



Försvarshögskolan

Potential AI application in the Swedish Army and its relation to the Holiness of Life

A study of army officers' narratives on the military experience in the face of AI

Potentiell AI-tillämpning i den svenska armén och dess relation till Livets Helighet

En studie av arméofficers inställningen gentemot
införande av AI i militärt bruk

Author: Pepule Majken Brodrej

Ledning och Ledarskap för Försvar, Krishantering och Säkerhet

Supervisor: Erik Bjurström, Martin Schüler

Examinator: Erik Berntsson

Abstract

This master thesis examines army officer's view of the social implications of AI within the Swedish Army, as well as what is required of researchers to understand the implications of AI. The thesis is based on an interpretive study of the army officers' narrative and is supported by contemporary research on AI for military use. The theoretical framework includes ideas on social contracts, transrational sentiments, emotions (like love) as meaning making, human life as Holy and bounded rationality. The theme of the Holiness of human life opens up a discussion about the value of trust, hope and love within the activities of the Swedish Army. The analysis describes how the view of AI is partly positive, while simultaneously containing skepticism and fear that technical optimism will lead to a destructive use of it. Participants in the study describe AI's rationality in contrast to human rationality, and war is presented as a non-rational social process. This leads the study to an interpretation of the meaning of the officers distancing and fear towards AI. It addresses the risks of a higher AI usage rate in war, which include; decision makers loss of credibility, devaluation of life and the appearance of war as nonsensical and meaningless, which could contribute to an indifference towards human life and suffering. The conclusion addresses human life as a human responsibility because its meaning and value is socially constructed, the benefits of exploring AI capabilities and the significance of understanding the social culture where the AI is to be used - as it affects the application outcome.

Keywords

Holiness of Human Life, Emotions, Transrational Sentiments, Social Contracts, Military AI, Artificial intelligence

Sammanfattning

Uppsatsen undersöker arméofficerarens syn på de sociala implikationerna som AI medför inom den militära kontexten, samt vad som krävs av forskare för att förstå implikationerna av AI. Uppsatsen baseras på en tolkningsstudie av armeofficerarnas narrativ. Uppsatsen stöds av forskning kring AI inom militärt bruk i vår samtid. I det teoretiska ramverk ingår teorier kring sociala kontrakt, transrationella upplevelser, känslor som meningsskapande, mänskligt liv som heligt och begränsad rationalitet (bounded rationality). Temat kring människans personliga värde (Helighet) öppnar för en diskussion kring värdet av tillit, hopp och kärlek inom svenska arméns verksamhet. Analysen beskriver hur synen på AI är delvis positiv, och samtidigt innehåller en skepticism och rädsla för att teknisk optimism ska leda till ett destruktivt användande av den. Deltagarna i studien beskriver AIs rationalitet i kontrast till människans, och krig presenteras som en icke-rationell social process. Detta leder studien till en tolkning av vad avståndstagandet och rädslan gentemot AI innebär. Uppsatsen tar upp risker av en högre AI-användningsgrad vid krigets (beslutsfattar)processer. Dessa är bland annat; att beslutsfattaren ska förlora trovärdighet, att liv ska devalveras och att krig ska förefalla oförståeligt och meningslöst, vilket kan bidra till en likgiltighet kring mänskligt liv och lidande. Slutsatsen tar upp att mänskligt liv är ett mänskligt ansvar eftersom mening med och värdet av liv är socialt skapad, att det är gynnsamt att utforska AIs kapacitet samt att kulturen där AI bör framkomma som en betydelsefull aspekt vid utforskandet - eftersom det påverkar beslutsfattandet i sin helhet, tillit mellan soldater, motivationen till och synen på liv.

Nyckelord

Människolivets Helighet, Känslor, Transrationella Känslor, Sociala Kontrakt, Militär AI, Artificiell Intelligens

Preface

True enough, all men are fated to die; true enough also, a soldier may grow old in battles; yet for those whose spirits have bent under the yoke of war, the relation between death and the future is different than for other men. For other men death appears as a limit set in advance on the future; for the soldier death is the future, the future his profession assigns him. Yet the idea of man's having death for a future is abhorrent to nature. Once the experience of war makes visible the possibility of death that lies locked up in each moment, our thoughts cannot travel from one day to the next without meeting death's face. The mind is then strung up to a pitch it can stand for only a short time; but each new dawn reintroduces the same necessity; and days piled on days make years. On each one of these days the soul suffers violence. Regularly, every morning, the soul castrates itself of aspiration, for thought cannot journey through time without meeting death on the way. Thus war effaces all conceptions of purpose or goal, including even its own "war aims." It effaces the very notion of war's being brought to an end.

(Weil, 1955, *The Iliad, or The Poem of Force*)

Abstract.....	1
Keywords.....	1
Preface.....	3
Introduction.....	5
Research Question.....	8
Theoretical framework.....	8
Use of rationality and emotion in decision making.....	8
A need for Holiness and Value of Human Life.....	10
Method.....	12
Ethical considerations.....	16
Anonymity and funding.....	16
Who am I?.....	17
Other considerations.....	19
The Army experience in the face of AI.....	19
AI as rational machine, and humans less so.....	19
Emotions as orienting and motivation in war.....	23
Understanding of Holiness leads to Trust and Meaning.....	26
Discussion and Conclusion.....	30
References.....	35
Acknowledgements.....	39

Introduction

Regardless of specific design solutions in any given context, decision-making is at the heart of Command and Control (C2) science, demonstrating itself through the function of directing and coordinating efforts (c.f. Brehmer, 2013). Intelligent technology alters the nature of work, authority (Zuboff, 1988) and coordination itself, not least in the case of artificial intelligence (AI) (Zhang & Orlikowski, 2022). Touching at the heart of C2 work, AI deeply affects the core of the military experience (Kepe, 2020; RAND, 2020).

Previous research on AI in military decision-making has argued that consensus about AI has been elusive (Krafft, Huang, Young, Bugingo & Katell, 2020), is hard to understand (Yampolskiy, 2019), will not be able to replace the role of humans (Johnson, 2022; Goldfarb & Lindsay, 2022), will influence military power and internal politics (Horowitz, 2018) and that future military investments in AI will likely follow a similar pattern as previous investments in autonomous systems i.e. training or supporting (Brown & Rodriguez, 2019). Much has been written on how this can be done in a responsible way (Dignum, 2021), to minimize public fear response (Cave, Coughlan & Dihal, 2020) and understanding AI in relation to humans are of much interest (Kissinger, Schmidt, & Huttenlocher, 2021).

However, it has also been acknowledged that AI use is growing within warfare (Johnson, 2022), that AI can make predictions cheaper for military organizations (Goldfarb and Lindsay, 2022) and that AI will be used as an "enabling" technology rather than a specific weapon (Horowitz, 2018). Suggested AI application in the military has been planning and supporting military operations in intelligence, analysis of the enemy's intelligence, autonomous weapon systems and vehicles (Szabadföldi, 2021), modeling non-attrition behavior and virtual war-game simulations (Brown & Rodriguez, 2019). All these would lead to the other

important elements of decision-making, namely data and judgment, becoming both more valuable and more contested.

