Nazism and communism. In Achterhuis' analysis the connection between utopia and dystopia is so intricate that one cannot have utopian inspiration without dystopian danger.

The way out proposed by Achterhuis therefore differs from Musso's. Achterhuis has encouraged the *empirical turn* in the philosophy of technology, which involves the inclusion of more case studies in philosophy, or interdisciplinary collaboration with empirical sciences. In comparison, Musso's approach remains entangled in discourses about the meaning of technology. Musso calls for a moderate social utopian engagement, but in a rather theoretical, discursive way, whereas Achterhuis thinks social engagement can also grow without utopian thinking (which he designates as dangerous more strongly than Musso).

5.2 Varieties of ambivalence

Within the ambivalent view, which characterizes contemporary philosophy of technology, some are more utopian and others more dystopian in their outlook, and some are truly divided. For example, Peter-Paul Verbeek and Kevin Kelly tend towards the utopian. Andrew Feenberg is divided: generally suspicious about the social effects of technology, but positive about the possibility of change and almost somewhat credulous about the democratic potential of the Internet. Tending slightly towards the dystopian side within the ambivalent position, we find for example Bernard Stiegler and, perhaps, Pierre Musso.

In the case of Verbeek, it seems that his repeated claim that the dystopian view is outdated, makes him leap into a position that by lack of unease appears rather optimistic, with traits of utopian thinking. To overcome the strong dystopian view of classical philosophy of technology, Verbeek's strategy is to denounce the theoretical analysis of classical philosophy of technology as inadequate. The more adequate alternative would be his theory of technical mediation. This strategy implies that Verbeek thinks that an accurate understanding of the relation between humans and technology affords simultaneously an adequate evaluative stance to technology. The inadequate analysis of classical philosophy of technology led to the inadequately dystopian view of technology. *Mediation theory* would be necessary to correct this mistaken evaluation.

This is however questionable. The relation between *analysis* and *evaluation* of technical mediation is not one-way. Theoretical apprehensions are answers to an ethical concern just as much as, the other way around, ethical evaluations derive from theoretical understandings of states of affairs. Verbeek's strategy to redirect the debate over technology from the evaluation to the analysis drives him to the conclusion that an evaluative stance to technology is only valid if it follows from analysis. To stand up against technical developments is a sign of inadequate analysis.

The mirror image seems also to apply for Verbeek: an adequate theoretical understanding of technology appears to offer *ethical reassurance*. When we know better how technology co-shapes our existence, we can also more easily accept these processes. Verbeek's attitude of optimism and reassurance is a trait that belongs to utopian thinking (reassurance about being part of a natural development of progress belongs to utopian thinking, just as dystopian thinking is characterized by the shocking discovery that progress looks evil). Undoubtedly this is one reason for the fact that while Verbeek claims an ambivalent position that seeks the right *balance* (Verbeek 2014), this is not always

recognizable to his readers. The effect, perhaps unintended, of Verbeek's all too strong contestation of the dystopian view of technology is that his version of the ambivalent position tends rather to the utopian side.

A very much comparable stance is that taken by Kevin Kelly. In his essay *What Technology Wants,* Kelly (2010) gives a name to the process of technical evolution that means a transformation of the human existence: The Technium. Kelly differs from Verbeek in that he starts from the viewpoint of technical enhancement of human existence, reminiscent of the utopian conception of technology. But interestingly, in the course of his analysis he brings in a remarkable degree of ambivalence. Very much aware of the many difficulties and dangers the balance is for him still towards a view that technology means more improvement than danger, but only just a little bit.

As Musso mentions, the Internet is a technology that has provoked exaggerated expectations, for example in the work on the network society by Castells. A trace of the same kind of utopian connotation of the Internet can also be found in the philosophy of technology of Andrew Feenberg and Bernard Stiegler. These two thinkers may count as examples of truly ambivalent scholars, not to say that they are divided. Their hope for a more democratic future of technical development is the counterpoint of a fairly critical judgment about the present situation. Especially Stiegler (2010) is severely worried and negative about the transformation behind our backs of our way of living, of which we are often unaware and we cannot control ourselves, because so much power resides with huge commercial enterprises.

