

How do utopian and dystopian visions shape the discourse around the Partnership on Artificial Intelligence?

A critical discourse analysis investigating how Artificial Intelligence is discursively constructed on the platform Partnership on Artificial Intelligence.



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Abstract

By performing a critical discourse analysis according to Norman Fairclough's 'three-dimensional framework' this research has provided insights into the way Artificial Intelligence (AI) is discursively constructed on the platform Partnership on Artificial Intelligence (POAI), which was set up in September 2016. Firstly, it has been investigated how artificial intelligence is discursively constructed on the platform POAI. Secondly, it has been analysed how AI is discursively constructed by the founding fathers and thirdly, it has been investigated how the platform PAOI is discursively constructed by American news websites. Four selected texts from the POAI website, four official press releases, nine selected texts from the POAI founding fathers and eight American news articles were analysed. This research has illustrated on the level of the text that the usage of certain words, phrases, metaphors, questions, forms of addressing the audience and pictures influence the way a message is conveyed. The level of intertextuality, or the way the text refers to a broader set of texts effects discourses and power relations. Within the social dimension the media companies which the journalists are writing for influences the ways in which a technology is portrayed. Whereas the POAI platform and their founding fathers set AI in a very utopian spotlight, this differs from the view of American news writers. Based on their own research these authors promote a more negative voice towards the platform POAI and AI. This highlights also the dominance of the technological imaginary in the discourse and the way different actors such as journalists are able to influence discourses. It underpins that a good informed press is a necessity to stabilize the power relations between different discourses.

Keywords:

Partnership on Artificial Intelligence, Artificial intelligence, critical discourse analysis, technological imaginary

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Introduction

In September 2016 the Dutch airline KLM announced that it integrates artificial intelligence (AI) to better serve their clients on social media (KLM 2016). As the airline engages in about 15.000 conversations a week on social media, they, together with DigitalGenius conceptualized an algorithm that enables the client management system of KLM to directly suggest answers to customer's questions. The KLM agent then can decide if the message matches with the values of KLM, or has to be adjusted (Silk 2016). KLM does this to manage time more efficiently. Other tools such as Cortana or Siri follow the purpose for KLM to better serve their clients and are already established within our mobile communication. These examples use artificial intelligence at its core and indicate that artificial intelligence is nowadays a part of our daily lives and communication. Next to these features AI is an often-picked topic in science fiction films such as *Matrix* or *Terminator*, where especially the dystopian discourse or way of speaking is highlighted. In both cases AI is embodied in the form of machines, where machines brought the destruction of humanity.

It seems that AI has reached now its tipping point because of its interconnectedness in our daily lives. The discourse is often fearful and includes dystopian stories written about this technology. For example some American news articles speak about the threat of an artificial intelligence apocalypse (Poletti 2016), biased data sets (Mannes 2016) or unemployment through the rise of robots (Hemphill 2016). This might be the reason why that many research initiatives have risen in recent years that want to shed light on the developments around AI to prevent these AI doom scenarios. To give a few examples of such initiatives: Open AI is a non-profit AI research company set up in December 2015, "discovering and enacting the path to safe artificial general intelligence" (OpenAI 2017). One of the co-founders is Elon Musk. There is the AI Now Initiative under the direction of Kate Crawford and Meredith Whittaker, a research initiative in New York "researching the social impacts of artificial intelligence now to ensure a more equitable future" (AI Now 2017). In September 2016 Microsoft announced a new Microsoft AI and Research Group (Microsoft News Center 2016). In the same month the industry giants DeepMind, Amazon, Google, Facebook, Microsoft and IBM set up the Partnership on AI (POAI) which is a non-profit research initiative with its mission "to benefit people and society" (Mannes 2016). In January 2017 also Apple joined the group (Dignan 2017). These initiatives have in common that they want to stress the positive impacts of AI. An open letter published in January 2017 by the Future of Life Institute accentuates this positive approach towards AI. A document attached to this open letter outlines guidelines to ensure that the development of AI systems is beneficial for humanity (Cuthbertson 2017) (Future of Life Institute 2017). These guidelines

are based on Isaac Asimov's 'Three Laws of Robotics' that were published in a science fiction story in 1942 (Markoff 2016). These three laws contain that a robot is not allowed to harm a human through action or inaction, that a robot has to embrace humans, and that a robot is responsible for protecting its own existence (Cuthbertson 2017). As AI might bring a lot of progress for humanity it is important to investigate how to profit from AI while avoiding potential pitfalls. Therefore over 8.000 researchers and scientist including prominent names such as Musk and Stephen Hawking signed the open letter of the Future of Life Institute (Cuthbertson 2017).

The POAI states the following about AI: "We believe that artificial intelligence technologies hold great promise for raising the quality of people's lives and can be leveraged to help humanity address important global challenges such as climate change, food, inequality, health, and education (Partnership on Artificial Intelligence 2016)". This promising statement by the POAI alludes that artificial intelligence can help society to solve some of the world's complex problems. It is striking that a lot of these tech giants spend a lot of money in lobbying efforts for patent reforms, immigration purposes, taxation, trade policies and election campaign financing (Lapowsky 2015). To name a few numbers: in the second quarter of 2015 Google spent \$ 4.62 million in lobbying efforts and this makes Google the third largest corporate lobbyist. In the same quarter Facebook spent \$ 2.69 million, Amazon spent \$ 2.15 million and Apple \$ 1.23 million (Lapowsky 2015). As more and more technology applications of these companies dominate our daily lives it becomes clear that these investments reinforce this process.

The platform POAI arrives with the promise to offer transparency and to listen to the public. In the popular discourse there are utopian and dystopian visions traceable in the discourse around artificial intelligence and the platform POAI, whereby the dystopian visions seem to be more dominant. AI in the form of robots is mainly characterized as a threat to the labour market because robots supposedly to take over a lot of jobs from humans (Van Est et al. 2015). It might be therefore that the industry-giants joint forces to abandon fears around artificial intelligence (Statt 2016). But what biases, what desires and fears around artificial intelligence can be found on and around the platform POAI? How do the authors of American news articles speak about the platform? The main research question of this research is: "How is AI discursively constructed on the platform Partnership on AI?" The main research question will be answered in three steps. First, by investigating how AI is discursively constructed on the platform POAI. The formulated goals, mission, tenets and frequently asked questions on the website of the POAI are selected as corpus material for this first step of investigation because this texts illustrate the main purposes of this platform very well (see appendix 1). To enrich the corpus material on side of the platform POAI, the available official press releases of the founding fathers regarding the launch of the platform are collected (see

appendix 1). Second, by investigating how AI is discursively constructed by the founding fathers. A mixture of white papers and webpages introducing the founding partners involvements around AI is used in this second step as corpus material (see appendix 1). Third, by investigating how the platform PAOI is discursively constructed by American news-websites, by having selected eight articles about the platform POAI and AI (see appendix 2).

The theoretical framework draws on works of Bruce Buchanan, Mike Purdy, Paul Daugherty and the report *Preparing for the Future of Artificial Intelligence* of the American government which was published under the Obama administration, as these provide comprehensive background knowledge about AI. The authors Lister et al., Patrice Flichy, Robert Davis will be used to elaborate on the concept of the technological imaginary, which will be introduced later on in this introduction. Michel Foucault, Norman Fairclough, Marcel Broersma, Stephen Reese, Ernesto Laclau and Chanta Mouffe were the selected authors to elaborate on theories regarding discourses and their influences on journalistic works. It is necessary to elaborate how AI is discursively constructed on the platform POAI. In this case a critical discourse analysis (CDA) is used to answer the main question. The CDA can be regarded as a method that makes it possible to research relations between the discourse and the social (Jorgensen and Phillips 2002: 60). For this thesis, the critical approach by Norman Fairclough is used as it pays attention to the layered dimensions of discourse. The layered approach fits the goal of this research because its pays attention on the text, to the production process and the social dimension. The layered approach forms the analysis section, as the texts regarding the POAI website will be analysed first within the three dimension, secondly the texts of the founding fathers will be analysed only on text level and thirdly, the three dimensions of the American news-articles will be investigated step by step.

