Imagining intelligent artefacts

Myths and digital sublime regarding artificial intelligence (AI) in Swedish newspaper Svenska Dagbladet

Axel Allen

Department of Media Studies
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Supervisor: Jörgen Skågeby

Stockholms universitet

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Abstract

Artificial intelligence (AI) has over the past years become a hot topic for discussion in Sweden, as the technology presents exciting unique possibilities and challenges for the country and its citizens. Coverage of AI in Swedish news media presents imagined scenarios with both current and future AI that contribute to *myths* about how the technology is able to radically transform life, that spring out of a central *digital sublime*. Through a mixed-method study of 55 newspaper items about AI from *Svenska Dagbladet* from 2017 to 2018, the thesis studies what evident AI myths occur in coverage and how such discourses spring out digital sublime regarding AI. A total of four AI myths are found in news media coverage that revolve around existing and future intelligent computers, robots, machines and perceptions with them. Myths and hopes and concerns with them point to digital sublime regarding AI as a force of intelligent digitization that promises to empower a sublime citizen, economy, and welfare state. Emotional values with sublime AI are understood to reflect a general Swedish techno-optimism as digital artefacts have allowed Sweden to become prosperous.

Keywords

artificial intelligence, AI, technological myths, Sweden, digital sublime, Vincent Mosco, news media, Svenska Dagbladet, SvD

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Introduction

As research and development on artificial intelligence (AI) continue to unfold, the topic is depicted and discussed at large all around the world and in Swedish news media. Discussions on AI implementations, both current and future ones, present unique possibilities and challenges for humanity, that are both thrilling and terrifying. Like any other technological media artefact, artificial intelligence is seen to have a surrounding field where visions and ideas about utilizing the technology are projected (Ballatore & Natale, 2017). Such imaginations contribute to the creation of *technological myths* – stories and visions with media which celebrate the transformative powers of artefact. These myths are further seen to originate from a central *digital sublime* that frames artificial intelligence as an emotional collective force and belief about artefacts as objects that exceed the ordinary (Mosco, 2004).

Previous research on artificial intelligence in news media has covered AI myths and related perceptions with the technology primarily in US news coverage. A prevalent AI myth, the 'thinking machine', framed computers in a mystic techno-utopian manner as a mechanical electronic brain with almost human-like consciousness (Ballatore & Natale, 2017). The myth influenced news media coverage that would use misleading metaphors and technical exaggerations to describe both optimistic as well as alarmistic perceptions with the technology. Goode (2018) has shown that myths can be part of overarching popular imaginations about AI, where multiple discourses shape perceptions about possible futures with the technology. Long-term data on perceptions of AI in news coverage lastly demonstrates that writings about AI are more positive than negative but that concerns have been growing in recent years (Cho, Chuan, & Tsai, 2019) (Fast & Horvitz, 2017).

Listed findings yield fruitful historic and contemporary insights about underlying visions, ideas and perceptions with AI myths, as well as mechanisms and processes in discourses symbiotic interplay with news media. A general overall understanding of AI myths and a central digital sublime is however poor: current research has not studied AI as digital sublime, fails to convey nuances with myths and does not demonstrate how frequent they are in media coverage. Current research also almost exclusively covers AI in American news media and fails to deliver cross-cultural comparisons of myths, digital sublimes and coverage in general. Against this background, this master's thesis intends to study myths and digital sublime regarding AI in Swedish newspaper *Svenska Dagbladet*. Through a quantitative content

analysis and a textual analysis, the thesis intends to, on the one hand, produce a general study of online coverage of AI in newspaper in Sweden in order to provide insights about the portrayal of AI in an additional country. On the other hand, and more specifically, the paper seeks to study how different myths in occur in the newspaper coverage that describe current and future AI technologies, associated hopes and concerns with artefacts and spring out of the digital sublime that envisions the technology as an object that exceeds the ordinary.

Aim and research questions

The aim of this thesis is to study myths and digital sublime regarding artificial intelligence in Swedish newspaper Svenska Dagbladet. Specifically, the paper intends to document AI myths that occur in online coverage and to describe how discourses envision AI functionalities, implementations and hopes and concerns with utilizing artefacts. Lastly, the thesis intends to conduct an intertextual reading of AI myths in order to generate a *digital sublime* regarding AI, connect it to myths and associated perceptions and study the emotional value with the technology. In order to do this, three research questions have been formulated:

1. **What myths about AI are evident in Svenska Dagbladet's coverage?**

The aim of research question one is to investigate and document the occurrences of different AI myths in news media coverage, and to describe how these appear. Specifically, the question intends to address how AI myths appear in different shapes and forms across a variety of news media items and convey nuances and variations, in order to avoid portraying myths as homogenous entities. Relying on quantitative content analysis, each news item will be coded using a codebook in order to document textual features and variables in coverage.

2. **How do myths describe and envision AI technologies?**

Research question two implements Vincent Mosco's concept *technological myths* – tales, or discourses, about old and new technologies that motivate and celebrate ideas and visions about usage and expected outcomes with artefacts, that will transform human lives in different ways (Mosco, 2004). The aim is here to identify AI myths in newspaper coverage in Svenska Dagbladet and to detail how these discourses describe and envision both current and future AI technologies, usages in areas of implementation, a human-technology relationship, and

desirable and undesirable consequences with the technology for Swedish citizens and society. This question will be addressed by conducting a textual reading of news items about a specific AI technology by implementing textual analysis as a qualitative method.

3. **How is a digital sublime related to AI described and understood?**

The final research question complements the second one by producing intertextual readings of myths, in order to generate *digital sublime* related to AI. The digital sublime serves as a central collective vision and emotional state about new technology as a *force which exceeds the ordinary*, and will transform the life of individuals and society (Mosco, 2004). The sublime plays a central role in informing discourses and perceptions wit AI that take the shape of technological myths and associated hopes and concerns. Identifying a digital sublime and connecting it to AI myths and emotional responses is thus crucial in order to further comprehend the envisioned potential with, and impact of, the technology in Sweden. In order to further comprehend the emotional state about the sublime AI, the analysis draws from Swedish history of digital technology to generate a plausible understanding of perceptions with AI and how they can be read as both new and unique as well as old. This question will also be addressed through textual analysis of all identified myths identified in SvD.

Background

Artificial intelligence – 'the most important conversation of our time'

Artificial intelligence is extending its frontier and contributing to how technology is changing human lives. The exponential growth of speed and power of computers over the past centuries has paved the way for AI technologies that are able to perform complex tasks that rely on a vast amount of computational power and advanced data analysis. AI technologies are changing aspects of human lives such as privacy, information, security, equality, healthcare, labor and many more areas in different ways. The current resurgence of AI comes after an almost 70-year-old history of ups and down. Since the birth of the discipline, AI research has experienced waves of optimism and pessimism, known as 'AI winter', within different technological subfields such as AI goals through machine learning, computational logic through artificial neural networks and others (Norvig & Russell, 2016). A central philosophical claim, as well as an issue with AI, is that human intelligence 'can be so precisely described that a machine can be made to simulate it' (Franklin, 2014). Originally put forward by mathematician Alan Turing in 1950, the idea of AI as a 'thinking machine' has kept scientists and philosophers busy with trying to understand human consciousness in order create 'intelligent agents' and evaluating ethical concerns with creating such entities.

Most current-day AI systems are 'narrow' applications specifically designed to tackle a well-specified problem in a particular domain. During recent years, the field of AI has advanced rapidly and seen some dramatic breakthroughs in image and speech recognition, autonomous robotics, and game playing (Franklin, 2014). Computers in medicine have started diagnosing patients, listening and speaking to humans, composing high-quality prose, and recommending music and movies. These AI implementations will however stick to certain defined goals and objects and not evolve, in a human-like way, to adopt new challenges without being redesigned (ibid). The coming decades will however most likely see some substantial progress in the field of AI that promises greats benefits such as new scientific discoveries, cheaper labor and better services, and medical advances. Some scientists claim that realizing a long-held goal within the field of creating human-like artificial intelligence could happen. A 'hard' or 'artificial general intelligence' (AGI) will, just like humans, have

the capacity for self-improvement and could over time become increasingly intelligent (Totschnig, 2017). Whereas humans are constrained in our self-improvement due to our biological condition, artificial intelligence, by contrast, can continue to extend and improve itself. A human-equivalent AI could hence quickly surpass humans in general levels of intelligence, vastly outsmart us and one day become a 'superintelligence' (Bostrom, 2014). While some researchers are skeptical of such an artificial entity being created, others subscribe to a scenario where a superintelligence triggers an 'intelligence explosion' and usher humans into a *singularity*, where runaway technological growth will completely transform societies economically, socially, and politically (ibid) (Häggström, 2016).

Many scientists are positive about what AI potentially might do to improve human life in the future. Researchers such as Moravec and Warwick in robotics alongside Minsky, Kurzweil and Garis in AI research envision that AI over time will help humans improve our biological condition and ultimately help us overcome our limitations (Geraci R. M., 2010). Brynjolfsson & McAfee (2014) argue that a 'second machine age' is now succeeding the Industrial Revolution, and is ushering humans into a new era where AI will improve humans mental powers in the same way as the steam engine and its descendants did for muscle power.

A growing body of experts at the same time concerned about long-term safety and security risks with AI. Some highlight issues about privacy as multibillion-dollar tech-companies - from Amazon, Facebook, Google and Apple, in the US, to Baidu, Tencent and Alibaba in China – and governments around the world are collecting information on users and citizens, and increasingly concentrate power and wealth in AI research (Polson & Scott, 2018). Others express concerns about human unemployment as certain types of labor is automated and replaced by AI (Häggström, 2016) (Spencer, 2018). As many of these matters concern current time or nearby, future 'AI anxieties' (Johnson & Verdicchio, 2017), others worry about hypothetical general AI or superintelligence, and how such entities could pose catastrophic risks from accidents or misuse. Current AI systems go wrong in unpredictable ways and minimizing such a risk by designing accident-free AI is extremely difficult. An AGI could be used by humans in harmful ways in an arms race or by an authoritarian state to control and spy on its citizens. A superintelligence has the potential to become unfriendly by not sharing the same moral aspirations as humans and become an uncontrollable agent that turns on its human creators. Countering such a development could be extremely difficult, if not impossible, due to the entity's super intelligent condition, and lead to devastating consequences (Häggström, 2016).

Mentioned ongoing discussions has led actors to claim that artificial intelligence is 'the most important conversation of our time' and that human beings need to start addressing different issues about how we want the technology to be used for good in our lives (Tegmark, 2017). Proving or falsifying different hypothesis and myths with AI is easier said than done, and thoughts on different issues vary. Despite differences of opinion, a conversation that consists of visions and perceptions about current and future AI is taking place all around the world, including Sweden. The list of practical and ethical issues with AI is long and as more people over time realize the complexity of issues, new visions and perceptions about the technology are presented, envisioned, and problematized in different arenas such as news media.

Artificial intelligence in Sweden and the EU

Sweden is regarded as a strong international driving force for new digital technologies, including artificial intelligence. Since the 1960s, technological innovations have helped drive social progress and transformed the country's infrastructure as well political, financial, educational, and cultural institutions (Digitaliseringsrådet, 2018). In 2012, the Northern European country proclaimed the ambitious goal of becoming the best country in the world that embraces digitization – 'the establishing of digital communication and interaction between humans, organizations, and objects (Statens Offentliga Utredningar, 2018). The goal is to reshape Swedish society by implementing digital technologies, such as artificial intelligence, in a manner that allows for companies to financially grow, develop the Swedish welfare and improve the quality of life for Swedish citizens (Regeringakansliet, 2017).

Over the past centuries, AI has been implemented in different ways in the development of internet platforms, information search, image recognition and automatic translation tools in the private and public sector (Vinnova, 2018). Due to previous AI usage, Swedish authorities regard the technology to have an important role in a digitized future. A 2012 report by a government commission on digitization states that artificial intelligence is part of an ongoing 'fourth industrial revolution' that is transforming Sweden, where new machines will take over human physical and intellectual capabilities. The technology will continue to develop exponentially and is by 2030 envisioned to, alongside other digital technologies, have fundamentally changed Swedish citizens' way of life (Digitaliseringskommissionen, 2016)

In 2018, the Swedish Government Offices published a strategic plan for realizing their goal of becoming 'world-leading' in implementing artificial intelligence in both well fare and labor (Näringsdepartementet, 2018). The report highlighted four important areas: education,

research, innovation and implementation, and framework and infrastructure (ibid). One billion SEK will be reserved for different AI efforts in education, over a ten-year-period (Tidningarnas Telegrambyrå (TT), 2018). Conducted polls indicate that Swedes overall are optimistic towards AI, as eight of ten think the technology is important for future development. Five per cent are worried about their jobs being automated, while 46 per cent think AI will help improve companies which they work for (Novus, 2018). Citizens also want AI to assist them with their day-to-day-chorus such as drive cars, diagnose medical ailments, and send us reminders of different sorts (Ronge, 2018).

A number of Swedish governmental reports have covered different potential and risks with artificial intelligence in work, business and finance (Vinnova, 2018), welfare and health care (Sveriges Kommuner och Landsting, 2017) education, communication and infrastructure (Digitaliseringskommissionen, 2016) (Stiftelsen för Strategisk Forskning, 2014) (Näringsdepartementet, 2018). The purpose of these reports has been to both create awareness about AI and present guidelines for a collaboration between the private and public sector, in order to make the most out the technology in a fruitful manner. Estimates show that the potential for economic growth is twice as fast with massive use of AI compared to limited use, and that Sweden's potential with AI revolves around innovative use of the technology in industry and society (Vinnova, 2018). According to the Swedish innovation agency Vinnova, AI will have a big impact on areas of Swedish life such as industrial development, travelling and transportation, public health care, finance and security (ibid). Swedish companies are however currently bad at implementing and utilizing of AI. A report from Boston Consulting Group states that less than three out of four Swedish company directors report that AI has made significant contributions to their work (The Boston Consulting Group, 2018).

As a member state in the European Union (EU), Sweden plays a role in shaping a common vision for AI usage in Europe. EU is currently competing with the United States and China in becoming world-leading in AI development and usage (Joint Research Centre, 2018). In late 2018, the Commission of EU presented a coordinated plan for the fostering and development of European AI for 2019-2025. In the report, the Union states that it intends to maximize investments through EU partnerships, create European data spaces, nurture talent, skills and life-long learning through education, and develop ethical AI (ibid). The technology is regarded to be a 'highly prioritized matter' and €2 billion for the period 2019-2021 will be dedicated to AI developments (Euronews, 2019). In February 2019, the decision was adopted by EU's member states, and by mid-2019, Sweden and other states are encouraged to unveil 'national AI strategies' that take the Commissions' plan into consideration (Annex, 2018).

Despite ambiguous future plans with the technology, the Swedish governmental has lately been the subject of criticism. Some claim that the country is falling behind in AI research and development, as the current budget to realize Sweden's AI strategy is only a fraction of what it is in countries such as USA, China and other countries in the EU (Akenine, Sverige behöver strategi för artificiell intelligens, 2017). Other say that Sweden has realized the potential with AI '20 years too late' and that current investments are not substantial enough in order to speed up the process (Tidningarnas Telegrambyrå (TT), 2018). Some academic scholars and private businesses now fear that industries such as the Swedish car industry will fall behind international competition (Ottsjö, 2018). Many now doubt that the country is unable to compete with different AI power nations and that Sweden needs to come together with different EU member states and collaborate on AI development, in order to avoid democratic issues (Engström, 2018) (Akenine, 2017).

Previous research and review

A small body of existing previous research on AI in the news media from disciplines such as media and communication studies, science and technology studies (STS) and public understandings of science (PoS) will be presented here. Besides news media coverage, these fields also study the construction, and perception, of artificial intelligence in popular culture work such as literature, movies, and tv series (Szollosy, 2018). The section covers previous work about three different areas: AI and 'the thinking machine' myth, popular imaginations about AI, and topics and perceptions of AI in news coverage. Research findings are then assessed and a research gaps identified, that motivates why the thesis should be conducted.

AI and 'the thinking machine' myth

A small body of previous research on AI in news media has generated a number of findings. Ballatore & Natale's study (2017) deals with the prevalence of AI myths as the technology started to emerge in the early years of the digital revolution (1940-1970). A 'thinking machine' myth framed AI in a mystic and techno-utopian manner as a mechanical electronic brain, with an almost human-like consciousness and ability to think and act like a human beings (Martin, 1993). The myth influenced both perceptions about the technology amongst a

general population as well as a scientific community, as evident in scientific papers and journals. The usage of misleading metaphors and technical exaggerations about AI paved, according to Martin (1993), the way for 'premature enthusiasm' that would eventually lead to disillusionment and distrust towards computers that did not live up to expectations. In his study about AI coverage during the same time-period, Atkinson (2017) contends that an overall discourse on technological progress was mischaracterized as news media framed AI as a threat to increased human well-being and prosperity Despite this, the myth has been able to live on. Atkinson argues that not only is the myth bad for science communication on AI in general, but also for discussions about valid concerns that are mischaracterized (ibid).

A.I. and popular imaginations

Goode's study on AI in modern-day news media highlight a *popular imagination* that surround the technology. In his paper 'Life, but not as we know it: A.I. and the popular imagination', Goode (2018) investigates how three distinct but interwoven public discourses each play a role in shaping a popular imagination around possible AI futures. Besides analyzing future representations in science fiction movies and the concept of *singularity*, the paper investigates how news media depict events surrounding real-world developments on AI. The paper covers Googles' Go event, where the company's AI AlphaGo was able to beat the world champion at Go, a strategy board game with trillions of play scenarios that is considered a game that can only be won through mathematical reasoning and intuition.

According to Goode, a sense of the *uncanny*, or 'creepy' was central to a news media discourse, where the specter of an emergent, immaterial entity 'that sits uneasily between a (Western) dichotomy of life and non-life' served as a central focus. News media items (both text and video) were typically short, attention-grabbing and resonated strongly with elements found in science fiction movies, reflecting a media logic that centers around a 'sensationalist, marketing-driven and viral online attention economy (2018, s. 193). As the AI managed to surprise its programmers with the scale and speed of its achievements regarding human-like intuition, sensationalist headlines accompanied news items that described how Google's AI had 'nothing to learn from humans' and was 'able to create knowledge itself' (ibid). Public imaginaries are partially the result of corporate interests, as private enterprises try to frame and construct narratives about AI in a manner that is picked up and conveyed by news media outlets (ibid). Studying coverage of IBM's Deep Blue and Google's AlphaGo events, Bory

(2019) demonstrates that companies through media outlets were able to 'mix narrative tropes, gaming, and spectacle' in order to convey newness and other main features with their AI's.

Topics, perceptions and sentiments with AI

Previous research has also studied topics and perceptions with AI news media coverage in The United States, United Kingdom and China. Fast & Horvitz's (2017) paper is the most extensive analysis of media reporting to date, studying long-term trends in public perceptions of AI in The New York Times over a 30-year period (1986 to 2016). News coverage in TNYT has consistently been 2-3 time more optimistic than pessimistic over time. Since 2009, both optimistic and pessimistic coverage has exploded along with increased interest in AI. A clear upwards trend regarding different concerns about the *loss of control* of AI, *ethical concerns, work*, and *singularity* can be seen in recent years and the authors conclude that this 'suggest an increase in public belief that we may soon be able to build dangerous AI systems' (ibid).

Garvey and Maskal (2019) and Galanos (2019) explore public understandings and engagements with AI science in US and UK news media. Through a sentimental analysis of news media coverage about AI in digital health from 1956 to 2018, the first mentioned author examines the hypothesis that news media coverage of AI is overall negative and informed by a 'Terminator Syndrome' - the alleged usage of imagery from the movie *Terminator*. Such an overall understanding of science is perceived to influence public perception with AI and serves as a potential barrier to fruitful interactions and engagements of AI scientists and technology developers with journalists and a general public (Galanos, 2019). In line with Fast and Horvitz, Garvey and Maskal find that coverage is mostly positive towards AI. When discussing plausible explanations as to why a majority of the US public is still worried about AI, the authors conclude that risk perceptions amongst perceived experts of artificial intelligence might strengthen and reinforce negative biases towards the technology.

Galanos' paper indicates that Garvey and Maskal's hypothesis regarding the powerful influence of negative AI experts could be accurate, as the scholar demonstrates that a growing body of public commentators voiced in news media influence AI policy making in the UK, US and the EU. These prestigious public intellectuals, scientists, and entrepreneurs, albeit being experts in their own fields and research disciplines, have a limited understanding about AI. Studying coverage in a wide of outlets between 2014 and 2018, the paper captures, and demonstrates, the interplay between statements made by such experts by tracing their impact on government policy documents. Galanos problematizes the absence of real experts in

coverage and debates as well as a central ideology of science where the commentary of prestigious intellectual figures results in unwanted repercussions in other sciences that shape, in a distorting manner, public engagement and media representations of AI (ibid).

Cho, Chuan, & Tsai's research (2019) studies topics and perceptions in AI coverage in five major US newspapers from 2009 to 2018. The study show that coverage is dominated by the topics of *business and economy, science and technology* and *policy and politics* (2019, s. 3). Most news articles up until 2015 have a positive or mixed valence towards AI but as the number of articles dramatically increased, the number of articles with a negative stance grew as well and surpassed hopeful ones (2019, s. 4). By implementing framing analysis, the paper studied perceived risks and benefits with AI and how these framed topics in news coverage. 52,9 % of articles discussed at least one benefit with AI and 47,6 % covered one risk with AI. Economic benefits and improving human life or well-being were used much more often to frame AI topics than risks, and the most discussed risk concerned shortcomings of the technology, loss of jobs and privacy concerns. *Business & Economy* topics were more likely to be covered in articles that discussed only benefits with AI, while *Science fiction* and *Ethics* topics were more likely to be discussed in articles covering risks with the technology (ibid).

Another recent article studies cross-cultural differences in news coverage in China and The United States (Kong & Ding, 2019). Key strategic AI areas and topics that appeared most frequently in The New York Times were *computers, machines,* and *driverless cars*, while *the internet*, *recognition*, and *big data* dominated coverage in China Daily. In both countries, *computers* were mainly discussed as a *computer technology* that enables AI (2019, s. 96), and *machines* were primarily acknowledged as *intelligent machines* that interacted with human beings (2019, s. 98). The study shows conclude that research and development on AI received substantial attention in both publications, which connects to both countries efforts in making AI research national priorities (2019, s. 96).

Research gap

A sprawling mixture of studies has in general yielded fruitful historical and contemporary insights into the content and shape of US news coverage on AI, with Ballatore & Natale's (2017) study being an particular interesting case due to its focus on myths. Outside of a US context, very little is however known about AI coverage in news media in general and about myths and digital sublimes regarding AI in particular. A number of limitations with Ballatore & Natale's implementation of myths is also worth noting. First, the paper focuses only on one

particular myth and does not address a general occurrence of discourses and how they connect to a central digital sublime. Secondly, the study does not quantify and measure the prevalence of the thinking machine myth, which makes it hard to understand the scope and prevalence of it. Thirdly, as very few nuances with the myth are conveyed which make it hard to understand variations, the discourse is depicted as a somewhat homogenous sociotechnical entity.

Based on these observations, this paper has taken upon itself to address three identified research gaps. First, the paper intends to document and study the occurrences of AI myths in news media and digital sublime with the technology. Secondly, the paper intends to study how AI myths appear in news media in a manner that conveys frequencies and nuances with such discourses. Myths are multi-dimensional entities with numerous layers and variables. Studying this is important in order to further understand both AI news coverage in general as well as AI myths in particular. In order to succeed with this, the paper will implement a mixed-method approach that incorporates a quantitative and qualitative method (see Methodology for an elaboration). Thirdly, the thesis intends to fill a research gap concerning cross-cultural variations in AI coverages by studying AI news coverage in Sweden, in order to yield insights that can be compared and contrasted to coverage in USA and China.

Theoretical framework

Technological myths and digital sublime

Media scholar Vincent Mosco (2004) argues that in order to understand the central role and power of digital information technology in human lives, one must take into account the function *technological myths* and *digital sublime*. Myths are understood as tales about old and new technology that both motivates and celebrates usage and expected outcomes with artefacts that will change human lives in different ways. In Mosco's own words, myths are stories that 'animate individuals and societies by providing paths to transcendence that lift people out of the banality of everyday life' (2004, s. 3). Bell and Dourish in a similar way define technological myths as powerful 'organizing visions' of how new media will fit in the world, and ideas about implementations of technologies' (2011). Technological myths both point to, and partially stem from, *digital sublime*: 'a collective future belief and emotional state about technology as a *force which exceeds the ordinary* and affects its surrounding by

turning it sublime' (ibid:5). Mosco's concepts study how digital technologies are turned into objects, or tools, for rebuilding conditions of humanity and society, by also turning them sublime. Digital sublime serves as a sociotechnical framework for identifying and understanding an overarching central discourse with digital technology - ideas about the functionality and shape of an artefact, a point of cultural origin, visions of current and future utilizations, and a surrounding aesthetic and emotional component that portray objects in a manner that make them grand, beautiful and dangerous. As humans seek to communicate the sublime artefact and to establish a particular understanding of technology, these ambitions take the shape of technological myths. Myths are thus here regarded as sub-discourses, or *imaginaries* (Flichy, 2007), that spring out of digital sublime and both convey and spread its vision, ideas and perceptions with technology in order to establish them in society (ibid: 22).

Identifying and studying digital sublime AI is necessary to comprehend underlying ideas and visions with technology as expressed through myths. Both components need to be taken into consideration to understand a power aspect with technology regarding which visions and ideas that are allowed to become the most prevalent ones that define artefacts. A power aspect here also concerns the emotional aspect of a technology – the digital sublime emphasizes perceptions with technology through either astonishment and awe, or terror and demonization, as artefact's allow humans 'to transcend their banal lives' (ibid). Perceptions of hopes and concerns are central to both myths and the sublime, as the technology brings forth human contemplation about the overwhelming transformative power of technology that conveyed and reflected through imagined outcomes for human lives and society overall.

