

Fear the Flying Dead

The Neo-Luddite Influence on Discussing the Future of Warfare

By David Blome

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University of Twente, Faculty of Behavioral, Management and Social Sciences (#1859161)
Westfälische Wilhelms-Universität Münster, Institut für Politikwissenschaft (#431168)

Supervisors:

First Supervisor: Dr. M.R.R. Ossewaarde, University of Twente

Second Supervisor: Dr. A. Graf, Westfälische Wilhelms-Universität Münster

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Abstract:

This thesis aims to find out, to what extent Neo-Luddite arguments and ideas are used in today's discourse on malicious technology. This aim is approached by conducting a discourse analysis, applying a case study on the debates on Lethal Autonomous Weapons at the Munich Security Conference. To unmask the discourse and to find patterns, a theory-driven coding scheme is created, focusing on the typical Neo-Luddite features technology criticism, resistance against technology, uncertainty about the future, and the use of science fiction narratives. It is observed, that there is a constant notion of the rapidly evolving technologies causing challenges such as preserving human values. Furthermore, the discourse on the so-called Killer Robots is oriented towards a regulation of this technological advancement for the better of humanity. The possible loss of control of this technology and the probable abuse of autonomous weapons lead to a high degree of uncertainty about the future. The findings of this research lead to the result, that the examined discourse is pervaded by anti-technological thoughts, in line with the ideology of Neo-Luddism. Opposing the opinion of other scientists, this thesis shows that this ideology continues to live on. The results of this study indicate that approaching a debate on a certain technology by applying the method of discourse analysis to search for Neo-Luddite elements can be beneficial to understand the motivation, fears, and hopes of those involved.

Keywords: Discourse analysis, Lethal autonomous weapon systems, Luddism, Neo-Luddism, Malicious technology, Munich Security Conference

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Kommentiert [HDB1]: Am ende aktualisieren!

1. Introduction

Technology is ubiquitous, it cannot be eliminated from our daily lives. Because of the steady development of new technologies, technology is constantly increasing its impact. Many do not only see the bright side, but a dark side as well: They fear the abuse of technology for unwanted purposes, criticize side-effects or even predict machines taking over the world. Luddism, the first social movement protesting against technology, emerged during the Industrial Revolution. Like-minded successors exclaimed Neo-Luddism during the last decades of the 20th century. The Neo-Luddites reject modern technologies, question their influence and promote a “passive resistance to consumerism and the increasingly bizarre and frightening technologies of the computer age” (Sale, 1997). Constantly, the critics of technology are debating with proponents of the steady technological progress, for instance on the political implications, such as the question whether to limit the development and use of certain technology by applying policies. There are countless contributions to these arguments, but the discursive aspects of this debate remain untouched in scientific research.

The Munich Security Conference has established itself as the leading platform for such political discussions on technology, especially on military technology. As a “marketplace for ideas” (Ischinger, 2014, p. 31) the MSC earned high reputation and strongly influences security policies and diplomacies worldwide (Lamprecht & Ulrich 2016). The conference publishes numerous videos from the events, reports and even its own magazine, filled with articles by prestigious experts in their field. Besides some reviews of separate conferences (Bunde, 2012; Lamprecht & Ulrich, 2016) or analyses of certain speeches by high-level politicians (Monaghan, 2008), most publications by the MSC and the discussions at the meetings are not evaluated scientifically. The MSC debates on technology even remain fully neglected by the scientific community, only being considered in newspaper articles and blog posts reporting from the event. An example for discussions at the MSC on the use of malicious technology are the current debates on Lethal Autonomous Weapon Systems (LAWS), which are not in existence yet, but currently are being developed in countries such as the United States, the United Kingdom, China, Russia, Israel, and South Korea (Perrigo, 2018). These weapon systems will be robots equipped with responsible Artificial Intelligence, selecting and eliminating their targets without human interaction or supervision. For now, military robots (mostly drones or miniature tanks) are used remotely, but their level of autonomy is increasing. Therefore, experts predict a “third revolution of warfare” (Perrigo, 2018). The possibility of so-called Killer Robots raises new questions and concerns, and causes political debates, for example in various meetings of the United Nations. The main efforts are organized towards a ban of LAWS. These efforts, for instance by the Campaign to Stop Killer Robots, are based on scientific books and articles, such as writings on the general dangers of AI

used for the wrong purposes (Russell & Norvig, 1995) or on LAWS opposing moral and ethical concepts (Sparrow, 2007, Sharkey 2012).

Whereas there are numerous contributions to the debate on Killer Robots, the discourse itself remains under-researched. There are only four writings found dealing with this topic: The UNIDIR (2014) conducted a framing analysis on the LAWS-debate. Horowitz (2016) examined the fears and support of the US public towards this debate by conducting two surveys. He found out, that the numbers of supporters and opponents of LAWS are balanced: Some see the opportunity to replace humans in warfare by robots and fear the development of such autonomous weapons by hostiles overseas. On the other hand, many fear a Terminator-like scenario as well. It can be summarized, that the public opinion differs from context and scenario. Carpenter (2016) argues, that the social movement against LAWS is facilitated by science-fiction narratives. According to him, the discourse on Killer Robots, especially the movement towards a ban, is constituted by narratives inspired by science-fiction that draw participants into the debates. The only discourse analysis on Killer Robots so far has been conducted by Schroeder (2016), who briefly examined the discourse as part of his forecast on future developments in the field of LAWS. His observations are solely focused on state governments calling for a ban and the opposition of the UK against these efforts, with a notion to active NGOs as well. However, the chapter remains quite small and does not analyze the discourse in depth.

So far, Hundt-Bull (2006) has been the only one to bring together the topics of Killer Robots and Neo-Luddism. By referring to Neo-Luddite arguments such as the fear of tools becoming the master (p. 2), he argues against the use of AI and robots in warfare. He even calls his paper “A Neo-Luddite Manifesto”, based on Glendinning’s “Notes toward a Neo-Luddite Manifesto” (1990), one of the leading writings in Neo-Luddism. The narratives and dialectics of Luddism and Neo-Luddism have been the object of many investigations. Probably the most comprehensive analysis has been conducted by Jones (2006), who examined how Luddism has been “mediated and translated by way of various representations – novels, poetry, films, images in pop cultures, activist subcultures” (p. 4) into the Neo-Luddite movement. Examining a discourse on its Neo-Luddite elements, seems to be a new approach though, that has not been applied yet. Some researchers (Cook, Robbins & Pieri, 2006), however, have found Luddite and Neo-Luddite elements by conducting discourse analysis on various topics, but without specifically looking for them. This research provides a novel view on a highly debated topic of high societal and academic relevance. To understand what constitutes the discourse, the old Luddite and Neo-Luddite ideology is taken and applied to a new problem, the current discourse on Killer Robots and AI used in warfare.

Therefore, this research aims to examine the intense discussions on LAWS to find out, to what extent Neo-Luddite arguments and ideas are used in today’s political debates on malicious technology. Unmasking the discourse on Killer Robots at the MSC and finding patterns is helpful to conduct a

comprehensive analysis of these debates. Considering the existing knowledge gap discussed above, as well as the aims of this research, the following research question arouses: *To what extent can the discourse at the Munich Security Conference on malicious technology be characterized as Neo-Luddite?* This empirical and exploratory question is answered in the present thesis. The answer to this open-ended question is a description of the only variable, the MSC discourse on LAWS. Since this is not a causal, but an exploratory research question, the theory section is not used to set up hypotheses. Instead, this chapter explains the scientific discourse on technology, as well as the ideologies of the Luddite and Neo-Luddite movement. There are no additional sub-questions, one question already sums up the inquiry.

This examination of the political debates on malicious technology has a high degree of societal and scientific relevance. It addresses pressing issues of the modern society, since around a third of the population experiences technophobia (Brosnan, 1998). The Time magazine (as quoted in Sale, 2015) even argued “There is a little Unabomber in all of us”, referring to the anti-technology thoughts of the Neo-Luddite terrorist Kaczynski. Due to increasing anxiety due to automation, a “growing interest in off-grid lifestyles” and worries about data and privacy issues, 2018 is expected to lead to a rebirth of Neo-Luddism and may even become “the year of the Neo-Luddite” (Bartlett, 2018). Current debates on the data policies of Facebook and the involvement of the American institutions emphasize these findings. Since during its prime, Neo-Luddism consisted of a large group of members, including highly-motivated people, the potential of another Luddite movement would be immense. Therefore, it is highly relevant to consider Neo-Luddism again, even though it fell into oblivion during the last years (Frobish, 2002). Studying a discourse for its Neo-Luddite elements gives insights on how the narratives are still applied and helps understand the fears of the LAWS-opposing parties and players.