Within the critical media theory is investigated how discourses shape technologies. Mirko Tobias Schäfer writes in *Bastard Culture!* that contemporary popular discourses about technologies present technologies mainly positive and often in an utopian way (Schäfer 2011). According to Schäfer a technology not only affects us, but technology is also discursively constructed: “[...] technology cannot be perceived as being either neutral or socially and culturally determining with regard to its use and effect. Technology also has to be acknowledged as being discursive [...]” (Schäfer 2011: 15). Metaphors, associations and images create a certain image of technology. These elements influence our perception of these technologies and above that the usage of these technologies (Schäfer 2011: 25, 27). Schäfer illustrates that these discourses are mainly utopian or dystopian, as well as ideological (Schäfer 2011: 21, 25). Such discourses represent the technological imaginary that is formed through and by the expectation of cultural and social progress through technology (Schäfer 2011: 29). Sociologist Flichy describes in *The Internet Imaginaire* how a collective vision, also called imaginary, of utopias and ideologies is projected onto the

Internet and how this subsequently has influence on the development of the Internet itself (Flichy 2007: 4). This so-called technological imaginary is, according to Schäfer, a dominant discourse that reappears everywhere in our daily lives, like for example in journalism, conferences, art and marketing (Schäfer 2011: 29).

Schäfer and Flichy illustrate in their research that such earlier described discourses are mainly influenced by prominent spokespersons promoting these new technologies. In the next step these spokespersons will be also recognized through these technologies, they represent those (Schäfer 2011: 29) (Flichy 2007: 104). In the case of this research these spokespersons could be the representatives of the POAI platform, namely Ralf Herbrich from Amazon, Tom Gruber from Apple, Greg Corrado from DeepMind/Google, Yann LeCun from Facebook, Francesca Rossi from IBM, or Eric Horvitz from Microsoft. Literary scientist John Brockman calls these people “digerati” (Brockman 1996). This so-called “cyber elite” plays a significant role in promoting these new technologies as drivers of progressive change and thereby as a progress for our society (Brockman 1996: 2, 3). This research is a complementation of the studies within the (critical) media theory by analysing how AI is discursively constructed on the POAI. As earlier indicated it is important to critically reflect on the existing discourses about AI as these are forming this technology in the future. In chapter 1 the theoretical framework will be introduced in detail, followed in chapter 2 by elaborating on the used method, the selection and justification of the corpus and how the corpus material is examined. In chapter 3 the results of the analysis will be discussed. All findings of the paper will be summarized in in the conclusion and a few suggestions for follow-up research are discussed briefly.

1 The technological imaginary and discourse shaping AI

This chapter deals with the role that the technological imaginary and discourse play by producing AI as a technology. First, AI will be introduced in a historical perspective (1.1). Second, the concept of the technological imaginary will be explained because it plays a crucial role because of its direct relations between technology and the attached expectations (1.2). Third will be illustrated how discourse plays a role within journalism and how this impacts the ways a technology manifests itself within society (1.3.).

1.1 AI in a historical perspective

Definitions of AI can be divided into four categories: systems thinking like humans, systems acting like humans, systems thinking rationally and systems acting rationally (Russell and Norvig 2009). Nowadays, there seems to be a hype around AI and often AI seems to be perceived as a new technology, however it should be noted that AI is not a new technology. It is often mentioned in the context of robotics. Early robotics had much more to do with mechanical engineering than intelligence control. It is only more recent that robots become more powerful vehicles in the context of intelligent behaviour. Also with the rise of the modern computer industry in the last half century (Buchanan 2005: 54, 56). An early success within the field of AI was in 1997 the victory of IBM's chess-playing computer Deep Blue against the former world champion Garry Kasparov. Other successes included the victory of IBM computer named Watson, which answered questions in the TV game show *Jeopardy*, the DARPA Cognitive Agent that Learns and Organizes, which resulted in Apple's Inc. Siri and the successes around self-driving cars in the DARPA Grand Challenge Competitions in the 2000s (Executive Office of the President, National Science and Technology Council, and Committee on Technology 2016). Around 2010 the current wave of enthusiasm and progress around AI finds its origin. This wave is driven by mainly three factors building up on each other: first the access to big data from sources including social media, e-commerce, business, science and government, which was (as the second point) the raw material to feed machine learning approaches and algorithms, which in turn was based on the capabilities of more powerful computers (as the third point). At the same time the investments of companies in AI also increased (Executive Office of the President, National Science and Technology Council, and Committee on Technology 2016).

In society people have often thought of the implications of computers achieving more intelligence than humans. This resulted on the one hand in dystopian visions, whereby super-intelligent machines are controlling the humans (Executive Office of the President,

National Science and Technology Council, and Committee on Technology 2016). These fears or dystopian visions can be also traced back in a lot of science fiction movies such as *Terminator* or *Matrix*. Within the discipline of research a more positive view is promoted, whereby AI systems could work as teammates, helpers and assistants designed to operate ethically and safely. Research is therefore necessary to investigate the longer term capabilities of AI and how to deal with current challenges like security, privacy and safety risks (Executive Office of the President, National Science and Technology Council, and Committee on Technology 2016). In his historical description Bruce Buchanan is confirming this need for further research on AI by stating: “Although achieving full-blown artificial intelligence remains in the future, we must maintain the on-going dialogue about the implications of realising the promise” (Buchanan 2005: 53). Interestingly enough Buchanan speaks here over “realising the promise” which illustrates the expectations that are projected onto AI as a technology.

1.2 The technological imaginary

The rise and development of new technologies like artificial intelligence is often accompanied by distinct ways of thinking and speaking about these new technologies. The concept of the technological imaginary is used to highlight the ways in which ideals get projected onto technologies. It “draws attention to the way that dissatisfactions with social reality and desires for a better society are projected onto technologies as capable of delivering a potential realm of completeness” (Lister et al. 2009: 67). In this statement the authors propose that the dissatisfaction of the human about the social reality and the desire for an auspicious society get projected onto technology. New media are considered to be the solution for social and cultural aspects that do not hold in our society (Lister et al. 2009: 67). Thereby the authors point the attention to the ideological way of thinking whereby technologies serve as tools to enhance life in the society. Technologies can create this world of completeness. The desires, hopes and fears get projected onto the technology. Lister et al. argue that the arrival of a new medium comes with a kind of hope but also fears. In this context a new medium is often considered as good and one, which brings progress whereas the old medium is labelled as the other. This contrasting approach is according to Lister et al. a good example of the expectations and the hope that are projected onto new media by the society (Lister et al. 2009: 67).

According to Foucault what is said and especially how something is said influences how we experience reality (Foucault 1971). Discourse is in this sense “not just of representing the world, but of signifying the world, constituting and constructing the world in

meaning” (Fairclough 1992: 64). Thereby the meaning shaped by discourse is never static. It can shift in the case that other discourses appear. Flichy brought up earlier these kinds of discursive practices. He described in his book *The construction of new digital media* how different conceptions of digital television constructed collectively shared technological imaginaries. This in turn helped to influence the actual product or outcome of the digital television (Flichy 1999). Flichy does not elaborate implicitly what role the discourse plays in the construction of these conceptions. In my opinion these discourses play a crucial role to determine how a technology gets shaped or comes into existence.

Another example how discourse influences the development of a technology is illustrated in Robert Davis book *Response to innovation: A study of popular argument about new mass media* where he described how magazines in the United States reacted on the introduction of the movie, radio and television. Davis found out that it is important to distinguish between four categories of the framing around the introduction of communication technologies, namely framing based on definition (accentuating a specific capacity of new media over others), association (characterizing the kind of people using new media), comparison (differences between new and old media forms) and causality (investigating the effects of media) (Davis 1976: 70, 725). Interestingly enough Maaïke Lauwaert, Joseph Wachelder & Johan van de Walle illustrated in their publication ‘Computerspellen en de geschiedenis van angst’ that these four categories not only occur around discussions on radio, film and television but that these are also traceable in the debate on computer games and their positive and negative effects (Lauwaert, Wachelder, and Walle 2016: 39). This means Davis findings are broader applicable within the media studies.