So, what does the ambivalent position of Musso look like? It seems that Musso's version of ambivalence is also one of much tension. Although there is clearly a lingering utopian view, overall his view seems to tend towards the dystopian side. One valuable aspect of this position is that it makes clear that the ambivalent position can include divergent conceptions and evaluations of the effects of technology on human culture. This means an approach to technical mediation that is historical and hermeneutical and acknowledges different views. Musso however remains strongly entangled in the discourse about technology. His work does not offer a concrete hindsight for alternatives for change in practice. What he does allude to is the restoration of a social utopianism, but as I have discussed, the question remains if that removes the danger of utopian thinking.

6 Is the network to blame?

The remark that Musso's approach becomes entangled in discursive analysis brings us back, in this last section, to the network. Musso places enormous weight on the network. It is because of network technology that a techno-utopianism emerged. He asserts that the network has become a technology of the mind. The network functions as a metaphor in thinking. While perceiving and considering the world around us the network provides a model for how our sight is directed and how we might interpret what we see. We see connections everywhere and interpret these as progress towards universal association, transparency and freedom, while at the same time it also raises the suspicious counter-view of ubiquitous control and domination. Is the emphasis that Musso puts on the network pertinent? Is the network indeed the determinant par excellence, or is it less important as just one point of access to utopian thinking about technology? Is it possible to avoid the trap of the network?

It appears that the relevance of the network as a metaphor is at the same time more and less than in Musso's account. It may be less, for it is questionable if the network needs to be emphasized as the technological development that is the cause of utopian worship of technology. But more remarkably, it may also be even more, because the network does in a way also haunt Musso himself and may explain the entrapment in discourse at the expense of practical relevance. To elaborate this I will compare Musso's network critique with Bruno Latour's network thinking.

6.1. Network reign everywhere

The suggestion in Musso's work is that avoiding the trap of the network with its connotations would save us from a leap into techno-utopianism. Is it possible to avoid the trap of the network? And is it necessary? One reason why it seems impossible is that the network may have infiltrated our world even more deeply than is suggested in Musso's analyses. The network is indeed a model that shapes our perceptions and thoughts, as Musso revealed. This is so much true, that it is even part and parcel of Musso's own method of analysis. Musso's highly informative account of the network metaphor in discourse about technology could be called a discourse analysis that traces the crossings and connections of the network concept. As an approach and research method it is therefore itself also dependent on network-thinking. This only reinforces the view that the network is indeed all-important, but it makes the call to avoid network-thinking implausible.

But does the omnipresence and unavoidability of the notion of the network notion bring with it all the dangers of techno-utopianism? Does it imply that one gets trapped in discourse and the utopia/dystopia syndrome? This is perhaps not the case. It is remarkable that one of the most prominent thinkers about technology, Bruno Latour, actually combines a conceptual framework that heavily employs the network concept with a research orientation towards practice and away from any grand claims as in the utopia/dystopia scheme. Since the 1980s Latour has been a prominent proponent of a research approach called Actor-Network Theory. The approach has become so well known that the term network will remind many researchers of technology and culture of the Actor-Network Theory. In a monograph on Latour by Graham Harman (2009), Latour was given the title "Prince of networks".

The actor-network method aims at overcoming any presumptions of a fundamental difference between humans and non-humans, things. Humans should not be seen as subjects or actors in control. And things should not be seen as passive objects, but their role in the constitution of an event or course of action should be recognized. Humans and non-humans are considered both alike as actors (or "actants", in terms inspired by semiotics), namely as contributors to action. This has resulted in research approaches that involve mapping actor-networks, where Latour's advice was to "follow the actor" and to engage in detailed historical and ethnographic research (Latour 1987). The result was often a fresh look on the role of things and materiality in society, politics and morality − a role overlooked or dismissed by the established approaches in the respective disciplines of sociology, political science, and philosophy.