The goal with myths and digital sublime is overall to describe, and understand, visions with both new and old technologies, rather than to falsify and prove them right or wrong. As Mosco underlines, myths 'are neither true nor false, but living or dead' (Mosco, 2004, s. 3). This provides a theoretical advantage with implementing the concept: it is not important if a central belief about technology corresponds to reality or not - what matters is what it reveals about the cultural context from which it originated. Even though a myth might could be falsified, the discourse may still have profound effects on segments of general life. The idea about myths as living, meaningful stories is further interesting because such discourses suggest something about why people embrace them even in the face of compelling contrary evidence. Myths do not just embody a truth - they shelter truth by giving it a 'natural, taken-for-granted quality', a notion that is here understood to widely resonate with Roland Barthes idea that mythologies produce a desired ending of stories and ultimately meanings with different phenomena (Mosco, 2004, s. 29). Myths are thus here understood not only as an

anthropological phenomenon and term that equated with neutral-free values – it is also a political term which inscribes human values with ideological meanings and desires. Failing to take such a dimension into consideration consequently allows myths to become naturalized or, as Barthes calls it, ‘depoliticized speech’ that shields such tales from being scrutinized and critiqued (2004, s. 31). Studying and critiquing myths does thus not only entail identifying underlying political motivations, but also restoring and resituating them in such a context.

Technological myths and *digital sublime* will be implemented in a manner that primarily takes advantage of the first concept's descriptive emphasis on explicit meanings with myths on a manifest level. The paper will specifically document different AI myths in Swedish news media and present the described functionality of current and/or future AI technologies, different areas of implementation, and associated hopes and concerns with usages. Implicit readings of myths', regarding aspects such as cultural and political origins, reasons for existing and why people embrace them, is here not a focus, as that would entail a research process and workload that would surpass the scope of this thesis. The paper will however conduct intertextual readings of myths in order to come up with a plausible digital sublime regarding AI. Readings will be argued as plausible by connecting them to identified AI myths and associated hopes and concerns. In order to understand the envisioned emotional impact of AI, the paper will draw from Swedish history of digital technology to generate a plausible reading of perceptions with AI and how they are both new and unique but also old.

Method

This section of the paper will outline the two chosen methods for this thesis. The paper relies on a convergent parallel mixed method, where data from quantitative content analysis (QCA) and textual analysis are merged in order to provide a comprehensive analysis and holistic account of the research problem (Creswell, 2014). By employing a mixed method design, the thesis is able to overcome different shortcomings with each method. QCA is able to provide descriptive data and convey variations and nuances with different AI myths, that are rooted in objective observations which cannot be captured qualitatively. Textual analysis is able to describe myths and address the conjunction of central elements (envisioned usages, hopes and

concerns and an imagined digital sublime) in a manner that a numerical analysis is not able to convey. QCA will address the first research question and textual analysis two and three.

Quantitative content analysis

Neuendorf briefly defines quantitative content analysis as 'the systematic, objective, quantitative analysis of messages characteristics' (Neuendorf, 2017, s. 1). The method seeks to identify how characteristics or dimensions of a text or message occur and, through this, tries to say something about representations and their significance. This is done by producing *counts* of key categories and measurements of the *amounts* of variables, for which there is a numerical process. A variable is here defined as 'a definable and measurable construct that holds different values for different individual cases' (Neuendorf, 2017, s. 37).

Quantitative content analysis has as its goal a numerically based summary of a chosen message set and is fruitful for dealing with large amounts of material, where focus lies on *manifest* content rather than *latent* meaning (Hansen & Machin, 2013, s. 89). Based on a positivist paradigm of social research, the goal of the method is to produce generalizable knowledge with the emphasis on description, prediction, explanation, and control. A commitment to QCA includes attending to criteria such as validity (internal and external), reliability, sample representativeness, and a principle of maximum information (Neuendorf, 2017, ss. 19-20). Underlying the different criteria for quantitative content analysis is an assumption that research is regarded *nomoethic* – the goal is to develop *generalizations* about different phenomena. By using different theories as roadmaps for these generalizations, the method is able to provide patterns of knowledge and proper theory-building that can be generalizable across time, cultures, and other boundaries (Neuendorf, 2017, s. 36).

Method design and implementation

This thesis is mainly a *descriptive content analysis,* which seeks to describe or summarize the distribution of variables or some relationships between variables in a sample (Neuendorf, 2017, s. 125). A codebook with a total of 17 variables has been produced based on the twofold purpose of the thesis of providing both a general study on Swedish AI news media coverage and to convey nuances with AI myths (see Appendix 1 for variables). The study relies on the computer software SPSS in order to document characteristics of articles and general AI myths. Eight out of nine steps in Neuendorf's process of conducting content

analysis have been followed, leaving out step six *Training and pilot reliability* (2017, s. 40). The thesis has neither conducted a training session nor an independent coding test in order to assess the applicability of variables, referred to as *intercoder reliability*, as the study is conducted by one person. *Intercoder reliability* has alongside *internal validity*, the matchup of conceptual definition and an operational definition (Neuendorf, 2017, s. 125), also been tested in a separate method project with an a priori coding scheme (Allen, 2018). Variables 2-5, 8 and 10-14 were here successful in generating descriptive features of AI news coverage and addressing the research purpose. Variables 6 and 7 have since then been added and originate from previous studies on AI in news media, that have been thoroughly tested and shown to generate well-defined results (Cho, Chuan, & Tsai, 2019). Variable 9, type of AI, was added in order to distinguish which type of AI articles and myths concerned. Based on this, the paper has deemed step six unnecessary, as both the internal validity and intercoder reliability are regarded high. Evaluating these an additional time could have been fruitful for producing insights on how to interpret variables (manifest versus latent content) as well as suggestions for additional variables that provide additional data on AI coverage. To the extent that it can, the study intends to provide enough information about the methodology (code books, variables, and sample, in order to increase the chances of *replication* in the future.

Textual analysis

Textual analysis aims at studying and understanding how authors of media texts make sense of, and communicate, experiences of a particular phenomenon and life overall. Specifically, the method seeks to both provide explicit descriptive readings of texts and to produce implicit readings of underlying meanings and ideas that shape the content (Hawkins, 2017, s. 1754). Textual analysis stipulates that texts are influenced by, and indicative of, larger social structures, that reflect and/or may challenge cultural, political, social and ethical contexts for which they exist. In order to produce a richer understanding of texts, the analyst must understand how items are socio-politically and historically situated and how these larger structures influence information and meanings with texts. Through interpretation, the author tries to identify textual and intertextual meanings in texts and connect these to larger social elements that provide cues about how messages should be read by different people (ibid). Besides studying how *authors* intend texts to be read, the method also seeks to understand both how *readers* comprehend texts and how their interpretations are influenced by subcultural and cross-cultural factors (Hawkins, 2017, s. 1755). Textual analysis is a practical

method for producing a plausible interpretation of a sense making process amongst producers and consumers of texts. The qualitative nature of the method makes it useful for providing broad and/or narrow explanations of a worldly phenomenon, by applying a theoretical framework as a lens to see the world through (Creswell, 2014, s. 64). Such a framework further allows the researcher to create research question/-s which point the scholar in the direction of a specific type of *primary texts* (here news texts) and elements, or units, in these that will assist with the analysis. The goal with text analysis is thus not to only to provide a summary, or synopsis, of texts – the method aims at locating parts and bits in artefacts which address the research question in the best way (Hawkins, 2017, s. 1756).

Method design and the role of the researcher

Textual analysis is implemented in order to identify and describe both AI myths and a central digital sublime. The unit of analysis is news items that are individually read in order to interpret the *authored* perspective, or what Hawkins refers to as *the creator or author's intentions* of texts (2017, s. 1756), that focuses on how authors communicate and describe AI. Texts items that deal with the same particular technology, based on the QCA variable 'AI technology' are further read and analyzed together in order to outline and describe a myth about the particular AI technology. Lastly, all myths are intertextually analyzed in order to identify a plausible digital sublime regarding the technology. Appendix 9 outlines a code book with variables based on elements of myths which the study intends to capture. The thesis recognizes texts as located at a unique time and place with AI in the 21st century as described in the Background section. Such a context helps explain and motivate an interpreted author intention but is not evidence for readings. The thesis implements a *structuralist* approach to texts which recognizes that there are different cultural ways of comprehending a phenomenon but that similar underlying structures exist. By doing so, the paper allows future research to compare and highlight similarities and differences with AI myths and digital sublimes.

The qualitative nature of textual analysis requires reflecting on the researcher's personal subjectivity and intention with the study and how this affects the validity of conducted readings and interpretation of AI myths and digital sublime (McKee, 2003, s. 1756). Briefly, AI has been a personal topic of interest since 2017: different types of information about AI (books, news articles, podcasts, videos, etc.) have over time been consumed and have accumulated a substantial body of knowledge about the topic. An overall techno-optimistic attitude towards artificial intelligence has been developed, and is regarded a personal bias,

which believes that the technology will have a largely positive impact on Sweden, but that legitimate concerns and challenges with the technology exist and need to be addressed.

Personal knowledge about AI presents different strategic advantages and disadvantages to ethical guidelines. On the one hand, the author is able to identify and explain contextual background information that allows for a rich description of news items, AI myths and digital sublime. It is however important to be aware of potential information gaps that can become more or less invisible to the author, as prior knowledge allows them to be implicitly filled. If this is not done, ethical concerns arise regarding the transparency of the thesis as well as the validity and reproducibility of the produced results. As for the personal bias towards AI, this is not regarded a great concern to a qualitative credibility and validity, as textual analysis focuses on descriptive textual features of AI myths that can be easily identified.

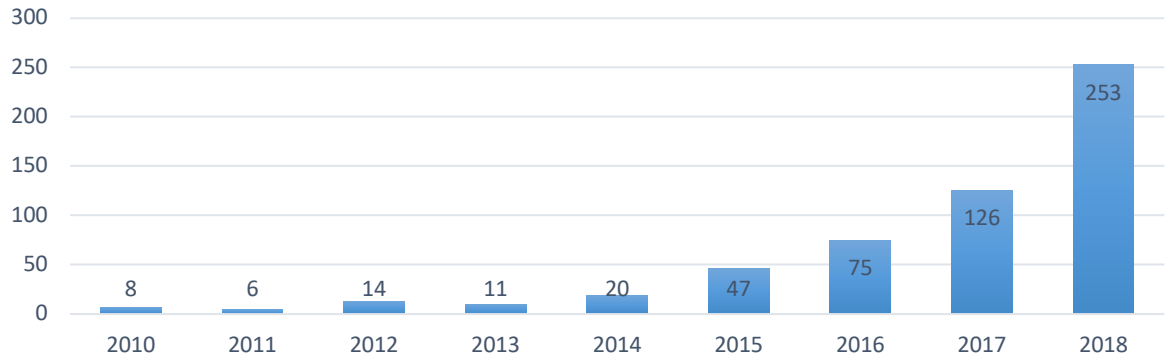
In order to ensure that ethical intentions with qualitative reading are followed, the paper will implement two validity procedures from Creswell & Miller's (2000) model of establishing research credibility and transparency (ss. 124-125). The first validity procedure, reflexivity of the researcher, concerns how the researcher brings his- or herself into the study, and has just been reflect upon in this section. The second validity procedure, collaboration with other scholars, concerns conveying 'an audit trail' (s. 128). An 'audit trail' allows readers who examine the textual analysis to attest to its credibility, as the researcher provides clear documentation and evidence of all research decisions and activities that have been made. This is done by presenting a list of news articles that are part of the sample (Appendix 2) and by outlining the code book for the textual analysis (Appendix 9).

Material and sample

The paper's research sample consists of articles from Swedish newspapers Svenska Dagbladet's website, which were generated using the Swedish media data base Retriever (Retriever). Svenska Dagbladet (SvD) is considered an independent liberal conservative media outlet and is part of the Norwegian international media group Schibstedt (Wadbring & Weibull, 2014). SvD is the second biggest morning newspaper in Sweden: in 2018, the online and print editions had roughly 170 000 subscribes (Kantar Sifo, 2019) and a total reach of 664 000 readers (Orvesto Konsument, 2019). Svenska Dagbladet's web site was chosen because

of the outlet's overall public reach and influential and pivotal role in Swedish society and a general public sphere as it shapes public understandings of general world phenomenon such as technology (Wadbring & Weibull, 2014). The online edition was chosen over the printed edition due to a larger number of articles than print. This is most likely due to the limited space of a newspaper, whereas the website is able to publish a vast number of items. The publication was also chosen because of its substantial coverage of AI. According to a search for 'artificiell intelligens' (artificial intelligence in Swedish) on Retriever from 2010 to 2018, Svenska Dagbladet is the outlet in Sweden that has written the most about AI (Table 1). Coverage has over the years increased and saw in 2017 a significant spike, thus following a similar trend in US publications such as The New York Times (Fast & Horvitz, 2017). Lastly, SvD was chosen in order to cover as much ground as possible in Swedish AI coverage within the frame of a master thesis.

Table 1: Articles with the phrase AI in Svenska Dagbladet's online edition 2010-2018 in Retriever



A sample was created by collecting news items across a two-year period (January 1st, 2017 to January 1st, 2019). A search for the phrase 'artificiell intelligens' in Retriever resulted in an initial body of 379 articles from all sections of the paper. Including articles from all sections was here motivated by an intention to cover as much of the newspaper as possible. In order to generate a sample which consisted of article that were relevant for the study, a first step consisted of reading all articles. The entire body of newspaper items was then reduced based on a number of criteria. The first criterium was that AI had to be the main topic of articles, which lead to the exclusion of items where the phrase only appeared in passing. A second criterium was that news items described AI in the context of Sweden, the EU (Sweden is a member country and is thus part of the union's ideas and visions with AI) or a general,

unspecified one. A third principle was that news items had to have a minimum length of 400 words, in order to allow for a substantial reading. Review articles about AI in popular culture (books, video games, tv series and movies) were excluded, as these covered fictional scenarios with AI. Articles concerning non-fiction work with AI, such as interviews with scholars, were however included. While it could be argued that reviews of popular culture also contribute to the shape of different AI myths, the thesis has chosen to exclude these as it sought to focus on real-time happenings, thus purposely limiting itself somewhat. Following this process, a total number of 55 articles remained in Svenska Dagbladet. All articles were chosen in order to produce a feasible and representative sample, with an overall high level of generalizability regarding the overall population of news items as well as general AI coverage in Svenska Dagbladet. Given the vast landscape of news media outlets in Sweden, the small sample and qualitative approach make the findings however non-replicable and non-generalizable for AI coverage in the country overall. Instead, the study provides an insight into *some* AI myths which circulate in news outlets and influence a Swedish public discourse on AI. Future research thus has the potential to cover more ground, and fill additional research gaps, by studying coverage in other news outlets.

Results and analysis

Overview AI coverage in Svenska Dagbladet

In this section, the results will be presented that address research questions one and two. An overview of AI coverage in Svenska Dagbladet will first be given that covers general features based on the results of the quantitative content analysis. The second part outlines four identified AI myths, by first describing their general characteristics from the QCA and then outlining them based on textual analysis. A total of eight different AI technologies appeared in Svenska Dagbladet's AI coverage. The most common artefacts were computers, robots, machines and vehicles (Table 2). The findings are thus similar to AI coverage in The New York Times based on Kong & Ding's study (2019) and indicate that coverage in Sweden, just like in America and China, is somewhat reflective of strategic areas of interest with AI identified by the government and Swedish business companies (see 'Previous research').

Table 2: AI Technologies in Svenska Dagbladet (SvD)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Robot	12	21.1	21.1	21.1
	Vehicle	6	10.5	10.5	31.6
	Computer	15	26.3	26.3	57.9
	Voice assistant	1	1.8	1.8	59.6
	Everyday smart objects	1	1.8	1.8	61.4
	Unspecified	1	1.8	1.8	63.2
	Algorithm	4	8.8	8.8	71.9
	Autonomous weapon	4	8.8	8.8	80.7
	Machines	11	19.3	19.3	100.0
	Total	55	100.0	100.0	

A vast majority of articles appeared in the finance section (Näringsliv) followed by editorial section, arts section, and debate section (table 3), and were mostly written in a news format, followed by editorial format and debate format (table 4).

Table 3: Sections of SvD where AI articles were published

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Näringsliv (Finance)	35	63.8	63.8	63.6
	Sverige (Domestic news)	2	3.5	3.5	64.9
	Världen (International news)	3	5.3	5.3	70.2
	Ledare	6	10.5	10.5	80.7
	Debatt (Debate)	4	7.0	7.0	87.7
	Kultur	6	10.5	10.5	98.2
	SvD Perfect Guide (Suplement)	1	1.8	1.8	100.0
	Total	57	100.0	100.0	

Table 4: News format/frame of AI articles in SvD

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	News	30	56.1	56.1	56.1
	Editorial	18	31.6	31.6	87.7
	Debate	6	10.5	10.5	98.2
	Report/story	1	1.8	1.8	100.0
	Total	55	100.0	100.0	

News articles primarily cover different AI technologies such as robots, computer software and autonomous vehicles, and the different usages and potentials with artefacts in areas of implementation such as labor, social welfare, politics, militarism, communication, infrastructure, transportation etc. News items also discussed judicial and political aspects surrounding AI such as laws and regulations, political visions for implementing AI in Swedish welfare and incentives to capitalize on a Swedish work force in AI development before losing it to foreign companies. While a small number of editorial and debate articles also highlighted and discussed these topics, philosophical matters were a bigger focus in this genre as articles addressed issues regarding the nature of intelligence, understanding and replicating human consciousness, a shifting human-technology relationship, and existential meaning making processes for humans with intelligent artifacts in our lives.

A vast majority of articles written by journalists from SvD and Swedish news agency TT (Tidningarnas Telegrambyrå), followed by scientists/scholars and business actors (Table 5 & 6). Journalists had written all news items as well as a majority of editorial items, while scientists and business actors conveyed their ideas about AI in an editorial and debate format (Table 7 & 8). A vast majority of items had one author while three items had two or more.

Table 5: Background of author one of articles about AI

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Journalist	45	82.5	82.5	82.5
	Scientist/ scholar	6	10.5	10.5	93.0
	Private individual	1	1.8	1.8	94.7
	Political actor	1	1.8	1.8	96.5
	Business actor	2	3.5	3.5	100.0
	Total	55	100.0	100.0	

Table 6: Background of author two of articles about AI

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Scientist/scholar	1	1.8	33.3	33.3
	Private individual	1	1.8	33.3	66.7
	Business actor	1	1.8	33.3	100.0
	Total	3	5.3	100.0	
Missing	System	52	94.7		
Total		55	100.0		

Table 7: Articles written by first author in sections of SvD

		Journalist	Scientist/ scholar	Private individual	Political actor	Business actor	Total
Article	News	32	0	0	0	0	32
	Editorial	14	3	1	0	0	18
	Debate	0	3	0	1	2	6
	Cover story	1	0	0	0	0	1
Total		47	6	1	1	2	57

Table 8: Articles written by second author in sections of SvD

		Scientist/ scholar	Private individual	Business actor	Total
Section	Näringsliv (Finance)	0	1	0	1
	Debatt (Debate)	1	0	1	2
Total		1	1	1	3

Most articles in Svenska Dagbladet framed AI in a thematic manner (Table 9) by discussing AI in relation to broader general contexts of Swedish life. Episodic frames covered events such as the unveiling of autonomous cars, the launch of AI applications such as Google translate and automated news feeds, interviews about specific AI services such as banking applications, job recruiting software or suicide prevention algorithms on Facebook.

Table 9: News frame in newspaper articles about AI

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Episodic	12	21.1	21.1	21.1
	Thematic	37	64.9	64.9	86.0
	Both	8	14.0	14.0	100.0
	Total	57	100.0	100.0	

The impact of artificial intelligence on society was the primary focus of newspaper articles overall, followed by a mixture of societal and personal impact (Table 10). AI's societal impact addresses the general, overall consequences of AI on broader societal areas such as labor, health care, computing, law and jurisprudence, infrastructure, military, communication, banking, etc. The personal impact covered aspects such as the impact on individuals' employment or work tasks, personal well-being and health care, exposure to disinformation and propaganda online, personal safety while driving with or near an autonomous vehicle and general aspects concerning the overall management of one's own personal life.

Table 10: Conveyed impact of AI in articles

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Personal	4	7.0	7.0	7.0
	Societal	37	64.9	64.9	71.9
	Both	16	28.1	28.1	100.0
	Total	57	100.0	100.0	

A majority of articles concerned AI technologies in a future setting, such as 'near future' or 'distant future' (Table 11). The first category covered a time span of 20 to 50 years and concerned AI technologies such as quantum computers, autonomous vehicles, autonomous weapons, and health care robots. The second group covered a time span of 100 years or more and concerned robots, computers and machines equipped with AGI and superintelligence. Articles about current time AI concerned artefacts such as intelligent computer software for banking, stock trading as well as industrial robots, social robots and others.

Table 11: Time setting in articles about AI

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Current	19	35.1	35.7	35.7
	Future	21	36.8	37.5	73.2
	Both	15	26.3	26.8	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		57	100.0		

A vast majority of articles highlighted narrow AI and a small number of articles dealt with artificial general intelligence (AGI) (Table 12). The takeaway from this is that coverage was more interested in narrow AI as the technology had a bigger chance of being realized in the future compared to the other two types. This further connects to news articles in finance being more prevalent than essay and debate articles in arts, as the former ones emphasizes hard facts and are less speculative compared to the later (Häger, 2014).

Table 12: Type AI in newspaper articles

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Narrow AI	52	91.2	91.2	91.2
	General AI	1	1.8	1.8	93.0
	Multiple	4	7.0	7.0	100.0
	Total	57	100.0	100.0	

AI's relationships to human actors was described in eleven different ways in articles, indicting a technology with a potential of being used in many ways (Table 13 & 14). Most articles described AI as an assistant in labor, welfare work, driving, military work or other areas of implementation. AI as a replacer concerned different technologies replacing humans in conducting a wide range of work tasks or entire professions, driving cars and trucks or

controlling military weapons. AI was in four articles described as having the role as a destroyer of humankind, as the technology had the potential to outsmart human beings, turn against us and take control over the entire planet. As many articles described multiple relationships between AI, the paper thus decided to code for two evident connections.

Table 13: AI's first relationship to humans in articles

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Assistant	22	36.8	38.9	38.9
	Replacer	14	24.6	25.9	64.8
	Destroyer	4	7.0	7.4	72.2
	Controller	1	1.8	1.9	74.1
	Partner	1	1.8	1.9	75.9
	Unspecific	6	10.5	11.1	87.0
	Manipulator	3	5.3	5.6	92.6
	Advisor	1	1.8	1.9	94.4
	Heir to humans	2	3.5	3.7	98.1
	Creator	1	1.8	1.9	100.0
	Total	55	94.7	100.0	
Missing	System	3	5.3		
Total		57	100.0		

Table 14: AI's second relationship to humans in articles

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Assistant	6	10.9	27.3	27.3
	Replacer	7	12.7	31.8	59.1
	Destroyer	6	10.9	27.3	86.4
	Controller	1	1.8	4.5	90.9
	Competitor	1	1.8	4.5	95.5
	Decision maker	1	1.8	4.5	100.0
	Total	22	40.0	100.0	
Missing	System	33	60.0		
Total		55	100.0		

Five types of actors occurred in articles and described and/or envisioned different AI technologies, implementations and hopes and concerns with artefacts (Table 15 & 16). Major

western it-companies, such as Google, Apple, Samsung, Amazon Microsoft, Tessla were the most mentioned ones. Swedish companies such as Volvo, Veoneer, and Scania were also mentioned in a few articles but not nearly as much as the big US tech-giants. Scientist was the second largest group and included scholars from a wide range of disciplines such as computer science, economy, media and communication, and philosophy. The third most prevalent group, politicians, included figures from the Swedish government, political parties in the Swedish parliament and representatives in the European Union parliament. In line with what Goode argues (2018), corporate actors were seen to shape myths and a digital sublime by based on their specific economic products and interests. The result further point to the prevalence of specific US designs and usages which continue to shape Swedish perceptions with technology in general and AI in particular. The results are however unable to convey to what extent this is the case, given that multiple actors compete on a 'market of ideas' with AI.

Table 15: First actors mentioned in AI newspaper articles

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Political actor	13	23.6	23.6	23.6
	Business actor	28	50.9	50.9	74.5
	Science/scholar actor	13	23.6	23.6	98.2
	Unspecified	1	1.8	1.8	100.0
	Total	55	100.0	100.0	

Table 16: Second actor mentioned in AI newspaper articles

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Political actor	7	12.7	36.8	36.8
	Business actor	4	7.3	21.1	57.9
	Science/scholar actor	5	9.1	26.3	84.2
	Fictional actor	1	1.8	5.3	89.5
	Media actor	1	1.8	5.3	94.7
	Unspecified	1	1.8	5.3	100.0
	Total	19	34.5	100.0	
Missing	System	36	65.5		
Total		55	100.0		

AI myths in Svenska Dagbladet

Articles from Svenska Dagbladet regarding one specific technology, based on the variable with the same name, were read and analyzed through explicit textual analysis, in order to address research question two (see section 'Method design and the role of the researcher'). Based on this, a total of four AI myths were identified; *the intelligent computer*, *the intelligent robot*, *the intelligent machine*, *and the intelligent vehicle*. In order to identify a myth, the number of articles about a specific technology had to exceed five articles. This allowed for a big enough narrative with technology to be identified. All fours AI myths make up 44 articles in total, roughly 80 percent, of all articles in SvD. The results from the QCA are initially presented, in order to convey an overview of variations within myths. AI myths are then outlined following the structure of the code book for the textual analysis. Variables from the quantitative content analysis, such as AI frame, AI impact, time, AI's relationship to humans and actors, are here also exemplified from time to time. Excerpts from articles are translations by the author, and an overview of all articles in individual myths is available in Appendix 4.