AI is a fundamental aspect of modern military operations that has been discussed in terms of the emergence of Software-based Defence (Soare et al., 2023), raising calls to ban autonomous weapons capable of killing without control (Russel, 2023), questions about responsibility (Taylor, 2021), as well as how decision support systems can underpin judgment from different ethical perspectives; utilitarian, deontological, relational and virtue ethics (Steen et al., 2023). Satori & Bocca (2023) remarked that there is a neglect of how AI is framed, they suggested that identifying and accounting for actors involved in its role, purpose and imaginaries in the socio-technical system should be a mandatory step towards problematizing (Roberge et al., 2020) the conversation about AI.

Liu (2021) noted a regained interest in analyzing the social nature, as well as antecedents and consequences of AI from a sociological perspective. She further distinguished between ‘scientific AI’ that seeks to make sense of AI as specific techniques, systems or products from a sociological perspective on the one hand, and on the other hand ‘cultural AI’. ‘Cultural AI’ is more concerned with its interactions in the broader e.g. social and cultural conditions where it occurs, triggering images of AI as trends, processes, actions and relations in specific social settings. In a similar vein, Lee (2023) underlined specifically the role of military culture with regard to success or failure in innovation, suggesting that military leaders need to strike a balance between competing organizational norms and identifying resistance. Lee (2023) also meant this would have to be done while at the same time recognizing the value of long-held beliefs, and that researchers may examine how an innovation came to be. In the face of the radical potential of AI, Griffin (2023) pointed at the need for AI literacy for senior leaders at military education institutes.

While the interest for AI has been around since the mid 20th century – with Herbert A. Simon as one of the pioneers – Cao (2023) set the year 2000 as a starting point for ‘the new age of AI’. Cao argued that its destruction and disruption of programmable AI requires thinking outside the box, exploring ‘we do not know what we do not know’ by identifying and addressing fallacies and pitfalls in the AI hype. Discussing AI as cognitive enhancement, Brunyé et al. (2020) pointed at the fundamental fact that much of military research has borrowed its conceptualization of performance optimization from the system and network engineering literature, seeking to reduce performance degradation under conditions of high demand, such as stress, workload and uncertainty. With reference to Bostrom & Sandberg’s (2009) definition, they instead suggested that we need to rethink performance enhancement as accelerating or amplifying individual and team performance beyond existing peak capabilities, thus altering a performance distribution.

Hence, as ‘the new age of AI’ opens up for possibilities that sheds light on and questions old ways of thinking and define problems. It should be worthwhile to explore – from a ‘cultural AI’ perspective – how AI is framed and embraced or resisted in the context of military culture and C2, not least given AI’s potential to transform the nature of work and authority. This may also help understanding how AI innovation came to be – or not be – in any specific setting. Schiff et al. (2021) pointed at the ‘principles-to-practice-gap’ in the form of barriers to be overcome in the realization of aspirations for a responsible development of AI. In a similar vein, Bareis & Katzenbach (2022) noted that AI imaginaries reflect cultural, political and economic differences, and that the celebration of technology itself runs the risk of conceding its problems and contradictions. Discussing military AI from an ethical perspective, Graves (2023) used the term ‘deification’ – a spiritual and graced process including the formation of

virtue – and pointed at AI as a potential challenge to professional aspirations, specifically when engaging with war.

Research Question

What do the narratives of senior advancement officers in the Swedish Army convey about the social implications of potential military AI application?

Theoretical framework

Use of rationality and emotion in decision making

Randall Collins (1992) presents a series of essays that explore various topics with the intention of developing a more comprehensive understanding of human behavior. Collins uses the term "transrational sentiment" to refer to emotions and feelings that are not necessarily based on rationality or logic, but rather arise from social interactions and the shared experiences of individuals. Simon (1991) presents a description of rationality, it can be seen as a process that is dynamic, circumstantial and adaptive. Simon (1991) coined the term "bounded rationality" to describe the notion that perception is selective in humans and that our attention span limits rational decision making, as opposed to economic's notion of "perfect rationality". This can be seen in the phenomena of intuition or in selective blindness (Carpenter, 2001). This helps us understand the difference between the rationality of a human mind and an artificial intelligence.

Collins (1992) also uses the term "social contracts" to argue that social relationships and interactions are governed by implicit agreements between humans, humans and institutions and between groups. We make decisions based on social contracts between us. These contracts

involve expectations and obligations and are understood and accepted by all parties involved although not based on rationality but on emotions. Transrational sentiments can be powerful motivators for social behavior and can lead to the formation of group identities and social cohesion, which are a basis for social contracts. Hogarth (2010) illustrates the value of emotion in making decisions by explaining intuition; “[it is] reached with little apparent effort, and typically without conscious awareness. They involve little to no conscious deliberation”. Hogarth does add that intuition can be simply emotional reactions, and in other cases, the emotion is an intuitive moderator of learning. He separates intuition from rationality. While rationality is maintained beyond emotions, decision making based on intuition includes use of earlier experiences and knowledge alongside emotions and sociality.

Iagulli (2016) discusses Collins' research on emotional energy and how it can be generated and transmitted in social situations. Iagulli (2016) argues using Collins that emotions are not just internal experiences but also social phenomena. He means that when people are emotionally charged, they radiate this energy to others, who can in turn respond with their own emotional energy. This is a way to explain economic or political power that stretches beyond rationality and encompasses status and trust. The emotional charge of people determines the social contracts (Collins, 1992). Humans need to be part of a group to gain certain benefits (such as safety) and can not produce all we need alone. Collins means that if humans acted purely rationally it would not be possible to join together to create a group, let alone a society. This, he admits, sounds paradoxical since rationality seems an advantage. His point is that in every social contract there is not one but two contracts involved. One is consciously established but there is also a second concealed deal being made; the second states that all parties agree to respect the first agreement. A rational approach is to realize that there is no way to ensure others follow through with what they promised they would. An emotional connection on the other hand can involve trust, hope, love, pride, respect, shame

and other aspects of our social and emotional being that can be summarized as; matters of Honor and Heart. Collins (1992) uses the phrase transrational sentiment to describe it. Collins (1992) point is that earlier researchers did not mean to say social organization is impossible by theorizing it can never be rational. I am describing making decisions in or for a group as a vital part of any social organization. Instead Collins aimed at providing an explanation to what he calls the pre-contractual solidarity, which is essentially based on trust. Trust in this case is understanding, likening, believing and in other ways choosing love (ergo emotion) over facts (ergo rationality) to rely on.