Latour has given the network a connotation quite different from the analysis by Musso. Whereas Musso shows how examples of network technologies led to overly general thought concepts, for Latour the network notion helped to find a path back in the other direction: from the all too general discourses towards empirical research into the details of the

associations between concrete technologies and humans. This is also how Hans Achterhuis was inspired by Latour. Achterhuis' call for an empirical philosophy of technology as a way to overcome the utopia/dystopia syndrome was strongly influenced by the orientation towards case studies and the deconstruction of thought-concepts in Latour's Actor-Network Theory.

6.2. Value pluralism and diplomacy

The recent developments in the work of Latour may provide further insight into how one still can define a critical position and a form of social engagement even when one is immersed in the network. For a long time Latour advanced Actor-Network Theory explicitly and in sweeping terms as a contestation of the modern world picture in philosophy and social sciences. In his recent work *An inquiry into modes of existence,* Latour (2013) intends to follow up his contestation of the prevailing modern self-understanding with a "positive" description of what he thinks would be an alternative, better understanding of ourselves as moderns. The extensive book offers a broad philosophical interpretation, synthesis and further elaboration of his earlier research approach. Latour's project is of interest for us here as well, because he explicitly gives a twist to his earlier work.

Overall the book develops a non-essentialist understanding of being. The enquiry is about describing and comparing different "modes of existence", regimes of enunciation of what is. The provisory list of modes of being contains fifteen more or less distinct patterns in the way things and events obtain a certain degree of subsistence, even if these beings evolve and their existence always remains fragile.

Latour's research was often understood as merely opposed to values – this central concern of the human sciences – even if Latour himself always wanted to contest the very distinction between facts and values. In introducing the modes of existence Latour remarks that his case studies that employed the mapping of actor-networks often met with controversy and contestation. The controversy was never so much about the findings on the level of empirical and historical description, but rather it appeared that actor-network descriptions always engendered clashes about values. The actor-network description thus appeared to serve as a detour that releases people and makes them aware of their stance. Critical philosophy and anthropology can use this detour by the network analysis to raise awareness of conflicting values.

The role of critical philosophy today, according to Latour, is to perform an anthropology of ourselves as moderns. This means to speak eloquently about matters of concern with the people to whom it concerns. Speaking eloquently means that, when successful, mere conflicts and confusion are surpassed and become acknowledged as value conflicts in a pluralistic world. In the past actor-network theory took a certain pride in confusing the self-understanding of the moderns, although it might indirectly also have given inspiration for practical engagement. Latour now explicitly engages on the path of "diplomacy": mediating and finding compromises in the situation of conflicting values. And what is more, insight in the network character of reality plays a positive role here. This shows once more that the network may not be to blame for the loss of social engagement and entanglement in utopian and dystopian thinking.

7 Conclusion

The contribution of Pierre Musso's work to the philosophy of technology is that it helps promoting an historical perspective in the philosophy of technology and it draws attention to the utopian view of technology. In this essay I have elaborated this utopian view with regard to historical utopian projects, the early philosophy of technology and the actuality of utopian thinking about technology.

Technology is in the utopian view the obvious and necessary way to bring human existence to completion. In itself technology is wonderful and raises no ethical questions; only inequality in access to technical progress is a problem. This identification of technology as good in itself also obscures the more profound philosophical layer in early philosophy of technology. A functional conception of technology does however not coincide with the ordinary, pre-philosophical view of technology as neutral means. To say that is to miss the associated deeper utopian meaning of technology as indispensable mediator towards the completion of human existence.

In this way I have also promoted a cultural historical and hermeneutical approach to technical mediation. Technical mediation is not one particular theoretical grasp of the relation between humans and technology but a *theme*. If one wishes to speak of a *theory* of technical mediation, than such a theoy should consist of a repertoire of different figures of the impact of technology (analyses and evaluations) in which different historical views on technology are acknowledged. This implies that the ambivalent position in thinking about how technology mediates human society, does not simply follow up earlier and less correct understandings of technology, but acknowledges and retains these as an internal tension.

While Musso's work can thus be seen as a contribution and inspiration to current work in the philosophy of technology, there are points of critique. His work remains rather abstract and questions arise as soon as one turns to possible practical implications. His suggestion of demarcating a worn out utopianism from a moderate inspirational form can be questioned as well as his identification of techno-utopianism with the network.

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