The intelligent computer

The most prevalent AI myth in Svenska Dagbladet's coverage is 'the intelligent computer' myth, which appeared in a total of 15 news items. News (8 items) followed by editorials (6 items) were the most common news sections in items depicting the myth and news stories primarily appeared in sections dealing with finance and economy (8 items) followed by arts (3 items each) and international news (2 items). Most articles were written by journalists (12 items) who framed the myth in a primarily thematic manner (12 items) and by describing AI's impact on Swedish society (11 items) in a future time setting (6 items). The myth primarily focused on narrow AI (13 items), and was primarily described, and envisioned, by scientists (9 items) followed by business actors such as (7 items). These actors described AI's relationship to human beings' primarily as assistants (6 items) followed by destroyer (3 items) and manipulator (2 items each) (Appendix 5).

The 'intelligent computer' myth revolved around intelligent computer software, that enable both the creation, and hosting, of different types of advanced narrow-typed artificial intelligence, as manifested in computational abilities, tasks and goals. Computers with sophisticated algorithms and machine learning were able to collect and analyze large amounts of data, identify patterns in information, draw conclusions in a manner that equals or

surpasses human intellectual capacities. Over time, artefacts were able to depend on human intermediaries to a lesser degree and, self-improve and become more efficient and intelligent.

Intelligent computers in labor

Intelligent computers in labor was one area of implementation which described both current usages and envisioned future ones. Artefacts companies such as Google, Amazon, and Tessla were outlined as having the ability to conduct labor of an intellectual kind, that relies on incorporating algorithms and machine-learning, in order to process vast amounts of information and replicate human-like problem-solving. The myth primarily focused on work in the Swedish it-industry. Current intelligent computers were described as assistants to humans as they aided them in their day-to-day work in car manufacturing (Tidningarnas Telegrambyrå (TT), 2018) or lowering bank-customer's loans and by conducting advanced calculations (Tuvhag, 2017). A noticeable feature was that employers were the only ones speaking about the myth in an overtly positive manner. Articles thus excluded the perspective of employers or labor unions, a very significant perspective in Swedish labor journalism

Hopes with AI artefacts concerned an overall *amplification* process which took different expressions. An envisioned *personal* amplification focused on intelligent computers improving labor for human workers through the creation of either new work tasks or entire professions. These were deemed as more suitable for humans as they took advantage of their analytical capacities and improved on with new information and insights from AI (Tidningarnas Telegrambyrå (TT), 2018) (Tuvhag, 2017), a perception, and argument with AI that is wide-spread one and has taken many different shapes. Amplifications also had a financial meaning which focused on companies that automated jobs with intelligent computers and paved the way for a new wave of business *rationalization*, that would boost productivity to levels never before seen and generate an increasingly cost-effective, and cheaper, work force (ibid). Such a notion harked on the previous mentioned idea of improving a human-AI relationship, without necessarily ruling out humans entirely, and reflect a next third phase of business processes called 'the missing line'. Future companies and businesses' are here regarded as more fluid, adaptive as they move beyond 'rigid assembly lines' towards an idea about working teams that partner humans with AI systems, in order to improve one and another and companies overall (Daugherty & Wilson, 2018, s. 4).

Intelligent computers in the public sector

The ability of intelligent computers to carry out jobs of an evaluative, governmental nature was discussed and envisioned in relation to labor, or services, in the public sector. One newspaper article described how computer systems were currently used as 'welfare managers' in the municipality of Trelleborg that had automated a decision-making process:

"*Citizens (of Trelleborg, editor's note) apply for economic support online by providing information on income, housing costs, and family costs. For the most part, computers are able to make a decision on its own. Depending on the total amount of personal income, the benefit figure would reach a certain figure"* (Törnwall M. , 2018).

The usage of intelligent computers was described to be paving the way for a more effective, and more helpful Swedish well fare state, by letting humans do other tasks. Computers were described helping the state process a greater number of welfare applications in a fair manner: applicants were deemed eligible for financial aid based on a universal income figure deemed livable, which citizens either exceeded or not. Just as in the private sector, the myth envisioned, and thus replicated, a rationalization process that would, hopefully, help improve equality and justice in Swedish welfare by making it more rapid and rational. A specific concern however regarded governmental transparency and the fact that computers were unable to motivate by themselves (Törnwall M. , 2018).

The article also envisioned how a Swedish judiciary processes in the future could be automated as computer judges replace or assist human judges, known as 'judicial AI' (Sourdin, 2018) (Törnwall M. , 2018). AI was described as having the potential to replicate human sub-conscious processes, such as intuition, reflexiveness and transparency, that are essential for the profession. By also understanding existing human shortcomings such as emotions and personal biases that inform decisions, AI was described as also described as having the ability to overcome such human limitations and act as a value-neutral, rational and just lawyer. Such traits could ultimately make a Swedish judiciary process more just, as fairer sentences would be given and discrimination towards different social groups (ibid).

Concerns at the same time specifically regarded AI's ability to understand and replicate these fundamental sub-conscious processes as well as difficult abilities such as to learning new laws continuously, apply them in cases and identify room for interpretation with them. As computer judges also were seen as the product of humans, implicit biases risked being programmed into intelligent software that analyzes evidence, and thus risked reproducing

discriminatory structures in Sweden in a new manner (ibid). Listed concerns highlighted an ongoing discussion about the definitions of 'intelligence' and whether current understandings of AI as information and sequences of actions occurring in a logical order, are substantial enough. According to a Swedish philosopher, the idea of intelligent computers is neither 'technologically nor philosophically possible', as contemporary understandings of intelligence only limit the perception of intelligence by failing to consider a phenomenological understanding of the concept as a conscious, bodily life experience which emulates a sense of meaning and *being*. Human beings thus risk creating machines that make 'dumber' and more passive, due to a glorified and inaccurate understanding of intelligence.

Deep fakes and quantum computing

A number of articles described the myth in relation to *deepfakes* – a computer software for human image synthesis through the usage of programs based on sophisticated AI's. By incorporating two AI's as a creator and an evaluator, the intelligent software was able to manipulate objects (faces and bodies) and audio (voices and other sounds) in order to distort existing video or create new ones (Belfrage, 2018). Both AI's were, through machine-learning and algorithms, able to produce political disinformation which could be spread on the internet with a high level of realness. The intelligent computer was primarily described, and envisioned, through a negative lens, where concerns described AI as a geopolitical phenomenon with the potential of being used as a powerful weapon. Super powers, such as Russia and China, were described as being able to incorporate deepfakes in their disinformation campaigns directed at countries that oppose their politics, such as Sweden (ibid)(ibid)(ibid. Through online based propaganda, deepfakes had the potential to threaten Sweden's national defense and security, and corrupt Swedish cultural values and norms:

"*A greater challenge for us (Swedes, writers notes) will be to understand and relate to an increasingly fuzzy reality. Sweden is a country where we in general trust one and another. Eventually, we will have a more difficult time coping with deepfakes than with people". A broad discussion around the breakfast table, at work, and in school is the first step. The more we discuss the risks that different statements potentially could be false, the easier it will be for people to be more watchful (or unnecessarily cynical)"* (Belfrage, 2018).

AI was here described as having a two-folded relationship to humans. The intelligent software functioned as a manipulator of human perceptions of time, space and objects which blurred

the line between reality and fiction in a way never before been seen. The technology was also outlined as an assistant to humans as it served as an effective end to a particular mean for individuals with political motivations (Belfrage, 2018) (Johansson S. , 2018).

Quantum computing (QC), computer systems that rely on quantum mechanics in order to make advanced calculations in order to solve problems (Moret-Bonillo, 2015), was another AI technology which embodied the myth and envisioned it through a geopolitical lens. The technology was perceived as being at the center of an unfolding global arms race between a number of countries that intent to complete building the first artefact (Belfrage, 2018). Because of this, a number of hopes and concerns were outlined. The artefact was envisioned as a vital technology that would radically improve Swedish standards of living through new improve national security systems and scientific research that could lead to the invention of a new type of quantum-based economy. Consequently, Swedish universities were given resources by the government to research, study and create artefacts (ibid). The technology was on the other hand also described as a 'tool for destruction, due to its revolutionary processing power that allowed it to host an AI capable of inflicting significant damage on countries:

"*During a recent conference for research on quantum technology, Alexander Lvovsky painted a scenario were hackers would be able to 'threaten the worlds. All information stored at banks, health care, and the military's top-secret system, including 'nuclear codes belonging to superpowers, could be accessed and spread, according to finish public service Yle".* (Johansson H. , 2017).

Concerns about quantum computing regarded issues about sovereignty, autonomy and international co-operation. The computer was perceived as a threat to the Swedish nation state and as well as a Swedish freedom project in the form of the welfare state, that has protected crucial infrastructure (water, roads, electricity), cultural and normative systems and guaranteed Swedish citizens individual freedoms (Belfrage, 2018). A threat also concerned Sweden as a transnational entity and freedom project which, just like the technology itself, now transcends the country's borders by being heavily dependent on a stable EU project which extends its political, economic and technological rights. While China and the US described as putting a lot of resources into research and development on AI and quantum computing, Sweden and the EU were described to be lagging far behind the two AI-super powers. By not going in for the technology, concerns worried that Sweden was making itself vulnerable to having its infrastructure and military systems hacked and rendered useless.

Summary

‘The intelligent computer’ myth described, and envisioned, AI based computer software that are able to collect and analyze large amounts of data, identify patterns in information, draw conclusions and perform particular tasks in a manner that equals or surpasses human intellectual capacities. Intelligent computers were described in four areas of implementation: labor, the public sector, political communication and geopolitics. Hopes with intelligent computers envisioned the technology as able to pave the way for a state of *amplification*, by improving a Swedish human citizen as well as areas of Swedish life such as labor, welfare and law, research, finance, and security. Concerns with intelligent computers regarded a central problem about current, dominating understandings of intelligence that hinder technological developments and disallows human amplification. Worries also highlighted how geopolitical AI such as deepfakes and quantum computers could pose a threat to a perception of true and false, the nation state of Sweden and different norms and values.

The intelligent robot

The second most prevalent AI myth in Svenska Dagbladet’s coverage was entitled ‘the intelligent labor robot’ and appeared in 12 newspaper articles. Ten articles conveying the myth appeared in finance section and one in editorial and debate each. A majority of these (8 items) were written in a news format, followed by editorial (3 items) and debate formats (1 item). Articles about robots were written by journalists (10 items), scientists (1 item) and business actors (1), who mostly framed the myth in a thematic manner (7 items) by describing intelligent robots’ impact on Swedish society (7 items) in a future setting (6 items). The intelligent robot was first and foremost regarded a narrow AI (11 items) with a relationship to humans primarily as an assistant (8 items) or a replacer of humans (7 items). Business actors where the ones describing and envisioning the myth the most (7 items) followed by political actors (5 items) and scientists and scholars (3 items) (Appendix 6).

The intelligent robot myth revolved around the central idea of different intelligent robot artefacts, or AI robots, with a central functionality of conducting manual labor which requires physical strength and/or data collection and analysis that require complex cognitive and intellectual skills. AI was seen as the foundation of an incorporated software that allowed robot artefacts to analyze, comprehend and perform tasks, and individual hardware components to communicate, and interact, with one and another. For the most part, robots were not detailed in articles expect for one item in DN. A robot, which was able to assemble

furniture from Ikea, was described as equipped with grips, power sensors, and 3D cameras, which made it both fast and effective (Gunther, 2018).

Intelligent robots in labor

Just as with the intelligent computer, the intelligent robot myth was described in relation to labor, which was the biggest area of implementation discussed. The intelligent robot myth did, unlike the intelligent computer, not only describe intellectual labor but also physical and manual work. Robots were used in industrial, manufacturing, and service industries in Sweden, to do 'routine based, redundant and physical' labor, such as manufacturing vehicles and producing plastic products or pharmaceutical drugs (Spiesshofer, 2018). Through machine learning and algorithms, intelligent robots were able to sense work environment, comprehend, act, and learn, and become 'self-adapting' (Daugherty & Wilson, 2018, s. 2).

Robots were described as more effective, durable, and overall better than humans in doing physical labor, and the gap between the two would only continue to grow due to future advancements in both robotics and AI. Human workers were consequently being replaced by robots through automated that contributed to an 'extensive and extreme re-structuring on the work market' (Spiesshofer, 2018) (Tidningarnas Telegrambyrå (TT), 2018). Robots' relationship to humans was here two-folded: in relation to employers, robots were regarded as *assistants*, or collaborators, that helped actors achieve capitalist ambitions with businesses such as increased control over production and workers. The intelligent robot was in relation to employees seen as a *replacer* that took the place of human workers and made them unemployed, due to a market-economy logic of replacement demand. Because of this, it was argued that robots artefacts should be taxed (Direkt News Agency, 2017) and that general EU-laws for robots in labor should be established (Tidningarnas Telegrambyrå (TT), 2017).

The myth also described robots in intelligent labor as machine learning and algorithms allowed artefacts to become intellectual and sophisticated enough to be used for data collection, information analysis and problem-solving. Robots here played an important role in increasing the digitization of Swedish companies' work practices and service productions, and paved the way for a Swedish *new mediocracy* where data is understood as a new valuable business resource like oil and gold (Nourbakhsh, 2013). Recommendation systems in banking and stock trade (Törnwall M. , 2018), journalistic writing (Spiesshofer, 2018) and job management (Suni, 2017) were jobs of an intellectual nature where robots were part of computer systems. Robots in banking and stock trade were used to help human actors generate insights about their money, evaluate data on the market and give advice on what

investments to conduct and stocks to be purchased (Törnwall M. , 2018). A job recruiting robot was, through 'blue matching' used to match people with certain jobs at companies, by collecting and analyzing information from workers' resumes, personal letters as well as personal texts that implied something about their personality traits (Darab, 2018). Artefacts were used here as they were superior to humans in processing and analyzing vast amounts of data. Robots thus occupied a relationship to both Swedish employees and employers as assistants as they helped improve individual tasks rather than automate entire professions.

Just as with the intelligent computer myth, the intelligent robot myth hoped for a state of human and business amplification. Concerning the first one, the intelligent robot myth did not only envision such a state in relation to intellectual jobs, but also manual, physical labor. Amplification here also entailed robots replacing, rather than assisting, human workers and thus making them unemployed. By doing so, the myth envisioned that new, stimulating professions would be created that amplified humans by not directly affecting their physical health in a negative way, as is the case in a lot of manufacturing and industrial labor. Making humans unemployed was just deemed somewhat morally justifiable (Spiesshofer, 2018). As for the business side of things, underlying motivations and hopes were here almost identical those described with the previous myth; robots were part of a new wave of a late capitalistic rationalization, were companies seek to increase productivity by making their work force more cost-effective and cheaper (Spiesshofer, 2018) (Törnwall M. , 2017) (Törnwall M. , 2018). Yet again, articles conveyed an overtly optimistic idea with AI and automation in in labor, that excluded contrasting perspectives of workers or trade unions. No article chose to explore the question of unemployment, by writing about the number of workers affected by AI, the different plausible safety-nets mechanisms in Swedish welfare or amongst trade unions, and other ways to reduce human unease due to being job less. The phenomenon was only mentioned in passing as a plausible outcome amongst certain workers.

Intelligent robots in Swedish health care

The intelligent robot myth also envisioned artefacts in Swedish health-care services. Current robot implementations and breakthroughs in science were used to describe future scenarios where AI robot applications could be used to improve a universal health care system that currently suffers from, amongst many things, long waiting queues, due to a shortage of available nurses and doctors in different medical areas (Blix & Stensmyren, 2018). Intelligent robots were described as part of a health care digitization process which was paving the way

for an ‘ongoing, and rapid, technological development that is fundamentally changing health care’, and helping reduce a big workload which medical staff workers today phase (ibid).

Intelligent robots were detailed as a new, emerging competitor to human doctors in different areas of medical expertise, as units, due to advanced neural networks and learning, were starting to successfully diagnose patients. Referring to recent scientific work, intelligent robots were described to be equally as good as, or in some cases even better, than human doctors and nurses in identifying different types of skin cancer, lung cancer, and eye diseases. In the long run, robots would be able to surpass humans entirely in both evaluating patient data and comparing it to a general body of information, especially at times of urgency when time pressure is very high. Just as with other types of labor of an intelligent nature, artificial intelligence allowed robots to have a role as assistants to human doctors and medical staff:

“*Robots are, of course, far from being complete. They are missing a number of human insights and could easily stumble upon issues that for us humans appear as trivial. Robots are however suitable as replacement for humans in doing a number of tasks, especially those that are both difficult and monotone. In this way, human doctors can instead focus on other tasks where our human strengths come in handy’* (Blix & Stensmyren, 2018).

Besides using robots in medical work, the artefacts was also envisioned as usable for automating advisory services such as social robots functioning as health coaches that patients could talk to (Rankka, 2018). Robots were also envisioned being able to help patients come in contact with doctors faster through the Swedish health care phone service 1177 Vårdguiden (Tidningarnas Telegrambyrå (TT), 2018). Through media technologies such as smart phones or computers, patients would, in an initial starting phase, be able to provide robots their symptoms. The robot then based on the input either recommend patients self-treatment or allow them to come in contact with a nurse or doctor. Symptoms provided by the patients could then be logged by robots in order to be accessible to doctors and nurses throughout an entire medical process, which made the job of medical workers much easier (ibid). Yet again, AI was here understood as an assistant to humans who aided both workers by reducing their workload as well as patients by allowing them to seek out treatment much faster.

The myth hoped that intelligent robots, as part of overall health care digitization, would improve Swedish health care by both solving practical and organizational issues through automation, and improving a central digital infrastructure which is essential to both internal and external communication within the institute (Blix & Stensmyren, 2018).Unique traits of

Human medical worker's, such as compassion to humans and intuitive reading of patient's well-being, were envisioned to become more valued with robots. In the longer run, the myth hoped that artefacts would help Sweden become world leading in digital health care, an ambitious goal which the Swedish governments has expressed in relation to a report entitled 'Vision e-health 2025' ("Vision e-hälsa 2025) (Tidningarnas Telegrambyrå (TT), 2018).

Concerns with intelligent robots

Concerns about the intelligent robot myth focused on the levels of intelligence in modern day AI robots, and whether the technology is smart enough to do tasks or entire professions. Although concerns did not directly address myths about intelligent robots in labor and health care (and were thus not included in these sections), the underlying question, and concern, did however apply to these areas of implementation as well as other ones where AI is incorporated. A few articles described the idea of intelligent robots as a 'dangerous superstition' and argued that humans today are trusting robot artefacts too much to solve different issues in Swedish society, when they are not smart enough (Hellström, 2018) (Törnwall M. , 2017). Intelligent artefacts were described as lacking the ability to reason, evaluate, and process ethical considerations about its programmed actions and goals, the impact of its activities on human subjects and ultimately a conscious understanding of itself and surrounding world. By paving the way for more dumbed down robot artefacts and increasingly believing in them to solve various complex issues, humanity risked creating an over exaggerated perception of AI that could be difficult to diverge from, and where human beings would be the ones suffering the consequences. The case of automatic evaluation systems for loan applications was used to demonstrate the risks with AI robots:

"One *example is the AI based baking system that automatically evaluates applications for loans. Such systems analyze large amounts of old applications and then try to resemble the assessments made by human administrators. Unfortunately, these systems tend to become very prejudice and consistently applicants based on their skin color or gender. The same problem has appeared with AI systems for automated assessments of job applications, or participation in beauty contests.* (Hellström, 2018).

The excerpt highlighted the risk of discriminating against people of color based on different types of statistical data, such as likelihood of not paying back interest rate on loans, and how such data could allow for upholding and reproducing structural racism. Awareness of such

issues was described to require a critical awareness which cannot be conveyed through statistical analysis but need to be complemented with deeper understandings in the form of consciousness. This specific concern touched on what is referred to as the *easy* and *hard problems of consciousness*, where an easy problems, such as specifying and performing certain functions in automating bank loans, at the same time are hard if robots lack a particular experience, or *qualia*, of how to feeling something about such a task (Chalmers, 1995). By lacking the latter, the former makes an AI unable to feel, or explain, why it denied a human a particular bank loan as well as contrast a decision profess that is not as easy and logical as portrayed to be. The issue is a classic one in philosophy of consciousness that has kept many in AI research occupied, as there are many ways of approaching the concept.

An additional, interconnected concern worried that that humans are 'on the brink of a worrisome evolutionary convulsion' as we continue to outsource 'intellectual thinking' to robots (James, 2018). Just as the Industrial revolution physically altered humans as technology replaced brute muscle power, AI robots were envisioned to be running the risk of altering humans intellectually as different mental processes are automated. Humans thus risked losing fundamental meaning-making and self-actualization processes that could pave the way for an existentialist crisis as the brain, and self, becomes irrelevant.

Summary

The 'intelligent robot' myth described, and envisioned, robots equipped with narrow AI with a central functionality of conducting either manual labor requiring physical strength, and/or data collection and processing necessitating complex cognitive and intellectual skills. Robots were described in labor and health care and just as with the 'intelligent computer' myth, hopes envisioned that artefacts would allow for human and corporate *amplification* which also encompassed a physical human condition. The myth also hoped for the increased usage of robot artefacts in different instances of Swedish health in order to improve aspects such as workload, a medical diagnosing-processes and internal and external health communication. Concerns about intelligent robots dealt with the question of intelligence and whether AI equipped robots could actually perform certain tasks or not. Another issue concerned outsourcing certain tasks to artefacts that are unaware of moral implications with interacting with humans and the risk of reproducing structural inequalities in Sweden. A final concern focused on the risk of making humans passive and paving the way for an existential crisis as fundamental meaning-making processes are automated which make the self feel irrelevant.

The intelligent machine

An AI myth entitled ‘intelligent machines myth’ appeared in a total of 11 items and the was third most prevalent discourse in Svenska Dagbladet. The myth primarily appeared in finance (4 items) followed by staff editorials (3 items), debate and arts (2 items each). Most items were written in an editorial format (5 items) followed by news and debate formats (3 items each). Most articles were written by journalists (8 items) followed by scientists (3 items) who wrote about AI in a thematic manner (6 items). Articles for the most part highlighted the societal impact of AI machines (6 items) in a mixed current and future time Sweden (5 items). Intelligent machines were primarily described, and envisioned, in relation to narrow AI (9 items) and as having a relationship to human beings in the form of assistants (6 items) replacers (5 items) and destroyer (2 items each). Political actors (6 items) and business actors (5 items) were the ones that primarily envisioned intelligent machines (Appendix 7).

The intelligent machine myth was seen as a broad AI myth that was not specific to a particular AI technology, but instead concerned multiple artefacts under the umbrella term “machines”. The functionality of AI was very broad and vague: the myth revolved around different types of artefacts conducting a wide range of intellectual tasks that demonstrated behavior which either mimicked human capabilities to various degrees or surpassed them in a conscious human-like manner. The focus of the myth was primarily to describe and problematize social and political consequences with current, or near future, narrow AI, and envision the potential capabilities and outcomes with a hypothetical superintelligence in Sweden. Out of all AI myths in Svenska Dagbladet, the ‘intelligent machines’ myth was the one that covered superintelligence the most (2 items).

Narrow AI and superintelligence

In relation to artefacts equipped with narrow AI, the ‘intelligent machines’ myth described, without going into great detail, artifacts being implemented in finance, labor and innovation (Tidningarnas Telegrambyrå (TT), 2018) (Akenine, 2018), law, medicine (Akenine et.al., 2017), government work (Blix & Heintz, 2018), driving (Sigfrid, 2018), and virtually all areas of Swedish life. Machines were described as assistants and replacers of humans workers due to the automation of professions and tasks of an intelleigent kind:

"*Smart algorithms in AI possess the ability to conducting and replacing human beings in doing parts of work in finance, law, and medicine. This is similar to how technology, throughout history, has affected us, especially in the early days when human muscle power was automated. The development differs fundamentally now in that automation is increasingly replacing tasks which previously relied on our brain capacities'* (Akenine & et.al., 2017).

Narrow AI machines were acknowledged to be chaninging individual human's day-to-day lives 'no matter if we like it or not' (ibid), as personal technologies, such as inplanted cell phones, were envisioned becoming increasingly smarter and more prevalent (ibid). Overall, the intelligent machine myth conveyed an AI functionality that, more or less, resembled that which was conveyed about intelligent computers and robots in previous sections.

Super intelligent machines were envisioned to be affecting virtually all aspects of Swedish life, as an ongoing digitization process would help pave the way for a fruitful digital for such an entity. The big general impact of superintelligence was however not presented in detail but rather acknowledged in passing. Science, welfare, law, and education were a few areas mentioned of Swedish life were a super intelligent agent could be implemented as an assistant to humans (Sundberg, 2017). Besides the entity's vast pressence, the claimed vast impact of a superintelligence was also due to its extreme levels of intelligence, that allowed for a new human-technology relationship. Whereas technology previoisly in history was described to have had the function of being a passive, and unconscious, tool for human control and power, such a hegemonic relationship was not described as changing, as super intelligent artefacts allowed technology human-lie consciousness and sense of agency.Super intelligent artefact would help humans usher in what scholar Max Tegmark referrs to as 'life 3.0' (Sundberg, 2017). The entity is here not limited to different constraints, such as biology, in order to physically and intellectually evolve. The superintelligence is instead able to upgrade and improve itself continuously and in a rapid manner. The described feature of superintelligence harked on to the idea of an 'intelligence explosion' or a 'technical singuiarity' occurring, where technological artefacts themselves become better than human engineers at improving hardware and software capabilities, in an extremely rapid manner that has a profound impact on areas of both Swedish society and human civilization in general (Bostrom, 2014) (ibid). ¨

Hopes with intelligent machines

Hopes with intelligent machines equipped with narrow AI were expressed in relation to articles about Swedish general AI policies. The myth argued, in very general terms, that

intelligent machines were part of a new wave of ambitious 'innovation and development' in Swedish public and private sectors, due to the country's current digitized state and future ambitions of expanding its IT infrastructure (Akenine, 2018) (Akenine, 2017). Swedish innovation agency Vinnova envisioned the technology as able to help evolve Swedish companies with intelligent machines in organizations, as well as help drive AI innovation and competitiveness (Tidningarnas Telegrambyrå (TT), 2018). Hopes about personal and business amplification were evident with regards to intellectual labor.