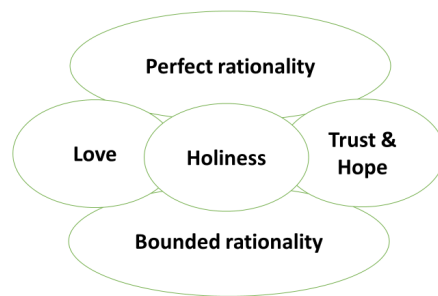
A need for Holiness and Value of Human Life

Simone Weil's essay *Human Personality* (1952) emphasizes the importance of distinguishing between the individual and the personality. She argues that personality is an attribute formed by external forces such as society and our own desires. Weil believed in the inherent holiness of each human being. In her view, every person has a divine spark that connects them to the transcendent, and to God, and this connection gives them a unique dignity and worth. Weil believed that recognizing and honoring this holiness in ourselves and others is essential to living a fulfilling and just life. Weil also believed that the suffering of others could awaken us to this holiness and inspire us to act with compassion and solidarity. She also writes that the collective is disruptive to the holiness of a person. I interpret this to be a hint at the fact that we as a group spend our energy at defining the group identity and our identity in relation to it, where identity is irrelevant to holiness. It is not who we are as a person that makes us valuable but simply that we are a person. She also touches on the fact that we are a personal body, which becomes relevant to understanding why physical violence is a degradation and evil even when rational, as it hurts a person, i.e. something holy. In her essay *The Iliad, or The Poem of Force*, Weil (1955) shares her interpretation of the main theme of the Iliad; force. She discusses its power and how force takes the shape of war.

Hunt (2015) argues in *The Value of Human Life: A Sociological Perspective* that the value of human life is not an inherent quality of individuals, but rather a socially constructed concept. This means that the value placed on human life is not determined solely by individual characteristics, but is shaped by cultural, economic, and political factors. It explains why we differentiate humans from other animals as well as suggests that different societies and historical periods have assigned different values to human life. This is relevant as it can make sense of why allowing AI to make decisions about human life is a complex subject which risks leading to devaluation of human life due to its use of rationality. Hunt's view is that the value of human life is socially constructed, and can therefore be interpreted as cultural rather than simply rational.

Simone Weil's (1952) ideas about the holiness of human life were inspired by her own experiences at the frontlines of the Spanish civil war. She observed that the holiness of human life must lead to it being a human responsibility, which corresponds with what Hunt (2015) adds to the discussion of the value of life as a social construction. Weil makes the point that if nothing was holy, life would be meaningless, which I have interpreted as a reasoning for why war exists. More specifically, war exists because things like national borders, treasures and human life carry meaning. This social construct is the reason why ending human life is not only a destroying of resources but an act of power (Hunt, 2015). An article by Hicks and King (2019) explores the ways in which emotions contribute to the creation and maintenance of meaning in life, i.e. adding value to our own life as well as the lives of others. They describe the emotion of love as doing this. It is a "meaning-making emotion" that can provide a sense of belonging and connectedness with others, help humans develop a sense of purpose and direction in life alongside possibly fostering a sense of connection with something greater than yourself.

The figure below summarizes the concepts discussed in this thesis, and which will be presented in the section below. They are interconnected and are the results of a choice of methodological approach that is aimed at providing the researcher and reader with conceptual tools to make sense of the narratives in a real life context (Czarniawska, 2004).



Method

“A social science researcher knows that facts are fabricated
and wishes to know how they were fabricated.”

(Czarniawska, 2004)

The decision to conduct an interpretive study of army personnel surfaced after doing a scoping search, which resulted in discovering that interpretative approaches are relatively unexplored within this field. The concepts presented in the previous section were the result of investigating themes which were identified when interpreting the narratives of the interviewees.

Academic and researcher Richard Rorty (1992) argues that the traditional philosophical concepts of objectivity, truth, and knowledge are not absolute, instead they are social

constructs that are constantly evolving over time. This is an argument for the relevance of interpretation, where a contemporary interpreter of a narrative can find the larger meaning or implications of what is being said by putting it into a relevant context. When trying to understand the role of language and communication in this thesis, Rorty's ideas (1992) on pragmatism and the social construction of reality are relevant. Qualitative interviews such as these need to be seen as both communication and data, the participants are not only sharing their views but are also trying to make themselves and their narratives understandable to me as the interviewer and as a person. This is communication and, as Rorty (1992) argues, language and communication play an important role in shaping our understanding of reality. In research interviews, this means that the researcher needs to be aware of how language can shape the responses they receive from participants. I believe this is important for both researcher and reader to understand the choice of interpretational practice, as it will inevitably be not only the interpretation between two humans but also two organizational languages. This means I have placed a higher value on listening and re-listening to the recorded interview in lieu of reading any transcription, as it allows for a fuller picture of the circumstances and meaning of what is said, rather than the choice of words. Using an interpretational method and listening rather than reading also allows for meaning to take center stage as it includes more layers to what is for the researcher to analyze. Some examples of the many layers in interviewing are; who the interviewee is, who the interviewer is, language, intonation and pauses, physical circumstances or shows of emotion. The risk of losing the meaning of what is said in translation can therefore be reduced, even when translating from the language spoken in the interviews to another for writing the research paper. A lack of understanding of the many layers in interviewing and lack of philosophical root may lead a researcher into bias, egocentrism and flawed academic rigor, which I hope to avoid. I have used journaling and critical self reflection throughout the research process for this purpose. The attention I give each interview will lead me to reach a conceptual

generalizability - this allows a researcher to find the meanings of what is shared, which is connected to larger phenomena in the real world.

In his book *Om undran inför samhället*, Asplund (1983) discusses the contribution of qualitative research and conceptual generalizability - along with generalizability, which he calls "aspektssende." I believe the conclusions I reach will be scientific and representative of aspects that are relevant when studying the use and application of AI in command-and-control systems, leadership, and management in Swedish land forces. I believe this because I have given the time to interpret the meaning of what has been shared by listening and journaling, rather than documenting the words. Asplund (1983) describes in detail a scenario where a scientific study (Freud's study and interpretation of Leonardo Da Vinci's dream) was based on incorrect data and led to highly personal interpretation filled with assumptions (which were also mostly incorrect, sometimes incoherent but rather amusing). Asplund (1983) points out that this does not inherently mean the scientific conclusion was incorrect or off the topic. Instead an intellectual act can be related to reality in more ways than one. Where one way might be quantitative data summary (which could be included in "traditional wisdom") and another could be a more freely flowing interpretation of qualitative data, where the scientist tries to tune into and understand those who have shared the data in a larger context. I believe the latter approach to be an absolute necessity when working with qualitative data analysis, otherwise it risks becoming a pseudo-qualitative study. Czarniawska (2004) describes this methodological approach by saying "a social science researcher knows that facts are fabricated and wishes to know how they were fabricated", and Steedman (1991) presents the idea that knowledge cannot be separated from the knower. Because it is a narrative shared from a human where emotions, the atmosphere and the meeting are cornerstones to what is being shared. To be able to give each participant's narrative proper consideration for interpretation I have chosen to do four interviews, and no more. I met each of the participants

in their respective offices to ensure their comfort and began by asking about their background. Some had not received education outside of the military, and some had. They are all in their fifties and have all been in management most of their careers.