Davis observations highlighted that two oppositional discourses were prominent in that debate around those innovations. One group of authors embraced the new medium and tried to support it. Davis named this group ‘advocacy’. The other group of authors experienced the new medium on the contrary more as a threat and wants to attack this new technology. Davis gave this group the label: ‘attack’. According to Davis the similarities, repetition and the predictions of the reactions on each new medium are very significant. In this context it seems not to be important what the characteristics of a new medium are, they all become valued equally (Davis 1976: 708). Thus a lot of people will experience this kind of judgement process attached to a new technology. These opposing discourses are somehow similar to the utopian and dystopian views on new technologies which appear in the discourse and which are evenly connected to the concept of the technological imaginary (Lister et al. 2009). Although Davis identified two oppositional discourses as a response to earlier introductions of new media in America, it seems to me more a limited outcome of his research. This research wants to investigate in addition what role discourse plays in shaping these utopian and dystopian visions on technology.

The technological imaginary refers as mentioned earlier to a desire of completeness. Therefore it is an important concept when there is a focus on ideas and influences that have contributed to the development of AI as a technology.

1.3 How discourse influences journalism

It is important to realise that reoccurring ways of thinking and writing about new technologies play a very important role in how the technology manifests itself within society and how the ideals of the people additionally form a medium. In former times these ideas influenced the development of the Internet.

According to Marcel Broersma discourse within journalism is a very powerful discourse when it comes to maintaining or weakening the domination of the status quo, especially because of the broader audiences (Broersma 2010: 16). Characteristics such as truthfulness and reliability can be seen as the “basis of a shared social code between journalists and their public” (Broersma 2010: 16). These elements are necessary for the existence of journalism. According to Broersma journalistic discourse is intentionally performative and constructed: “Events and facts do not have ‘intrinsic importance’ but become important because they are selected by journalists” (Broersma 2010: 16). In this context journalistic articles can be seen as social constructions and not just as articles that neutrally reflect the reality (Broersma 2010: 16).

Broersma has identified a two strategies in journalism to create stories that are “as convincing as possible” (Broersma 2010: 17). At first, inadequacies or shortcomings in an article are hidden. Above that facts are presented in general implicitly, a few times also explicitly presented as natural (Broersma 2010: 17). According to Laclau and Mouffe this is actually happening in discourse (Laclau and Mouffe 1985). The authors argue that it is through discourse, that the reality appears neutral and natural (Laclau and Mouffe 1985: 108). Journalists frame their information by using “organizing principles that are socially shared and persistent over time, that works symbolically to meaningfully structure the social world” (Reese 2003: 11). Journalists can approach complex events or issues by simplifying and organizing them. Hereby journalists use public’s existing knowledge and try to appeal to their cultural codes (Broersma 2010). Within the debate around AI these cultural codes might manifest themselves in the utopian and dystopian visions.

Second, by stating which documents and reports journalists used, they mostly reflect on textual conventions. Multiple sources are mostly quoted. In this matter it is the duty of journalists to double-check their sources. Above that the journalist should keep the reporting

balanced by listening to both sides (Broersma 2010: 17). This is how someone could recognize good structured content of journalists. This is helpful for this research because these characteristics can assist to identify if an article can be matched more with the journalistic discourse or if it is more a subjective blog post.

According to Broersma an article can be described as a convincing representation if it includes a feeling of truthfulness in the eyes of the public. By this, the interpretation can be transformed into truth, a reality on which the public acts on (Broersma 2010: 17). One of the aspects this research investigates is how common ideas of the platform POAI and AI are traceable in American news articles. In the next chapter will be explained what method is used for this research to answer the main research question.

2 Method for analysing POAI

By analysing the debate around AI on the platform POAI, around it and on selected American news websites through a CDA it is possible to reveal how and in what terms people talk about the platform POAI and AI in general. Thereby the aim is to critically reflect on the common ways how these topics are discussed because as indicated in the theoretical section these ways of talking and writing about AI can influence the forming of this technology in the future. First, it will be described how and why Fairclough's model of a CDA is chosen to answer the research question. Thereby the pros and cons of using this method will be also highlighted (2.1). Second, the selected corpus material will be introduced and justified (2.2). Third, the actual steps of doing the research and how the corpus material is examined are illustrated and it is indicated how the used method structures my analysis section (2.3).

2.1 Critical Discourse Analysis

The usage of the CDA for this research is important because it enables the researcher to identify the relationships and interactions between discourse and social and cultural change (Fairclough 1995). By doing this it is possible to look at the way people talk about the platform POAI and to relate this to the theoretical concepts as discussed in chapter 1. The concept of the CDA fits very well for this research because one aspect of the analysis is to analyse American news articles. Within the CDA news media can be seen as an ideological process with an important social role (Fairclough 1995). Thereby the researcher tries to expose the underlying role and the influence of the discursive practices on the social world (Jorgensen and Phillips 2002: 63). In this context the CDA seeks to identify social relationships and social forces (Jorgensen and Phillips 2002).

There are different interpretations possible when performing a discourse analysis. One of the most influential and most developed approaches within the CDA is the approach of Fairclough (Jorgensen and Phillips 2002). Fairclough's approach to the CDA will provide the basis for this analysis of this research and the approach was chosen by two reasons. First, because his interpretation is based on a transdisciplinary perspective (Jorgensen and Phillips 2002). This means it can be seen as an approach more in dialogue with other theories and disciplines where contemporary processes of social change are central. According to Fairclough it is not just enough to look at the narration, but are non-discursive theories important in gaining more insights in the relation between text and social-cultural

processes and structures. In this sense Fairclough's approach differs from other concepts within the CDA such as Laclau and Mouffe (Jorgensen and Phillips 2002). For this research Laclau and Mouffe are less relevant because they assume that within the cultural level nothing exists beyond the discourse (Jorgensen and Phillips 2002). By using the approach of Fairclough it is thus possible to incorporate discussed theories about the technological imaginary and rhetorical usage of language and to reveal how these concepts appear in practice. Second, the approach of Fairclough is chosen because this approach pays more attention on the used utterances and provides practical tools for the analysis in form of a three dimensional framework as shown in figure 1.

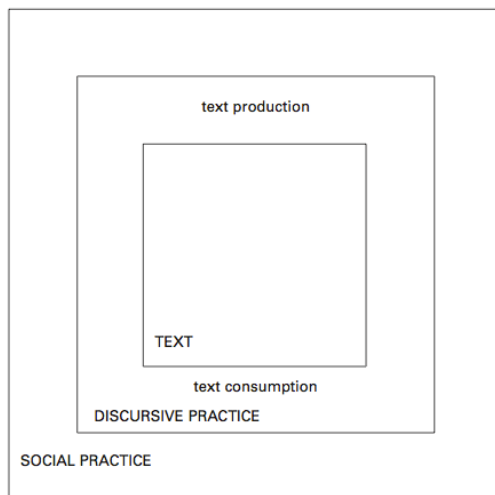


Figure 1: Fairclough's three-dimensional framework for critical discourse analysis (Fairclough 1995: 98)

It should be noted that a disadvantage of this method is, that it requires such a degree of attention to the language aspect, only a limited amount of text can be analysed in this research (Jorgensen and Phillips 2002). By performing this kind of research the researcher has to be aware of that he is also influenced by discourse. Henry Widdowson criticized critical discourse analysis because of its vague description and the biased approach (Meyer 2001: 17). He argues that the researcher gets tempted to cherry-pick texts that strengthen his hypothesis. Therefore it is important to reflect within the process of research on the researcher's own position in terms of both, their subjective understanding of the material and how they translate this through the used research method, by documenting and reflecting on each step of the research.