The development of self-driving cars and 'smart solutions' in public health care and law were areas where AI services were sought after and had the potential of being used to improve such public services. In relation to these areas, Swedish companies were further described as having the potential to lead the way of developing 'ethical AI' within the country and the EU, due to Sweden's tradition of close collaborations with research, finance, and government institutes in creating useful technologies (Sigfrid, 2018). Overall, the myth reflected a liberal and optimistic approach to technological usage and innovation that has been enforced through a historic relationship between the Swedish private and public spheres, and which AI will help evolve and maintain (Rahm, 2019). Listed outcomes here pointed to a general idea of *human amplification*, which did not specifically emphasize individual areas of life, but rather how these combined were able to improve overall life in Sweden in a symbiotic manner.

The myth described a number of hopeful scenarios worth striving for with future super intelligent machines, that also emphasize an improved human condition. Super intelligent artefacts were envisioned as assistants to human researchers that could both improve existing medicines and discover new ones, create renewable energy sources, and pave the way for a more fair Swedish criminal justice system through super intelligent judges (Sundberg, 2017) (Ekman, 2017). A super intelligent being in science would also improve the life of Swedish citizens qualitatively and quantitively, by extending life and making it more enjoyable. The super-intelligent entity was also envisioned as able to expand Swedish life outside of the country and planet Earth by traveling into space to discover new uninhabitable sites:

"*There are billions of uninhabited planets in our galaxy, and there are hundreds of thousands of galaxies…We have the possibility to animate our universe. To miss out on such an opportunity would be a pity"* (Sundberg, 2017).

A superintelligence would not only help Sweden improve its understanding of our galaxy and inhabit it, through the expansion of both national interests of science and finance - it would

allow the country to spread its norms and values such as rationalism, egalitarianism, fairness, and pragmatism with super intelligent artefacts inhabiting space (ibid).

Concerns with intelligent machines

Concerns with narrow AI did not directly deal with the technology itself but rather the Swedish politics surrounding intelligent machines, that prevent the country from fully embracing the technology. Technical and practical aspects of AI were thus fully embraced by different actors and not problematized at all. Concerns instead highlighted how the government was lacking a strategy on how to incorporate and take advantage of AI and the country's highly competent work force. The number of skilled workers were described to be already plumetting and more assetts ran the risk of moving out of the Sweden, as tech-giants such as Google, Apple, Amazon and universities in China and USA were able to recruit them by paying high sallaries (Ekman, 2017) (Tidningarnas Telegrambyrå (TT), 2018).

Concerns further touched on an inability to address ethical issues with technology itself, legislating laws and regulations surrounding intelligent machines, and evaluating artefacts impact of Swedish social life (Akenine, 2017). Issues here regarded informartion as a vital resource for AI and how this could cause privacy and integrit issues for Swedish citizens. Because of this, Swedish companies were on the fence on developing AI technologies as these could run the risk of being illegal and useless in the future (Akenine, 2018) (ibid). Buisness and political actors thus called for the creation of a future oriented joint AI plan, and a general *sociotechnical imaginary* (Jasanoff & Kim, 2015), with a central vision for creating and using intelligent machines as well as strategies for solving ethical, practical and judiciarial issues.

Worries with superintelligence were of a more severe nature and took existentialist proportions. A superintelligence was described as 'the biggest threat to humanity' surpassing climate change and nuclear war fare, due to the lack of human unawareness about the potential risks with such an entity (Sundberg, 2017). The reason for this was the so called *AI control problem*: the successfull construction of a superintelligent agent that, from the start, subscribes to human goals and moral values, rather than an entity that discards set goals, turns on its creators and harm its humanity (Bostrom, 2014, s. 231). The myth argued that such an artificial agent (AA) could in theory develop its own moral values and rationally pursue actions that go against human ideals, in order to pursue its own goals such as controlling humanity and the world. Although a superintelligence was believed to be far from realised, scientists still argued that it was important that programmers, scientists, politicians, and others become aware of dangerous possibilities and prepare for such an entity being created. An

attempt to reverse the technoloigcal developmet in order to regain control or eliminate, a superintelligence would be almost impossible, and thus rendered humans extremely vulnerable and subordinated to the powerful entity (Sundberg, 2017). Scholars further warned that the impact of a superintelligence on Swedish life could be greater if an 'intelligence explosion' were to occur in a scenario where critical awareness about a changing human-technology relationship is low. (Ekman, 2017). The myth was thus understood to explicitly convey a desire to raise awareness about current and distant AI and to stress the importance of having a vision of how to implement and make the most out of super intelligent AI.

Summary

The 'intelligent machines' myth described, and envisioned, different AI technologies under the umbrella term 'machines' that were equipped with either narrow AI or advanced superintelligence in areas of implementation such as labor, science, finance, health care, and space exploration. Hopes with narrow AI and superintelligence concerned, just as before, envisioned personal and corporate *amplification* but also a *general human* amplification that hoped for the overall improvement and expansion of Swedish life outside of Earth. Concerns about narrow AI regarded sociotechnical and judiciary aspects surrounding the technology and the current lack of a general Swedish strategy plan and vision with the technology. Concerns with superintelligence took an existentialist shape by envisioning potentially dangerous outcomes for humanity with an unfriendly super intelligent, and the overall difficulty of reversing technological development because of this.

The intelligent vehicle

'The intelligent vehicle myth' was the fourth most prevalent AI myth and appeared in 6 items in Svenska Dagbladet. The newspaper item appeared in its entirety in the finance section of the newspapers. All articles conveying the myth were in a news format and written by journalists. The myth was equally framed in a thematic, episodic and mixed manner (2 items each), and primarily focused on the societal impact of AI (4 items) in a future setting (3 items). The autonomous vehicle only concerned narrow AI and was described as having a relationship to human beings as replacer (4 items) and assistants (2 items). Business actors were the only ones outlining the myth and did so only in a positive manner (Appendix 8).

The intelligent vehicle myth revolved around the functionality of creating vehicles with AI that are able to drive by themselves in a manner that resembles the behavior, and reasoning, of

human drivers, with very little or no human input. Vehicles were described to be equipped with radars, microphones, cameras and sensors that are able to analyze their surroundings for objects such as other vehicles, cyclists, pedestrians etc. (Augustsson, 2017) (Augustsson, 2017). Self-driving vehicles were controlled from central computers that communicated through 5G cellular networks in Sweden. Computers served as the interconnecting link between different parts and components of cars, by allowing them to communicate with each other. Vehicles were in this way able to become aware of their surroundings, collect information about driving and, through deep learning, identify patterns to improve it (ibid).

Visions about when and how the myth would be realized varied: while some car manufacturers believed in a radical, drastic conversion to self-driving vehicles, others envisioned a step-by-step process were cars by training over time would become increasingly intelligent and safer drivers (ibid). The myth regarded personal cars and long-distance trucks in areas of implementation such as private life and work and was envisioned by Swedish car manufacturers such Volvo, Veoneer and Scania as well as tech companies like Google, Apple, Samsung and Nvidia. A new type of hybrid market was envisioned and described to be generating a new, unique challenge for the latter group of companies in developing a new AI:

"*A new market is taking shape where the car manufacturing industry meets the it-industry. But there is a distinct difference now compare to before. While computers and cellular phones sometimes do not function, no such insecurities and risks can be allowed with it-solutions in vehicles, says Ola Bostrom."* (Augustsson, 2017).

Hopes with intelligent vehicles

A particular hope with intelligent vehicles regarded improving the safety of driving on Swedish roads. Intelligent vehicles were seen as having the potential to not just reduce the number of car accidents in general, and fatal ones in particular, but to eliminate fatal accidents entirely. Such a hope aligned itself with a national Vision Zero ('Nollvisionen') about car accidents on Swedish roads, which was established in 1997, in order to improve driving safety (Trafikverket). Since then, the number of accidents has steadily gone down and was, in 2017, record low with only 254 fatal crashes. In 2018, the number increased to 325 (Trafikverket). One car manufacturer argued that the secret to lowering the number was to implement artificial intelligence in a way that:

"*[…] improves the co-operation between human drivers and vehicles. The goal is to create law-abiding vehicles that follow speed limits. In this way, we can also avoid traffic"* (Augustsson, 2017)

AI was here understood as a new link between human drivers and vehicles that had the potential to improve driving as a complex, communication process between human drivers and vehicles, by learning when it was appropriate for a human driver to take charge of the vehicle and vice versa. Car manufacturers argued that this could be established by creating intelligent vehicles with human like cognitive skills that can handle multiple sources of information, from equipment monitoring the outside and inside of vehicles (Augustosson, 2017). AI was here envisioned as able to control a car or truck if a human driver did not react fast enough before crashing into another vehicle. Artefact were described as able to adjust the speed if a human driver was either too much over or below a speed limit, in order to reduce chances of accidents or lines of traffic. Intelligent vehicles took the form of assistants to drivers by aiding them in their awareness of the surrounding and reacting in time to unforeseen events (Tidningarnas Telegrambyrå (TT), 2017).

Expressed hopes concerned the creation of robot ethics in *ethical settings* of a hybrid nature, called *hybrid system*, with both human and AI actors. Matters here concern how responsibility and ethical decision making should be distributed, based on the notion that artefacts are, more or less, autonomous artificial agents (AA) that are able to make rational decisions in situations where a human actor is experiencing *moral uncertainty* about what do (Abney, Jenkins, & Lin, 2017, ss. 2-3+21-22). While no specific moral paradigm, such as harm reduction or responsible behavior (Abney, Jenkins, & Lin, 2017), were outlined as motivations for designs, myths still encompassed of ideas about how to address different moral dilemmas with intelligent vehicles as well as how AI is able to process the overall complex nature of driving in a manner that excels human's simultaneous capacities.

Besides improving driving conditions and human-car relationships, another hope with the myth concerned how AI driving software could help Swedish car manufacturers financially grow. Veoneer, a company specializing in advanced driver assistance and autonomous driver software, argued that the demand and interest in self-driving vehicles and improving car safety is rapidly increasing, as foreign companies are reaching out to them and Volvo. Because of this, the companies were growing steadily and envisioned a potential future industry that could rapidly grow and maintain Sweden's noticeable presence in the auto mobile industry (Augustsson, 2018). Besides personal vehicles, Scania and Volvo's trucks for

long-distance transportation were also receiving attention from all around the world. The primary interest for international business actors here was to reduce workers costs through automation, by letting trucks drive both short and long distances, and eliminate humans as the 'weakest link in the chain' of driving (Tidningarnas Telegrambyrå (TT), 2017).

Concerns with intelligent vehicles

A number of concerns with intelligent vehicles concerned yet again the supposed 'intelligence' of AI and whether autonomous vehicles actually were capable of driving by themselves. One actor from an auto mobile insurance company argued that it would take long time for vehicles to drive entirely by themselves. Vehicles were today struggling with different weather conditions, such as snow storms and icy roads, which inhibit cars by limiting their view sight and speed (Augustsson, 2018). Artefacts were also having a hard time identifying an ideal driving speed in situations with multiple objects in corners situations. Another difficulty regarded AI's ability to communicate with drivers. Different factors such as attention, mood and levels of tiredness have to be taken into consideration when AI seeks to understand humans and their ability and willingness to drive (ibid).

A potential challenge with making Swedish society and human drivers in general more accepting of driverless vehicles on the road was also highlighted. Worries concerned both levels of safety and trust towards AI vehicles amongst human drivers and how this subsequently could affect their driving abilities. Integrity concerns were also raised with regards to the idea of drivers being constantly filmed by cameras, in order to provide an additional layer of context for AI to understand humans. A final personal issue regarded AI's impact on human's overall driving abilities, as driving competence was envisioned being reduced by letting AI drive:

"*We know that there is a huge difference in driving quality between humans driving at least three days a week and those driving way less. It thus becomes important to maintain their driving abilities despite the fact that vehicles are taking over more of the driving"*
(Augustsson, 2018)

Summary

The 'intelligent vehicle' myth described, and envisioned, autonomous vehicles (cars and trucks) equipped with narrow AI that were, to certain extents, able to drive with little or almost no human intervention, in areas of implementation such as private driving and long-

distance work. Hopes with intelligent vehicle concerned the potential with making driving on Swedish roads much safer through an improved human-vehicle communication as AI cars ultimately can realize a zero-vision of traffic accidents and deaths. Another hope also touched on the financial aspect of Swedish car manufacturing, and the potential for it grow if car manufacturers were to focus on producing AI driving software. Concerns with the myth regarded yet again the levels of intelligence in artefacts as vehicles are still struggling in certain driving situations. Expressed worries also concerned the technology's impact of human's ability to driver on the roads as intelligent cars were being deployed into traffic and human, and how levels of trust towards vehicles would take time to grow.

Analysis and discussion

This part of the paper will present an analysis of AI myths in order to identify a digital sublime regarding artificial intelligence and to address research question three. This was done through an implicit textual analysis and reading of all four myths identified and detailed in the results section. This section outlines an evident digital sublime regarding artificial intelligence and justifies such a reading based on evidence from AI myths as well as previous work in Swedish history of technology, computing, and IT (Information and Technology).

The sublime AI: a force of *intelligent digitization*

Based on close readings of AI myths, the paper has identified a digital sublime regarding artificial intelligence, or a sublime AI, that frames the technology as a force of *intelligent digitization*. Specifically, AI is understood as a sublime technology and foundation for a digitization, or digitalization, process where vast amounts of information and pieces of knowledge, or 'big data' (Kitchin, 2014) is processed by advanced computational hardware and processes such as 'deep learning', 'machine learning', 'algorithms' and 'neural networks'. These digital components, seen as components of the human intellect, are increasingly able to emulate human intellectual and analytical skills in a manner which not only equates levels of intelligence amongst humans but also exceeds them. While such an ambition with digitization is not necessarily new[1], the focus has here shifted from a physical

[1], Digitization as a process where information, artefacts, and people are made digital (Rahm, 2019) has permeated the history of technology for quite some time (Ess, 2017).

digitization through automation to an intellectual one in an advanced technical manner never before seen. Besides a technical process, *intelligent digitization* is also a societal process that reflects human and social transformations through technology in general and AI in particular. The sublime AI is understood as a force that promises to *empower* actors through technology as a means to break free from, and transcend, perceived boundaries of human conditions. The sublime AI is thus understood to hark on to, and reproduce, a general Western technological sublime that emphasizes the possibility for such aspirations to overcome different natural limitations (Tarantino, 2012).

Hopes of empowerment and transcendence with AI

AI myths are overall seen to reflect both ways of understanding the sublime AI. The intelligent computer, robot, machine and vehicle myth all describe, and envision, transformed artefacts such as computers, cars, robots, quantum computers that were used by humans in both public and private spheres of Swedish life. Readings lead to the emergence of a *sublime citizen, economy, and welfare* state that were described as transformed in many ways, based on hopes and concerns with myths. Hopes with the intelligent computer, robot, machine and vehicle all reflected the sublime AI's ability to empower actors and break free from limitations. For the sublime Swedish citizen, empowerment entailed overcoming cognitive limitations and to improve an ontological awareness while driving the intelligent vehicle and using intelligent computer at the sublime workplace, to reach goals such as personal well-being and efficiency. On the other side of a sublime Swedish social contract, the sublime welfare state was, just as the sublime citizen, empowered through enhanced information-based awareness and efficiency; the intelligent robot was envisioned to both improve medical and organizational work at hospitals and process more welfare applications. The intelligent welfare applications revitalize national security defense systems and scientific research and create a new type of economy. This would allow the state to honor its part of a social contract to ensure and protect the well-being and rights of citizens, in an improved manner.

The sublime economy, as manifested through companies like Google, Volvo, Ericsson and Facebook, was empowered in achieving its goal of generating more profit and stimulate the economy. Intelligent computers and machines were part of a rationalization process that allowed companies to both become more efficient and save money by firing human workers. As the firing of workers was justified by arguing that it enabled citizens to do intelligent work that was better for them, companies were understood to use the sublime as a way to justify

such economic ambitions. Besides sublimity through economic growth, the sublime economy was also transformed through an empowered presence in influencing the sublime citizen and welfare state. The technological nature of AI, which centers around logically quantifying information and basing decisions on data, became a way of also reproducing and normalizing economic rationalist thinking in the sublime citizen and well-fare state, where the sublimity of Swedish citizens was also understood as an empowerment of the idea about the *homo economicus* (Wheeler, 2018). The sublime AI was thus seen as situated in a late-capitalist and late modern condition (Bodén D. , 2016) as the technology continues to blur the boundary a private and public sphere increasingly and let market logics influence and shape social life.

Concerns about what is neither known nor realized about AI

As hopes with myths are understood to reflect promised, and thus *know*n, transformative potentials with a sublime AI, concerns with myths center around *the unknown* and *unrealized* transformations with the sublime technology. In other words – concerns harked on the sublime AI by emphasizing what is currently not evident about *empowering* and transcending potentials with the technology, as well as what happens if Sweden chooses *not to utilize*, and thus empower itself, with the technology. Visions about AI here demonstrated Ballatore and Natale's (2014) idea with perceptions about future media as occurring in stages of *imagined media change*, as unknown uncertainties hinged on available and unavailable AI artefacts.

The first type of worry was manifested through concerns with AI myths regarding levels of intelligence in AI, and whether artefacts a*re intelligent*. The intelligent vehicle, computers in welfare and law, and robots in banking that were all described to lack the ability to reason and evaluate moral consequences when interacting with humans, and to interpret objects such as law paragraphs. Worries here questioned AI's ability to transform and empower the sublime citizen, economy and welfare state in some regards, and argued that a true imagined transcendence hinged on a conscious and phenomenological understanding of reality which AI currently cannot display. Concerns also problematized the potential consequences with *unintelligent* artificial intelligence and a process of having to reverse subsequent individual and societal transformations due to the technology. Visions of future AI here described an imagined stage of media change that *proceeds actual media invention* (Ballatore & Natale, 2017) which seeks to understand clues about the capacities and designs unavailable in AI. Another example regarded AI's unknown existentialist impact on the sublime citizen that is unable to tell fake from real with deepfake videos and what the unknown effects of a blurred

border between reality and fiction might do to understanding time, space and objects in a *post-truth* era (Wikforss, 2017)

Another case regarded an unknown but plausible existentialist crisis in human subjects about the increasing number of automated processes of self-actualization and meaning making, such as labor and budgeting one's private economy, by intelligent computer, robots and machines. The unknown here questioned the span of the idea of *empowerment* and whether it could be applied to all human users of AI. Yet again, the unknown transformations partially envisioned media change proceeding the actual availability of AI artifacts. But it also touched on a subsequent stage of speculations that *accompany the earliest period after the introduction of a new medium*. This was evident in items about current robots in industrial work and how human workers, after having been laid off, would face a crisis of being unemployed. Robots, alongside intelligent computers and vehicles were AI technologies that occurred in this stage of imagined future media usage but were for the most perceived in a hopeful manner.

Despite being given very little attention in myths, the most significant speculative media change with existentialist undertones regarded the unknown about AGI and superintelligence. The unknown here emphasized a severe crisis in not being aware of how a sublime AGI or superintelligence would have an impact on the state of humanity. Plausible scenarios with unfriendly and immoral entities that could take over humanity touched on a central question about whether humans can both understand and ensure a fruitful entity both from creation and going into the future as such an AI would become more aware of its world. While conveyers of these perceptions such as Max Tegmark and Nick Bostrom ultimately were optimistic about the future, the shape of articles still emphasized a worrisome, even fearful, image of the unknown capabilities of these hyper-advanced forms of artificial intelligence.

The second type of concerns expressed with myths – the *unrealized* sublime transformations of AI – manifested itself through articles that were troubled by the Swedish government's lack of funding AI research and an overall absent vision, or *imaginaire* (Flichy, 2007), of the technology. Concerns were expressed about intelligent machines (narrow AI specifically) and intelligent computers and touched on the risks with missing out on different potentials of AI such as boosting the economy, improving labor and scientific research, and creating new military defense systems. The central, underlying meaning here was that the promised empowering potential with AI was regarded as true, or at least highly plausible and, that the technology should be implemented and not missed out on, in order to maintain

Sweden's ambition of being a world-leading country in digitizing its infrastructure and overall improving it. Not doing so would set Sweden back in a *digital modernization process* as well as make the country and its citizens vulnerable to an outside world which not only implements AI for good purposes but bad ones in modern military warfare and cyber-attacks.

The sublime AI and convergent emotions of techno-optimism

The emotional value with the sublime AI as seen in hopes and concerns with myths is understood to reflect a Swedish optimism about technology based on the role of media artefacts in the historical development of the country. Media devices such as computers and IT-systems have paved the way for the rich and prosperous welfare-oriented and humanist country that Sweden today is. Following the Second World War II, Sweden, turned to science and technology in general, and computers in particular, to stimulate growth amongst companies and the economy that increased citizens salaries and thus their standards of living (Rahm, 2019) (Bodén D. , 2016) (Bodén & Godhe, 2020). As part of an emerging welfare state, the computer helped both create and ongoingly reshape the Swedish government as part of a rationalization process, where the government sought to increase efficiency to guarantee citizen rights and welfare benefits (ibid). As the technological development continued and a period of 'IT-ism' and early neoliberalism emerged in the1980s and early 1990s, a new type of 'information-based economy' allowed the private and public sphere to grow and new societal transformations to occur (Ilshammar, 2002). Computers and IT-systems were, in a sublime manner, described as enablers of continued automation and economic rationalization which, alongside capitalist free-market deregulations, allowed the sublime private enterprise and economy to flourish. A sublime relationship between the state and the individual was also amplified as the sublime 'IT-ism' allowed for enhanced information and communication access to citizens that were believed to enhance individual prosperity, liberty, and increased democratic participation (ibid). Looking towards the 21st century, Sweden envisioned radical economic and societal transformations due to new digital information technologies and should because of this strive to become world-leading in digitally transforming its society.

As Sweden currently is in the midst of a modern digitization process, AI as intelligent digitization is understood as yet another technological artifact with envisioned potentials to improve prosperity and well-being in the Nordic democratic country. An emotional attachment stems from a general techno-optimism towards artifacts as objects of scientific empiricism and rationalism, that have allowed for political and economic developments to

shape the country into the prosperous welfare and nation-state it today is. This is reflected through both hopes and concerns with the sublime AI that both ultimately acknowledge the idea about AI as empowering and transcending actors but differ in how such a powerful force should be approached, based on what is known and unknown about the technologies intelligent nature and impact on Swedish life. Ultimately, the intelligence question is what makes not just general understandings about AI unique but also optimistic perceptions of the technology in relation to previous artefacts at a similar stage of their lives such as modern computers, smartphones, the internet and online streaming services. The sublime AI is thus understood as a *convergent* technology not only with regards to techno-material aspects but also envisioned sociotechnical transformations and the underlying techno-historic perceptions that play a part in shaping emotional responses to AI alongside science, popular culture, news media and other sites of technological meaning-making (Jenkins & Thorburn, 2004).

Conclusion

Through a quantitative content analysis and textual analysis, this paper has studied the prevalence of different myths and digital sublime regarding artificial intelligence in Swedish newspaper Svenska Dagbladet. Three research questions were formulated in order to address the research aim:

1. What myths about AI are evident in Svenska Dagbladet's coverage?
2. How do myths describe and envision AI technologies?
3. How is a digital sublime related to AI described and understood?

The paper has implemented two theoretical concepts from Vincent Mosco's *The Digital Sublime* (2004) to understand the central role of the technology in Swedish life. *Technological myths* are tales about technologies that describe, and envision, current and future AI technologies, functionalities, areas of implementations and hopes and concerns with artefacts. *Digital sublime* regarding artificial intelligence serves as a central discourse about the technology as a force of extraordinary power and abilities to transform Swedish life, that is seen to inform myths about the technology. A total of four AI myths appeared from a sample of 55 newspaper articles from Svenska Dagbladet between 2017 and 2018; t*he intelligent computer*, *the intelligent robot, the intelligent machine and the intelligent vehicle*. The four myths described and envisioned several AI artefacts with different functionalities and usages

and human-AI relationships in areas of implementation such as labor, driving, welfare, healthcare, law and jurisprudence, military and defense, media making, scientific research, economy, and a few more. Myths were accompanied by a wide range of perceptions about the impact of technologies equipped with different types of AI (narrow, general and superintelligence) in the Swedish private and public sphere. Hopes about AI regarded visions where AI is used for different types of personal, economic, and social amplification in above-mentioned areas of Swedish life such as economic profit and growth, improved personal health and well-being, a more effective and just Swedish welfare state, improved military defense and expanded knowledge about space. Concerns regarded unintelligent artefacts as a limited perception of the concept was described to be going into creating technologies, the negative impact of AI on human beings due to a lack of consciousness and moral awareness, and difficulties in reversing technological development based on unintelligent devices. Worries also touched on envisioned sociotechnical outcomes for Sweden if it failed to go in for AI and how an unfriendly superintelligence potentially could control or destroy humanity.

Based on close readings of myths, a digital sublime regarding AI emerged which framed the technology as a force of *intelligent digitization* that promised to e*mpower* a *sublime citizen, economy, and welfare state* as a means to break free from, and transcend, perceived boundaries of the human condition. Empowerment, as reflected through hopes with myths here, entailed overcoming cognitive limitations and improving an ontological awareness to ensure goals such as personal well-being, guaranteeing and protecting the well-being and rights of citizens, generating more profit and stimulating economic growth. The sublime economy was also empowered as AI allowed for the increased prevalence and normalization of economic rationalism in the sublime citizen and welfare state, which indicated that the sublime AI overall as situated in a late-capitalist and late-modern era. Concerns with myths centered around *the unknown* and *unrealized* transformations with the sublime AI and harked on the sublime AI by emphasizing what is currently not evident about *empowering* and transcending potentials with the technology, as well as what happens if Sweden chooses *not to utilize*, and thus empower itself, with the new medium.