Furthermore, there is the urgent need to examine the discursive aspects of the very recent debate on Killer Robots: Many experts already expressed the societal relevance and the “urgency to consider legal, ethical and moral implications” (Alston, as quoted in CSKR, n.d.) towards LAWS some years ago and called for political debates on this topic (Sharkey, 2012). The rapidly increasing number of papers dealing with the ethical issues of LAWS in the last years and the growing success of the Campaign to Stop Killer Robots underline the high topicality of these issues. Additionally, the debates on Killer Robots and on future policy-making are expected to influence future discussions on two enormous movements as well: Firstly, the new developments in this technology might change the way malicious technology is seen and the efforts towards a ban might blaze a trail for regulation of weapons in the future (Baum, 2015). Secondly, the ongoing changes in the character of warfare, mainly the dehumanization of the battlefield (Royakkers & van Est, 2010), are already impacting the foreign and security policies of national states - the development of Killer Robots would take the war between machines to another level. Now, with the leading political

platform for discussing malicious technology addressing the topic of LAWS, it is important to get insights into the status quo of these debates and to show, what issues are being addressed.

By asking an exploratory research question, inductive research is conducted, using the examined case of MSC debates on LAWS to come up with a theory that can be generalized. This research question is answered by conducting a discourse analysis, applying a coding scheme to search for typical Neo-Luddite elements (namely the conflict between humanity and technology, resisting the technological progress, the fear of an uncertain and dystopian future and the use of science-fiction narratives) in the debates on Killer Robots at the MSC. Therefore, Stake's qualitative case study approach (1995, 2006) is applied, which follows a Constructivist approach, examining and interpreting how individuals and groups construct reality. The examined data set includes a total of 26 documents, mainly publications by the Munich Security Conference and newspaper articles covering the MSC meetings. The focus of this discourse analysis lies on textual data, but visual and audiovisual data is included as well. All sources were taken from the time frame January 2016 until March 2018, addressing the issues of Killer Robots. Most texts and videos are English, but some German newspaper articles were included as well.

2. Theory

2.1. Introduction

This section describes the leading concepts that pop out given the aim of the research and the research question, namely the scientific discourse on technology and two campaigns against the technological progress and its side effects: Neo-Luddism and its precursor Luddism. This chapter aims to point out the main characteristics of such technology criticism, mainly focusing on the Neo-Luddite discourse. From this theoretical consideration, the three dimensions of the coding scheme, namely the conflict between humanity and technology, resisting technology, uncertainty and dystopia and the use of science-fiction narratives, are applied to search the data set for Neo-Luddite elements as the base of the conducted discourse analysis.

2.2. Scientific Discourse on Technology

Given the research question of this paper, the discourse on technology pops out as the first important topic to be discussed. As already stated in the first sentence of this thesis, technology is omnipresent. Since the Industrial Revolution, technology has begun to take over and today, most people cannot imagine living without their TV, smart phone or laptop. Especially businesses profit from the permanent innovation and omnipresence of technology, increasing their productivity through time and cost savings.

This triumph of technology is described best in C.P. Snow's "The Two Cultures", the first part of a highly impactful lecture. According to Snow, the "intellectual life of the whole of the western society" (as quoted in Allen, 2014) is divided into two groups, the humanities and the sciences, whose lack of correspondence does cause all the world's problems and hinders solving them. Snow especially blames the humanities, the "traditional culture", for this: The conservative and backward-looking musicians, artists and historians only show interest in their own fields, whereas scientists, for instance physicist, trust and respect the arts as well. This mindset leads to a rapid decline of humanities and the loss of their superiority. Sciences on the other hand are expansive, with today's average person being "scientifically-savvy" (Allen, 2014) and handy with technologies. Promoters of the ubiquity of technology see this as an opportunity to "grasp the future and pull ourselves forward" and argue "If we do so, we will indeed renew the American Dream and enhance the promise of American life" (Dyson, Keyworth, Gilder & Toffler, 1994).

In his book "The Whale and the Reactor" (1986), Winner states that there is a magnificent gap between the rhetoric of such writings and actual reality, he even calls utopian novels "blatantly technopornographic" (p. 13). Furthermore, he argues, only few try to get to the bottom of the utopian

promises of scientists by asking questions such as “What could go wrong?”, whereas the majority is neglecting the ambivalence of the technological progress (Leckie & Buschmann, 2009). In conflict with the optimistic science-fiction novels of Jules Verne or Iain Banks, later writings were characterized by a fear of technology and descriptions of a dystopian culture. This fear of technology re-emerged after World War II, with the deployment of nuclear weapons and the soon emerging Cold War. Just like the general discourse on technology, the middle of the 20th century was marked by a split between “utopian technophilia and dystopian technophobia” (Jones, 2006, p. 11), producing a long list of science-fiction novels and technology-criticizing writings such as Orwell’s “1984” or “I, Robot” by Asimov.

“Criticism of technology is nothing new”, argues Feenberg (n.d.), “[w]e hear it constantly. Technology is poisoning us, making us fat, wasting our time, spying on us, and depriving our children of an education”. Leading social scientists such as Heidegger (1977) and Ellul (1964) dedicated their works to the problems of technology as well. Ellul (as quoted in Frobish, 2002) for instance argues, that many do not see or understand the power of technology and how it is rooted in social institutions, falsifying the prevailing “naive perceptions” (p. 207) that technological progress is equal to human progress and that technology is somewhat holy and sacred - in line with later Neo-Luddite thoughts. Winner (1978) points out, that the main problems of technology are always “unintended consequences” (p. 89) and that it cannot be foreseen for what purposes inventions will be used for. As examples, he names air pollution caused by cars and job loss caused by automation (p.89). Reasons for the impossible anticipation would be the interconnectivity of technology and social life, as well as rapid evolution of technology, which can be compared to Darwin’s theory of biological evolution (Marx, 1906, as quoted in Winner, 1978). Likewise, Ellul (1964, as quoted in Winner, 1978) had argued before, that humanity lost its control over this evolution and technique in general. Winner (1978, p. 98) explains: “Each new variety of apparatus, technique, or organization expands the sphere of human possibilities to a degree which, in the nature of things, remains uncertain.” Not knowing, what technology is going to be used for, leads to possible misuse or abuse of inventions. One could for instance name the use of technology for genocide, such as the crimes to humanity committed in the concentration camps in Nazi-Germany (Katz, 1992) or the use of Artificial Intelligence for warfare and other malicious purposes (Russell & Norvig, 1995), which are further discussed in this thesis.

2.3. Luddism: Opposing Technology during the Industrial Revolution

The first movements to draw attention to the threats of technology and the first efforts to crack down its reign appeared during the Industrial Revolution: Luddism emerged in the beginning of the 19th century as a protest against the loss of status due to the Industrialism. The Luddite movement united English workers that were fed up with technology and its dominance, which could only be stopped by anti-

technological philosophy (Thompson, 1963). Still, the Luddite movement was not anti-technological in general: It was only aimed at the technologies of others, taking away the jobs and status of the lower societal groups. Most Luddites were unemployed textile workers and weavers that had lost their jobs to the more productive weaving machinery. Luddites also protested against the bad conditions of labor and; thus, the exploitation of the workers. Whereas the status and wealth of the middle class increased, the workers remained poor and were exposed to bad conditions of living. Lead by the mythical figure of “General” Ned Ludd, the textile workers started to sabotage and destroy machines, after their first attempts of petitioning against “Machinery hurtful to Commonality” (Thompson, 1963, p. 530) was unsuccessful. The Luddite movement had political and economic components, but mainly took place in the underground. Like the attempts of petitioning, the violent actions of Luddism remained unsuccessful at large. According to Sale, “Luddites established themselves as the symbol of those who resist the new technologies and demand a voice in how they are to be used”, but otherwise failed to produce significant results (Kelly, 1995). The movement was violently stopped by the British Army, its leaders were hanged.