Czarniawska (2004) argued for a perspective on choice of approach and method, by which she implies that several approaches are equally applicable to a given inquiry and that the fashion of the time or the institution will play a role in the choice of approach. She means that the choice of approach should provide the researcher with conceptual tools to make sense of the collected material. Czarniawska (2004) warns us that there are no universal theories - only theories with universalistic claims. Interpretation is such a tool for this study. I will therefore not touch on the subject of generalizability - but focus on reaching validity, traceability and scientific value. She argues that the criteria for a good research text should be performative, and thus judged by the responses of the reader - and perhaps what Asplund (1983) calls being intellectually adventurous. He states that this might seem scary in research - as one risks not being accepted by one's peers - but is at its core commendable. Thus, approach and method is truly a matter of choice and inclination, and of course whether or not one actually follows the course set out, can make it understood and persuasive.

I will show narratives among persons in certain positions and interpret them to reach a deeper understanding of reality. I believe this could guide further research as well as be an asset for those within the field of interest in understanding themselves and their potential future. Johan Asplund (1983) describes how there is always a possible task of "what does it mean?". This is a nonspecific and open question which allows the researchers to go into depth of understanding. I see him as encouraging interpretation with arguments inspired by the ideas presented by Peter Winch. Asplund (1983) presents the idea that even though a conclusion can be combined with the data, it does not prove its tenability. Winch means that to

understand something is the same as seeing the meaning of it. Asplund (1983) is in utter agreement when saying that understanding a phenomenon diverges enormously from the world of statistics. To understand a phenomenon may not be to answer specifically formulated questions or to conduct an experiment. Interpretations are hypothetical and must be verified, which is where data collection has its role. For this purpose I will bring forward quotes and details from the narratives in my analysis. Because data cannot and should not be separated from interpretation in social sciences. Although it is a risk which Asplund describes as; to be a great thinker, one does not always end up with a clear answer. However, my choice of an interpretive approach aims to include explanation, Czarniawska (2004) emphasized the similarities between explanation and interpretation. Where the latter also assign context, intentions, emotion and meaning to the shared narratives without which it would be impossible to understand human behavior - and therefore phenomena and artifacts (like AI) created by humans.

Ethical considerations

Anonymity and funding

The fact that the participants' organization paid for my train ticket raises potential ethical concerns about the influence this may have on the study results. Additionally, the participants seemed to have compromised their own anonymity. Given that they all work in the same building and may have seen me going in and out, anonymity is a concern. Despite my efforts, participants may have compromised their anonymity by informing each other about their participation, and my presence at the workplace may have been noticed by others there as they even invited me to have lunch in their local mess hall.

To address these issues, I will describe the steps leading up to this. Firstly, I contacted student counselors, my supervisor, and the professor responsible for my course to discuss my own economic limitations and my desire to conduct in-person interviews. While some participants were only able to meet digitally, two were located in another city and were able to meet in person. It later turned out that all could in fact meet in person on the day I was present. I attempted to secure funding for travel expenses, but was ultimately unsuccessful. However, my supervisor was able to connect me with a teacher at the Swedish Defence University who facilitated the first four interviews and arranged for me to be classified as their visitor by their organisation. The travel costs were approximately 500-700 SEK. The security classification of the participants' work has been an ongoing issue since the initial contact. It has not only limited what they can talk about but also how we can practically communicate. For example, their computers do not have internet connections, which means that digital interviews can only be done over the phone. This risks diminishing the social connection between the interviewer and the interviewee, which could lead to lower levels of trust and comfort and subsequently lower quality data. That is the reason I believe it is my responsibility to pursue any potential avenues that might benefit the quality of the study - including prioritizing in person interviews over digital ones, while also addressing potential ethical concerns. I do not believe the arrangement compromised the study's integrity.

Who am I?

I want to add that I am aware that I am an outsider in the extreme. The sample selection includes individuals from social intersections and phases that differ from my own. As a younger, female-coded person with a traditionally non-Swedish name and appearance, I was in sharp contrast to the participants. They were all middle-aged to seniors, had traditional Swedish names, light skin and hair, and a "traditional military" bodily build and manners. The situation will be customized to the individuals, and I understand that I might gain a different

viewpoint from a researcher who, on a larger societal scale, might have an likeness to the participants and therefore higher status in our normative patriarchal society.

Regarding research as a non-insider and woman, Soyer (2014) discussed in her paper that there are pros and cons to being coded as a woman in research. She discusses some negative aspects of being part of a male-dominated research field, and although my research field is not dominantly male, the context in which I am researching is. I have also reflected on possible benefits of being an outsider in the context one is researching.

I believe my social position will be a counterweight to possible impression management (Alvesson, 2011, pp.10) that participants will inevitably fall into when confronted by being part of an academic endeavor. I might be interpreted as less imposing and therefore might gain a different account than someone with an insider perspective. Talking to this happy student might be preceded with less reservation than it would have been by being interviewed by an equal/peer. This might be speculative, but I believe it to be more ethical to present a reminder to the reader of my position, ergo who is in the room where the data was collected. It is not only Me and Them as interviewer and participant, but also what we are in relation to one another and society at large that affects the data collection. I believe a second study done from an insider perspective would be very useful and would probably shed light on other aspects of the same phenomenon.

Other considerations

I realized another ethical consideration as I was contacting potential participants. Because some aspects of the officers' work are confidential, one of the participants believed that the interview would be more fruitful to this research if I sent the questions I wished to ask one week before the interview. I felt I could not do so because it would compromise the integrity

of my methodological aim. It became an ethical consideration since I did not wish to put the participants in an awkward or challenging position; I also wanted to maintain academic rigor.

I offered to share a set of themes and reassurance that I will not pry into the details of the uses of specific programs. After seeing the themes, the participant agreed to an interview and only wished to skip questions on two occasions.

The Army experience in the face of AI

We base our management a lot on personal contact. I believe that if the system had presented us with smart solutions, with smart information, then there would be a risk that we would rely more on that information. Then we would talk less and then we would lose something

(Interviewee)

AI as rational machine, and humans less so

The first theme I documented was an optimism towards the use of AI, which was due to the “perfect” rationality and data analyzing effectiveness that AI possesses. Examples of uses were given, all in relation to the general operations (grundorganisationen; GRO) aspects of the army mission; preparation, training, readiness and logistics. Examples of AI use in GRO included; terrain analysis, terrain modeling, mapping, architectural modeling, storage balance management, automated ordering systems for storage refilling, soldier training by simulation (war games), summarizing several reports into one and (most adamantly) AI/ML-enhanced search engine for the organization's internal database. These uses are clearly separate from the

wartime aspects of the army operations (krigsorganisationen; KRO) and have been thoroughly investigated in earlier research.