The emotional value with the sublime AI is understood to reflect a Swedish optimism about technology based on the role of media artefacts in the historical development of the country. AI as intelligent digitization is understood as yet another technological artifact with envisioned potentials to improve prosperity and well-being in the Nordic democratic country. The question about intelligence is seen to make not just general understanding about AI

unique but also optimistic perceptions of the technology in relation to previous artefacts at a similar stage of their lives such as modern computers, smartphones, the internet and online streaming services. The sublime AI is thus understood as a *convergent* technology not only in regard to techno-material aspects but also envisioned sociotechnical transformations and the underlying techno-historic perceptions that shape emotional responses.

Research gaps and future work

This master thesis has been able to generate insights about several technological myths and one central digital sublime, or discourse, about AI in Svenska Dagbladet. As readings of myths here have been done at a textual level, future research can address an intertextual research gap concerning cultural and political origins of these discourses. Such understandings are according to Mosco (2004) crucial to identify to further comprehend where envisioned usages and consequences of technology can be understood to stem from. The results from the quantitative content analysis can be seen to motivate a number of future studies. Future research could investigate the influence and impact of different news genres and their media logic and writing conventions on myths and their central ideas, visions and associated perceptions. These elements of myths could also be studied in relation to the background of writers to compare and identify similarities and differences in the writings of journalists and scientists. The data on actors describing myths and an interlinked sublime paves the way for interesting research on power aspects with AI myths, such as which perceptions of AI are prevalent amongst a general public and to which actor they can be traced back to. The four evident AI myths are seen to consist of a number of potential *sub-myths* surrounding technologies like deep fakes, quantum computers, health-care robots and robot judges, that should be investigated further. Lastly, as AI myths and digital sublime here stem from material from Svenska Dagbladet, future research has a potential to study coverage in other news outlets and cover more ground in a Swedish media landscape where findings either can be compared or combined to comprehend a national AI coverage.

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Appendix 1 – Code book for QCA

	Variable		Values	Description
1	Headline		String	Name of newspaper article
2	Section		Numeric	Section of newspaper
		1	Näringsliv	Finance
		2	Sverige	Domestic news
		3	Världen	International news
		4	Ledare	Editorial by staff writer
		5	Debatt	Debate article
		6	Kultur	Arts
		7	SvD Perfect Guide	Supplemental magazine

3	Article		Numeric	Type of article
		1	News article	
		2	Editorial	
		3	Debate	
		4	Cover story	
4	Writer/author 1		Numeric	Background of the author
		1	Journalist	
		2	Scientist	
		3	Private individual	
		4	Political figure	
		5	Businessperson	
5	Writer/author 2			

6	News frame*		Numeric	The contextualization of news items
		1	Episodic	Presents an issue by offering a specific example, case study, or event-oriented report
		2	Thematic	Discusses AI in a broader, general context
		3	Both	Both frames are evident

*Variable taken from Cho, et.al's study (2019)

7	Impact*		Numeric	The framed impact of AI
		1	Personal	Focuses on individuals' opinions, experiences, or consequences of incidents.
		2	Societal	Addresses the general, overall consequences of AI on broader societal areas
		3	Both	Both frames are evident

*Variable taken from Cho, et.al's study (2019)

8	Time frame		Numeric	The described time frame of AI
		1	Current time	20 to 50 years from now
		2	Future time	100 years or more from now
		3	Both	

9	Type of AI		Numeric	Type of AI in newspaper article
		1	Narrow AI	AI that is focused on one narrow task.
		2	Artificial general intelligence	AI that has the capacity to understand or learn any intellectual task that a human being can.
		3	Superintelligence	Hypothetical agent that possesses intelligence far surpassing that of the brightest and most gifted human minds
		4	Multiple	Multiple AI's occur in a newspaper item
		5	Unspecified	

10	AI technology		Numeric	AI technology discussed in news article
		1	Robot	
		2	Vehicle	Cars, boats or other vehicles
		3	Humanoid	Intelligent robot with human-like features
		4	Computer	Computer hardware/software equipped with AI
		5	Virtual assistant	Intelligent software agent that can perform tasks when given verbal command
		6	Internetbot	Software application that runs automated tasks (scripts) on the internet
		7	Everyday smart object	Home objects, such as ovens, refrigerators, and ovens that communicate using AI
		8	Algorithm	A set of instructions, typically to solve a class of problems or perform a computation.

9	Lethal autonomous weapon	Autonomous military robots than can independently search and engage targets
10	Machines	General artefacts referred to as machines
11	Unspecified	No AI technology is specified

11	Relationship to humans 1		Numeric	AI's relationship to human beings
		1	Assistant	AI assists human's with certain tasks
		2	Replacer	AI replaces human's doing a particular task, such as driving
		3	Surveiller	AI monitor human beings
		4	Destroyer	AI is described as destroying the human race
		5	Controller	AI is described as a controller of humans
		6	Competitor	AI is described as competing with humans
		7	Partner	AI is described as an intimate partner for humans
		8	Manipulator	AI is described as a manipulator of human perception of reality
		9	Decision maker	AI is described as an actor making decisions for humans
		10	Advisor	AI is used by humans for advice
		11	Heir to humans	AI is described as an heir to human beings
		12	Creator	AI is seen as a creator of something for humans, such as new jobs
		13	Unspecific	
12	Relationship to humans 2			

13	Actor 1		Numeric	Actors in articles that envision and describe AI
		1	Political actor	Actors from political organizations such as Swedish parties, the state, EU, etc.
		2	Business actor	Actor who work for private companies
		3	Science/scholar actor	Actor who works in academia
		4	NGO actor	Actor who works for a non-governmental organization
		5	Fictional actor	Actor who does not exist in reality but in popular culture, such as movies, literature, or tv-series
		6	Media actor	Actor who works in journalism and media, such as a journalist
		7	Unspecified	
14	Actor 2			

Appendix 2 – Sample from SvD

Headline newspaper item	**Publication date**
Krav på EU-lagar för smarta robotar	1/13/17
Bill Gates: Robotar borde beskattas	2/20/17
Förarlösa lastbilar på svenska vägar inom tre år	3/1/17
Robotar kan slå hårdare än tidigare revolutioner	3/1/17
Självkörande bilar nästa steg för Samsung	5/3/17
Självlärande datorer ger bättre översättning	5/23/17
Varning: Ny superdator kan röja alla hemligheter	8/16/17
Svenska experter: Svårt att stoppa mördarrobotar	8/21/17
Cheferna om AI: Inte rädda för våra egna jobb	9/6/17
Aurore Belfrage: Den nya geopolitiska maktfaktorn heter AI	9/7/17
Artificiell intelligens avgör bilindustrins framtid	10/3/17
MP: Sverige bör verka för förbud mot ”killer robots”	10/10/17
Första AI-datorn som kan ersätta mänskliga förare	10/13/17
Ny robot vet om du vill byta jobb: ”Förstår ironi”	10/23/17
Teknikoraklet: Utan AI så kommer asteroider döda oss	11/4/17
AI-robotarna inte lika intelligenta som vi tror	11/16/17
Ny tjänst sänkte kunders lånekostnad med 74 procent	11/17/17
Vad händer med människan när maskinen tar över?	11/21/17

Hugo Rehnberg: Kommer AI göra kökscheferna arbetslösa?	11/22/17
Aurore Belfrage: Tjänstefel att inte lära sig AI	11/30/17
AI kommer att skapa fler jobb - inte färre	1/4/18
Smarta hemmet hetast i Vegas: Allt ska kopplas upp	1/18/18
"Frukta inte robotarna - de kan ge oss ett bättre liv"	1/28/18
Aurore Belfrage: Maskinerna lär oss vara bättre människor	2/11/18
Fåtal yrken kan tas över av robotar	2/16/18
”Vår AI är bättre än en människa”	2/26/18
Aurore Belfrage: Starta prestigefylld cybersoldatutbildning för de smartaste	3/11/18
”Elon Musk har en poäng – jag kan också bli rädd”	4/29/18
Tuffa prövningar om Sverige ska bli bra på AI	4/30/19
Drömmen om självkörande bilen inte så nära	5/7/18
Mikael Törnwall: Ericsson slår tillbaka - tar ledningen i AI-racet	5/17/18
Ny tjänst mot ”fake news” tipsar om nazistartiklar	5/17/18
Aurore Belfrage: Svensk list kan rädda världen från dödande maskiner	6/19/18
En klinisk robot ska ge kunden råd på banken	7/3/18
"AI kommer att göra jobbet i framtiden"	7/4/18
Veoneers rapport: ”Ökat intresse för självkörande bilar”	7/27/18
Så bra är Googles nya hjälpreda på svenska	8/15/18
”Falsk trygghet” när datorn blir domare	9/19/18
”Krock mellan vision och verklighet i vården”	9/20/18
Aurore Belfrage: Håll i dig - för nu kommer Deepfake	9/24/19
Kritik mot att Sverige halkar efter kring AI	10/7/18
Volvo Cars och Nvidia utvecklar dator	10/10/18
"Svenska politiker måste sätta sig in i AI"	10/12/18
"Ödesfråga att Europa når ifatt AI:ns supermakter"	10/28/18
Experter varnar för falska nyhetsvideor i valkampanjer	10/29/18
Karl Sigfrid: Låt den artificiella intelligensen flöda fritt	11/5/18
Maria Rankka: Från floskler till verklighet om lärande	12/6/18
Nicklas Berild Lundblad: "Varför ska vi utveckla artificiell intelligens?"	12/3/18
Artificiell intelligens – en oxymoron?	12/11/18
Nicklas Berild Lundblad: Vad kan maskiner fortfarande inte göra?	12/13/18
”Sverige behöver strategi för artificiell intelligens”	12/27/18
Aurore Belfrage: Kapprustning - kan låsa upp all världens krypteringar	12/27/18
Hans Ruin: Den envisa myten om intelligenta maskiner	12/28/18
Hans Ruin: Den envisa myten om datorn	12/28/18

Appendix 3 – Results QCA

Table 1: AI technologies in Svenska Dagbladet (SvD)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Robot	12	21.1	21.1	21.1
	Vehicle	6	10.5	10.5	31.6
	Computer	15	26.3	26.3	57.9
	Voice assistant	1	1.8	1.8	59.6
	Everyday smart objects	1	1.8	1.8	61.4
	Unspecified	1	1.8	1.8	63.2
	Algorithm	4	8.8	8.8	71.9
	Autonomous weapon	4	8.8	8.8	80.7
	Machines	11	19.3	19.3	100.0
	Total	55	100.0	100.0	

Table 2: Sections of SvD where AI articles were published

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Näringsliv (Finance)	35	63.8	63.8	63.6
	Sverige (Domestic news)	2	3.5	3.5	64.9
	Världen (International news)	3	5.3	5.3	70.2
	Ledare	6	10.5	10.5	80.7
	Debatt (Debate)	4	7.0	7.0	87.7
	Kultur	6	10.5	10.5	98.2
	SvD Perfect Guide (Suplement)	1	1.8	1.8	100.0
	Total	57	100.0	100.0	

Table 3: News format/frame of AI articles in SvD

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	News	30	56.1	56.1	56.1
	Editorial	18	31.6	31.6	87.7
	Debate	6	10.5	10.5	98.2
	Report/story	1	1.8	1.8	100.0
	Total	55	100.0	100.0	

Table 4: Background of author one of articles about AI

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Journalist	45	82.5	82.5	82.5
	Scientist/scholar	6	10.5	10.5	93.0
	Private individual	1	1.8	1.8	94.7
	Political actor	1	1.8	1.8	96.5
	Business actor	2	3.5	3.5	100.0
	Total	55	100.0	100.0	

Table 5: Background of author two of articles about AI

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Scientist/scholar	1	1.8	33.3	33.3
	Private individual	1	1.8	33.3	66.7
	Business actor	1	1.8	33.3	100.0
	Total	3	5.3	100.0	
Missing	System	52	94.7		
Total		55	100.0		

Table 6: Articles written by first author in sections of SvD

		Journalist	Scientist/scholar	Private individual	Political actor	Business actor	Total
Article	News	32	0	0	0	0	32
	Editorial	14	3	1	0	0	18
	Debate	0	3	0	1	2	6
	Cover story	1	0	0	0	0	1
Total		47	6	1	1	2	57

Table 7: Articles written by second author in sections of SvD

		Scientist/scholar	Private individual	Business actor	Total
Section	Näringsliv (Finance)	0	1	0	1
	Debatt (Debate)	1	0	1	2
Total		1	1	1	3

Table 8: News frame in newspaper articles about AI

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Episodic	12	21.1	21.1	21.1
	Thematic	37	64.9	64.9	86.0
	Both	8	14.0	14.0	100.0
	Total	57	100.0	100.0	

Table 9: Conveyed impact of AI in articles

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Personal	4	7.0	7.0	7.0
	Societal	37	64.9	64.9	71.9
	Both	16	28.1	28.1	100.0
	Total	57	100.0	100.0	

Table 10: Time setting in articles about AI

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Current	19	35.1	35.7	35.7
	Future	21	36.8	37.5	73.2
	Both	15	26.3	26.8	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		57	100.0		

Table 11: Type AI in newspaper articles

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Narrow AI	52	91.2	91.2	91.2
	General AI	1	1.8	1.8	93.0
	Multiple	4	7.0	7.0	100.0
	Total	57	100.0	100.0	

Table 12: AI's first relationship to humans in articles

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Assistant	22	36.8	38.9	38.9
	Replacer	14	24.6	25.9	64.8
	Destroyer	4	7.0	7.4	72.2
	Controller	1	1.8	1.9	74.1
	Partner	1	1.8	1.9	75.9
	Unspecific	6	10.5	11.1	87.0
	Manipulator	3	5.3	5.6	92.6
	Advisor	1	1.8	1.9	94.4
	Heir to humans	2	3.5	3.7	98.1
	Creator	1	1.8	1.9	100.0
	Total	55	94.7	100.0	
Missing	System	3	5.3		
Total		57	100.0		

Appendix 4 – Articles in AI myths

The intelligent computer myth

Självlärande datorer ger bättre översättning
Varning: Ny superdator kan röja alla hemligheter
AI-robotarna inte lika intelligenta som vi tror
Hugo Rehnberg: Kommer AI göra kökscheferna arbetslösa?
AI kommer att skapa fler jobb - inte färre
"Elon Musk har en poäng - jag kan också blir rädd"
Datorn en mer rättvis domare än människan?
Volvo Cars och Nvidia utvecklar dator
Experter varnar för falska nyhetsvideor i valkampanjer
Nicklas Berild Lundblad: Vad kan maskiner fortfarande inte göra?
Hans Ruin: "AI inget att oroa sig för - men övertron på teknik är det"
Hans Ruin: Den envisa myten om intelligenta maskiner
Ny teknik ska återuppliva skådespelare
Aurore Belfrage: Håll i dig - för nu kommer Deepfake
Aurore Belfrage: Kapprustning - kan låsa upp all världens krypteringar
Ny tjänst sänkte kunders lånekostnad med 74 procent

The intelligent robot

Krav på EU-lagar för smarta robotar
Bill Gates: Robotar borde beskattas
Robotar kan slå hårdare än tidigare revolutioner
Ny robot vet om du vill byta jobb: ”Förstår ironi”
"Frukta inte robotarna - de kan ge oss ett bättre liv"
Fåtal yrken kan tas över av robotar
”Vår AI är bättre än en människa”
Mikael Törnwall: Ericsson slår tillbaka - tar ledningen i AI-racet
En klinisk robot ska ge kunden råd på banken
"Krock mellan vision och verklighet i vården"
Maria Rankka: Från floskler till verklighet om lärande
AI kommer att göra jobbet i framtiden

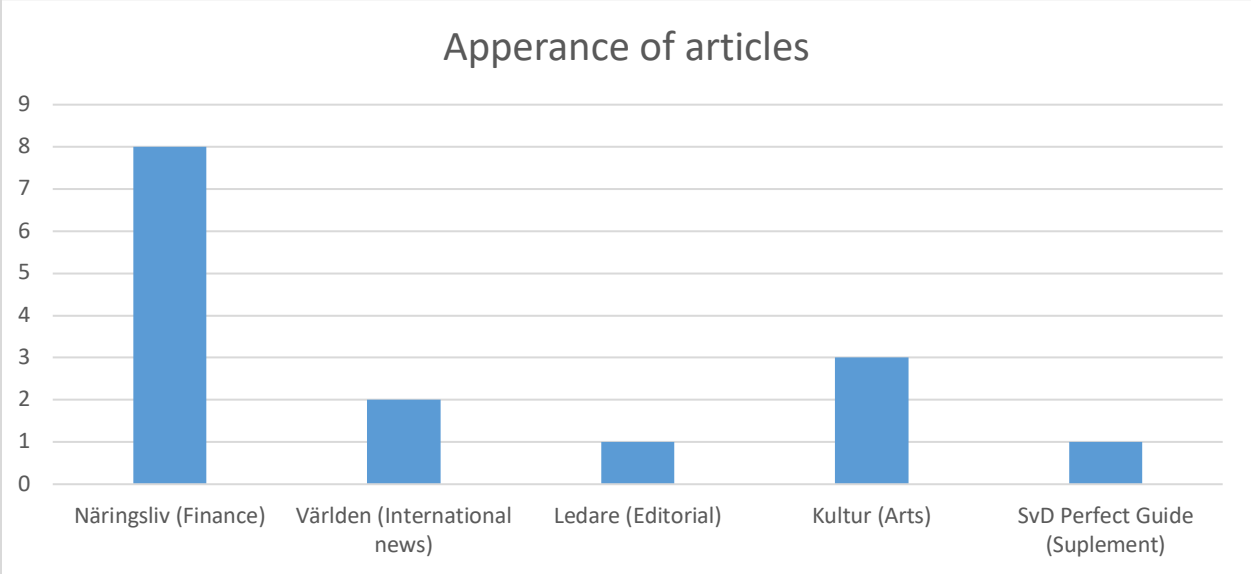
The intelligent machine myth

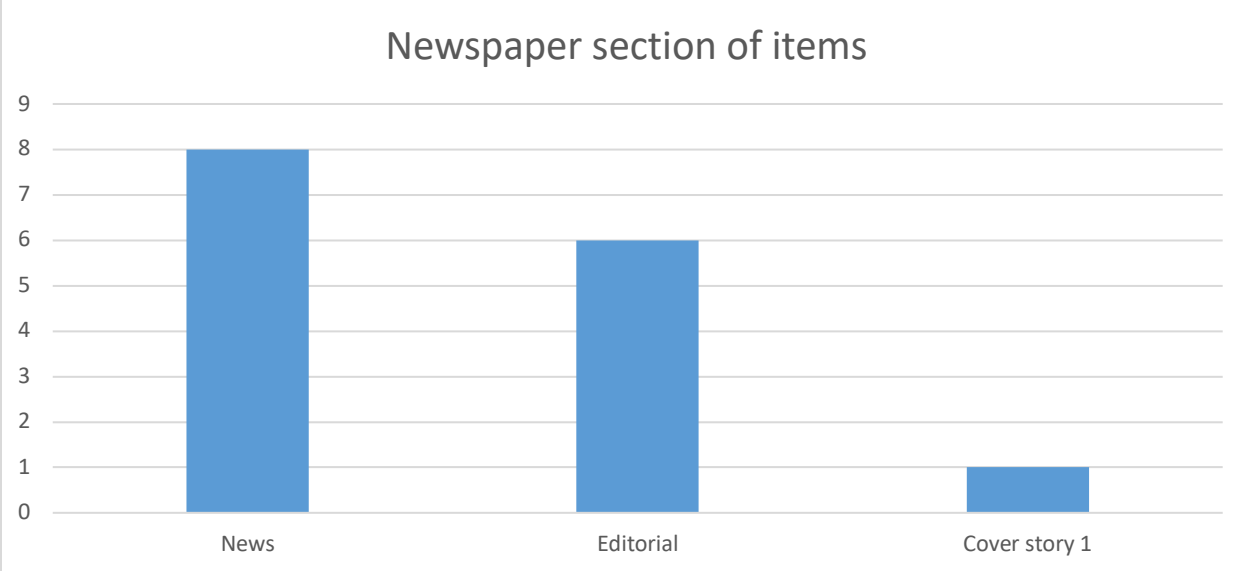
Teknikoraklet: Utan AI så kommer asteroider döda oss
Vad händer med människan när maskinen tar över?
"Ödesfråga att Europa når ifatt AI:ns supermakter"
Karl Sigfrid: Låt den artificiella intelligensen flöda fritt
”Sverige behöver strategi för artificiell intelligens”
"Svenska politiker måste sätta sig in i AI"
Nicklas Berild Lundblad: "Varför ska vi utveckla artificiell intelligens?"
Tuffa prövningar om Sverige ska bli bra på AI
Kritik mot att Sverige halkar efter kring AI
Aurore Belfrage: Den nya geopolitiska maktfaktorn heter AI
Kritik mot att Sverige halkar efter kring AI

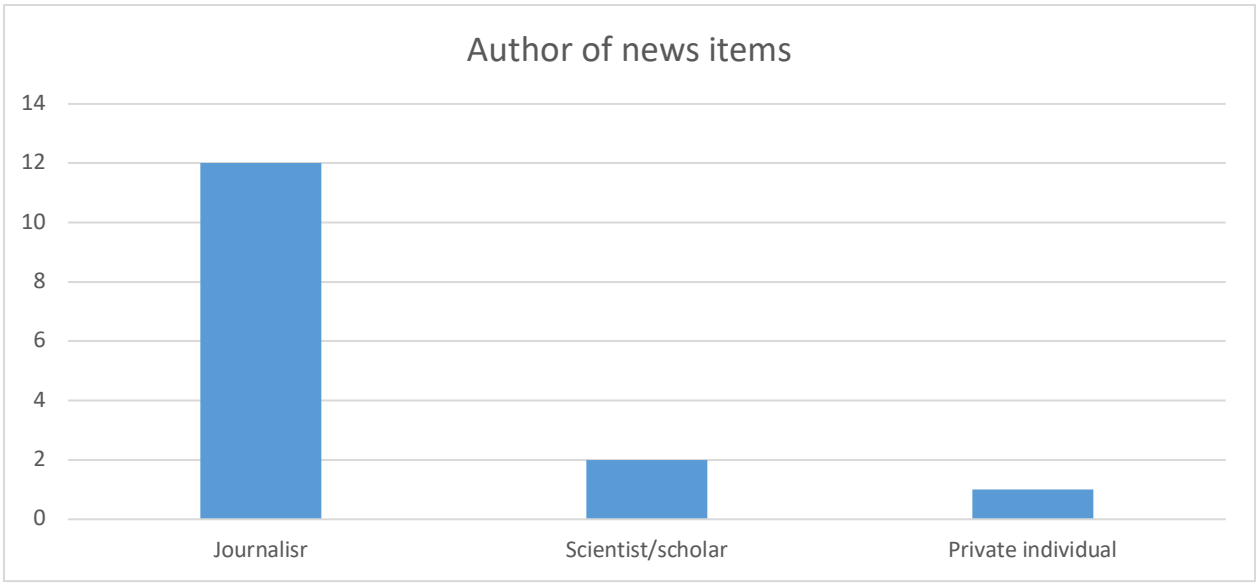
The intelligent vehicle myth

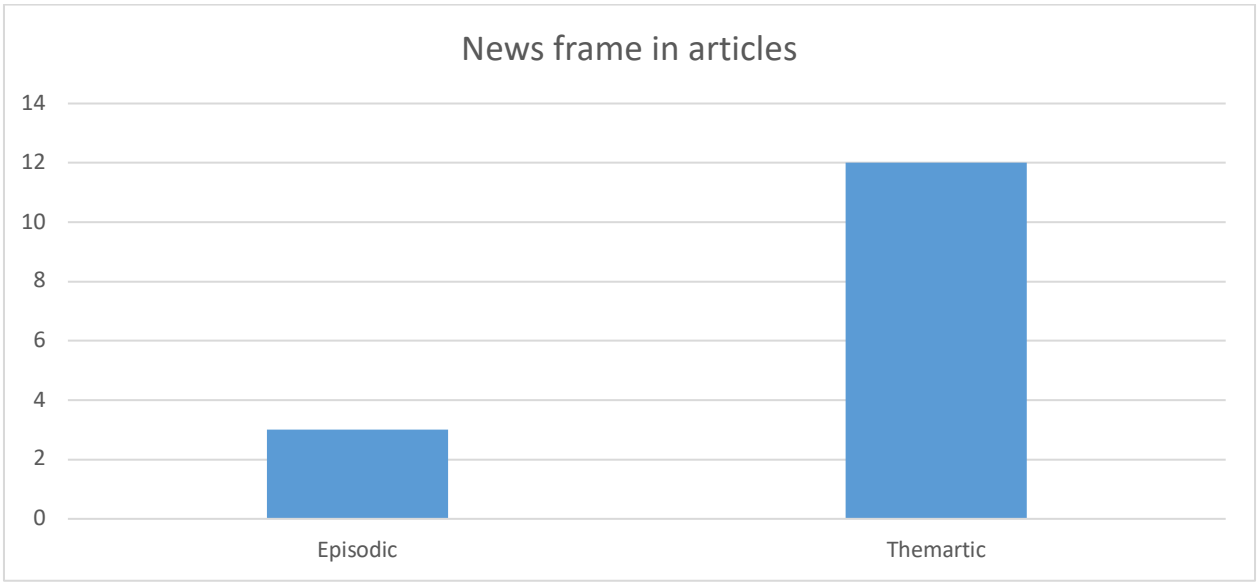
Förarlösa lastbilar på svenska vägar inom tre år
Självkörande bilar nästa steg för Samsung
Artificiell intelligens avgör bilindustrins framtid
Första AI-datorn som kan ersätta mänskliga förare
Drömmen om självkörande bilen inte så nära
Veoneers rapport: ”Ökat intresse för självkörande bilar”