2.2 Selection and justification of corpus

First of all the formulated goals, mission, tenets and frequently asked questions on the website of the Partnership on AI initiative are selected as corpus material (see appendix 1) because these texts give a proper indication how the POAI positions itself towards AI. The platform POAI is launched in September 2016. A board of trustees is in charge for the activities of the board and it includes six seats for the representatives of the founding partners and an equal number of seats for non-company representatives (illustrated in appendix 3). A lot of the founding fathers representatives of the POAI are already developing AI applications and use these for their own businesses. The aim of the POAI is it to study the potential societal impacts of AI applications. After having studied these, the POAI want to share best practices on AI, will host discussions, commission studies, write and share reports on AI related topics (Partnership on AI 2017a).

As the POAI website is recently set up there are not yet any white papers on AI available on the website. Nevertheless this information is a good starting point to investigate how the platform Partnership on AI positions itself towards artificial intelligence and to the public. To enrich the corpus material on side of the platform POAI, the available official press releases of the founding partners regarding the launch of the platform are collected, if available, by using Google Search (see appendix 1). Above that information about the recent activities of the founding partners on AI is gathered via Google Search. This is a mixture of white papers and webpages introducing the founding partners involvements around AI (see appendix 1). Important by selecting that material was that AI was introduced in an accessible way for the public audience to get an impression how AI is discursively constructed by the founding fathers of POAI.

Besides that American news articles are analysed to inventory the reoccurring debate around the platform POAI. The choice is made to concentrate on American online news platforms because Partnership on AI is an American initiative. Partnership on AI was founded September 28, 2016. Therefore the decision is made to collect online news during the time period of September 1, 2016 until January 17, 2017, actually shortly before the set-up of the initiative until the time when the thesis proposal of this master thesis has been written. The online articles were selected from Google News, by selecting the United States as country and by using the time frame mentioned above. Thereby the search terms "Partnership on AI" and "Partnership on Artificial Intelligence" were executed. First, sixty-two online news articles were selected. To ensure that the selection of news articles fits with the discussed theoretical concepts in the theory chapter the following conditions had to be fulfilled: POAI, artificial intelligence and the technological imaginary or utopian and dystopian ways of speaking about artificial intelligence had to be mentioned in the news articles. Thereby articles about

the platform POAI that discuss AI in a broader sense and not the platform itself are not taken into consideration for this research. Finally eight articles are selected as corpus of this research (see appendix 2). Each article and the medium it belongs to, is connected to a media theme. This results in three news discourses, namely business/finance news, general news and technological news. The media themes were defined by screening the Twitter profiles and the About Us pages of the designated news sources. In addition tags or the rubric of the news article, a short bibliography and interests of the authors are collected if available from the company websites. All this data is gathered in appendix 2 and the articles are accessible by following the attached links.

2.3 Examining the corpus material

The first dimension of Fairclough's three-dimensional framework focuses on the text itself. Fairclough uses a framework of ten main questions which can help to analyse a text investigating three main headings, namely: vocabulary, grammar and textual structures (Fairclough 1989: 110, 111). He stresses that his ten questions can be just considered as a framework to analyse a text or 'a blueprint' (Fairclough 1989: 110). Due to the limited amount of time the research will only focus on five topics within the text level. First, this thesis focuses on the usage of words and phrases as these can also be ideologically loaded (Fairclough 1989: 114). Second, this thesis analysis how metaphors are embedded in the text to reveal in which ideological context they appear. This helps to clarify how meaning gets constructed in the text through metaphors (Fairclough 1989: 119-120). Third, this thesis investigates how questions are used in the text because as Fairclough states "asking, be it for action or information, is generally a position of power" (Fairclough 1989: 125-126). Fourth, this thesis analysis if the text uses the pronouns 'we' and 'you' because it can express authority and unity (Fairclough 1989: 127-128). Fifth, this thesis investigates the usage of images in the text. The aim is first to describe what is pictured and secondly is which context the image can be read as the image can be ideologically loaded (Fairclough 1989: 115). Due to the sheer size of the selected corpus, this research is not able to highlight and discuss every individual word, clause, or image within the selected texts.

By accessing the corpus material first a distant reading is done in combination with a close reading of the selected texts. For the distant reading the Keyword Density Analyzer tool (SEOBook.com 2015) is used for this research to highlight several words and phrases as the tool provides information on word occurrences in the texts. Nevertheless this data is not

useful when putting the data into context. The selected texts were read several times and relevant text passages were coded. Thereby the focus was on zooming in on the five earlier discussed topics on the level of the text and indices regarding the discursive and social dimension of the text. The important findings of this analysis are processed in a Word document. A sample of how the data is partially gathered is to find in appendix 4.

The second dimension focuses not only on the purely text, but also on the process involved. How is the text produced and how can it be interpreted are two questions that can be investigated in this stadium. Intertextuality, or in other words how a text is connected or build up on pre-existing texts, is an important element within this second dimension or the discursive practice (Fairclough 1989: 140-167). The connectedness of texts could give an indication of which texts or citations are loaded with power and could be characterized as influential within the discourse.

The third dimension incorporates factors such as economics, politics and culture which exercises power on social practices and thus on the text itself (Fairclough 1989: 140-167). Within this dimension the focus is on investigating the relationship between power and discourse and also defining the role of the technological imaginary within the discourse. The second and third dimension will only be briefly investigated within this research.

The following figure 2 offers a better picture of the layered approach of this thesis. The selection of texts on the POAI website and the American news articles will be discussed regarding all three layers, namely text, discursive practice and briefly social practice. As the selection of texts of the POAI founding fathers is only considered to enrich the corpus and not the main focus of the research question, only the textual level will be taken into consideration for the analysis of that part.

	Selection texts POAI website	Selection texts of POAI founding fathers	Selection American new articles
Text	X	X	X
Discursive practice	X	-	X
Social practice	X	-	X

Figure 2: Layered approach analysing corpus

Now that we have discussed the used method in this chapter we move on to the findings of the analysis.

3 Analysis

This chapter covers the analysis of this research. First, the discursive construction of AI on POAI will be discussed based on the three dimensions: text, discourse and social (3.1). Second, the discursive construction of AI by the POAI founding fathers will be explained only on the textual level (3.2). The third will touch upon the discursive construction of POAI in American news articles (1.3.). These three steps are helpful to formulate an answer on the main research question: “How is AI discursively constructed on the platform Partnership on AI?”

3.1 Discursive construction of AI on POAI

Textual dimension

Within the goals section on the POAI website the partnership puts the emphasis on three important pillars, namely best practices, public understanding and being an open platform (Partnership on Artificial Intelligence 2016). By doing and presenting research on AI related topics the POAI wants to strengthen the collaboration between people and AI machines. Based on the best practices the aims of the POAI are that society gets a better understanding of AI. Thereby phrases like “potential benefits” and “state of AI progress” are mentioned but what is left out are the pitfalls or threat AI could also bring. The only related point the POAI tips on is ‘potential costs’ while explaining the ‘advance understanding’ goal. Referring to the article of Lapowski (Lapowsky 2015) this could be sneaky of the POAI to ask for more money to lobby and use the money to further spread their AI technologies for the public (Lapowsky 2015). Especially the phrases “potential benefits” and “state of AI progress” accentuate the utopian aspects of AI as a technology. All three formulated goals of the POAI begin with verbs: ‘to support’, ‘to advance’ and ‘to provide’ as illustrated below:

“**To support** research [...]”

“**To advance** public understanding [...]”

“**To provide** a regular, structured platform [...]”
(Partnership on Artificial Intelligence 2016)

By using this rhetorical instrument the authors might want to state that the ambitions of the POAI are more of a practical nature. Their ambitions are not only concentrated on theorizing about AI, but also actually applying some concepts in society.

In the mission section of the POAI the partnership focuses on 4 core pillars, namely 'engagement of experts', 'engagement of other stakeholders', 'third-party study report' and 'informational material development'. Slightly outstanding is the emphasis of the word 'engagement' within these four mission statements. It again stresses the involvement the POAI wants to emit that hopefully results in a better public understanding towards AI.