The participants mentioned some uses of AI in KRO, but then later disregarded them. One example of this is when a participant described how a decision maker on the front lines will make decisions not solely based on a rational analysis. He describes that on the front lines there are things that are more important than rationality. He uses the wording “more human” to describe these things - which I interpret as referring to a social process where trust and team morale are as important as rationality. He also uses the words ‘emotion’ to describe something humans have that technology lacks. He describes ‘emotion’ as being very important for decision making on the front lines and puts it in sharp contrast to perfect rationality. I draw parallels to the relevance of trust and hope, where decision making should inspire hope in the leader and to the group. This is something I have interpreted as love. I use the word love both per the definition Hicks and King (2019) give as a meaning-maker and as a likeness to the profound relationship formed between soldiers on the front lines. In addition, love reflects the intricate and intense social processes the participants have shared and how it is a transrational sentiment which lays the groundwork for the trust built between them (Collins, 1992). I see love as not wanting an attribute or a servant, love is companionship, respect and inspiration. Love is also not a logical or rational choice - it is based on a social contract between individuals (Collins, 1992). Love is therefore an act of trust and hope, it is belief in something and the process of making something in the world meaningful. Here lies a parallel to war. Love and war both push humans to the edge of our abilities and place us under great stress, they place humans in dependance on each other's abilities and whims. Therefore the idea of love is connected to the phenomenon of war.

The participants all described the social process of a team - where trust and meaning must be maintained to motivate - and how it can even trump an analyzed rationale. It is also this step away from rationality that the participants describe as being necessary for them to trust each other on the frontline. It seems that the decision being made is considered to be better not because it has a lesser margin of error, but because it can be trusted to have considered irrational aspects that might be prioritized to the group. This prioritization encompasses the emotional process of hope, valuing human life and keeping morale high - and placing the actions in a historical and physical mythology which the participants can incorporate into their worldview without endangering their beliefs. According to one participant this belief system can also include the general public's perception of the army as trustworthy and humane. Another participant described a theoretical scenario to exemplify how an AI's rational recommendation might even have to be ignored if it leans too much against a lack of emotion, which is placed in opposition to humanity, trustworthiness and hope. He gives the example of triage and how prioritizing there can not always follow rationality, but must take the feelings of the group into consideration to be sustainable long term.

It affects us as humans. It will affect the others in the group if a friend is put to the side, and only gets to lie there, one will think 'What is that?' and lose trust in the colleagues whose job it is to take care of you if you were hurt.

The hesitation towards using the technology appears to be due to the fact that the technology is emotionless yet rational, it does not understand the value of that which is part of the social contract. Which I have interpreted to be an important building block in an army - or any organization acting in high reliability situations or under pressure. Another reason the participants stray from the idea of using AI in KRO is the fact that the foundation of war is in itself irrational.

Strategic level, even political level, that's where AI becomes much more difficult to bring in. Take the war in Ukraine, what is rational in such a war? Is it possible to see a rational pattern in Putin's behavior? Then some say 'Yes, he wants to have the same status as Tsar Peter', but you don't know that, there is no evidence for that. But you can sit down and think for a while and come up with that idea, which isn't rational; how can it be rational to start a war in Ukraine? Now that Finland is joining NATO and hopefully us too. He has lost the Baltic Sea, it is a NATO possession, he has extended his border with NATO, he has got the whole West to unite against him, strategically, it has gone to hell for Putin. So, since this is not rational, it is not possible to apply AI at the political level. And if the AI were smart and logical, it would all be rationalized away. Do you understand what I mean? Therefore, it becomes very clear that it is possible to apply AI at the lowest level. But at the highest level, with the highest political leadership, the highest military leadership, there it is difficult to apply logic, rationality, predictability.

This is an example of how the participants put high value on having social understanding in order to be able to wage war. They all describe war as a social, cultural, emotional and moral project which would not occur if total logic was applied. They also describe how it is that nature that gives it meaning, which is a idea that coincides with Hunts (2015) point of view that the value of life is socially constructed, one might even extend that statement and say that the value of human artifacts are socially constructed and so is the value of human ideas - which war is. And so we can see it through the ideas of Weil, where she describes war as the ultimate force - the force which kills. War is more than resource destruction because we put a value on human life based on the fact that we can share emotions (such as love) with other

humans, which allows us to make social contracts. Emotions being transrational can therefore be seen as the reason war exists as well as the reason humans can stand waging it, and end up doing so.

Emotions as orienting and motivation in war

Participants themselves use the words 'emotion' to describe something humans have that technology lacks, they describe 'emotion' as being important for decision making on the front lines. Emotional connection as the basis for having a functioning operation is a recurring theme throughout the interviews, as seen in this short quote; "The war is based on us trusting each other. Thereby it includes a social part". They also describe this not to be the case in the "handling of simple data", but in "impact decisions, that is when the emotions hit". This refers to the difference in GRO and KRO aspects of army operations. An example where the participants divulge more on the subject on and definition of 'impact decisions' is the statement that AI should not make decisions about human life because there is a responsibility concerning human life that should be handled by another human. The meaning of the participant's statement can be connected to the idea of a holiness of human life that risks being devalued as a consequence of deviating from the responsibility they describe, as I will go into further below.

I would also add a point made by participants about trust in oneself along with trust in comrades. They described it as such; avid AI-users risk being incapacitated when those tools are taken away, this is an obvious reason not to accustom soldiers and officers to AI-supports for decision making. Learning to handle the risk of incapacitation is part of developing decision making skills, which in turn is learning to trust oneself and do it quickly. This is finding peace with the decisions and priorities, and that the participant believes this to be easier when there is clear emotional traceability to the made decision, not only traceability of

the rationale. Under time pressure it is impossible to take part in a summary of why, when and how a decision was made. There needs to be trust immediately, everyone has to make the decision to trust, without taking part of the motives since it would take too long - no matter if it is produced by an AI or a coworker. Here, my interpretation is clear, the participants consider trust to be a social phenomenon, an emotion clearly connected to sociality and relationships. I have interpreted it this way since the participants have presented a narrative where the risk of mistrusting a comrade - wanting to take part in the reasoning behind a decision in the aim to gain comfort and serenity with the decision - is low. But the risk of this happening with technology such as AI is presented as higher. This is due to the fact that love can exist between humans. Love as an anti-rational social contract (Collins, 1992) that comforts and facilitates action, therefore being able to trust that a comrade will care the same way you would and about the same things is easier than being able to trust AI since humans can love - be emotional, be irrational. The responsibility is then constituted by a capacity for emotional engagement. There can of course be no social contract established with machine intelligence, leading it to appear as less trustworthy when it comes to respecting emotional arguments for making a decision. One participant pinpointed this by stating that AI is limited in making decisions because it might not understand the concept of "bad will", which he defined as long term cultural or socio-psychological effects. "It is logical but abstract" he added to clarify to me that these are aspects of decision making that might not be rational but are important and tangible despite that. Because a management system is closely entwined with the leadership within it, emotional aspects are utterly relevant to understanding the system at large as they constitute the second layer of the social contract. It is not simply that the participants describe their occupation but also that they describe a worldview where their work has meaning.

We base our management a lot on personal contact. I believe that if the system had presented us with smart solutions, with smart information, then there would be a risk that we would rely more on that information. Then we would talk less and then we would lose something... I think we would lose something there. We must, we must, talk to each other precisely because the information can say one thing but you can choose to do differently. You can choose to use your unit in different ways. Which means that you can still do a lot of things. An AI can say 'this option is bad', but no; it might gain something the AI does not understand.