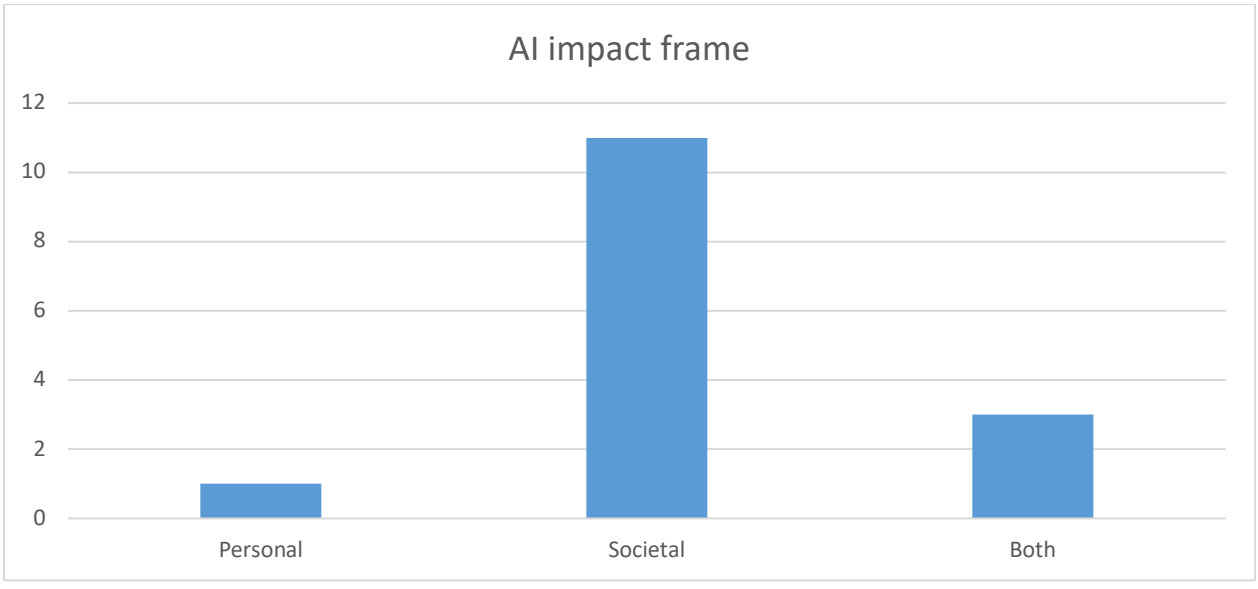
Appendix 5 – Results the intelligent computer myth

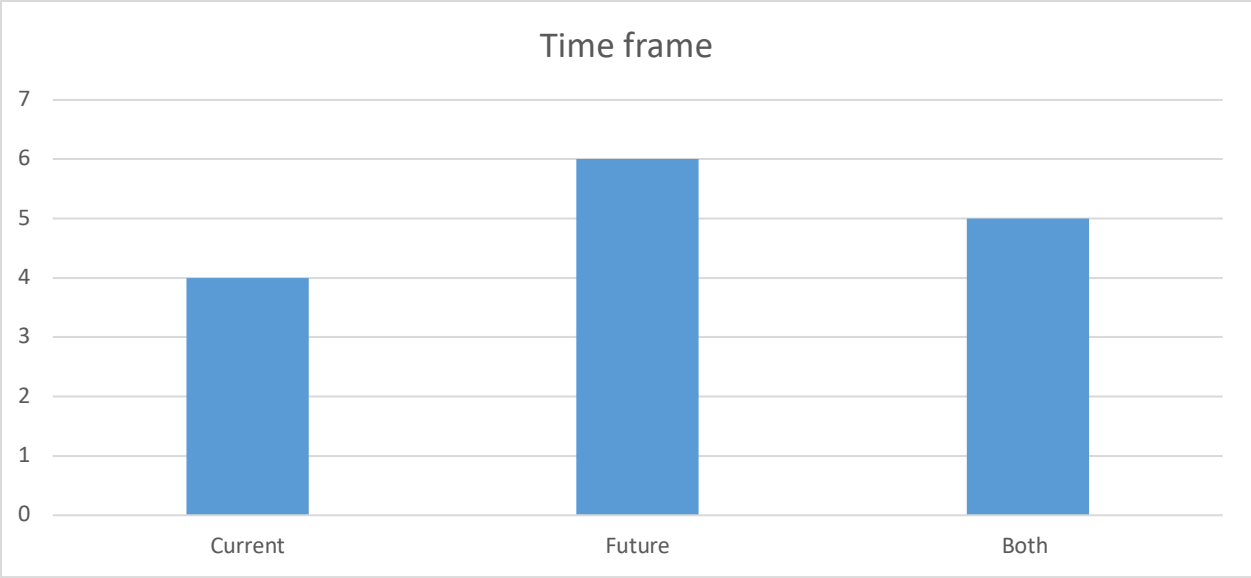


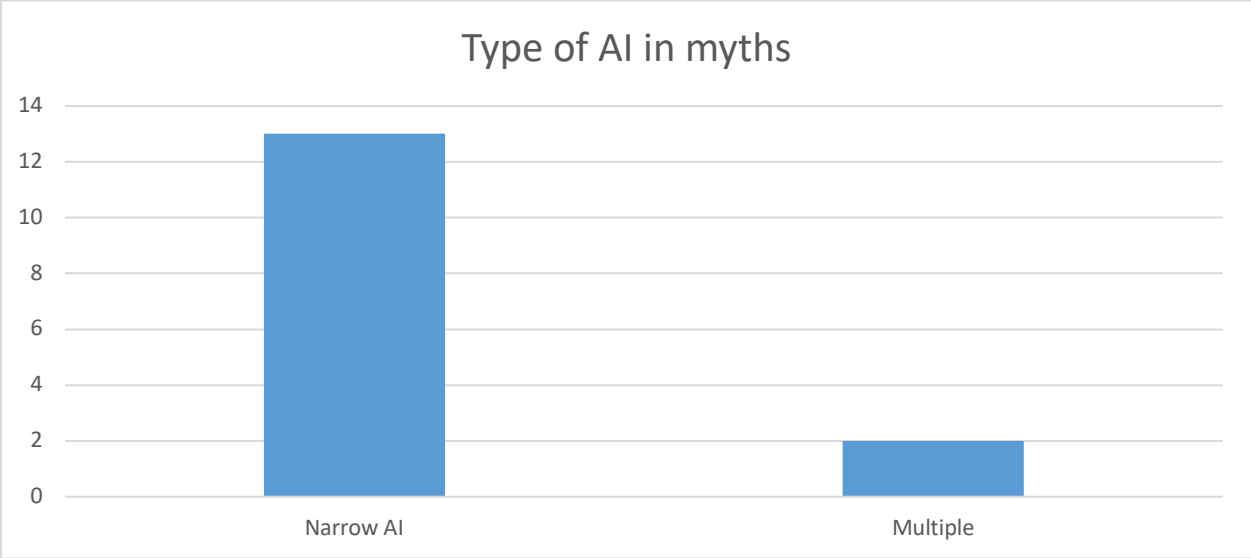


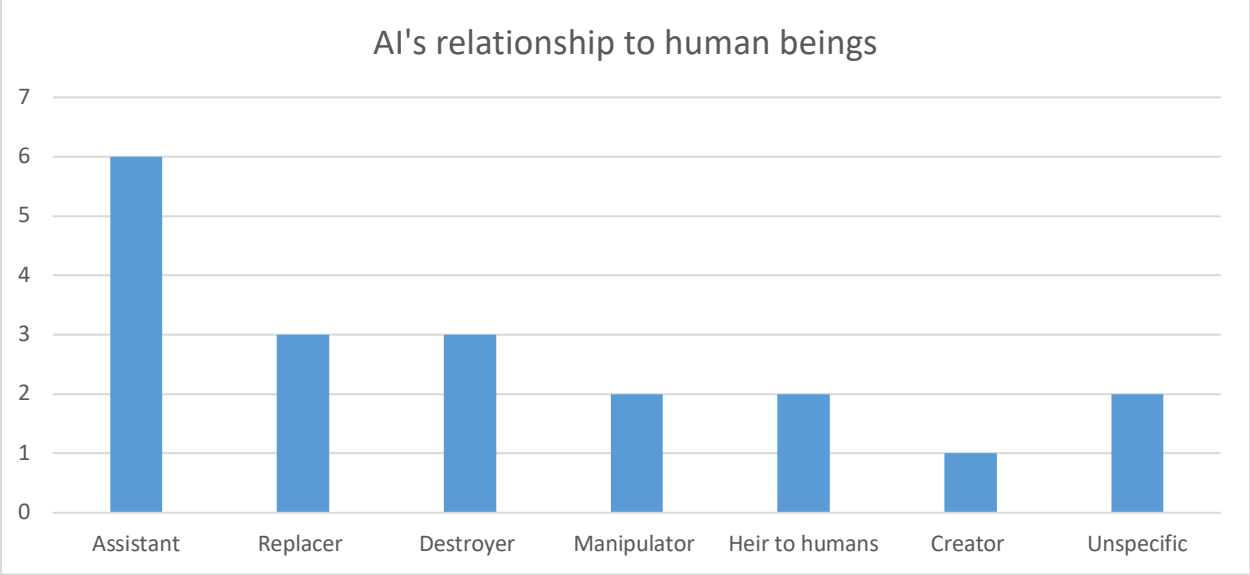

Author of news items
14
12
10
8
6
4
2
0
Journalisr
Scientist/scholar
Private individual

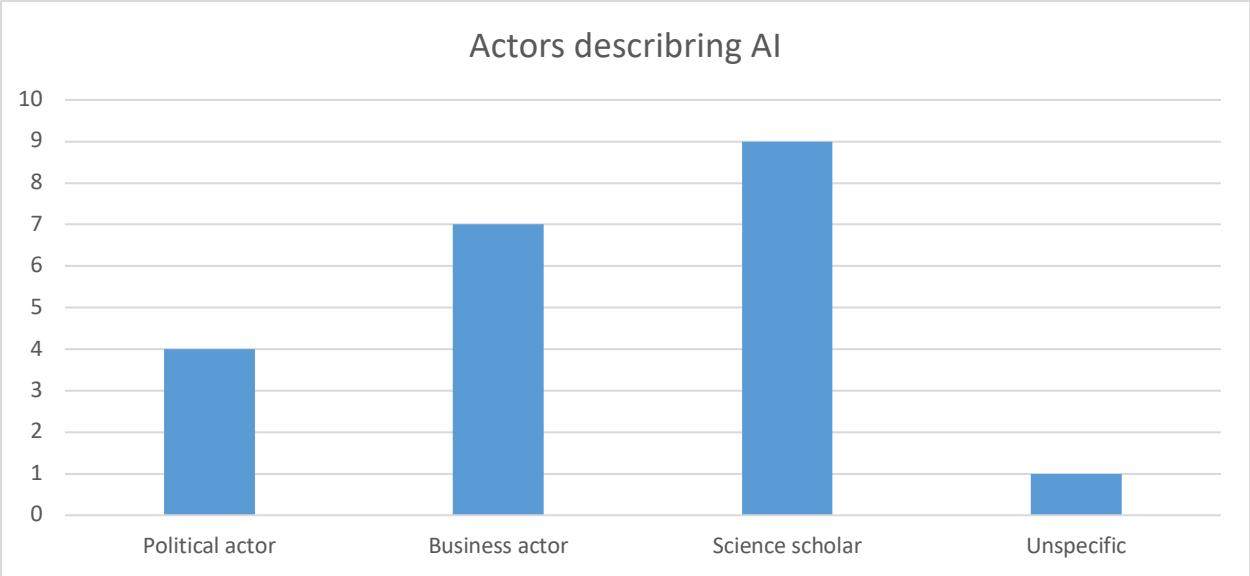

News frame in articles
14
12
10
8
6
4
2
0
Episodic
Themartic


AI impact frame
12
10
8
6
4
2
0
Personal
Societal
Both

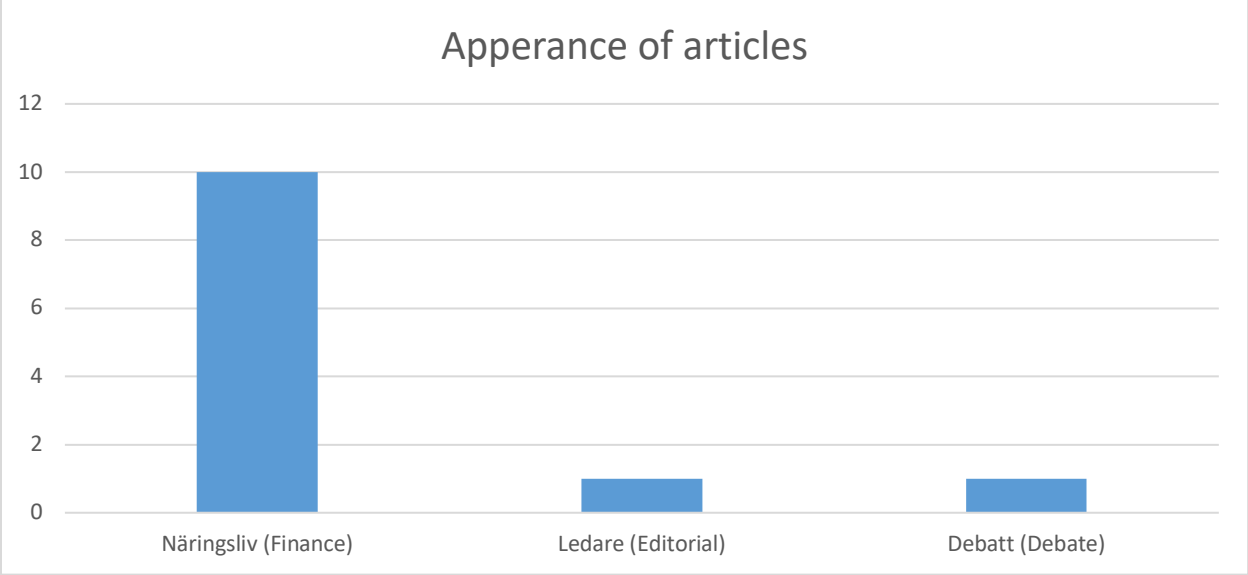

Time frame
7
6
5
4
3
2
1
0
Current
Future
Both

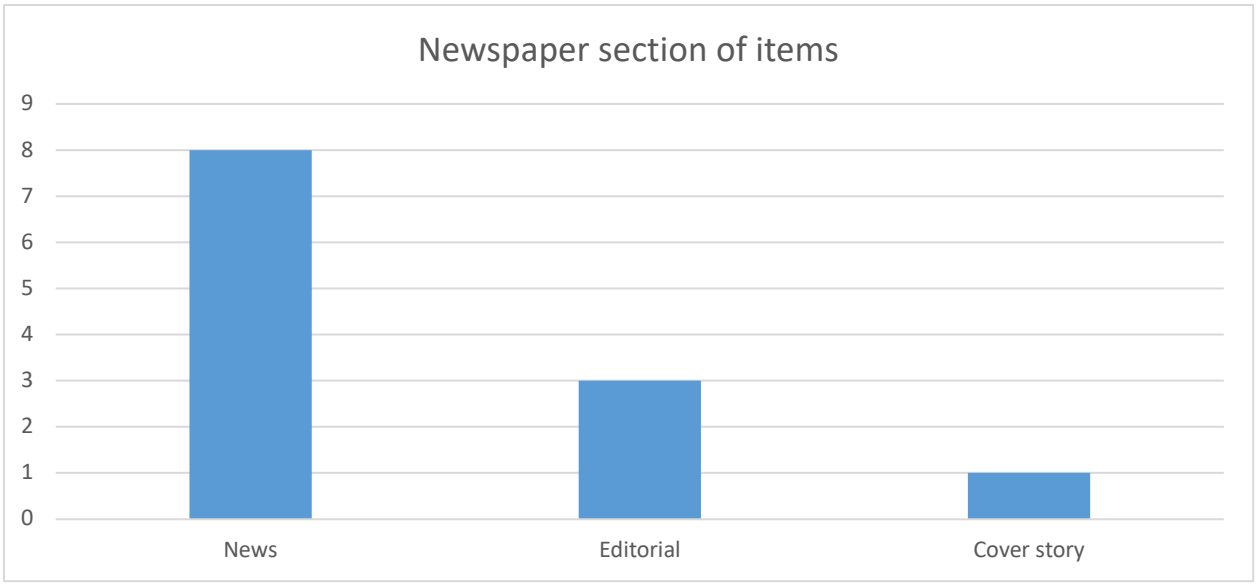

Type of AI in myths
14
12
10
8
6
4
2
0
Narrow AI
Multiple

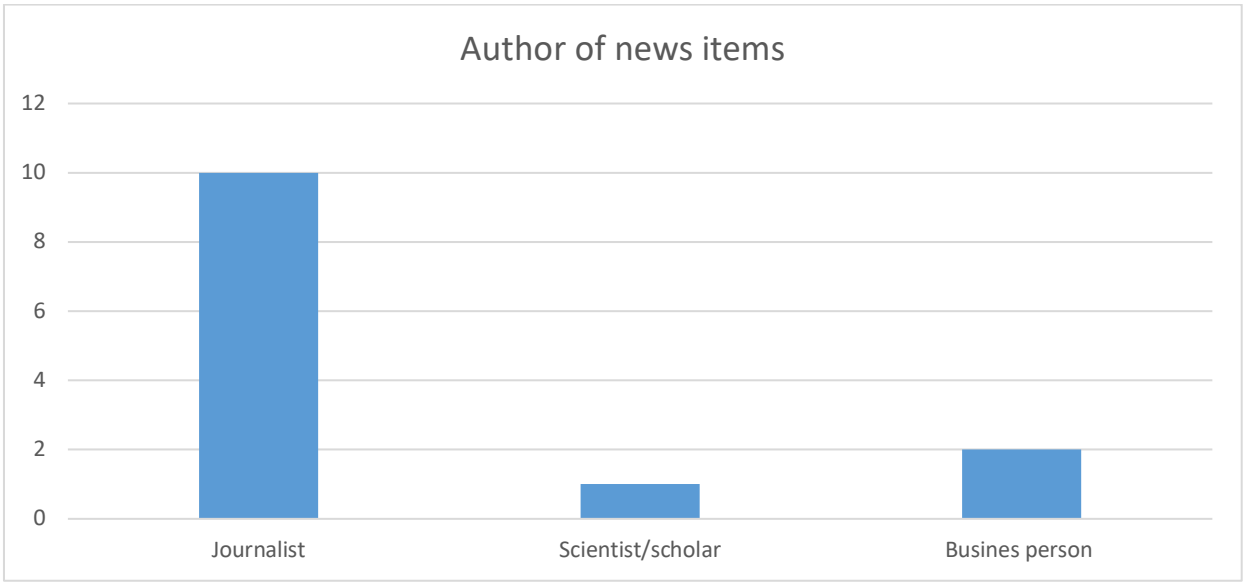

AI's relationship to human beings
7
6
5
4
3
2
1
0
Assistant
Replacer
Destroyer
Manipulator
Heir to humans
Creator
Unspecific

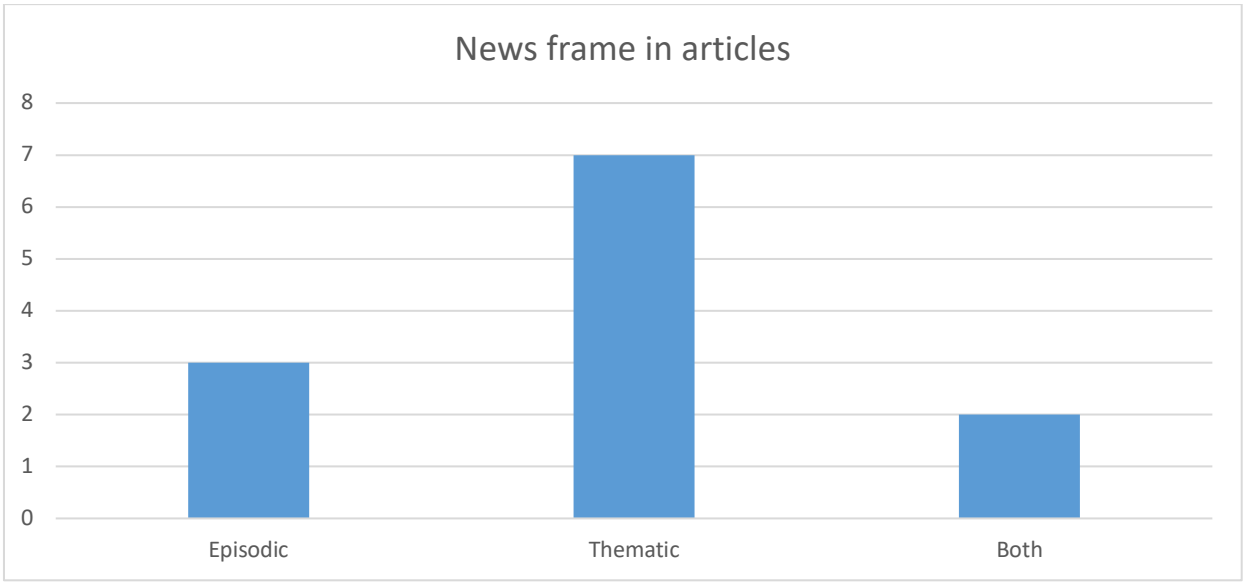


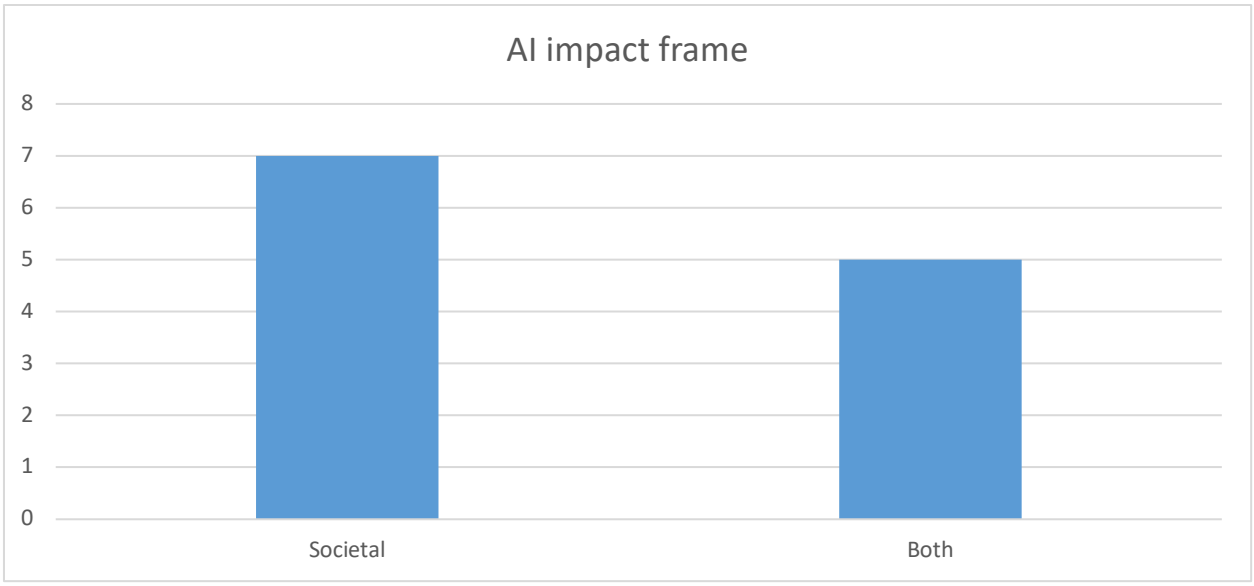
Appendix 6 – Results the intelligent robot myth