The POAI formulated eight tenets to regulate the developments on AI for good purposes. These can be found in the tenets section of the POAI website (Partnership on AI 2017b). Those eight tenets highlight core beliefs of the partnership related to AI, namely empowering people (1), educating the public (2), open research and dialog (3), broaden up network of stakeholders (4), involvement in the business community (5), maximizing benefits of AI (6), ensure transparency of AI systems (7) and trust and unity to reach the goals (8). In the tenets section the continuous use of the word 'we' is remarkable. At the beginning and each announced tenet the sentence begins with 'we'. According to Fairclough such a use of 'we' can be regarded as an implicit authority claim. It comes with the authority to speak for others (Fairclough 1989: 128). Although the founding fathers are competitors in the daily life, the POAI wants to promote a united picture towards the outside world. It serves in this sense the corporate ideologies of the POAI (Fairclough 1989: 128). To make the meaning of the word 'we' even stronger words like 'believe', 'will' or 'strive' are used in the tenets section. Phrases like "hold great promise" and "raising the quality of people's lives" strongly address pre-existing classification schemes and reflect the utopian visions the POAI has regarding AI. Those explicitly refer to discursive structures, such as systems of beliefs and desires.

The frequently asked questions (FAQ) section consists of in total nine questions (Partnership on AI 2017a). Seven of those are focused on POAI related topics, one is more focused on the interests of the public and one addresses future plans of the POAI. The last question about the future highlights that the POAI wants not to be seen as lobbying organisation. By doing this, the POAI might want to prevent getting entangled as a cooperating working for its own behalf and not for the public. The questions appear from the view point of the visitors and twice times where the pronoun 'you' is used, as here for example: "What brings you together?" (Partnership on AI 2017b). It refers to aspects of unity as highlighted by Fairclough (Fairclough 1989: 127-128). By doing this, the reader is intended to believe that the POAI is obviously listening to the public.

By having analysed the press releases, it is remarkable that only three of the six founding fathers, namely DeepMind, Amazon and IBM, choose to publish an official press

release. Board member Yann Lecun from Facebook posted only a personal post about the announcement of the POAI on his Facebook wall (LeCun 2016). No official press releases were found of Apple and Microsoft.

The tone of voice regarding AI is mainly very positive and the authors thereby highlight the more utopian aspects of this new technology:

“[...] We believe that AI has the potential for transformative, positive impact in the world [...]”
(Suleyman 2016)

“[...] We're in a golden age of machine learning and artificial intelligence [...]” (Herbrich 2016)

“[...] AI technologies hold tremendous potential to improve many aspects of life [...]”
(Sekaran 2016)

Ralf Herbrich from Amazon uses in the context in addition a metaphor by referring to a golden age of AI (Herbrich 2016). This can be seen as an exaggerated argument, which places AI on top of all other technological developments. IBM emphasizes in the title ‘Industry Leaders Establish Partnership on AI Best Practices’ of the press release that it wants to be acknowledge as ‘industry leader’ together with the other founding fathers. This is a notion of prestige. DeepMind, Amazon and Facebook use the term ‘we’ as overarching term to address the public. Only IBM chooses for a text written in a third person perspective. The words ‘ethical’, ‘best practices’ and ‘open collaboration’ are mentioned several times in the texts and refer in this way back to the formulated tenets on the POAI website. Amazon emphasizes in the press release more their own achievements on the field of AI and their own company interest, although the POAI declared that the founding fathers would not lobby for their own products. That statement of the POAI stands in conflict with Amazon’s approach. Two of the three press releases use a picture of the group-members. That emphasizes also that ‘unity’ aspect that the partnership wants to communicate to the public.

Discursive dimension

By looking at the production process one point to start with is the website of the POAI. The website of the POAI is registered as an ‘.org domain’. ‘.org’ actually means organization. This type of domain is often used by non-profit organisations (Bailey 2017). The website is registered to a Panama-based company named WhoisGuard, Inc., (DomainTools 2017). It is a third party domain purchaser which protects the identity of the originally website owner

(WhoisGuard, Inc. 2013). By searching on Google news several articles described fraud incidents of websites, which used the WhoisGuard, Inc. services (Moneycontrol.com 2016). In their seventh tenet the POAI talks about ensure transparency of AI systems. Someone could question in this context why the POAI shows not that much transparency concerning their website details.

Concerning the points of intertextuality it is interesting that the IBM and Amazon press release articles use hyperlinks. As Fairclough is arguing that discourse is not only taking place in one text those hyperlinks are a lead that the texts of the authors built up on other texts (Fairclough 1989). Next to one link to the POAI website Amazon is promoting also their own products and services, such as Amazon fulfilment network and Alexa. On the other hand IBM considers more the interests of the POAI as their hyperlinks mostly link to the POAI website, which in turn helps the website to get more visible in search engines.

Social dimension

Within the social practice Fairclough refers to the ideological, political and social effects of the discourse (Fairclough 1989). In this context the aim of this research is to connect findings through the theoretical lenses of this thesis. It is a fact that the technological imaginary is a important part of the discourse around the platform POAI and is influencing the way AI is constructed on the platform. Especially in the tenets section and the press releases of DeepMind, Amazon and IBM predominantly utopian visions occur. This brings an imbalance within the discourse. It is explainable in that sense that the POAI wants to shine in the public and especially in their press releases. What is forgotten is to leave some space for critical concerns towards AI.

3.2 Discursive construction of AI by the POAI founding fathers

Textual dimension

Regarding the complex field of AI it is remarkable that the different disciplines of AI are quite spread among the founding fathers. On the 'About us' page of DeepMind the company explains how they want to use AI to solve some real-world challenges. Thereby the company introduces some of their own AI applications and research in the field of games (Alpha Go

Program) or the health sector as two examples (Deepmind 2017). The 'About us' page mainly focuses on the positive impacts on AI for society, as the following examples indicate: "make the world a better place", "for the positive impact", "maximise the positive and transformative impact of AI" or "benefit the many" (Deepmind 2017). These statements refer to the utmost utopian vision as characterized in the theoretical chapter. Phrases such as "tackle some of our most pressing real-world challenges" are strongly linked to the POAI (Partnership on Artificial Intelligence 2016).

On the Google Research page the introduction text titled 'Machine Intelligence' describes Google's engagement around machine intelligence, deep learning and algorithms. Google offers here access for the public on about 710 papers on machine learning (Google 2017). This indicates a sense of transparency and ambition to share the work of Google with the public. Or this could be clever marketing for the product and wider company to attract and inspire potential future staff, while still being wealthy enough to fight any case of copyright. All fair enough.

The 'Facebook AI Research (FAIR)' page focuses especially on the communicational aspect or possibilities of machine intelligence (Facebook 2017). The other webpage of Facebook which is part of the corpus of this research focuses on algorithms, machine intelligence and the (positive) impact of AI on the daily lives (Candela and LeCun 2016). Words like 'progress' and 'advancing' are first indicators but also phrases like "better ways to communicate" (Facebook 2017), "AI is going to bring major shifts in society" or "AI offers a wealth of opportunities" (Candela and LeCun 2016) underpinning the utmost positive expectations Facebook lies on AI. Facebook AI Research has chosen for the abbreviation FAIR (Facebook 2017). This is alike a metaphor. The Cambridge Dictionary describes 'fair' as: "treating someone in a way that is right or reasonable, or treating a group of people equally and not allowing personal opinions to influence your judgement" (Cambridge Dictionary 2017). It could be that Facebook chooses this abbreviation on purpose to inform the public that they apply a fair policy. But besides fair commitment Joaquin Quinonero Candela and LeCun end their article by stating that Facebook interests are mainly focused on the product-side and not on research concerning AI (Candela and LeCun 2016).