Like the ideas of the promoters of the technological progress, the legacy of the Luddites was kept alive by “novels, poetry, films, images in pop cultures, activist subcultures” (Jones, 2006, p. 4). Winner (1978), who is known for being one of the first Neo-Luddites, states in line with Luddite ideology that society is losing control over its own tools: He uses the fictional example of Frankenstein and his monster to show the bondage of humanity to its inventions. The novel by Mary Shelley was published in 1818, shortly after the peak of Luddism, and is not only known for being one of the first science-fiction novels, but also for being the first Luddite writing, since it formulates “a warning about the dangers of runaway science” (Lindholdt, 1997, p. 869). As Jones (2006), Dinello (2006) and Lindholdt (1997) found out, such science-fiction writings and similar narratives have been important tools for translating and reproducing Luddite and Neo-Luddite ideology. Studying such science-fiction narratives in social sciences can be applied as an important tool, for instance for understanding organizations and their structure (Savage, Cornelissen & Franck, 2017). Menadue and Cheer (2017), stress the applicability of science-fiction as a tool for gaining cultural insights, for instance on understanding the hopes and fears of the public. Frase (2010) even points out many similarities between the two fields social sciences and science fiction, stating:

(...) both fields can be understood as projects that attempt to understand empirical facts and lived experience as something which is shaped by abstract—and not directly perceptible—structural forces. But whereas social science attempts to derive generalities about society from concrete observations, SF derives possible concrete events from the premise of certain sociological generalities. (Frase, 2010)

Since science-fiction, especially dystopian literature, has been successful to predict multiple technological developments, it can be used as a prophecy, or even an alarm to oppose the rapid progresses of technology - neglecting such prophecies would equal praying to the god technology. Therefore, all technophobia is rooted in science-fiction narratives. (Dinello, 2006) Of course, this is valid for the Neo-Luddite discourse as well: Romantic poetry, science fiction pop culture and literature translated technophobia and the Luddite idea into the modern age and helped constituting the movement of Neo-Luddism: "Whether modern neo-Luddites are aware of it or not, their idea of the original Luddites has been powerfully influenced by the novelization of Luddite history" (Jones, 2006, p. 11). Just as its successor, the Luddite discourse was centered around narratives and myths as well, such as the legends on General Ludd, the fictional leader of the social protests.

2.4. Neo-Luddism: Opposing Technology in the Computer Age

In the 1990s, society was facing another technological revolution, with a "new generation of technologies" (Glendinning, 1990) approaching. Most importantly, the early 1990s marked the birth of the internet and its rapid growth "from a single experimental network serving a dozen sites in the United States to a network of networks linking millions of computers worldwide" (Abbate, 1990), and thus, the global expansion of economy. Like the Industrial Revolution, this new development raised new concerns, from fears about possible job loss to being afraid of a possible exploitation by the owners of such new technologies. Furthermore, this time was characterized by worries about the effects technology might have on the economy, with the recent disaster of Chernobyl in 1986, as well as growing concerns about the greenhouse effect and climate change. Alongside these fears, narratives and ideologies of the Luddite movement reappeared, the Neo-Luddite movement was born, questioning the "predominant modern worldview, which preaches that unbridled technology represents progress" (Glendinning, 1990). Neo-Luddites propose an anti-technology philosophy as the only way to avoid the ultimate catastrophe of wrecked mankind due to a takeover by the machines. Their discourse is characterized by their "hostility to modern technology and their desire to promote low-tech and locally rooted economies as a basis for a sustainable future" (Sale, 1997), considering the Amish and comparable tribe-like communities as superior to modern society (Sale, in Kelly, 1995).

The Neo-Luddite discourse is characterized by a broad diversity and range of thought: The movement contains elements of various other social movements, including anti-globalization, anti-capitalism, anti-science and radical environmentalism (Sale, as quoted in Frobish, 2002). Additionally, Technophobia and technology-criticism can be found in all levels of society - therefore Neo-Luddites can be intellectual thinkers (such as Kaczynski or Sale), green and social activists (such as Glendinning), hippies, workers who lost their jobs to automation and many more (Jones, 2006) - unlike Luddism, which

was only a movement of the working class. The supporters of Neo-Luddism can also be distinguished in terms of the intensity of their techno-criticism, ranging from little resistance up to major sabotages, for example as performed by the infamous Unabomber Ted Kaczynski (Sale, as quoted in Frobish, 2002), who despite his use of violence and terror, for some Neo-Luddites still is considered to be an iconic hero. Kaczynski (1995), who proposed a revolution against technology, that “may or may not involve physical violence”, used letter bombs to target universities and airline companies, comparable to the violent action of the Luddites.

According to Glendinning (1990), Neo-Luddism is based on three principles: (1) Like Luddism, Neo-Luddism is not anti-technology in general, only opposing technologies destructing humanity, society and the environment - for instance nuclear and chemical technologies, as well as television and computers. (2) All technologies are used for political purposes. (3) The individual should know that the “personal view on technology is dangerously limited” (Glendinning, 1990). Sale (2006) expands Glendinning’s (1990) definition of Neo-Luddism, coming up with a total of eight lessons. Sale agrees, that “technologies are never neutral, and some are hurtful” (Lindholdt, 1997, p. 872), that they should only be under the control of people with a consciousness for environmental issues, and that there is the need for social and political resistance to the industrial progress. Furthermore, Sale (as quoted in Lindholdt, 1997, p. 872) describes Industrialism as a “cataclysmic process destroying the past, roiling the present, making the future uncertain” and mentions the problematic intertwinement of Industrialism and the nation state. Moreover, Sale calls for a shared philosophy opposing malicious technology and predicts the collapse of the industrial society in the coming decades.

After its peak in the 1990s, the Neo-Luddite discourse suddenly fell into oblivion due to various struggles of the movement. Firstly, the actual number of Neo-Luddites always was unknown, and the movement never had a clear structure - there is not even unanimity about the actual goals of the Neo-Luddites. Whereas the original Luddites followed the voices of certain leaders and organized joint events, Neo-Luddism only seems to exist in the mind of technophobes and very few actions (e.g. the attacks by Kaczynski), with a few leading thinkers coming out to public. Even though there were attempts to structure the movement, such as the Second Luddite Congress in 1995 (there was no first meeting), Neo-Luddism remained chaotic (Sale, 1997). Secondly, since the followers of Glendinning, Sale and other Neo-Luddite leaders today mainly communicate and organize themselves via the internet, the loose structure of the movement is even based on a paradox - the technology critics are using technology to criticize technology (Frobish, 2002). And thirdly, there is the urgent need for Neo-Luddites to come up with “another grand narrative that makes economic and political sense – one that is technologically feasible” (p. 214). Otherwise, Neo-Luddism is to be written off and said to remain in the underground as an irrelevant movement. In line with Frobish (2002), even Sale admitted in 2015 that the urgently needed resistance he

called for, never appeared. Instead of a containment of the technological progress, the opposite happened, with the rapid expansion of the internet and social media, as well as the invention of smartphones and growing applications of Artificial Intelligence. Critics of the technological progress, such as the Neo-Luddites, see this development as the root of all societal evil:

Technology has truly won out over individual and collective human lives, with severe — I would say catastrophic — effects on economics at all levels as machines increasingly outperform humans, allowing the stagnation of the middle class, the growth of the underclass, and the triumph of the one-percent. (Sale, 2015)

2.5. Concluding Remarks

There has been a constant debate between supporters of the technological progress and technology critics bashing the side-effects that come along with it. Luddism, the first movement opposing the Industrialization, created a large legacy, but was shut down and remained unsuccessful at large (Sale, in Kelly 1995). Still, science fiction novels, other social movements and the side effects of the digitization lead to the rebirth of Luddite discourse and the emergence of Neo-Luddism (Jones, 2006). Neo-Luddites question the “unbridled technological progress” (Glendinning, 1990) in the computer age, in the context of the emerging internet and the natural disasters caused by technology. Due to various struggles, such as the paradox of Neo-Luddites using the internet to spread their ideas and missing political and economic sense-making (Frobish, 2002), the Neo-Luddite discourse sunk into oblivion in the last years. The following chapters aim to examine, whether Neo-Luddite elements are still to be found in the discourse on malicious technology by studying the case of LAWS and the Munich Security Conference. The discourse analysis shows similarities and points out major differences between former and current discussions. By searching for technology-opposing, Neo-Luddite elements in the MSC discourse on Killer Robots, this research provides a novel view on a highly debated topic, by taking an old view and applying it to a new issue.

3. Methods

3.1. Introduction

This thesis answers the research question by conducting a discourse analysis on MSC discussions on LAWS. Since in this thesis, reality is constructed by groups and individuals and needs to be interpreted, a Constructivist approach is followed, applying Stake's qualitative case study approach (1995, 2006). This research is inductive, getting from a specific observation to a general theory, which is formulated after analyzing the data set and finding patterns in the observation. Therefore, this research can be classified as exploratory, aiming to discover new ideas and thoughts and to make new insights into an under-researched topic. A single case is examined.

3.2. Case Selection

The method of discourse analysis suggests itself as a perfect method for analyzing political debates, such as the ones at the MSC, since "politics is an arena in which different interest groups seek to establish a particular narrative or version of events as a means to pursue political objectives" (Jacobs, 2006, p. 1). According to van Dijk (1997, p. 360), political discourse is significant for "enactment, reproduction, and legitimization of power and domination". This falls in line with the arguments of Fairclough and Wodak (as quoted in van Dijk 1997), who state that "power relations are discursive" and "discourse constitutes society and culture" (p. 353). Political language even became part of the institutional structure of politics, causing the emergence of new thoughts and actions (Connolly, as quoted in Jacobs, 2006). Furthermore, discourse analysis has numerous advantages over traditional policy research, which has not been as successful in analyzing ideological arguments exerting an influence on policy making (Hastings, 1998).