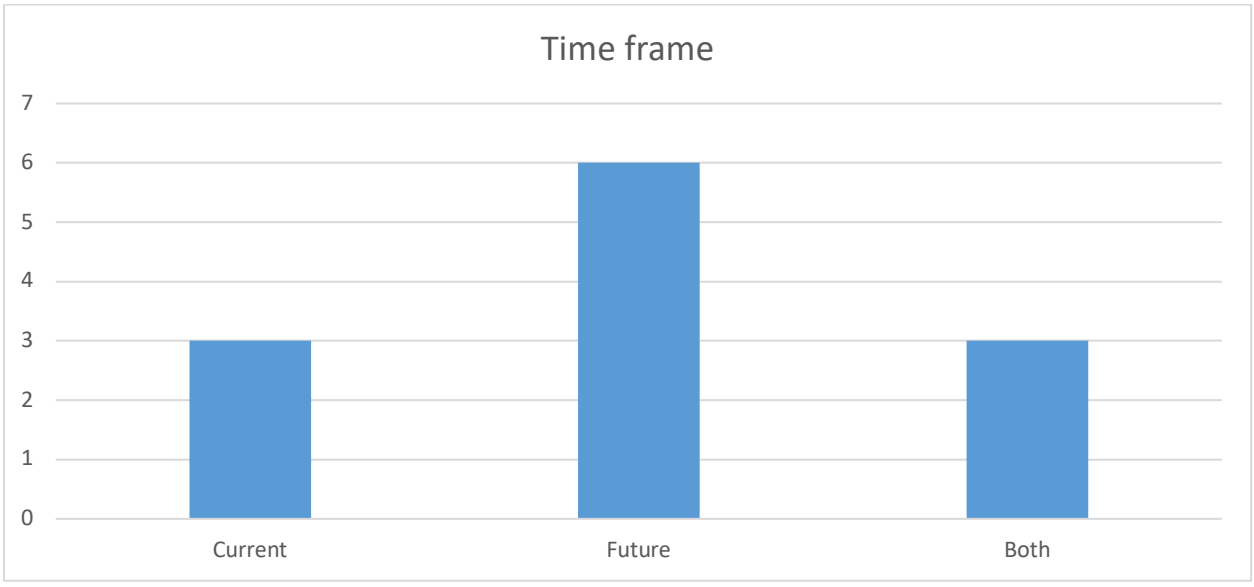


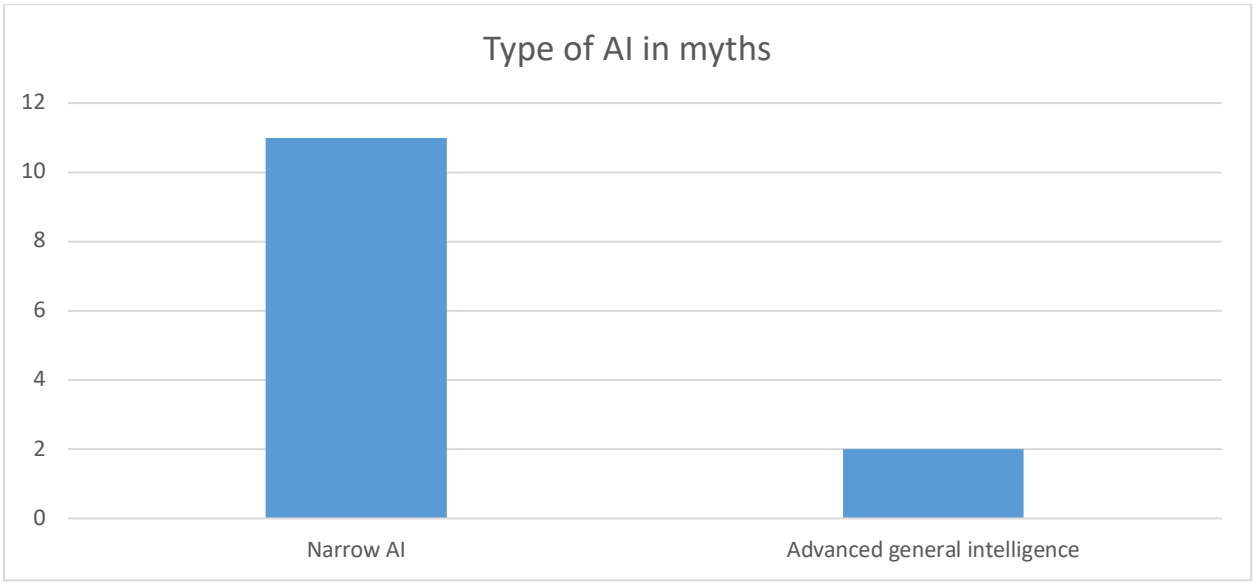

Newspaper section of items
9
8
7
6
5
4
3
2
1
0
News
Editorial
Cover story

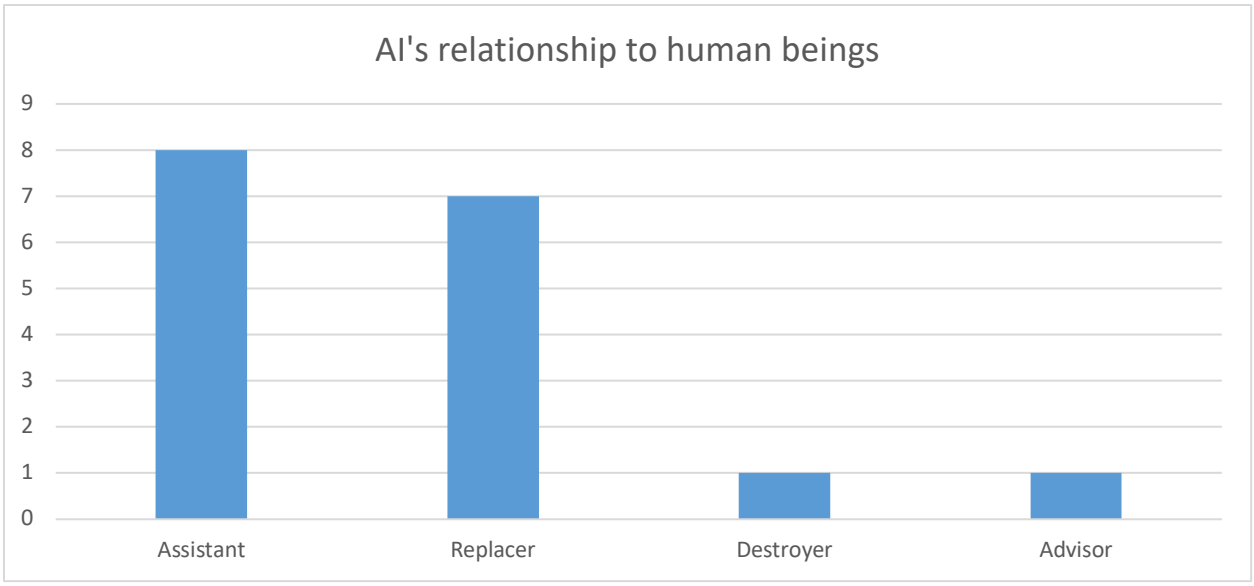

Author of news items
12
10
8
6
4
2
0
Journalist
Scientist/scholar
Busines person

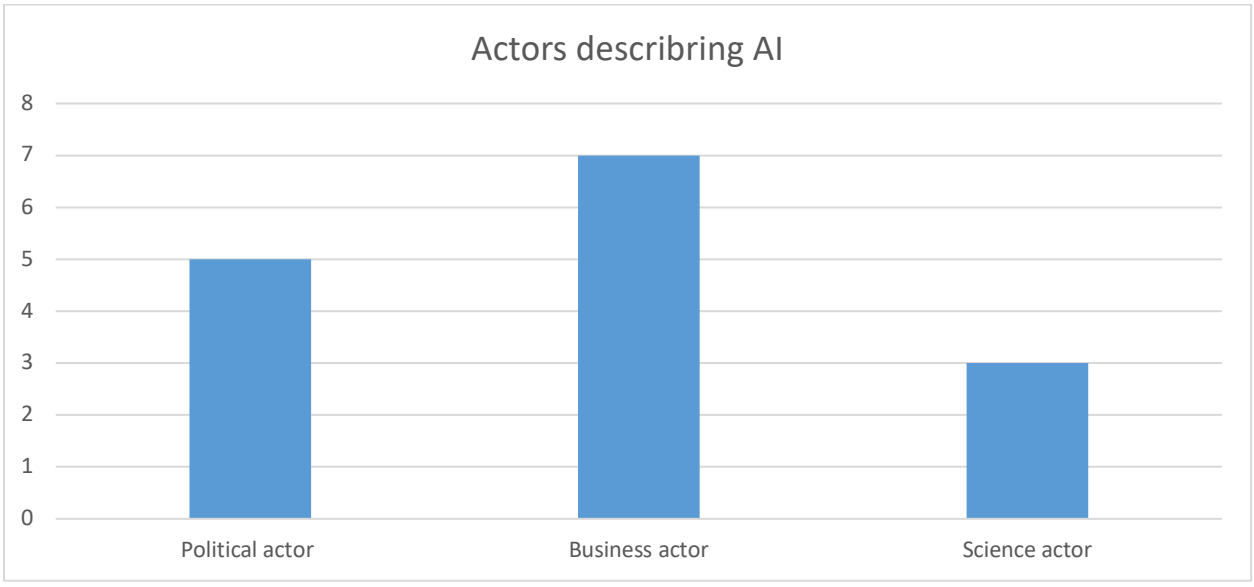

News frame in articles
8
7
6
5
4
3
2
1
0
Episodic
Thematic
Both


AI impact frame
8
7
6
5
4
3
2
1
0
Societal
Both

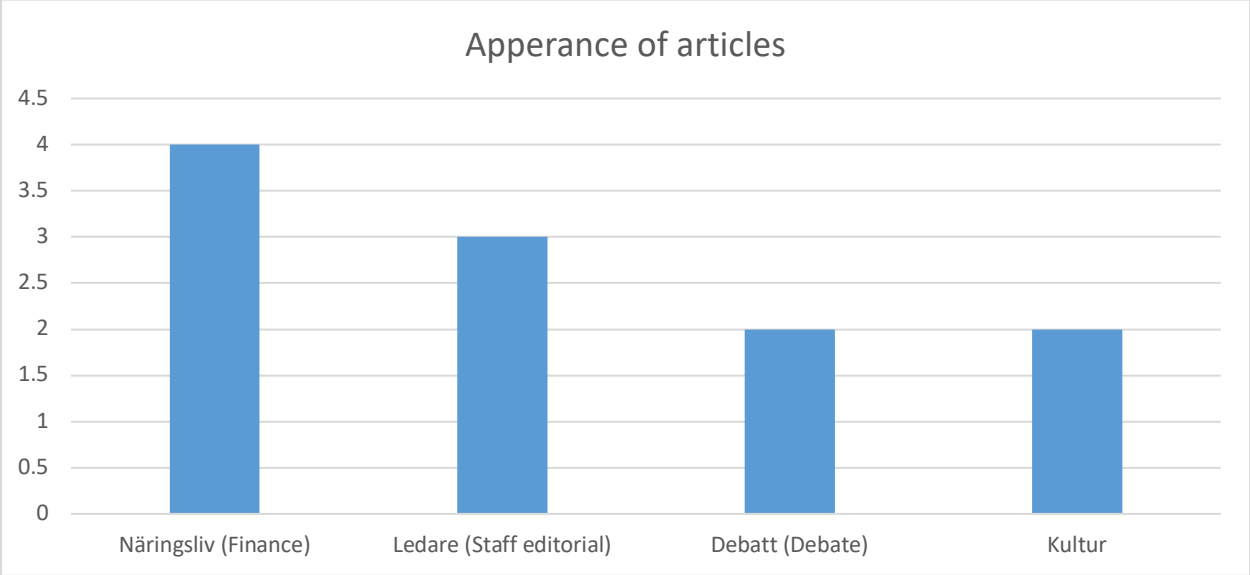

Time frame
7
6
5
4
3
2
1
0
Current
Future
Both

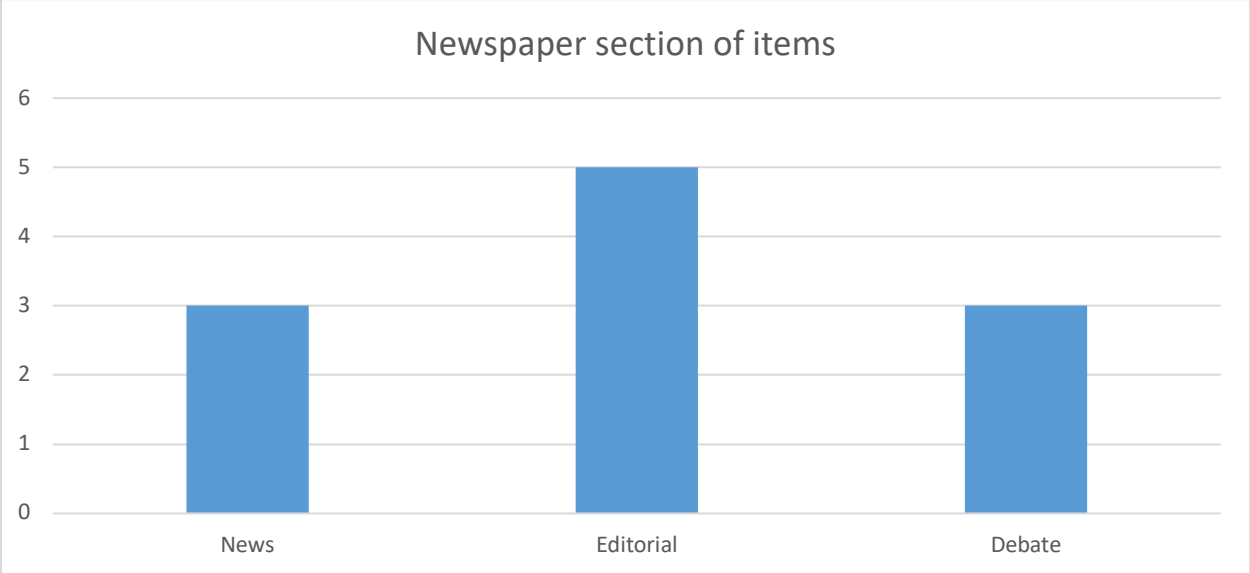

Type of AI in myths
12
10
8
6
4
2
0
Narrow AI
Advanced general intelligence

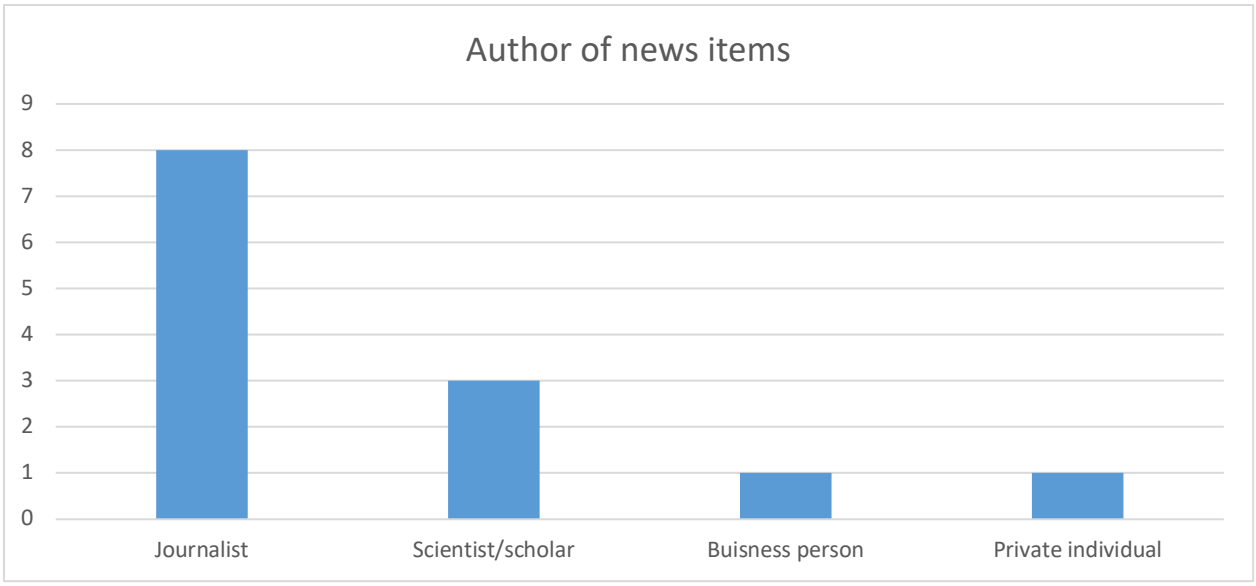

AI's relationship to human beings
9
8
7
6
5
4
3
2
1
0
Assistant
Replacer
Destroyer
Advisor

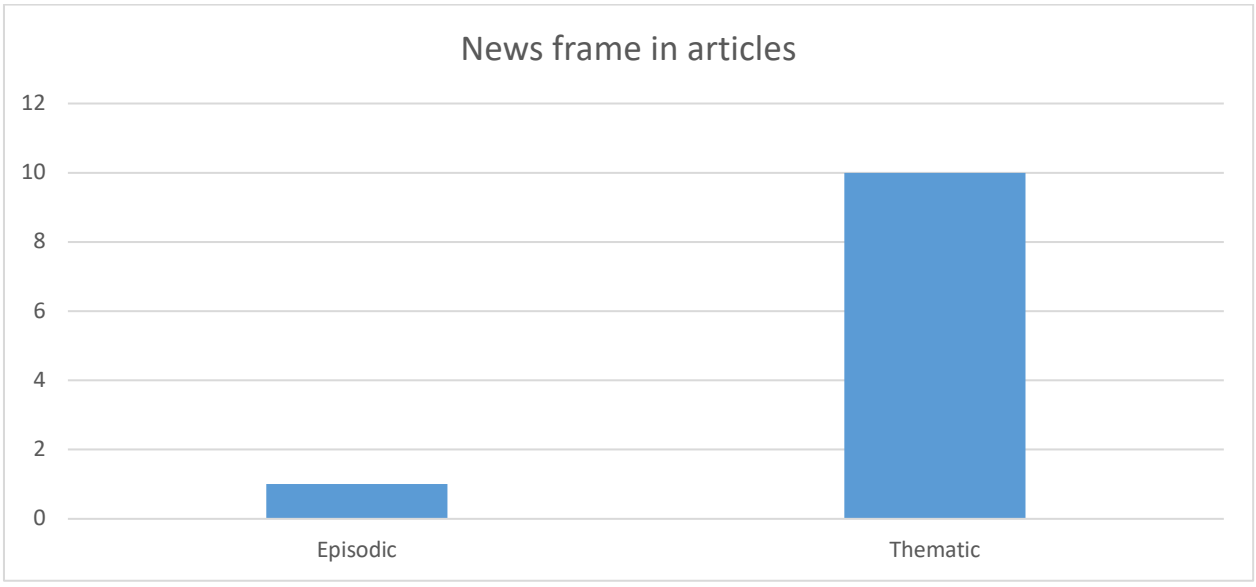

Actors describring AI
8
7
6
5
4
3
2
1
0
Political actor
Business actor
Science actor

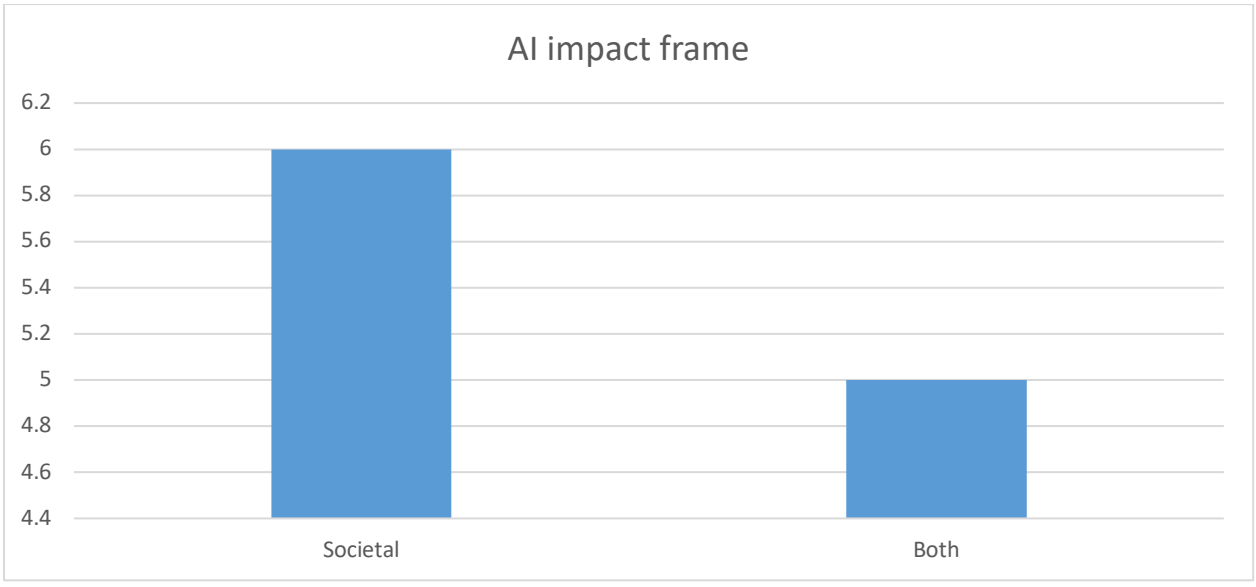
Appendix 7 – Results the intelligent machine myth

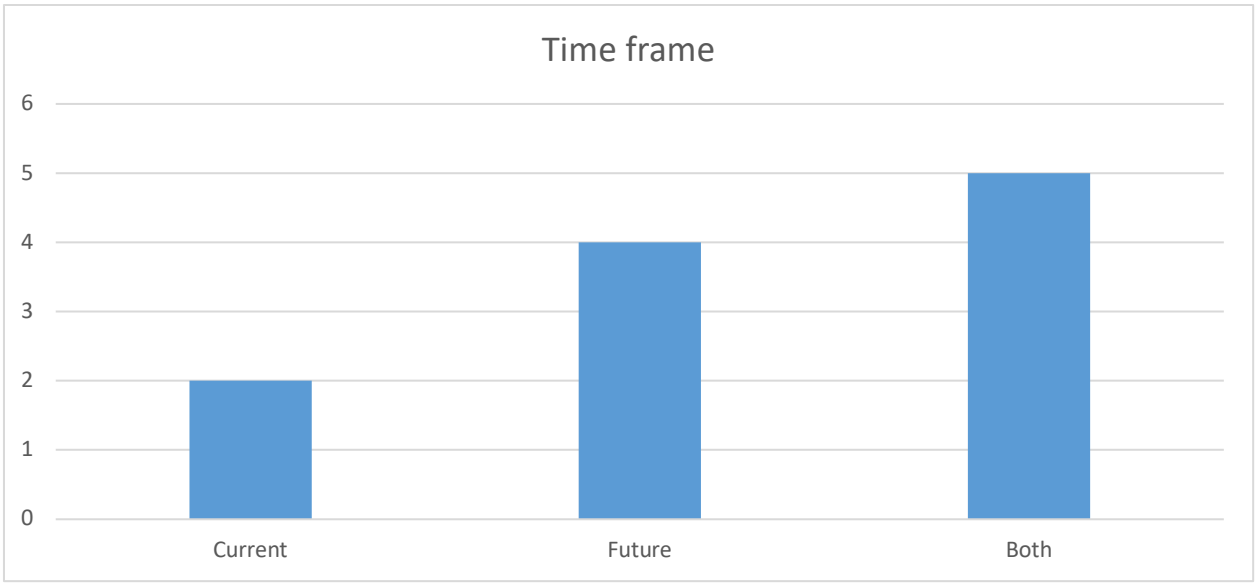


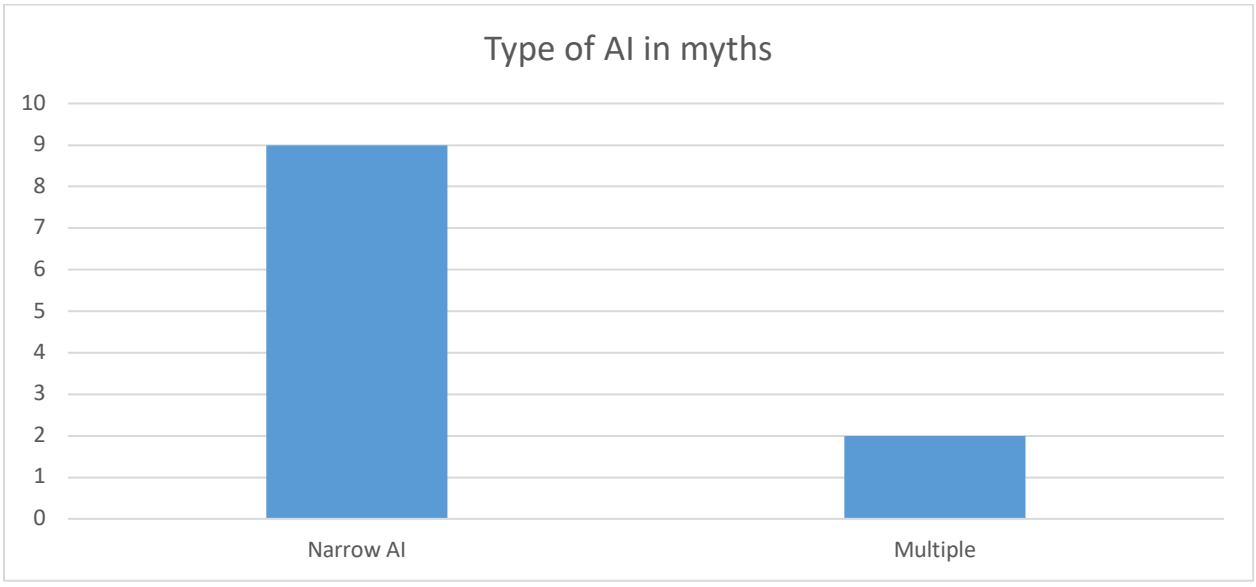


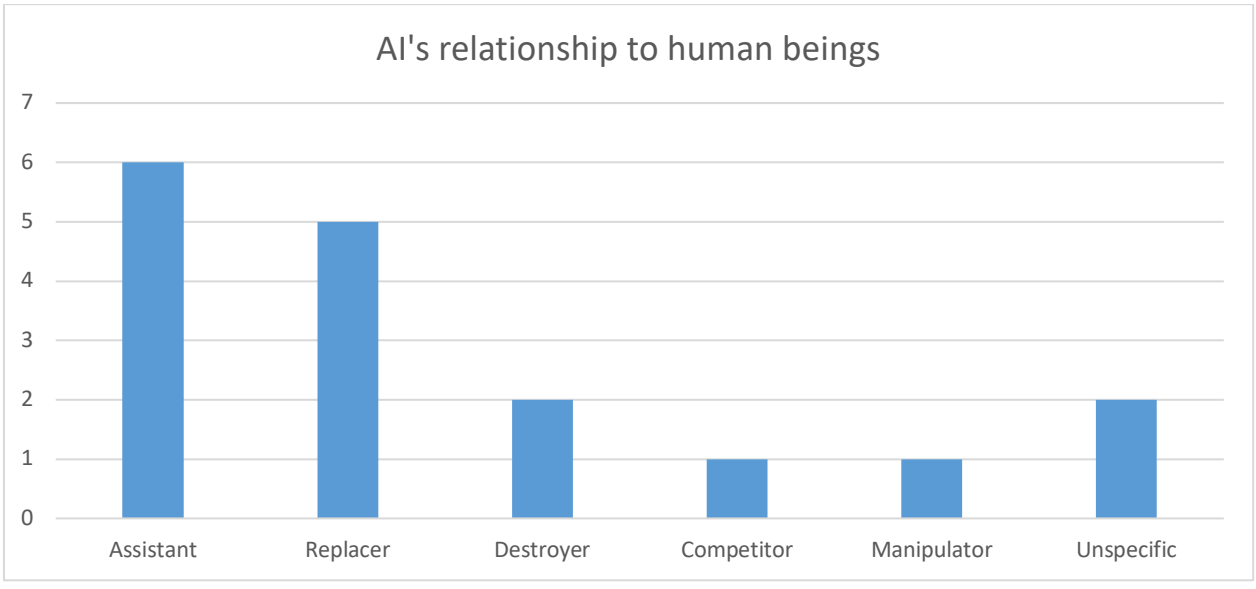

Author of news items
9
8
7
6
5
4
3
2
1
0
Journalist
Scientist/scholar
Buisness person
Private individual