I see this 'something' as being the emotional level, the trust that binds the unit together, motivates them in their everyday work, motivates them to stay within the organization and becomes a vital part for sustainability within the army.

The participants describe scenarios where decision making must reflect the hope of the leader and convey hope to the team. I have interpreted hope as an emotional response in this thesis - same as trust or meaning. All of the participants have shared the view that war - to them - is more than a string of situations, it is also a becoming of humans in a group. They, as a unit and as an army, must not just survive physically but also mentally and socially. Wars give meaning to nations as it creates a sense of national pride, which is also an emotion. It also places events and people into a historical context and allows for story telling and makes sense of what has happened in a way which gives it meaning, this is a social construction process that Weil relates to mythology, history and the existence of nations. It creates value, something that could be at risk if the decisions were delegated to machines. Although they are designed by humans, the immaculate rationality in which AIs analyze, filter and recommend, maroon humans on an island of rationality, which is a place of little comfort. 'Meaning' as an

emotional process must be maintained to motivate those in war to move forward and carry out acts under great stress. These acts are in themselves bound to be horrid because they are constituted by force against humans. This is an impossible task due to the fact of the holiness of human life and therefore needs to have meaning to be justified and not to be soul-breaking.

Understanding of Holiness leads to Trust and Meaning

The theme of holiness relates to the participants' discussion of human rationality in relation to an artificial intelligence's rationality. They understand human rationality to be bounded by the existence of emotion, much like it is described in Simon. The participants mean that this can lead to a selective blindness that can be used like a sorting tool, where options that trigger 'bad will' within the group, organization or society will be more effectively avoided. That which is called 'bad will' seems to run deeper than simply being uncustomary or triggering of negative emotional experiences - that awakened interest to understand it further. I have documented an ambivalence in the army context when it comes to AI, using AI is described by the participants as an ethical concern. They all expressed the idea that there are different decision making levels which could be supported in different ways, where AI on lower levels could be incredibly valuable while AI on higher levels will be hard to incorporate because rationality is bounded on those levels of decision making (i.e. it is transrational, cultural and emotional). I interpret this as being related to the question of how the value of human life will be affected by those who make the decision, as it is socially constructed. This can be understood by understanding the holiness of life. The risk of devaluing human life renders technology as utterly rational as AI a threat to the feeling of meaning. The sentiment of 'bad will' is then put in a context, 'bad will' can be created in a group or between groups if one part has disrespected and therefore risks devaluing something that carries great worth. Such as, for example, the idea of the holiness of life.

The participants mention that traceability of decisions are of importance in the same sentence as stating that there is little time to trace decisions. This combination of statements have led me to interpret this not to mean being able to follow the logic of the decision basis. Instead it connects to the idea that there is someone giving the order of the decision that can feel pain and remorse for having made the decision. If a human made the decision but shield themselves from painful and abstract emotions there seems to be a fear that those decisions might be made more lightly. If the decision maker does not feel the potential pain of the decisions it also makes them less trustworthy as it puts their ability to love their peers into question, consequently upping the risk to their life in the eyes of others. Because love does not only make partaking in a group feel more meaningful, it also makes one value someone's life more highly because you are chosen by them. Of course all interview participants are aware that there can be no effect without risk but they also explain that it is more understandable, forgivable and also more meaningful if the decision is made by someone who can understand the holiness of a life.

No matter how many security measures one builds into a device there will always be risk. And some risks are not acceptable but not inconceivable either, like the death of a human. If a human causes it, it might be more understandable than if a machine causes it.

If we agree with Weil's (1955) depiction of war (which is presented in the preface) as a stressor so large it annihilates the soul, we can make sense of the importance of the social group. This is relevant to understanding why the narratives of technology include themes of irrationality, emotions and sociality. 'Bad will' - and similar references that the participants have made throughout the interviews - risks turning the holiness of the human into something so unique but banal as a blade of grass sitting on a field. It also risks diminishing the social

processes creating trust, hope and love which give vigor to the souls of those under the threat of death. It places the mythology created around war - which makes it bearable - beyond reach because it is based on rationality, and in a rational world war should not exist. It is not only a practical or realistic approach that has led the participants to focus on the possible technological solutions that they have when I asked them about possible applications of AI. The ones mentioned were advanced mapping, warehouse balance, modeling and a better search engine. These examples are non-threatening while self driving vehicles, loitering munition, decision recommendation, triage support and similar are equally real but much more threatening because AI are acting in accordance with programmed orders and do not - can not and should not - consider the case to case on an emotional level. The cultural and social aspects of the consequences of technological advancement will affect our emotional self and our souls as humans, and in contact with other humans.

If we would connect the idea of the Holiness of Life with a more traditional holiness, that of God, it might become more understandable why these ideas are so firmly rooted in the world view shared by the participants, as it places today in a historical context. It is the idea that we as humans might only break the ten commandments and kill by the mercy of God. It is God that might forgive, and therefore make sense and allow a worth to be given to the death of the other - as a necessary evil. If one sees God as a human created idea, it is we as peers that do the forgiving, and merciful interpretations of the one who has killed. If a rational machine acts out the decisions for killing there can be no place for forgiveness of the act, because AI is a what and not a who, and no place for God. If it is a rational machine that has analyzed the circumstances and decided on the killing the situation is the same - and even more forgivable. That idea both makes war more vile and less understandable for our emotional psyches. The risk of devaluing life will therefore be ethical as well as philosophical. This is relevant when discussing practical aspects of the application of AI in military use, as war is a phenomenon

that involves the whole society (not only the army) a narrative around it is needed for it to be meaningful. Weil writes that war - because it is such a brutal and destructive force to both society and the person - needs to end in an extreme and tragic way for the soul to receive deliverance.

Any other solution, more moderate, more reasonable in character, would expose the mind to suffering so naked, so violent that it could not be borne, even as memory. Terror, grief, exhaustion, slaughter, the annihilation of comrades — is it credible that these things should not continually tear at the soul, if the intoxication of force had not intervened to drown them?

(Weil, 1955)

I interpret her to mean that although rational actions could potentially minimize the extent of the war, they would risk making it meaningless. If it simply stopped and no one won and no one lost, both sides would be struck by the rational insight of meaninglessness. This relates to creating a narrative of meaning, the mythologies of the war - much like knights and dragons - that give meaning to the deaths and the losses.

I believe Weil's (1952; 1955) view of humanity and its inherent holiness or worth can be used to make sense of the reasons why AI decision making is a complex subject - especially within military use where dealings of life and death are unavoidable. It is contradictory to use rationality in irrational places, to use AI in decision making could potentially minimize the harm but also serves no point in war as the reason war exists is to do harm, to either a political state or the humans who give it meaning and power. Therefore ML-enhanced tools could potentially be used by human operators but even that appeared as almost disgraceful or

unethical in the narratives of the participants. This reaction, I believe, is partially irrational and emotional - and therefore has a higher worth to the discussion of ethics in war than the rational idea of using AI as the next natural revolution of military technology.