There are only few events that bring together as many prestigious experts on security issues and technology as the Munich Security Conference does. The conference functions as "an important independent venue for policymakers and experts for open and constructive discussions about the most pressing security issues of the day—and of the future" (MSC, 2014). Since its beginning in 1963, the conference has developed from an exchange between German and US diplomats to an important institution for creating European and global identities in security politics (Greiff, 2011). Joe Biden, former Vice President of the United States explains: "Like no other global forum, today's Munich [Security Conference] connects European leaders and thinkers with their peers from across the world to have an open and frank exchange of ideas on the most pressing issues we currently face" (Ischinger, 2014, p. 20). In 2017, the Munich Security Conference was awarded the title "Best Think Tank Conference" for its reputation, force and accomplishments for the fourth consecutive time. Still, the MSC remains highly under-researched by

scholars. There are only a few scientific presentations of its history and some analyses of certain speeches. All these arguments show the high impact of the informal meetings at the Hotel Bayrischer Hof in the Bavarian capital and explain, why it is worth examining the debates at Munich Security Conference.

Robots suggests themselves for examination because they embody the “love-hate relationship with our technology”, explains Wilson (as quoted in Barber, 2011): The specific case of LAWS covers runaway technologies as well, an example of malicious technology - since the term “autonomous technology” is used as a general label for all conceptions and observations to the effect, that humans cannot intervene, and technology is out of control. Unmanned robotic systems can be divided into three categories based on their level of autonomy: Human-in-the-Loop weapons only act under human command, Human-on-the-Loop weapons act on their own but are monitored and can be overruled by a human being. The third form of robotic weapons are Human-out-of-the-Loop weapons, with the robots being fully autonomous, selecting and eliminating targets without human interaction and supervision. (HRW, 2012) This thesis defines the term Killer Robots as a synonym to the idioms Lethal Autonomous Weapon Systems and autonomous weapons, considering the latter two concepts of Human-on-the-Loop and Human-out-of-the-Loop weapons.

3.3. Method of Data-Collection

The data set examined in this thesis consist of 26 documents in total. Twelve of them were published by the Munich Security Conference itself, including the video of a statement by Benjamin Netanyahu, prime minister of Israel and the full event on Artificial Intelligence and Conflict from the MSC 2018. Furthermore, the analysis considers the Munich Security Reports from the years 2016, 2017 and 2018, as well three articles from the 2018 edition of the Security Times, a magazine published by The Atlantic Times and the MSC on security policy issues. All sources mentioned above are in English and can be found on the website of the MSC. While analyzing the data, it was decided to exclude the photograph of Benjamin Netanyahu (MSC, 2018c) from consideration, since it does not include textual data that can be analyzed. Whereas the videos from MSC events can be searched for keywords manually, there is not such possibility with a photograph. Additionally, the essays of the MSC Junior Ambassadors (MSC, n.d.) were excluded as well. Surprisingly, even though their task included addressing new technologies in warfare, none of the published essays included LAWS as a pressing issue.

According to MSC project manager Leonhard Simon there are no video recordings of the 2016 event “The Future of Warfare: Race with the Machines”, an event that would have been very important to this research. To make up for the lack of primary sources on this and to extend the scope of the data set, this thesis also considers 13 English and German newspaper articles on the debates of Killer Robots at the MSC, predominantly focusing on the 2016 event on AI in warfare and the latest events of MSC 2018.

Especially the article by Ignatius (2016) helps makes amends for the missing video on the “Future of Warfare”-event. All items that could be found online were included, besides those just copying or strongly referring to included articles, such as Highbeam Research (2016) for instance copied the article by Ignatius (2016). Since all traceable articles were included, the newspapers were not selected for additional reasons, such as only considering broadsheet or tabloid newspapers, as other scholars have done in their own discourse analysis. Still, most writings were taken from the online platforms of prestigious newspapers, including *Süddeutsche Zeitung*, Euronews and Washington Post. Lastly, the data set contains an evaluation of the MSC 2018 by the CSKR as well, since it summarizes the debates on LAWS at MSC 2018 as extensive as no other source included. It shall be noted, that only the sections dealing with LAWS are considered in the analysis. Especially the MSC reports and some newspaper articles do not only contain stories on this issue, but on other topics such as cyber warfare or the MSC in general. These sections are excluded, since they are not relevant for this research and might falsify the outcomes of the discourse analysis.

This thesis considers the discourse on LAWS during the MSCs in 2016, 2017 and 2018, since the topic of Killer Robots was not addressed during earlier meetings. In January 2016, LAWS were discussed for the first time within publications of the MSC, when the Munich Security Report 2016 dedicated a full chapter on future technologies used for warfare. March 1, 2018 marks the end of the examined time frame, since research for this thesis started during this time.

3.4. Method of Data-Analysis

The theoretical considerations on malicious technology, Luddism and Neo-Luddism lead to the following theory-driven coding scheme (Table 1), which is applied as tool to analyze the data set. This coding scheme aroused from the discussion of scientific criticism of malicious technology and Neo-Luddite writings. For this research, this approach is superior to an observation-based coding, since it provides a clear structure, a red line one could say, to follow while analyzing the data set. The discourse analysis of the textual data was inspired by a comparable research conducted by Cook et al. (2004), combining linguistic and sociological perspectives to analyze the data set and to come up with a long list of keywords. Using the coding scheme alone, however, would not be sufficient to come up with an analysis of high quality. As Crang (1997) explains, the coding only acts as an “aid to the researcher in making sense of the material”, since “what is generally of interest is not so much the codes as the text they denote, not how often they occur but what is in them” (p. 224). Therefore, not only the quantity of the notions are considered, but what exactly is being said or written. Some of the keywords were found in many, sometimes even all the sources. These were, for instance, the keywords “ban”, “Killer Robots”, “democracy”, “future” and “control”. Such keywords were given particular attention, the structure of the analysis chapter is based on them. Keywords only found once or only in one source were mainly left out of consideration, for instance

“harm” and most German keywords. After searching for all these keywords, the long list was cut down to the four to five most important and most frequently used keywords per dimension.

Table 1: Coding Scheme

Humanity vs Technology	Resistance Against Technology	Uncertainty and Fearing Dystopia	Science-Fiction Narratives
Democracy	Ban	Future	Terminator
Human Values	Regulation	Crimes	Movies
Technological Progress	Campaign	Potential	Killer Robots
Race Against the Machines	Standards	Ill-equipped	Apocalypse
	Responsibility	Control	Swarms of Robots

Firstly, the basic assumption of Neo-Luddism is included in the coding scheme, namely the hostility to modern technology and the conflict between humanity and technology. These anti-technological thoughts, which already acted as the engine of Luddism, unite all Neo-Luddite thinkers and form the base of the movement. Secondly, Neo-Luddites do not only criticize the technological progress, but also call for a resistance against modern technology. Often, they “advocate a revolution against the industrial system” (Kaczynski, 1995) and call for a shutdown of harmful technologies. Thirdly, the coding scheme contains the notion of the Neo-Luddite fear of an uncertain future and a dystopia caused by the technological progress. According to Sale (as quoted in Lindholdt, 1997, p. 872), the cataclysmic process of Industrialism creates an uncertain future, which leaves room for technophobia and Neo-Luddite ideas of an apocalyptic vision of technology not only hurting but destroying humanity and mankind. Such Science-fiction narratives have been important tools for spreading the message of Luddites and Neo-Luddites and are therefore included as the fourth dimension of the coding. Beginning with the novel “Frankenstein” by Mary Shelley (Lindholdt, 1997), (Neo-) Luddite and technology-criticizing literature have been crucial for describing dystopia caused by the use and abuse of technology. Science-fiction novels and pop-culture helped constituting Neo-Luddism, translating the fear of the Luddites into the modern world (Jones, 2006), with multiple predictions, for instance the concept of a surveillance state given in Orwell’s “1984”, becoming reality.