From the selected texts of the POAI founding fathers IBM is the only company where white papers were found to address the better understanding of AI for the public. IBM puts by referring to the first document emphasize on trust, ethics, hopes & fears (Banavar 2016) and referring to the second document more emphasize on the cognition and computing part of AI (Kelly 2015). Microsoft's main interests lies in democratising (Microsoft 2017) and Amazon's main interests regarding AI are machine learning and deep learning (Herbrich 2016).

Regarding the usage of metaphors Microsoft states:

“At Microsoft, we have an approach that’s both ambitious and broad, an approach that seeks to democratize Artificial Intelligence (AI), **to take it from the ivory towers** and make it accessible for all.” (Microsoft 2017)

The phrase ‘ivory towers’ is ideologically loaded and here used as a metaphor. Microsoft might tend to express that in former times AI as a technology was not accessible for the public. Microsoft can change this and make AI now accessible for all.

It is interesting that Deepmind and Facebook categorize AI as a kind of solvable problem:

“**Solve intelligence.** Use it to make the world a better place.” (Deepmind 2017)

“We are committed to advancing the field of machine intelligence and are creating new technologies to give people better ways to communicate. In short, **to solve AI.**” (Facebook 2017).

In these cases AI is materialized, because it is described in these contexts as a (equipment) tool. Besides that Deepmind clearly wants to express their power by stating: “DeepMind is the world leader in artificial intelligence research and its application for positive impact” (Deepmind 2017).

Especially Facebook, IBM and Amazon use questions to address the audience, like for example “What is Artificial Intelligence?” or “What is deep learning?” (Amazon 2017). Asking question is in general a sign of power as Fairclough explained (Fairclough 1989: 126). This way of expressing power gets even more visible by searching for the pronouns ‘we’ and ‘you’ in the text. Almost all founding fathers of the POAI make usage of the word ‘we’ in their texts. Especially as Microsoft describes the four-pronged approach to democratise AI, all steps start with ‘we’ (Microsoft 2017), as this is also applied in the tenets section of the POAI (Partnership on AI 2017c). Facebook (Candela and LeCun 2016), Microsoft (Microsoft 2017) and Amazon (Amazon 2017) use in addition often ‘you’ in their texts. Microsoft refers also often to ‘your’ (Microsoft 2017). The use of the ‘inclusive’ we is an authoritative claim to speak for others. According to Fairclough is the word ‘you’ commonly spread to address to public and is often used in advertisement. Its implies also a kind of unity and solidarity (Fairclough 1989: 128).

3.3 Discursive construction of POAI in American news articles

Textual dimension

Andy Szal refers in his article to the founding fathers of POAI as “Tech Giants” (Szal 2016) and Mariella Moon uses the expression “tech titans” (Moon 2016). By this rewording the authors change the status quo of these companies by attaching more power to them. For example titanium stands for a metal with high strength used to fabricate robots. By portraying the founding fathers as ‘giants’ and ‘titans’ the reader gets the impression that these companies represent the status quo in the technology domain.

Compared to the other texts the authors of the news articles use more metaphors to express their opinion. Here a few examples from the news-articles:

“The road ahead may be bumpy, but there’s no going back.” (Hemphill 2016)

“This is one mountain we need to climb, but we don’t know how many mountains are behind it.” (Patel 2016)

“Now, the cat’s finally out of the bag.” (Moon 2016)

“Five of the world’s largest technology companies have come together to shed light on the ongoing development of artificial intelligence.” (Statt 2016)

First the metaphors will be set in the broader context. Then this research elaborates on possible interpretations of these metaphors. To give more context about the first example: Thomas Hemphill describes in his article that AI is more and more embedded into our daily lives but there are also fears around machine intelligence that need to be tackled. In his opinion this should be the duty of the POAI. With the first metaphor Hemphill indicated that dealing with AI could become problematic, but there is no other way. The second metaphor is a statement by LeCun in the article written by Prachi Patel. LeCun expresses here that artificial intelligence is a new frontier for mankind. He compares this with the human history in which we made our steps by observing the world. The third metaphor by Moon stresses the fact that it took a while for the founding fathers of the POAI to confirm that they set up the initiative to deal with AI. The last example wants to accentuate with “shed light on” that the POAI is now able to do a proper investigation on the recent developments around AI. Might this indicate that we are until now tipping in the dark regarding AI?

The first two metaphors have a quite negative connotation because these accentuate that dealing with AI as a technology might be problematic. The articles of Therese Poletti (Poletti 2016) and Mike Brown (Brown 2016) follow this trend and openly criticize the activities of the POAI in their articles. The fourth metaphor can be more attached to hope and a more utopian future, as the word 'light' could be replaced with 'hope'. It is noticeable that two authors already refer in the title to quite powerful ideologies.

It is remarkable that not a single news article of the eight addresses the readers by using questions. The earlier investigated texts in the sub-chapters 3.1 and 3.2 well used this textual feature. As discussed earlier Fairclough argues that questions indicate a form of power (Fairclough 1989). If one of the authors would have stated a question it could have functioned as an authority claim. The discussed text from sub-chapter 3.2 named 'Artificial Intelligence, revealed' illustrates this in a good way. In this text questions such as 'What is learnable' and 'What is intelligence' are discussed. By doing this, the author puts his own person in a 'teacher position' as it is his responsibility to come up with an answer for the question. This in turn transmits this sense of power to the author.

Another interesting fact is that the pronouns 'we' and 'you' are scarcely used in the news articles. This can be considered as given because the authors craft their texts on their own. But they do not work independently, they work for a company, and this in turn likewise influences their writing style. It is obvious that the authors represent the company they write for. This point will be elaborated further in the upcoming discursive dimension. If the authors of the news articles had used more 'you' as a form to address their audience this would have created a closer bond with the reader. The earlier cited text in this section titled 'Artificial Intelligence, revealed' is also a good example. The text uses a lot of 'you' forms. By reading it the reader gets more sympathy with the authors. In turn this gives the authors more power to consciously influence and manipulate the reader by playing with these mechanisms.

Five of the eight selected news-articles use a cover image of a robot. That indicates that the authors of the articles directly link AI with robots because it refers to already existing cultural codes and knowledge by their readers audience (Broersma 2010). In figure 5 on the next page the five cover images on a row.

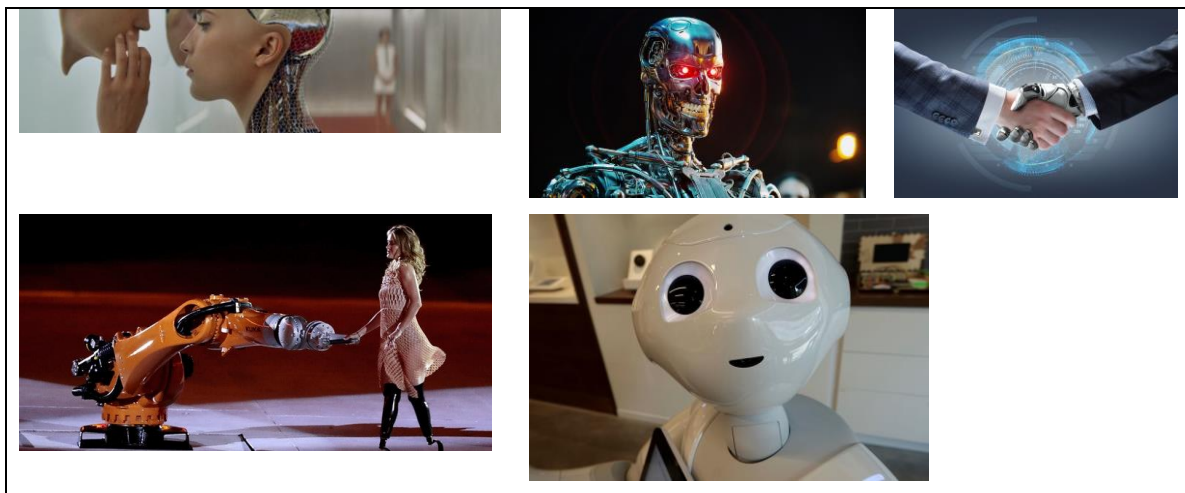


Figure 3: Cover images news articles (the news article authors as reference from top left to bottom right: first image (Hemphill 2016), second (Poletti 2016), third (Moon 2016), fourth (Brown 2016), fifth (Statt 2016))

The first image is a scene from the movie *Ex Machina*. We see here a robot figure touching the human skin. The second image is also taken from a science fiction movie, the *Terminator series*: a shiny robot with red eyes looking evil. The colour red activates the human fears. The third image shows only the arms of a human and robot, suited up and shaking hands. The fourth photo showcases the handicapped model and sports woman Amy Purdy dancing with a robot during the opening of the Paralympic Games in Rio (KUKA Aktiengesellschaft 2016). Amy is displayed thereby in a quite sexy pose on this image. The fifth image showcases a white robot looking very curious.