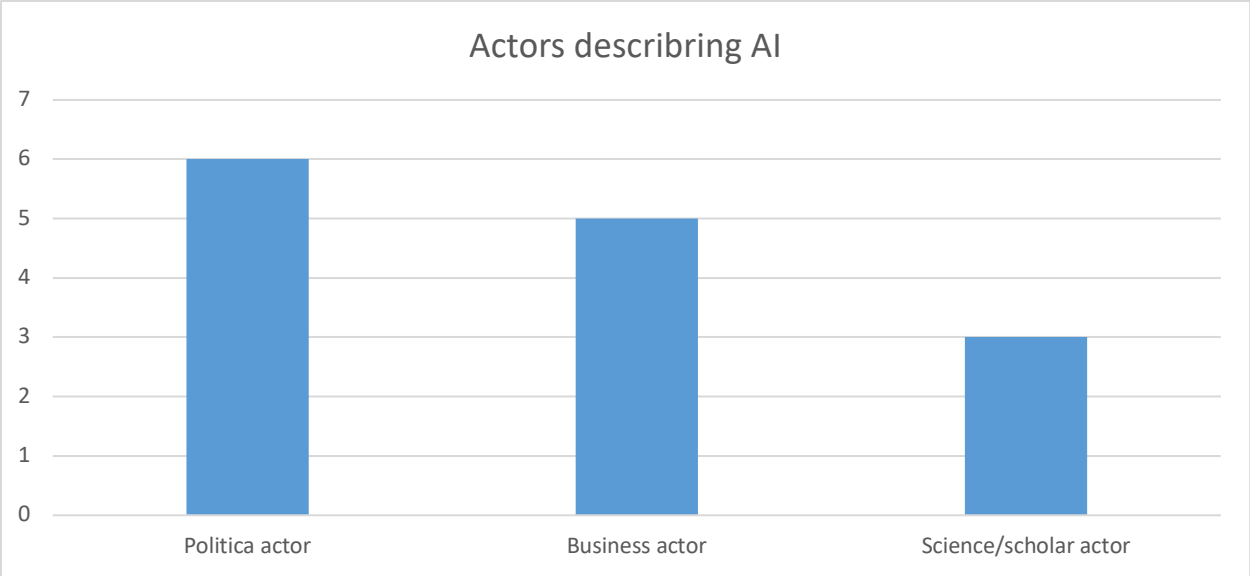

News frame in articles
12
10
8
6
4
2
0
Episodic
Thematic


AI impact frame
6.2
6
5.8
5.6
5.4
5.2
5
4.8
4.6
4.4
Societal
Both

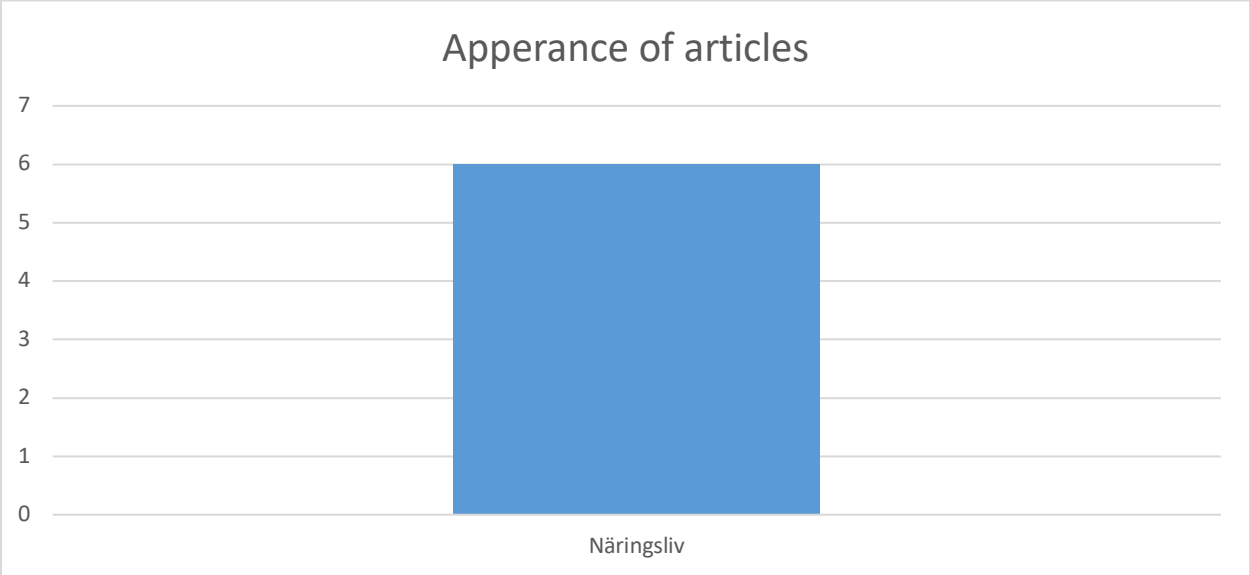

Time frame
6
5
4
3
2
1
0
Current
Future
Both

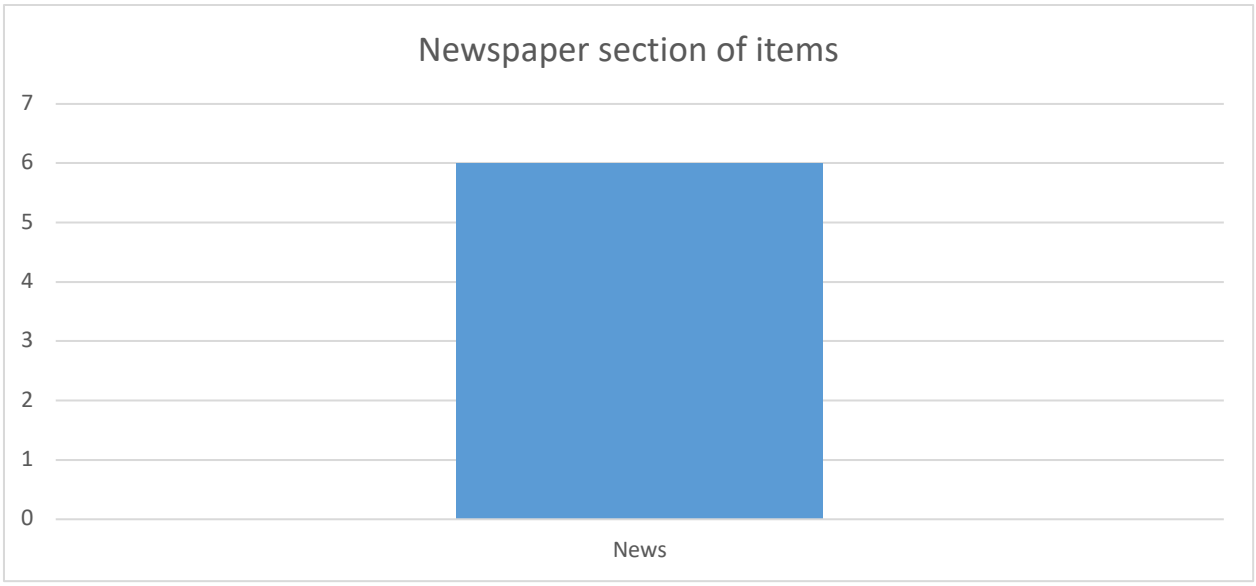

Type of AI in myths
10
9
8
7
6
5
4
3
2
1
0
Narrow AI
Multiple

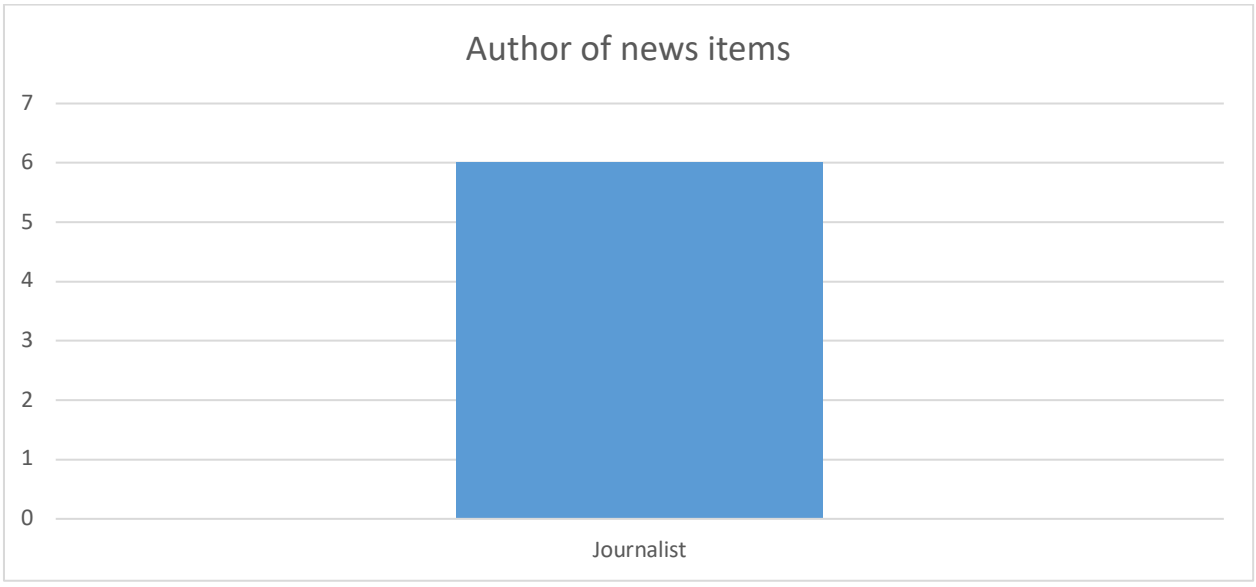

AI's relationship to human beings
7
6
5
4
3
2
1
0
Assistant
Replacer
Destroyer
Competitor
Manipulator
Unspecific

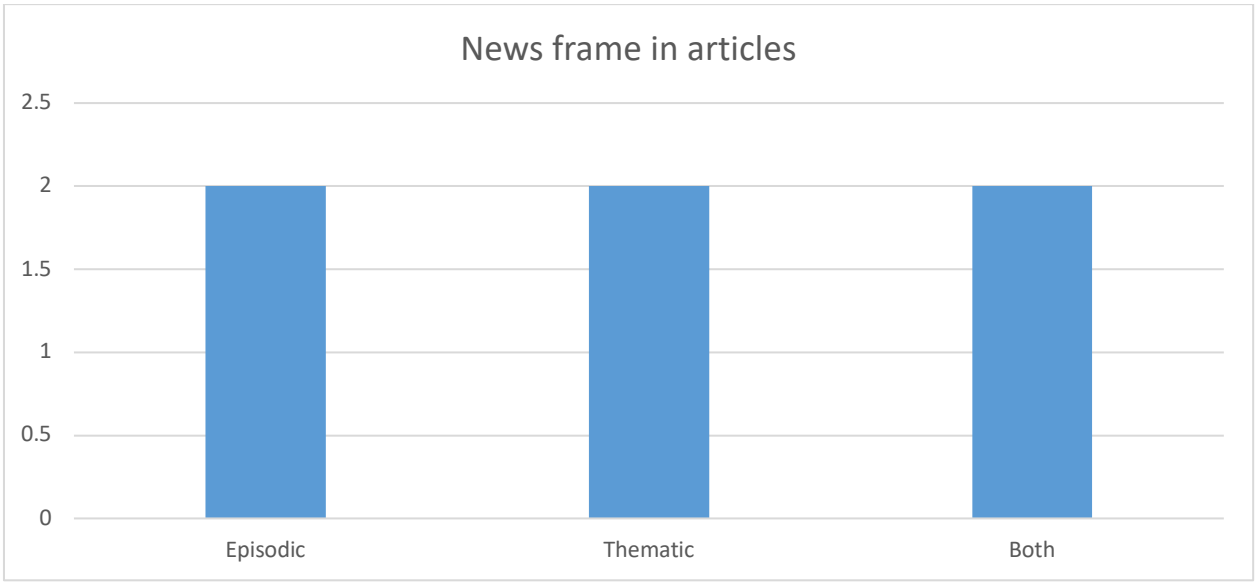


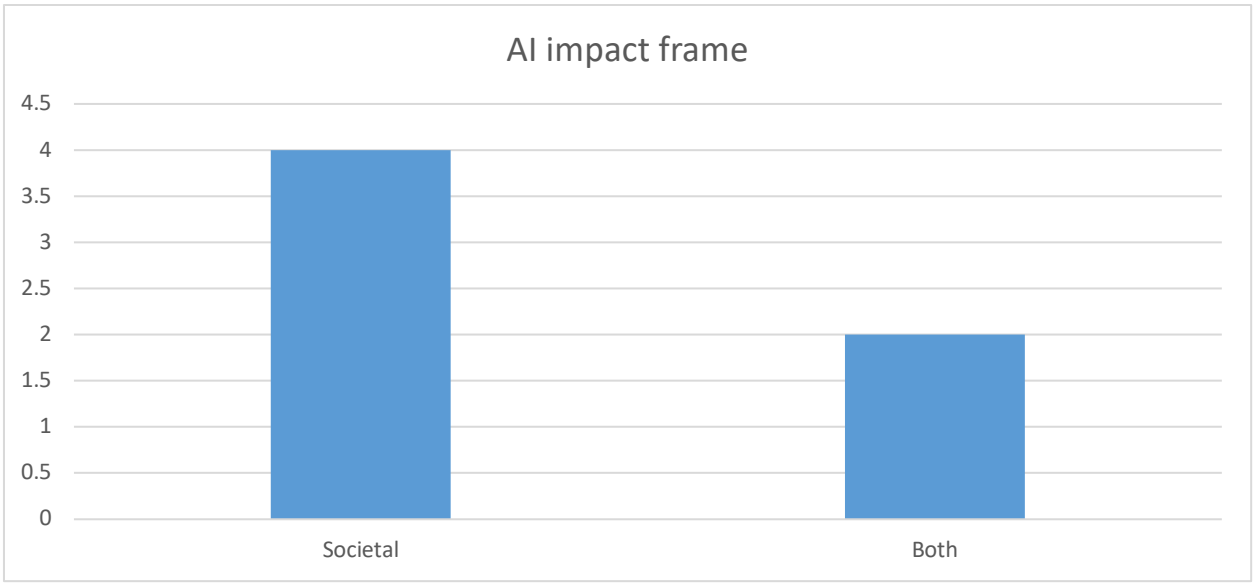
Appendix 8 – Results the intelligent vehicle myth

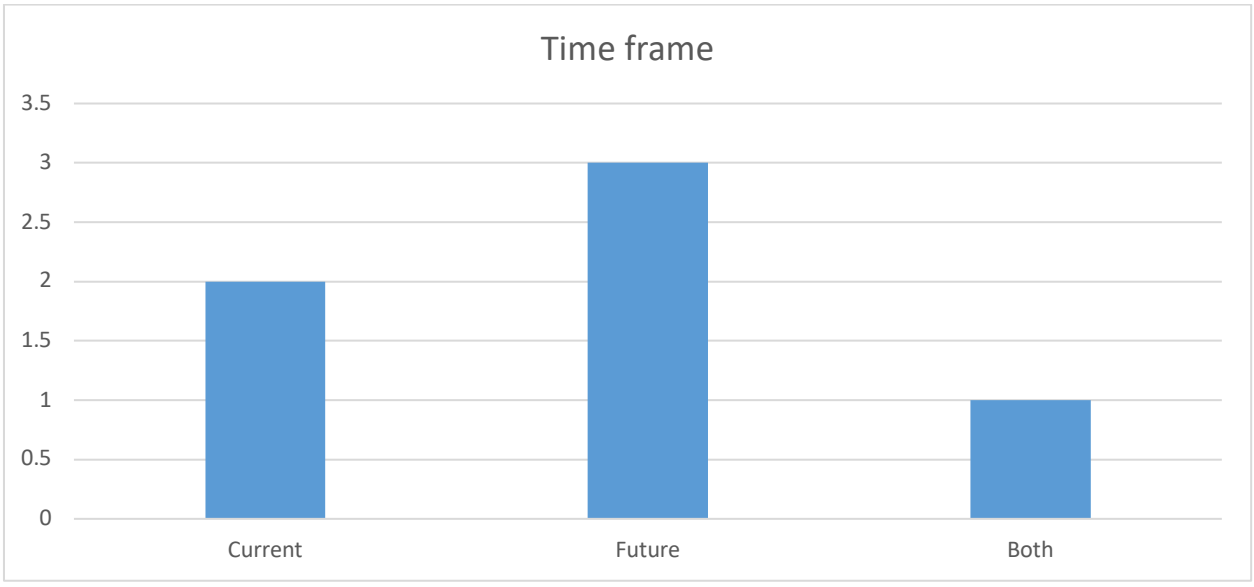


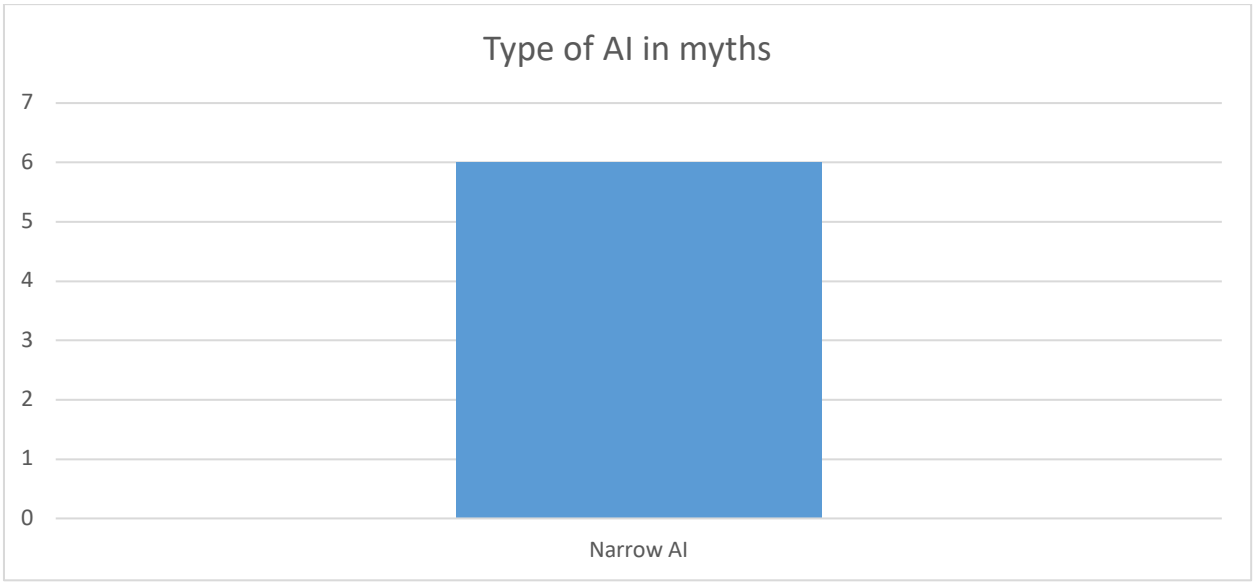

Newspaper section of items
7
6
5
4
3
2
1
0
News

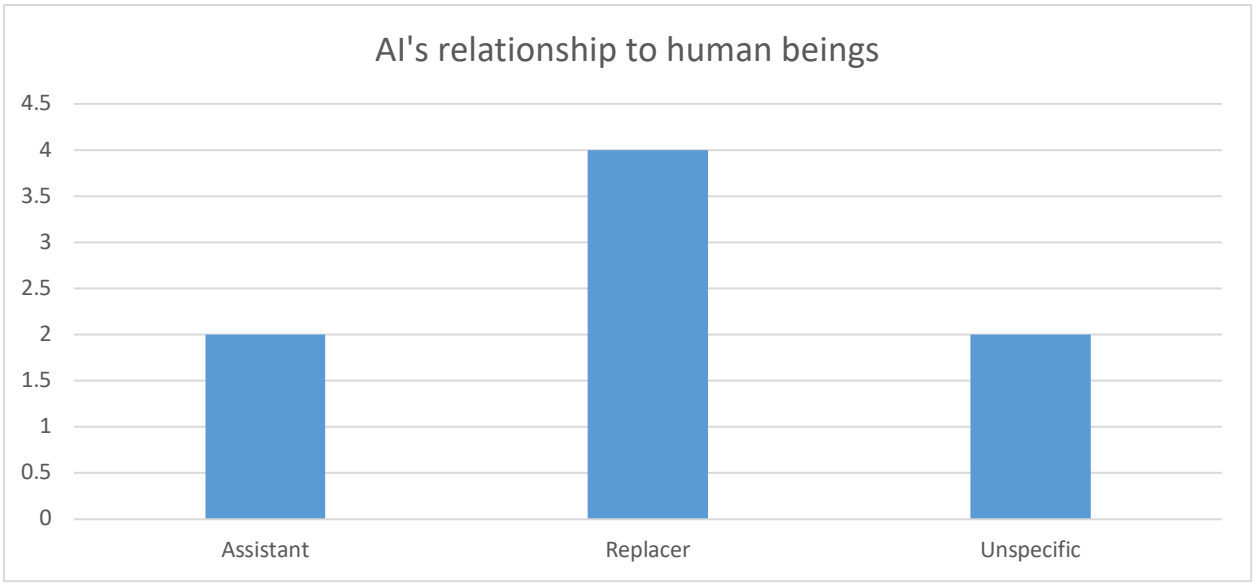

Author of news items
7
6
5
4
3
2
1
0
Journalist

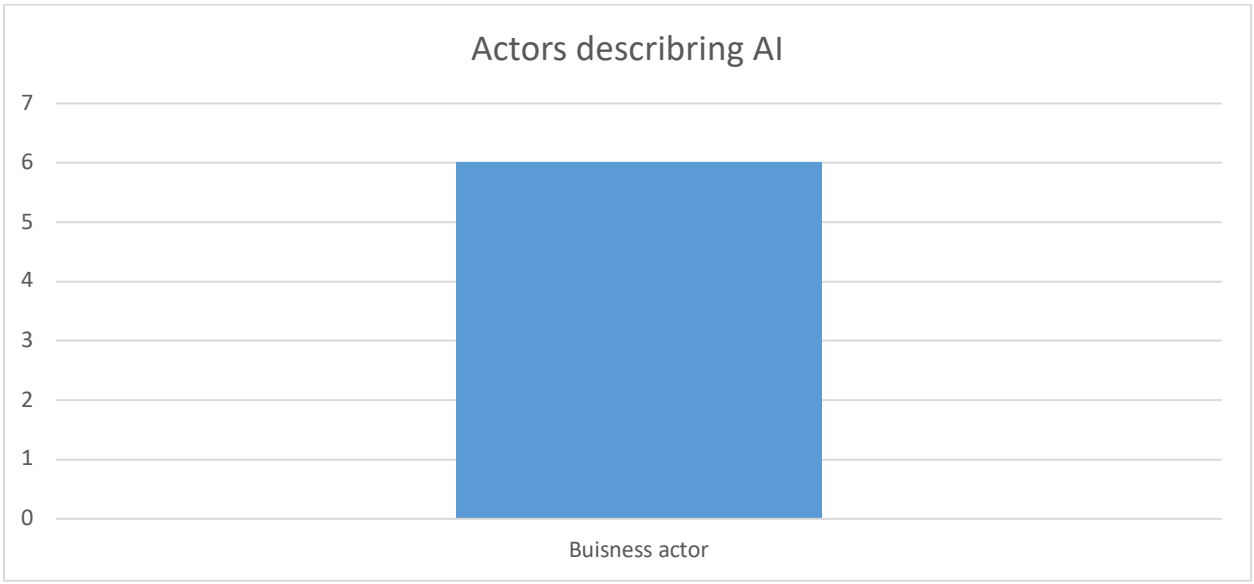

News frame in articles
2.5
2
1.5
1
0.5
0
Episodic
Thematic
Both


AI impact frame
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Societal
Both


Time frame
3.5
3
2.5
2
1.5
1
0.5
0
Current
Future
Both


Type of AI in myths
7
6
5
4
3
2
1
0
Narrow AI


AI's relationship to human beings
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Assistant
Replacer
Unspecific


Actors describring AI
7
6
5
4
3
2
1
0
Buisness actor

Appendix 9 – Code book for textual analysis

AI functionality: Describes how AI myths detail the technology: technical aspects, abilities of different AI artefacts, and functionalities.

Areas of implementation: Describes which area/dimension of Swedish life that AI is/could be used in such as labor, health care, education, military services, science, transportation, etc.

Usages: Describes how AI is being used/could be used for certain intentions such as reducing number of car accidents, improve scientific research, replace human labor, create new jobs, filter information online, etc.

Hopes: Describes how AI myths hopes for potential outcomes with the technology such as improve health care in Sweden, improve levels of safety driving on Swedish roads, make companies more cost-effective, make better use of human labor's intellectual capacities, reduce online hate speech, etc.

Concerns: Describes how AI myths worry, or warn, about potential outcomes with using technology such as increasing levels of unemployment, make driving on Swedish roads less safer, create new types of hate speech online, hacking organizations and accessing sensitive information, alienating people from real human intercourse or increasing objectification of women.

Stockholm University
SE-106 91 Stockholm
Phone: 08 – 16 20 00
www.su.se

Stockholms universitet