Even though the method chosen for this thesis is coherent and can be recreated, there are some potential threats that need to be discussed: Firstly, the use of a case study might have some notable effect on the outcomes of the research. Building theories from case studies can cause threats to the research as well, such as the possibility of an ethically questionable selection bias (Guba & Lincoln, as quoted in

Merriam, 1998) and the theory emerging being too narrowed down to the specific case (Eisenhardt, 1989). Since “its strengths outweigh its limitations” (Merriam, 1998, p. 41), the use of a case study is justifiable though and can be applied with good conscience. However, its limitations need to be considered when carefully generalizing the results. Secondly, some issues of the method of discourse analysis need to be addressed. Jacobs (2006) mentions little practical relevance, limited practical utility and the reduction of everything to discourse as often criticized weaknesses. This research, however, is closely connected to the real world and highly relevant in a practical way, as it is addressing the frequently debated topic of Killer Robots. The findings of this case study can be utilized to predict future developments and upcoming debates, for instance on the dehumanization of warfare and future regulation of weapons. The critique on the reduction of every aspect of a political issue to discourse was already falsified by van Dijk (1997, as quoted in Jacobs 2006), who argued for discourse having a “material component and [being] part of a more complex set of social events” (p.46). A relevant issue threatening internal validity might be a possible selection bias, only including data confirming previous research results. To prevent such bias, all MSC data available dealing with the topic of Killer Robots and all German and English newspaper articles on the debate on Killer Robots in Munich are included. Still, the biggest issue of this research might be incompleteness: In 2016, a major event at the MSC addressed “The Future of Warfare: Race with the Machines”. This event would probably have been at the center of these investigations. However, neither are there recordings nor protocols of this session, as a member of the MSC organization team explained.

3.5. Concluding Remarks

The following analysis contains the observation and interpretation made from applying the coding scheme to the data set, searching for Neo-Luddite elements in the MSC discourse on Killer Robots. This case was selected due to the high relevance of the current debates on LAWS and the high status of the Munich Security Conference as a platform for discussing technology. Firstly, the discussion of the relevance of the topic, the gaps in findings this far, and the aims of this research lead to the setting of the research question. Secondly, the data set is selected, consisting of 26 documents in total, including videos and photos of MSC events, MSC publications, and media coverage of the MSC discourse on autonomous weapons. Thirdly, a coding scheme is developed by focusing on four essential features of Neo-Luddism, namely mentioning the constant battle between humanity and technology, attempts to regulate the technological progress, fearing an uncertain, maybe even dystopian future and making use of science-fiction narratives to stress technophobic reasoning. Fourthly, by applying this coding scheme as a tool, the data set is being searched for Neo-Luddite elements. Lastly, the findings will be analyzed and discussed as part of the actual discourse analysis. Then, it is expected that it is possible to give an answer to the stated research question.

4. Analysis

4.1. Introduction

This chapter outlines the findings of the discourse analysis that were noticed when analyzing the data set with the help of the coding scheme. The method of discourse analysis is applied to examine how Neo-Luddite narratives and ideologies are established in these political debates - traditional policy research would not be sufficient to unmask this discourse. Four typical features of Neo-Luddism, which multiple authors agree upon, are applied to analyze the MSC discourse on Lethal Autonomous Weapons. The findings from these dimensions, as pointed out in the theoretical framework and in the theory-based coding scheme, are presented in their own section each. Firstly, this chapter shows the constant mentioning of the radical advancement of technology. Secondly, the call for a resistance against this technological progress is presented. The third section elaborates on two of the main reasons for this demanded resistance, namely the high degree of uncertainty and fearing a dystopia. Lastly, the use of science-fiction narratives, a popular tool for spreading Luddite and Neo-Luddite ideas, is presented. Based on the findings, conclusions are made to shed light on the existence of Neo-Luddite ideas in the MSC discourse on LAWS and on whether the Neo-Luddite idea continues to live on, even though the movement was already declared death.

4.2. The Technological Progress and its Challenges

In 2016, the Munich Security Conference addressed autonomous weapons for the first time, asking the question “(...) will humankind win the race against the machines?” (MSC, 2016, p. 46). This competition between humanity and technology are addressed in the following section, as the first Neo-Luddite element to be found in the MSC discourse on LAWS. Constantly, there are new weapons deployed, with large investments made by the nation states into research and development. The strong notion of the technological advancements in this context refers to these processes, since warfare is marked by permanent new inventions of better, quicker and stronger weapons - ranging from the invention of bow and arrow to the use of cyber technologies for martial purposes. LAWS are even often referred to as “the third revolution in warfare” (MSC, 2016), following the footsteps of gunpowder and nuclear arms. The steady technological development, especially in fields like cyber technology, ICT, and Artificial Intelligence, is addressed in all kinds of data analyzed, ranging from the description of rapid innovation in MSC publications (Min-Seok, 2018, p. 41) to a notion of the “rapidly evolving interface of technology and security” (Ignatius, 2016) in the media coverage. The actual current state of technology remains unknown by most citizens, and even experts are not unanimous, for instance on the possibility of Killer Robots: Whereas some predict their arrival in a few years, others claim, that they are decades away (Russell, 2018, p. 40) and others argue, that

humans will always keep control about weapon system (Cebul, 2018). Russell (2018) analyzes “At present, the broader public has little awareness of the state of technology and the near-term possibilities” (p. 40), and sees the limited care for such issues. The Estonian president Kaljulaid agrees as well by pointing out, that is not even clear yet, what risks are feared. This would only change, if LAWS become commonly used weapons, but then it would be too late to intervene (Aitoro, 2018). The discrepancies in describing the possibility of Killer Robots and Russell’s argumentation fall in line with Glendinning’s (1990) explanation of the personal view on technology being inadequate and limited. These rapid developments cannot be foreseen, which leads to a high degree of uncertainty and the fear of a future full of malicious technology.

Multiple speakers at the MSC meetings and journalists reporting from the events share the opinion, that this technological advancement, so the constant development of new weapons, is something to observe carefully. Additionally, it is stated that policy and decision makers need to keep up with the quickness of technological development to prevent an uncontrolled arms race, which might be inevitable if “one of the major military power pushes ahead with [AI] weapons development” (Winship, 2016, MSC, 2016). Especially military technology needs to be at the focus of observers and policy makers, argues Gottenmoeller, Deputy Secretary General of NATO:

There are new frontiers of technology that we have to keep a sharp eye on. We have to understand how they can emerge into the defense sphere — either as threats or as useful military technology. (Cebul, 2018)

Like Sale (as quoted in Lindholdt, 1997), such statements call for public consciousness and debate on the side-effects for humanity, that come along the rapid technological advancement. This means, that the development and deployment of new weapon systems can not only change the way wars are fought, but it also influences values embedded in the Industrial society, in this case especially threatening moral values. Neo-Luddites, such as Glendinning or the terrorist Kaczynski, predicted the end of the industrial society and its values, if humanity does not understand and acts against the dangers of technology. The possible impact of technology on democracy for instance was highly debated at the MSC in 2018, addressing topics such as digital activism and Fake News, as well as the implications of Artificial Intelligence in politics - technologies, that are “capable of transforming society” (Sanders, 2018). These discussions, however, did not particularly address the concept of Killer Robots.

LAWS are especially accused to cause ethical and moral issues: When first mentioning autonomous weapons in its publications, the MSC directly pointed towards such “profound ethical dilemmas” (MSC, 2016, p. 46) and the need to discuss their implications for humanitarian law. The ethical issues of letting machines decide on human lives and deaths dominate the general debate on Killer Robots as well, forming

the base of the movements to stop LAWS. Scientists (Sparrow, 2007, Sharkey 2012) and humanitarian organizations (HRW, 2012) name the contrast to moral and ethical concepts as the leading reasons to prevent the development of autonomous weapons. According to HRW's Mary Wareham, also one of the leaders of the CSKR, the moral issue of letting a machine decide about life and death crosses a moral line and can be considered as the biggest problem of autonomous weapons. Her interlocutor Rasmussen agrees and argues, that lethal force should remain in the hands of human and should not be handed to technology (MSC, 2018a). Russell (2018) also quotes former US president Obama, who stressed the importance of "fundamental moral questions about whether and to what extent computer algorithms should be able to take a human life" (p. 41).

Additionally, Russell (2018) answers the MSC's question from 2016 regarding the implications of LAWS on humanitarian law, by referring to the Martens Clause. As the preamble to the 1899 Hague Convention, the clause deals with the laws and customs of war on land, for instance by referring to the principle of humanity. The development and use of LAWS contradicts this clause, and therefore international humanitarian law, especially by disproving the following principle: "The human person remains under the protection of the principles of humanity and the dictates of public conscience" (Russell, 2018, p. 40). In addition to the moral issues caused by violating humanitarian law, Russell (2018, p. 40) mentions the lack of ability of current AI to determine necessity and proportionality as another aspect leading to inferiority of the machines to human decision-making. Constantly, experts such as Eric Schmidt (as quoted in Cebul, 2018) refer to errors in technology and describe a lack of reliability, which leads to a high degree of uncertainty (see Section 4 of this chapter). The relationship between humans and machines and who is superior to the other is observed to be one of the leading debates at the MSC when it comes to discussing technology - unlike typical Neo-Luddism, where this is rarely debated. Instead, Neo-Luddite writers focus on the issues caused by this relationship and only fear the ultimate inferiority of humans after a machine takeover.