Image number one and five seem to express the curiosity of robots. The pictures three and four symbolize the cooperation part. On the one hand man and machine doing business with each other, on the other hand the human with his need towards machine extensions. Image number two especially drives on the fears humans express towards this technology. Whereas the examined texts from the sub-chapters 3.1 and 3.2 drove more on the utopian aspects of AI as a technology this image is an example for the more dystopian fearful aspects of this technology (Flichy 1999).

In the next paragraph of this research zooms in on the intertextuality as this gives an indication on which discourse the news articles built up upon.

Discursive dimension

Fairclough describes referring to the intertextual context: “participants in any discourse operate on the basis of assumptions about which previous (series of) discourses the current

one is connected to [...]” (Fairclough 1989: 145). This means that the investigated texts relate to other texts and that the authors base their opinions on other texts. The authors use various ways to do that. In the news articles citations are often used by the writers to support and reflect on their own argumentation line. The article written by Patel for example draws intensively on the argumentation line of Lecun representing Facebook on the platform POAI by using seven citation of Lecun. By doing this the discourse gets more influenced by the power of Facebook. All website use hyperlinks to refer to the platform POAI. This effects the search rankings in a certain way. More links means a higher ranking in the search results. It is remarkable that only the news articles by Hemphill and Patel refer to academic publications. Hemphill refers to publications of the Stanford University and the Gartner Inc. Institute. This is quite interesting because Hemphill can also be regarded as the only academic professional of the selected writers. The other seven writers are more in the role of a journalist (see appendix 2). Patel referred in his article to the White House report on the future of AI, which is also referenced to in this thesis in the theoretical chapter. This is an indication that the science discourse also has a prominence in the discourse around the platform POAI. Only the article of Moon refers to other newspapers, namely the *New York Times* and *The Guardian*. No information is found that Moon publishes also for these newspapers but referring to the popularity of both newspapers this could be a way to speak up to a broader audience and gain more power as a journalist. In the next section this thesis further discusses the social dimension and power relations which occur around the selected news articles.

Social dimension

From a wider point of view the selected eight articles touch on much broader discourses dealing with developments around the Internet of Things, the impacts of AI on the transportation industry, the labour market, health care, security issues, science fiction, ethics, transparency and privacy. Besides that the academic discourse is also part of the larger discursive structures. This is done by referring to academic publications within the news articles. The image with the robot and human shaking hands is also an indication that the business world seems to be also interested in AI as technology. This can be seen as an interesting cross-reference to the lobbying efforts of these firms and as the POAI founding fathers trying to normalize the discourse around AI by using utopian vision to spread as much of their AI products under the public.

The selected authors entered this network of discourses with commercially based interests of their media outlets. According to Alexa TechCrunch has the biggest reach of

these outlets (Alexa Internet, Inc. 2017). Mannes who regularly publishes for TechCrunch is bound to the promotional interests in his written news articles. TechCrunch and also the other media outlets (see appendix 2) have as a goal to reach many (website) visitors next to their commercial ambitions. One way of doing that is through the use of enticement titles and cover images as discussed within the textual dimension of this sub-chapter (3.3). By writing about the platform POAI the authors have positioned themselves as experts of this field of technology and as seven of those eight authors publish on a regular bases they can consciously influence the discourse. In this sense they also own a lot of power to shift the discourse for example from a more dystopian to a utopian discourse regarding AI. In this sense it might be a given suggestion to the platform POAI to indulge more the press that these support more the positive view on AI and as they stand also closer to the public. One final remark regarding the professions of the writers: Only Mannes and Statt highlighted in their bibliographies the interests in AI and machine learning. It is agreeable that this trend proceeds as AI sets more and more steps into our daily lives.

Conclusion

By performing a CDA according to Fairclough's 'three-dimensional framework' this research has provided insights into the way AI is discursively constructed on the platform POAI. First, by investigating how AI is discursively constructed on the platform POAI. Second, by investigating how AI is discursively constructed by the founding fathers. Third, by investigating how the platform PAOI is discursively constructed by American news-websites. Four selected texts of the POAI website, four official press releases, nine selected texts of the POAI founding fathers and eight American new-articles were analysed.

From the texts on the POAI website we have learned that within the textual dimension the POAI often uses the word 'we', especially in the tenets section and also in the press releases. The word comes with an implicit authority claim and a notion of unity, which is interesting because on the one hand they present themselves as a unity. On the other hand they compete against each other in daily life. The texts on the POAI website reflect in a broader sense utopian visions regarding AI by using phrases like "hold great promises" and "raising the quality of people's lives". This positive utopian view is evenly very dominant in the official press releases. It is even more emphasized by using positive connoted metaphors, such as "we arrived in a golden age of machine learning". Amazon presents in their press release more an egocentric view because they focus more on mentioning their own achievements and promoting their own products in their article. Quite a contrast to the no lobby approach the POAI is persecuting. As the POAI uses a .org domain by only referring to the third party domain purchaser WhoisGuard as owner of the site the POAI is not that transparent. As the texts focus predominantly on the utopian visions the technological imaginary is strongly embedded in the discourse. These findings present how AI is discursively constructed on the platform POAI.

From the texts of the POAI founding fathers we have learned that regarding the complex field of AI the different disciplines of AI are quite spread among the founding fathers. This could count as justification on why these six companies now together formed the POAI. The texts focus on the positive impact on AI for the society as well. The usage of words such as 'progress', 'advancing' and phrases like "better ways to communicate" highlight these utopian visions. Microsoft uses a metaphor to glance as AI specialist and Deepmind and Facebook treat AI as a solvable problem. Deepmind defines itself also as world leader in AI. Particularly Amazon, IBM and Facebook use question to address their audience, which brings a form of power. That's more highlighted through the usage of the words 'we' and 'you'. IBM is the only company that offers general white papers for the public. Some approaches are strongly connected to the POAI website, as for example the democratise AI theme of Microsoft, the way of tackling real word challenges as DeepMind is doing, or the

focus on ethics of IBM. These findings give an indication how AI is discursively constructed by the founding fathers.

From the selection of eight American news articles we have learned that those regularly use metaphors to highlight their statement. In two cases the metaphors have negative connotations and in even in two articles the authors openly criticise the platform POAI. This dystopian trend is also prominent in the used cover images, as several show robot images, which then appeal to public's existing knowledge or their cultural values. In addition it can be concluded that questions are not prominent in the news articles and also the pronouns 'we' and 'you' are sparsely used. Within the discursive dimension we have seen that next to the popular news discourse there is also a small academic discourse traceable referring to the news articles. Within the social dimension scope there is a broad interests regarding AI. The science or business sectors are identified as two examples. Nevertheless the authors are bound to their media outlets. The regularity of publishing gives these authors power, power to change the direction of the discourse. These points give an answer on how the platform POAI is discursively constructed by American news-websites.

This research has illustrated that especially word phrases, metaphors, images and also the chosen form on how to address the audience are significant to convey a message. Whereas the POAI platform and their founding fathers set AI in a very utopian spotlight so differs this from the view of American news writers. Based on their own research these authors promote a more negative voice towards the platform POAI and AI. This is highlighting the dominance of the technological imaginary in the discourse and how different actors such as a journalist are able to bring a shift in this equality. It underpins again that a good informed press is a necessity to stabilize the power relations between different discourses. It would be a good step from the view of the POAI to not only better inform the public on AI related topics but also involve the American news continuously in this process.