Discussion and Conclusion

The research question pertains to what the attitudes of senior advancement officers in the Swedish Army convey about the social implications of potential military AI application. It also includes a second aim to investigate what is needed when doing such research to understand those implications. With decision-making at the heart of Command and Control (C2) and AI potentially altering the nature of work and authority, AI touches at the heart of C2 work and deeply affects the core of the military experience. Hence, this thesis concurs with Satori & Bocca's (2023) emphasis on the need for studies problematizing the conversation about AI. The empirical findings demonstrated how AI was framed in terms of rationality, reminding of economic's notion of perfect rationality.

This work has centered on interpreting the officers narratives and shedding light on aspects of the culture which they represent - in the face of potential AI applications. The narratives received in the study have presented it to be irrelevant for the officers whether or not AI is rational or could make decisions of human life that statistically would have as high a success rate as human decision making would have. Instead the officers have presented a narrative that the value of human life is connected to emotions. The value of human life is socially constructed through interaction between us, where emotions are both the means and the result through which meaning is created. As machines like Narrow AI work by following the rules set up for them without a flaw, no human could contest its rationality unless it is by questioning what we build into them. AI are fast rationality machines, which encompasses the calculative capacity of many potential uses. However, rationality and war do not go hand in

hand. The participants have shared a narrative where war is instead a social process of abstract values (i.e. cultural and political) in contest to win a veiled future. From the viewpoint of the army experience, it is a cultural and emotional affair rather than a statistical and practical one. It is not relevant to this discussion of AI in army use whether or not the decisions made by AI would be better or as good as human-made decisions. Because the focus lies on the attitudes of the officers and what the implications of these might be.

The emotional, social and political are placed in clear contrast to AI, which is rational to a fault, never swaying from the guidelines it has been given. It is my conclusion that using AI in war would mean trusting the rationality which AI also uses in its other applications. This could lead to harvesting the potential benefit of AI in management - which is its time efficiency. AI can present viable options for action at impressive speed, but there will not be time to trace or unpack the reasoning behind. This is where it becomes a question of trusting, but trusting a machine is in this case the same as trusting “perfect” rationality. This rationality can be simplified as this; three are more than one, one person needs one piece of land to live on. That is not human culture today, it matters who gets which piece of land, it matters if a human is ours or someone else's, how we feel matters. This can be programmed into the machine of course but it is a complex system of value and beliefs. Because we are not pebbles on a beach, we are human and each body is a person that is a world, which is something to regard with Holiness, to value, that matters. This view of Holiness rests on an emotional reading of, and attachment to the world. Although it can be programmed into a machine by a human designer it can not be felt and the risk of it failing is brought to light. Holiness of life and emotions are the basis of Meaning in life, if we disregard the Holiness of life war will not only seem pointless but our own and the fates of humans around us will be meaningless. If the world was ruled in order with perfect rationality there would not be war. But it is not.

Notwithstanding Griffin's (2023) claim for the need for AI literacy, the military experience in the face of AI illustrates aspects of army cultural traits among the participants. This is a portrait of the attitudes of the officers and the meaning behind. This may suggest whether and how AI as an innovation can be seen as promising or problematic – or both. From a 'cultural AI' perspective, it is crucial to understand how AI is framed and embraced or resisted in the context of military culture and C2. Especially given AI's potential to transform the nature of work and authority. This is why the conclusion has been that to study AI one must include studies of the culture which the AI is meant to be included in. Furthermore, such findings may conceive more realistic aspirations for a responsible development of AI (c.f. Schiff et al., 2021) by addressing not only technology per se, but also its problems and contradictions (Bareis & Katzenbach, 2022). This thesis specifically adds to Graves' (2023) discussion of AI as a potential challenge to professional aspirations – not least in terms of the formation of virtue – specifically when engaging in war.

I have understood, after interpreting the narratives of the participants of this study, that the value of life and emotions are at the core of the military experience. It is the contrast of rationality to emotion that creates the distrust the officers experience towards AI in decision making. The issue I have interpreted, which has led to the conclusion of this thesis, is that the army occupation puts such pressure on the individual that life easily can seem meaningless, as one is confronted by the risk of death (of the self and one's friends) in every task. In facing potential meaninglessness the emotions trust and hope can make up a defending mechanism, as they are the basic ingredients for the emotion of love, i.e. a meaning maker. Love therefore can be put in contrast to rationality, as trust is not based on the success rate of the decision maker but rather the feeling one has toward them.

The realization that any study of AI needs to include study of the culture has led me into an attempt to understand why it seems so impossible for the participants to accept a machine as a decision maker about human life. There is a link between emotions and the idea of the Holiness of human life. The Holiness of human life is not measurable or something that can be linked to traits or uses of the individual human. Weil philosophizes that human life is valuable despite her personality, and that any attempt of defining who we are and how we are valuable removes us further from the Holiness. In summary life is holy because it is a alive person. This Holiness risks being lost if quantified or rationalized, peddles can be counted but humans in war are all holy and it is a terrible thing to hurt even one. I have interpreted this to be the source of the force of war and its power. It has also been reflected in the sentiments of the participants, that to possess this Holiness also provides one with an understanding of it. This can be recognized by others, therefore only humans should make decisions about human life. This is out of respect for the Holiness, because the risk of wrongdoing is lesser if there is understanding of the Holiness but also because the shame and burden of harm will be visible to other humans - and therefore can be fitted in to the mythology of life, understood or forgiven, i.e. given Meaning.

It is its lack of understanding of Holiness that risks leading to an experience of meaninglessness in army personnel when having to trust the decisions it has aided in. But it is also this lack of understanding of such abstract things as Holiness that comprise perfect rationality, which in turn makes AI uniquely different from the human mind and useful in other aspects. However, this rational ability risks leading to distrust in the decision as a whole. Although the decision might be made by a human in the end, the idea of disrespect toward the Holiness of life leaves a sour taste to all decisions AI might have directed. This might then risk a loss of hope among the group, for if the process is stripped of emotion then so is the life it decides about, one might as well embrace another state of emotionlessness - death. Death

then appears inescapable, or even worse - meaningless. It becomes what Weil describes as Death of the Soul. It is the potential effect on those who the AI is aimed to aid that make understanding the culture which AI is employed in a priority of AI application. If it does not aid them emotionally, if attitudes are affected negatively, perhaps adoption should be reconsidered.