On the other hand, there are also many voices at the MSC supporting the idea of technological progress meaning human progress, opposing the Neo-Luddite ideas. Supporters of the development stress that LAWS can free soldiers from the danger and that robots do not make careless mistakes, which in warfare could have deadly consequences. Arkin (2018) for instance, refers to AI being a concept proving that technological development should be encouraged, for the better of humanity - generally and for military purposes. According to him, AI can be used to "save innocent lives where humans may and do fail" and to "reduce man's inhumanity to its fellow man through technology" (p. 40). At the 2016 event on the Future of Warfare, the advantages of LAWS over human soldiers were addressed as well, describing the machines' superiority on the battlefield. While also promoting to bump technological advancement, Work (as quoted in MSC, 2016) does not address superiority and inferiority. Instead, he argues, that machines and humans

can complement each other, stating “So the future of combat, we believe, is going to be characterized by a very high degree of human-machine symbiosis” (p. 46).

Summarizing the observations made regarding the relationship between technology and humanity, it can be argued that there is a constant notion of the rapid advancements of technology and the challenges that come with it. In this case, this refers to the permanent invention of more forceful weapons, the arms race that comes along with it, and the threats to moral and ethical concepts. Even though there are some supporters of the use of AI in warfare at the MSC, most speakers and writers address the superiority of human decision making over machine thinking and the threats to human values and society. These statements fall in line with Neo-Luddite thinkers such as Sale predicting the downfall of the Industrial Society, and the destruction of values and norms through technology.

4.3. Calls for Regulation

When mentioning the quick development of new technologies, especially of new weapon systems, Wareham stresses, that there is the urgent need to come up with agreements, saying “This is a game-changing technology. This is something we can do something about” (Reuters, 2018). Such resistance against, or rather a regulation of the technological progress is one of the main targets of Neo-Luddites as well, who promote a revolution against malicious technology and a return to low technology economies and societies.

The main efforts in the worldwide debates on LAWS are oriented towards the introduction of legally binding standards or even a ban of such weapon systems. Likewise, almost all discussions at the MSC in 2016, 2017 and 2018 involved the consideration on whether a global treaty is needed or not. Therefore, keywords such as “campaign”, “ban”, “regulation”, or “standards” were used frequently in the MSC talks and publications, as well as in the media coverage. Most MSC speakers fear the rapid technological developments in this field and fear a future characterized by runaway technology and abuse (4.4), which gives reason for clear statements for regulating LAWS, such as the following quote by Anders Rasmussen:

I’m in favor of trying to introduce legally binding [standards] that will prevent production and use of these kinds of autonomous lethal weapons (Rasmussen, as quoted in Aitoro, 2018).

The CSKR, perhaps the leading actor in organizing the prohibition of autonomous weapons, took part in the MSC meetings of 2016 and 2018 as well, expressing its worries about LAWS and promoting a treaty. One of the main missions of the campaign is to assemble like-minded countries and to have them

sign its petition. Previous campaigns, partially fueled by the same organizations and individuals, have been successful in regulating and prohibiting the development of landmines, chemical weapons, and blinding lasers. Now, the efforts to prevent Killer Robots should follow their footsteps for the better of humanity, explain Rasmussen and Wareham (MSC, 2018a). In 2015, a public letter by experts in AI and other technologies promoting such a ban attracted attention, it was included in the Munich Security Report 2016 as well. The letter ends with the following phrases:

In summary, we believe that AI has great potential to benefit humanity in many ways, and that the goal of the field should be to do so. Starting a military AI arms race is a bad idea, and should be prevented by a ban on offensive autonomous weapons beyond meaningful human control (MSC, 2016).

This quote supports the arguments by Neo-Luddite author Glendinning (1990), who stated that not all kinds of technology should be opposed, but only those threatening society. Likewise, the experts, including Elon Musk, Steve Wozniak and Stephen Hawking, pointed out, that only the field of military AI should be stopped by signing a banning treaty, whereas the use of AI in other fields should be encouraged. One of the reasons multiple speakers at the MSC promote standards seems to be the feeling of not being prepared for the implications of the possible deployment of LAWS. Speakers have stated, that there are no clear laws or strategies on how to proceed in a war lead by robots yet (Euronews, 2018). Kaljulaid for instance states, that the “capacity to internationally agree and regulate for technological development has been extremely low” (Aitoro, 2018). Furthermore, leading political institutions, such as the NATO, cannot provide the needed support due to their slow decision-making processes, contradicting the newest developments in combat, where technology speeds up everything and calls for quick decisions (MSC, 2018a). This inability of regulating technology and the technological progress could already be seen in the debates on cyber security about ten years ago (Aitoro, 2018). This feeling of not being prepared for the future increases the fear of possible abuse of the weapon systems by terrorists and of not handling LAWS well - in line with the Neo-Luddite fear of an uncertain future or even of a dystopian society oppressed by its own technological tools.

To sum up, most politicians, as well as scientific and humanitarian experts, discussing LAWS at the MSC meetings propose a regulation of the development of autonomous weapons, either by installing a ban or by agreeing on certain standards. In line with Neo-Luddite writers such as Sale, Glendinning or Kaczynski, who called for a resistance and regulation of technology and the technological progress, the MSC speakers try to contain the negative side effects of this radical advancement. The calls for a ban are

supported by the feeling of being ill-equipped for the future technological developments, raising the level of uncertainty.

4.4. Munich as a “frightening preview”

The Neo-Luddite fear of the steady technological progress causing an uncertainty about the future, or even creating a dystopian world, can be found in multiple MSC discussion on autonomous weapons. At MSC 2016, this uncertainty due to LAWS was well summarized by the Norwegian politician Eide, who stated

We may look back on the good old days when all we had to worry about was nuclear weapons (Eide, as quoted in Ignatius, 2016).

Not surprisingly, MSC debates usually deal with future developments in security, for instance in certain territories or in topics such as the future application of technology for warfare, addressing possible developments and common strategies. Especially the issue of LAWS implies a debate on the future, since such weapons are yet to be applied in warfare. Therefore, the debates at the MSC meetings center around the consideration of possible dangers and benefits, as well as around the question whether and how to prevent feared developments. Such dangers might include the elimination of wrong targets, terrorists buying such weapons on the black market or an accidental war triggered by an error by a machine (Russell, 2018, p.40). Work (as quoted in MSC 2016, p. 46), for instance, addresses “the future of combat” when giving his presumptions about how autonomous weapons will change warfare, Ignatius (2016) calls the MSC meetings a “frightening preview”. Still, the uncertainty raised because of the steady technological progress was not as ubiquitous as expected. With LAWS being a future phenomenon, mentioning the uncertainty about what the future may hold suggested itself as a topic to be debated frequently. Instead, authors, experts and speakers all clearly stressed their opinion and ideas of (possible) developments, without marking them as guesses. Former Google-CEO Eric Schmidt (as quoted in Cebul, 2018) for instance stated, that there will never be fully autonomous weapons and that human officers will always remain on the loop. Almost everyone else predicted horror-scenarios, accidental wars or the abuse of such military technologies. Still, some uncertainties were discovered, especially in the descriptions about what LAWS will look like and what it might mean for the future of warfare.

At the center of the concerns about possible issues arousing in the future through autonomous weapons, there is the worry about losing control. Keywords such as “control” or the German equivalent appear in almost every source examined. This does not come as a surprise, since the main difference between LAWS and already existing, semi-autonomous weapons, such as drones or landmines, is the

increased loss of control: Human judgement is erased from the decision-making process, the soldier goes from “in the loop”, to “on the loop”, to “out of the loop” (HRW, 2012). Additionally, the MSC Cyber Security Summit asked the question “How do we ensure that technological progress does not escape human control?” (FSI, 2018), referring to the constant invention and development of new weapon systems as well (see Chapter 4.2.). Alongside threats to society and environment and other issues such as the possible abuse of technology, the possibility of humans losing control over its tools is on the long list of “unintended consequences” (Winner, 1978). Losing an impact on how these technologies make their decisions is one problem, another one would be the loss of control about how and by whom such weapon systems are used. The letter by AI experts calling for a ban of Killer Robots for instance stated

Unlike nuclear weapons, they require no costly or hard-to-obtain raw materials, so they will become ubiquitous and cheap for all significant military powers to mass-produce. It will only be a matter of time until they appear on the black market and in the hands of terrorists, dictators wishing to better control their populace, warlords wishing to perpetrate ethnic cleansing, etc. (MSC, 2016, p.47)

Likewise, Russell argues, that LAWS will be easy and cheap to develop, transport and to operate, raising the likelihood of an abuse of this kind of technology. These fears of an uncertain future can also be extended by mentioning the possibility of “an accidental war – a military ‘ash crash’ involving spiraling and unpredictable high- speed interactions among competing algorithms” (Russell, 2018, p. 41). Multiple sources addressed the potential of LAWS leading to worldwide instability in security politics and reducing human security on various levels, ranging from personal to international security issues (Russell, 2018, p. 41). The uncertainties about when and how LAWS are deployed, who uses them and how will it change the way wars are fought in the future “might make the world more unstable” (Rasmussen, as quoted in Euronews, 2018). Such results might not only be drastic, but irreversible as well, explains Russell (2018, p. 41). The issue of the irreversibility of the impact caused by technology can also be found in the writings by Glendinning (1990).