The CDA and especially the three-dimensional model of Fairclough were a good approach for this thesis. Nevertheless due to constraints the research was limited to brief focus on the discursive dimension and the social dimension and limited through the relatively small corpus. Besides that this research only focused a selected amount of topics within the textual dimension. It would be interesting for follow-up research to investigate in how far other topics within the textual level relate to the findings of this thesis and can influence the discourse as this research only focused on the usage of word and phrases, metaphors, questions, usage of the pronouns 'we' and 'you' and the use of images. Another idea for future research would be to investigate the role of the public within the discourse around the platform POAI, for example by zooming in on the comments left behind and how the comments of the public influence the discourse. Those comments were completely left out for this research.

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Appendix 1: Corpus POAI website and related texts

Source:	Title:
POAI website	
POAI	<u>Goals</u>
POAI	<u>Mission</u>
POAI	<u>Tenets</u>
POAI	<u>Frequently Asked Questions</u>
Official press releases of founding partners during launch	
(Suleyman 2016)	<u>Announcing the Partnership on AI to Benefit People & Society</u>
Apple	-
(LeCun 2016)	<u>Yann LeCun Facebook</u>
(Sekaran 2016)	<u>Industry Leaders Establish Partnership on AI Best Practices</u>
Microsoft	-
(Herbrich 2016)	<u>Amazon Joins Partnership on AI</u>

Sources of the founding partners	
(Deepmind 2017)	<u>Deepmind About Us</u>
(Google 2017)	<u>Google Machine Intelligence</u>
Apple	-
(Facebook 2017)	<u>Facebook AI Research (FAIR)</u>
(Candela and LeCun 2016)	<u>Artificial intelligence, revealed</u>
(Banavar 2016)	<u>Learning to trust artificial intelligence systems – IBM Research</u>
(Kelly 2015)	<u>Computing, cognition and the future of knowing - IBM Research</u>
(Microsoft 2017)	<u>Democratizing AI</u>
(Microsoft News Center 2016)	<u>Microsoft expands artificial intelligence (AI) efforts with creation of new Microsoft AI and Research Group</u>
(Amazon 2017)	<u>What is Artificial Intelligence?</u>

Figure 4: Corpus POAI website and related texts

Appendix 2: Corpus American news articles

Date:	Title:	Tags/Rubric:	Medium:	MT ¹	Author:	Bio & interests:	F ²
03-11-16	<u>Artificial Intelligence Is Here: Now What?</u>	-	The American Spectator	GN	Thomas Hemphill	Professor strategy, innovation & public policy @ School of Management at the University / Michigan-Flint	I
13-10-16	<u>Facebook, Microsoft, and IBM Leaders on Challenges for AI and Their AI Partnership</u>	Tech Talks, Robotics, Artificial Intelligence	IEEE Spectrum	TN	Prachi Patel	Freelance journalist based in Pittsburgh. Publishes also for Scientific American and Technology Review. Interests: energy, biotechnology, materials science, nanotechnology & computing.	R
05-10-16	<u>Tech Giants Form New Artificial Intelligence Nonprofit</u>	News	Manufacturing Business Technology	TN	Andy Szal	Digital reporter, interests: manufacturing, technology, energy, food, labour and regulatory issues for Advantage Business Media's manufacturing group	R
30-09-16	<u>Tech must look to past to protect the future from an artificial intelligence apocalypse</u>	-	MarketWatch	BFN	Therese Poletti	Journalist, interests: tech industry	R
29-09-16	<u>Google, Facebook and other tech titans form 'Partnership on AI'</u>	AI, artificialintelligence, business, facebook, gear, google, IBM, microsoft, partnershiponai	Engadget	TN	Mariella Moon	Associate editor at Engadget, interests: tech and space	R
29-09-16	<u>Google, Facebook, and Microsoft Want to Make A.I. Serve Humanity</u>	AI	Inverse	TN	Mike Brown	Writer at Inverse, work also featured in IBTimes, Neowin, Building Magazine, interests: tech, politics, and photography	R
28-09-16	<u>Facebook, Amazon, Google, IBM and Microsoft come together to create the Partnership on AI</u>	Artificial intelligence, technology, IBM, computing, popular post	TechCrunch	TN	John Mannes	Writer on TechCrunch, some works also in The Washington Post and Education Week, interests: machine learning and AI	R

¹ MT = Media theme (BFN = Business/financial news / GN = General news / TN = Tech news)

² F = Frequency: R = regular / I = irregularly

28-09-16	Facebook, Google, and Microsoft team up to pacify fears about AI	Microsoft, Google, Tech	The Verge	TN	Nick Statt	Reporter at The Verge, interests: Silicon Valley, gaming, AI	R
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Figure 5: Overview corpus American news articles

Appendix 3: Board of Trustees POAI

Board of Trustees POAI			
Representatives founding fathers POAI		Non-company representatives POAI	
Ralf Herbrich	Amazon	Dario Amodei	OpenAI
Tom Gruber	Apple	Subbarao Kambhampati	Association for the Advancement of Artificial Intelligence, Arizona State University
Greg Corrado	DeepMind/Google	Deirdre Mulligan	University of California, Berkeley
Yann LeCun	Facebook	Eric Sears	MacArthur Foundation
Francesca Rossi	IBM	Carol Rose	American Civil Liberties Union
Eric Horvitz	Microsoft	Jason Furman	Peterson Institute for International Economics

Figure 6: Name's and involved company's of board of trustee members of the POAI (Partnership on AI 2017a)

Appendix 4: Sample analysis of corpus material

	Artificial Intelligence Is Here: Now What?	Facebook, Microsoft, and IBM Leaders on Challenges for AI and Their AI Partnership	Tech Giants Form New Artificial Intelligence Nonprofit	Tech must look to past to protect the future from an artificial intelligence apocalypse
Usage of words/phrases	Benefits (4) ³ Anxiety about AI (2)	Machines (7) Challenges (4)	-	Human (7) Robot (6) Rules (6) Technologies (4)
Usage of metaphors	The road ahead may be bumpy, but there's no going back.	This is one mountain we need to climb	Usage of tech giants in titel	
Usage of questions	-	-	-	-
Pronouns we and you	-	-	-	-
Usage of images	- Cover image: robot touching human skin	- Cover image: conference photo POAI members – White House Frontiers Conference held at Carnegie Mellon University - 1 highlighted citation of LeCun	-	- Cover image: evil robot, shiny robot from Terminator collection, red blinking eyes highlight the evil senses
Intertextuality	- Stanford University released its One Hundred Year Study on Artificial Intelligence - Gartner Inc. study - 1 citation Eric Horvath, managing director at Microsoft Research and interim co-chair of the Partnership	- 7 citations Yann Lecun (Facebook) - 3 citation IBM Banavar - 1 citation Jeannette Wing (Microsoft Research) - 1 hyperlink to POAI - 1 hyperlink to White House's report on the future of AI	- 2 hyperlinks to POAI news article (28.9.2016) - 1 hyperlinks to POAI page Board of Trustees - 1 hyperlink to POAI page Views from the AI community - 1 citation LeCun - 1 citation AAAI President	- 1 hyperlink to POAI tenet page - Relating to 8 tenets POAI and 3 rules Asimov

³ in () the data gathered from the SEO Keyword Density Tool (see chapter 2.3)

		<ul style="list-style-type: none"> - 2 citations Facebook's James Hairston (NSTC report) 	<ul style="list-style-type: none"> - 1 hyperlink to AI research site on own website - 1 hyperlink to articles related to deep learning - 1 hyperlink to own portfolio article about LeCun - 1 hyperlink to Banavar's IBM page 	Subbarao Kambhampati.	
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Figure 7: Sample Analysis of corpus material