References

- Asplund, J. (1983). *Om undran inför samhället*. Argos/Palmkrons Förlag.
- Bareis, J. & Katzenbach, C. (2022). Talking AI into being: The narratives and imaginaries of national AI strategies and their performative politics. In *Science, technology, & human values*, 47(5), 855-881.
- Brehmer, B. (2013). *Insatsledning*. Försvarshögskolan, Stockholm.
- Brunyé, T.T., Brou, R., Doty, T.J., Gregory, F.D., Hussey, E.K., Lieberman, H.R., Loverro, K.L., Mezzacappa, E.S., Neumeier, W.H., Patton, D.J., Soares, J.W., Thomas, T.P., & Yu, A.B. (2020). A review of US Army research contributing to cognitive enhancement in military contexts. In *Journal of Cognitive enhancement*. 4:452-468.
- Brown, M. & Rodriguez, S. (2019). 'World War AI': The First Shot Will Be Simulated. In *Army*, April 2019; 10-11.
- Cao, L. (2023). A new age of AI: Features and futures. In *IEEE intelligent systems*. January/February 2022. 25-37.
- Carpenter, S. (2001). Sights unseen. In *Monitor on Psychology*, 2001 April 1, 32(4).
- Cave, S., Coughlan, K. and Dihal, K. (2020). Scary Robots: Examining public responses to AI. In *AAAI/ACM Conference on AI, Ethics, and Society*.
- Collins, R. (1992). *Sociological insights*. Oxford University Press, London.
- Czarniawska, B. (2004) *Narratives in Social Science Research*. Sage Publishing, London.
- Graves, M. (2023). Deification. In Long, S. & Miles, R.L. (Eds.) *The Routledge companion to Christian ethics*.
- Griffin, J.F. (2023). *Investigating curriculum design for implementing Artificial Intelligence literacy education for senior leaders at the military education institutes*. PdD thesis. Graduate school of education. Northeastern University, Boston, MA.

Dignum, V. (2021). *Responsible Artificial Intelligence: How to Develop and Use AI in a Responsible Way*. Springer International Publishing, Berlin.

Goldfarb, A. and Lindsay, J. R. (2022) Prediction and Judgment Why Artificial Intelligence Increases the Importance of Humans in War. In *International Security*, Vol. 46, No. 3 (Winter 2021/22), pp. 7–50.

Hicks, J. A., & King, L. A. (2019). Love as a meaning-making emotion. In *Review of General Psychology*, 23(1), 1-12.

Hogarth, R. M. (2010). Intuition: A Challenge for Psychological Research on Decision Making. In *Psychological Inquiry*, 21: 338-353, 2010.

Horowitz, M. C. (2018). Artificial Intelligence, International Competition, and the Balance of Power. In *Texas National Security Review*, Volume 1, Issue 3 (May 2018).

Hunt, L. M. (2015). The value of human life: A sociological perspective. In *Social Forces*, 94(3), 1083-1108.

Iagulli, P. (2016). Randall Collins and the Sociology of Emotions. In *Italian Sociological Review*, 2016, 6, 3, pp. 411-429

Johnson, J. (2022). Automating the OODA loop in the age of intelligent machines: reaffirming the role of humans in command-and-control decision-making in the digital age. In *Defence Studies*, 22(2), 209-224.

Kepe, M. (2020/06/15). Considering Military Culture and Values When Adopting AI. In *Small Wars Journal*, Retrieved from <https://smallwarsjournal.com/jrnl/art/considering-military-culture-values-when-adopting-ai>

Kissinger, H. A., Schmidt, E., & Huttenlocher, D. (2021). *The Age of AI: And Our Human Future*. Crown Publishing Group, New York.

Krafft, P. M., Huang, H. A., Young, K. R., Bugingo, G., & Katell, M. (2020). Defining AI in policy versus practice: Exploring the implications for National Security. In *Journal of Information Warfare*, 19(1), 46-60.

Lee, C. (2023). The role of culture in military innovation studies: Lessons learned from the US Air Force's adoption of the Predator drone, 1993-1997. In *Journal of strategic studies*. 46(1): 115-149.

Liu, Z. (2021). *Sociological perspectives on artificial intelligence: A typological reading*. Sociology Compass.

RAND Corporation. (2020, June 10). *Considering Military Culture and Values When Adopting New Technologies*. Retrieved from <https://www.rand.org/blog/2020/06/considering-military-culture-and-values-when-adopting.html>

Rorty, R. (1992). *Objectivity, relativism, and truth: philosophical papers, Vol. 1*. Cambridge University Press, London.

Russel, S. (2023). AI weapons: Russia's war in Ukraine shows why the world must enact a ban. In *Nature*. 614: 620-623.

Simon, H. A. (1991). Bounded rationality and organizational learning. In *Organization Science*, 2(1), 125-134.

Steedman, P. (1991) On the relationship between seeing, interpreting and knowing. In F. Steier (ed.), *Research and Reflexivity*. Sage Publications, London.

Steen, M., van Diggelen, J., Timan, T. & van der Stap, N. (2023). Meaningful human control of drones: exploring human-machine teaming, informed by different ethical perspectives. In *AI and ethics*. 3: 281-293.

Satori, L. & Bocca, G. (2023). Minding the gap(s): public perceptions of AI and socio-technical imaginaries. In *AI & Society*. 38:443-458.

Schiff, D., Fanti, A., Rakova, B., Lennon, M. & Ayes, A. (2021). Explaining the principles to practice gap in AI. In *IEEE Technology and society magazine*. June 2021.

Soare, S.R., Singh, P. & Nouwens, M. (2023). *Software-defined defence: Algorithms at war*. The International Institute for strategic studies, London.

Szabadaföldi, I. (2021). Artificial Intelligence In Military Application - Opportunities And Challenges. In *Land Forces Academy Review*, Vol. XXVI, No. 2(102), 2021.

Taylor, I. (2021). Who is responsible for killer robots? Autonomous weapons, group agency, and the military-industrial complex. In *Journal of applied philosophy*. 38(2): 320-334.

Weil, S. (1952). Human Personality. In R. Rees (Ed.), *Simone Weil: An Anthology* (pp. 166-171). Penguin Books, New York.

Weil, S. (1955). The Iliad, or the Poem of Force. In R. Rees (Ed.), *Selected Essays: 1934-1943* (pp. 103-121). Oxford University Press, London.

Yampolskiy, R. V. (2018). *Artificial Intelligence Safety and Security*. CRC Press Inc, Boca Raton.

Zhang, A. & Orlikowski, W. J. (2022). Regenerative Coordination: Working with Algorithms to Produce Live Services. In *Academy of Management Proceedings* Vol. 2022, No. 1 (6 July).

Zuboff, S. (1988). *In the Age of the Smart Machine*. Retrieved from <https://shoshanazuboff.com/book/books/in-the-age-of-the-smart-machine/>

Acknowledgements

I would like to thank my mother for both forcing and spurring me to be brave, and for seeing me for what I am. Thank you Petter for reminding me of the benefits of a steady income and encouraging me to seek out a new path in life. Thanks to Caroline who invited me to Stockholm and into a community. Thank you to Sara for making FHS a place to giggle. Thank you Magnus and coworkers for choosing, guiding and allowing me. Thank you Erik and Martin for welcoming me with open academic arms, and for sternly telling me off when I lost *it*. Thank you Ylva, for making every small success into a shared joy and for reading every word I have written with love, although they are often jumbled and too many. Thanks Kris, with you as a windstopper this storm has felt like a breeze.

Thank you to all others involved in this somewhat unlikely journey, the love you have shown has been profoundly felt and is very much returned. It gives my life meaning.

Pepule Majken Brodrej

2023-05-25

Stockholm