Various experts have stressed the possible issues of a future with LAWS, fearing the uncertainty and a possible worst-case scenario of political instability and a lack of security. This might be caused through various issues, for instance through a deployment of Killer Robots by dictators or terrorists, as well as the beginning of an accidental war. Such a dystopian future, as predicted by the Neo-Luddites, seems to be inevitable for some, others claim that a treaty against Killer Robots would prevent such scenarios that sound like they are descended from science-fiction movies. The following section takes a closer look into the existence of such science-fiction narratives at the Munich Security Conference.

4.5. Only few Science-Fiction Narratives

During the MSC events dealing with autonomous weapons, very few science-fiction narratives found their way into the talks by politicians and technology experts. Since the Campaign to Stop Killer Robots was not only mentioned, but its members participated in events such as the podium debate “The Force Awakens” at MSC (2018a), the term “Killer Robots” was ubiquitous. The idiom is often used as a synonym to LAWS, especially when a source is pointing to the negative sides of LAWS and wants to warn of the future developments in this field. Furthermore, this term is easy to memorize due to the connection to dangerous humanoid robots in science-fiction such as Frankenstein or the Terminator. This is probably the reason, the CSKR selected its name, rather than choosing a more complicated or cloudy name, for instance “Campaign to Stop Lethal Autonomous Weapon Systems”. The ideas and organization of the CSKR itself is based on science-fiction narratives as well, with multiple elements to be found at the root of its strategies (Carpenter, 2016). This underlines the importance of analyzing science fiction in social sciences, as pointed out by Savage, Cornelissen and Franck (2017) who stress its usefulness in understanding movements and their structure, as well as the insights into the hopes and fears that drive such cultures, as explained by Menadue and Cheer (2017). Other MSC publications, such as the Munich Security Report 2016, applied the expression “Killer Robots”, too, but only in quotation marks or with the addition “what the public often refers to as” (p. 46), distancing itself from this science-fiction-inspired idiom. Furthermore, the term was used almost ironically by the robot Sophia at the event “The Force Awakens” (MSC, 2018a), when she stated that she would not be such “Killer Robot”.

In his article published in the Security Times, Russell (2018) expresses the urgency of negotiating a ban of LAWS, stating that “[t]his is not ‘science fiction’” (p. 40), but reality. To create a more realistic picture of LAWS, rather than the public picture of Terminator-like Killer Robots, Russell explains:

Autonomous Weapons do not have to be humanoid, conscious and evil. And the capabilities are not ‘decades away’ as claimed by some countries. (Russell, 2018, p. 40)

Whereas other proponents of a binding treaty make use of science-fiction to raise the awareness of the public (cf. Carpenter, 2016), for instance with the CSKR making use of a humanoid robot as one of their symbols (Ignatius, 2016), Russell pictures LAWS more realistically to stress the urgency to negotiate a ban of autonomous weapons. However, in his viral video “Slaughterbots”, not affiliated with the MSC discussions, Russell himself creates a science-fiction inspired, apocalyptic scenario (Stop Autonomous Weapons, 2017). Likewise, at “The Force Awakens”, former NATO Secretary General Anders Rasmussen predicted: “Soon, you may see swarms of robots attacking a country” (MSC, 2018a). This description of an apocalypse-like scenario raised a lot of attention, Rasmussen was quoted in almost every newspaper

article dealing with the event (e.g. Reuters, 2018, Aitoro, 2018 and Kolb, 2018). Besides Rasmussen, no one seemed to fear an apocalyptic future due to LAWS. There were no direct or indirect references to science-fiction novels or movies at all during the examined MSC events and publications, besides Wareham describing LAWS as “This is not like the Terminator”. Typical science-fiction-inspired keywords were nowhere to be found in this data. This opposes the findings by Jones (2006), who stresses the importance of such narratives for spreading the Luddite and Neo-Luddite ideologies. These tools did not find their way into the MSC discourse on LAWS. According to Dinello (2006), however, the technophobia found in the discourse, mostly explained by the two dimensions Humanity vs Technology and Resistance against Technology, is still rooted in the same fears, that drive dystopian science fiction narratives. As Frase (2010) found out, where social science determines generalities from observing specific events, science fiction does it the other way around, predicting concrete events inspired by general concerns. In this case, Rasmussen’s fear of attacks by robot swarms surmises from the general idea of humanity losing control of technology and a machine takeover, just like science fiction movies such as the screen adaptation of “I, Robot” do as well.

Whereas the MSC events and publications mainly waived science-fiction ideas, the media coverage of such events applies science-fiction narratives more frequently. Firstly, this observation can be reasoned by pointing to the common use of the term “Killer Robots”. Instead of using the term LAWS that prevails in official events and documents, the newspaper articles apply the science-fiction inspired idiom more often. Articles such as the one by Euronews (2018) even manage to completely forego terms such as autonomous weapons or LAWS, solely relying on attention-raising terms that are easy to understand for an uninformed audience. Such attention-raising use of science fiction narratives can especially be found in the headlines of the examined articles, in which the authors, for instance Ignatius (2016) and Galeon (2018), opt for the term “Killer Robots”. Additionally, other science-fiction ideas are visible as well. In line with Neo-Luddite fears, the articles include fear-stirring headings such as “AI movie death scenario” (Cebul, 2018) or “Robot soldiers” (Euronews, 2018). Additionally, the article by Cebul (2018) is centered on a quote by Eric Schmidt, who refers to LAWS-opponents being full of irrational fear inspired by science-fiction movies. Here, science-fiction is used as a tool to create distance between what he sees as reality, and the Neo-Luddite fears. Just like the headings of the articles, pictures are a broadly used as a space for science-fiction inspired content: Ignatius (2016), for example, utilizes a photograph of a humanoid robot, installed by the CSKR in 2013 for promotional purposes, Cebul (2018) even opts for a mixture of robot and skeleton, taken from the science-fiction movie series Terminator. Especially the article by Cebul is constantly referring to the pop culture of science-fiction, using terms such as “movie death scenarios”, “Terminator-like Killer Robots” and the already mentioned quote by Eric Schmidt, who addressed the opponents of LAWS by saying: You’ve been watching too many movies (Cebul, 2018). Carpenter (2016) found a close relation

between science-fiction pop culture and politics, by conducting a case study on the CSKR and the general topic of LAWS.

To sum up, there were very few science-fiction narratives used at the MSC events or in the MSC publications, especially the MSC reports almost completely forego science-fiction language. At the MSC, even the promoters of banning autonomous weapons used professional language and moderate critique on the possible side-effects of LAWS and AI used for warfare. Besides Rasmussen's vision, there was not a single vision of a machine takeover, as feared by the Neo-Luddites, or other and science-fiction inspired scenarios. The media coverage of the MSC events dealing with LAWS, however, is shaped by science fiction narratives, applied to raise the attention of the readers. This pertains especially to the headings and leading images of the articles. These observations support the findings by Carpenter (2016), who argued that science-fiction narratives helped constituting the global debates on Killer Robots and the social movement to prevent their deployment.

4.6. Concluding Remarks

To conclude, this analysis has proven that the MSC discourse on the so-called Killer Robots is pervaded by Neo-Luddite thoughts and ideology. Constantly, involved politicians and speakers mention the rapid technological advancement and the challenges that come with it, namely threats to democracy and other values of modern society. Regarding the deployment of autonomous weapons, almost everyone involved in the talks called for either common standards for or a ban of the development of such weapon systems. Such regulation of the technological progress for the better of humanity can also be found at the base of all Neo-Luddite thoughts. The resistance against technology, in this specific case AI used for warfare, is reinforced by the constant fear of losing control, as well as the possible abuse of military technology and therefore an uncertain future. Opposing the expectations, the MSC discourse was barely inspired by science-fiction narratives. Still, the media coverage of the events put these narratives to use frequently, using attention-raising headlines and images referring to movies such as "Terminator".

5. Conclusion

The present thesis examined the discourse on Lethal Autonomous Weapon Systems, so called Killer Robots, as debated at the Munich Security Conferences in the years from 2016 until 2018. The aim was to examine the intense discussions to unmask the discourse and to find patterns regarding the use of Neo-Luddite ideas and ideology in today's political debates on technology. To sum up the findings of this discourse analysis and to answer the research question, it is to say that the main technology-opposing ideas were found in the MSC discourse on LAWS: The speakers at the MSC and the publications of the conference constantly refer to the rapid advancements of the technological progress and the deployment of new and futuristic weapon systems. The unpredictable developments challenge the experts and policy makers to keep up with the enormous speed and constitute great tasks for democracy and society that are threatened by the implications of such radical and irreversible advancements. The debates are highly impacted by uncertainty and worries about losing control and about the future of society, frequently referring to ethical issues as well. To tackle these challenges ahead, politicians, experts and media involved at MSC promote a regulation of the technological progress in a small compass: The goal of those fighting against the development of Killer Robots is the establishment of a global treaty to prevent autonomous weapons, comparable to the successful campaigns to abolish blinding lasers and chemical weapons. Using science-fiction as a tool to promote the efforts was not as ubiquitous as expected, only the media referred to the "Terminator"-franchise and the associated pop-culture to raise attention. Whereas the Neo-Luddites' basic opinions on technology and the need to slow down the technological progress overlap, they differ in various other fields, leading to diversity and a broad range in thought (Jones, 2006). This research could not confirm all the various movements that help constituting Neo-Luddism, ranging from anti-capitalism and anti-science to radical environmentalism, but the existence of their common technophobia and the call for resistances, fed by fear of dystopia could be observed. All these observations lead to the result, that the MSC discourse on malicious technology is highly pervaded by anti-technological thoughts, in line with the ideology of Neo-Luddism. [Therefore, this discourse can be characterized as Neo-Luddite.]

Unexpectedly given the predictions by Frobish (2002) and the capitulation by Sale (2015), who already wrote off Neo-Luddism, this research has shown that the technophobia and calls for a resistance against the rapid advancements in science are not dead, they seem to live on. Even though internal struggles, such as the vague structure of the movement and the paradox of using technology to spread the ideologies (Frobish, 2002), did not disappear, the predominant fears and narratives are omnipresent in debates such as the examined discourse on Killer Robots. By studying the MSC discourse this research focused on debates between political elites, those who profit from technology, the triumphant one-percent – usually the opponents of the Luddites and Neo-Luddites. However, this discourse analysis proved that even the thoughts of such elites are pervaded by Neo-Luddite ideologies. This fits the loose definition and

Kommentiert [HDB2]: Satzstellung?

diversity of the movement, as observed by Jones (2006), with the possibility of Neo-Luddites being unemployed workers as well as intellectual thinkers. The findings of this research also support Bartlett's (2018) assumption of 2018 marking a rebirth of Neo-Luddism due to worries about data and privacy issues, for instance regarding the Facebook policies, as well as a "growing interest in off-grid lifestyles" (Bartlett, 2018). These observations seem to multiply the appearance of Neo-Luddite ideologies in the daily lives of individuals as well. The findings also fall in line with the high degree of technophobia in the majority of the population, as pointed out by Brosnan (1998). The present research reconsiders the social movement of Neo-Luddism, a movement that was written of for about the last decade. Unmasking the discourse on LAWS at the MSC helped discovering its relevance and showed, how its ideologies remain significant. The present thesis picked up the old ideologies and applied them to the new technology of Killer Robots and the current debates on this issue, allowing for a view from a completely new angle. Besides Hundt-Bull (2006), who provides a Neo-Luddite view on the issue in general, no scholar has provided this angle before. This thesis, however, goes in depth and analyzes the connections between the movement and the pressing debate on autonomous weapons.

Qualitative case studies need to be generalized with care, especially when analyzing a small data set, such the one underlying this research. Still, it shall be noted that the findings of this research can be generalized to the realization that the Neo-Luddite ideology remains relevant and omnipresent in political discussions on malicious technology. Even though only the discourse on Killer Robots was examined in depth, various sources included a general notion of the technological progress or even gave different examples, such as the notion of issues that come along with cyber technology. As one of the leading political events in security politics and in discussing technology, especially new inventions and developments in martial technology, the MSC functions well as a representative of the entire political discourse.

This thesis has provided multiple implications for the scientific level: Firstly, it underlines the need to further consider the Munich Security Conference as helpful source of rich data. It does not only reflect the international relations of the world's biggest players and pictures pressing conflicts and issues, such as the debates on malicious technology addressed here. The MSC also provides a comprehensive data set, ranging from the articles published in the Security Times, to the MSC reports, to the large media library that includes videos of full events, summaries and more. Furthermore, this research has discovered a new way of understanding political discussions on technology, its side effects and the attempts to regulate the technological progress. The results of this study indicate that approaching a debate on a certain technology by applying the method of discourse analysis to search for Neo-Luddite elements can be beneficial to understand the motivation, fears, and hopes of those involved. As the present analysis has proven, there is the need to reconsider the presumed dead movement of Neo-Luddism, even when looking into political discussions such as those at the MSC. Whereas some advisors and guidebooks for individuals suggest

Kommentiert [HDB3]: Kein einschnitt, zum absatz davor

implementing a Neo-Luddite philosophy in their lives, for instance by putting down their phone for certain times of the day or by promoting an off-grid lifestyle, this ideology has not been considered when analyzing certain political debates or issues. However, there seem to be countless adaptations of the fears and ideas rooted in Neo-Luddite philosophy that need to be considered. Furthermore, the thesis has provided some political implications as well. To this point, autonomous weapons have not even been debated at a handful of minor MSC events and only found their way into one chapter of the Munich Security Reports. Regarding the high relevance of the topic for global security and society, as well as regarding the urgency to act expressed by technology experts and humanitarian organizations, it seems like the topic has not gained as much attention as needed. Therefore, it seems reasonable to extend the debates and to strengthen the efforts towards a ban of LAWS, in line with a Neo-Luddite approach, as proposed by Hundt-Bull (2006). Furthermore, in line with Bartlett (2018), this research finds an increased notion of Neo-Luddite ideology, not only in the individual lives, but in political discourse as well. Therefore, the rise of new social movements, campaigns and political parties focusing on the regulation of the technological progress seems not only possible, but presumable.

This research had to deal with various threats, including the issues that come along when conducting case studies and discourse analyses. Previous scholars, however, have removed most of such fears, which justifies the use of these methods. The issue of incompleteness though, remains problematic: Even though newspaper articles were considered to make up for the missing 2016 event on the future of warfare, the incompleteness of the data and the small data set raise some concerns. Although including the articles efficiently filled in, an analysis of another MSC event probably would have helped gaining additional insights into the debates. In the future, researchers should therefore extend the data set to enrich the reliability of the findings. Even though this study has shown that current political debates are still pervaded by the ideology of Neo-Luddism, there is still a magnificent lack of knowledge and research on the existence of Neo-Luddite ideas in political debates, as well on how individuals take up some of these ideas in their daily lives. It is left to other scholars to further examine these aspects, for instance by conducting a discourse analysis on comparable political debates or on the public discourse on issues such as the robot tax or the job loss due to automation and robots. As pointed out above, some features of Neo-Luddism, such as the notion of radical environmentalism and anti-capitalism, could not be confirmed with this research, but they might be found in other discourses, for instance in debates on nuclear technology or comparable issues, such as other deployments of cyber technologies used for warfare. Furthermore, it might be interesting to examine various other issues addressed in Bartlett's (2018) article claiming 2018 to mark the return of the Neo-Luddites, for instance the discourse on autonomous cars or the anti-Uber riots in Paris. Taking a detailed look into such events might support the findings of this thesis, confirming the continuation of the Neo-Luddite ideology.

Lastly, it remains important to follow and evaluate the future developments in the discourse on Killer Robots, a pressing issue highly debated in science, society and politics. Sometimes, the Luddite and Neo-Luddite efforts to slow down, regulate and even stop the technological progress might seem unreasonable and exaggerated. In the case of autonomous weapons, however, such approach seems to be the only reasonable solution, especially when looking back to the scary quote by Eide, who predicted “We may look back on the good old days when all we had to worry about was nuclear weapons” (Ignatius, 2016).

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Appendix

1. Data Set

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2. List of Abbreviations

AI	Artificial Intelligence
CSKR	Campaign to Stop Killer Robots
GER	German Keyword (only in coding scheme)
HRW	Human Rights Watch
LAWS	Lethal Autonomous Weapon Systems
MSC	Munich Security Conference
NATO	North Atlantic Treaty Organization
NGO	Non-governmental organisation
UNGA	United Nations General Assembly
UNIDIR	United Nations Institute for Disarmament Research
WWII	World War II