Moral decision making in network enabled operations

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Christine van Burken

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At the time of writing this, the world witnessed a tragic event: the crash of flight MH17 from Malaysian Airlines. All passengers, 298 people, the majority of whom were Dutch, were killed. I could mention various things from this dissertation - misinterpretation, pitfalls, directions, and qualifying functions of military technology - but it cannot soften the suffering in any way of those who are left behind. We are left with many questions. During the five years that I worked on this thesis, there were times when there were more questions than answers. Sometimes, people critically probed me about the pricklyness of my research on military technology. However, I have never regretted chosing this subject for my research and I hope that a better understanding of technology on the battlefield, somehow, contributes to a more wise use of it, for the sake of us all.

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1 Introduction

In the morning of April 6, 2011, at the Sangin river valley in Afghanistan, the pilot of a remotely piloted aircraft[1] called Predator, performed an airstrike that turned out to be a friendly fire incident, meaning that the strike had hit his own troops. A selection of the article in which the incident was later described is inserted below. It runs as follows:

> At 8:40 a.m., the Predator crew spotted the heat signatures of three people. At 8:41, a burst of muzzle[2] flashes emanated from the group.
>
> A critical question was the direction of the muzzle fire. If the direction was east, toward friendly lines, they were potential insurgents trying to kill U.S. troops. If it was west, away from friendly lines, they might be U.S. personnel or other allies. The Predator crew and the forces in Afghanistan proceeded as if the muzzle fire were coming toward friendly positions. Only minutes earlier, ground forces had reported contact[3] with the enemy over the Predator crew's radio link. As the Predator circled over Sangin, its ARC-210 radio[4] received transmissions from the ground and fed them into the drone's satellite link, which relayed them to the Predator control station[5] in California. Given the situation, the Predator crew was furiously scanning for targets to strike with one or more of the plane's Hellfire missiles[6].

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1 Remotely piloted aircraft (RPA) is the preferred name in the military for airplanes that are also known as unmanned aerial vehicles (UAVs), unmanned aircrafts or drones.

2 Muzzle flash is the visible light at the barrel of a firearm during shooting.

3 Contact with the enemy (or "troops in contact" (TIC) in military jargon) means that there is an ongoing, active firefight.

4 ARC-210 is the name of a family of radios for military aircraft, enabling communications from the ground to the Predator.

5 The crew of the Predator, including the pilot, was controlling the unmanned aircraft from California.

6 A Hellfire missile is a 100 lb-class air-to-ground precision weapon. It derives its name from its initial design as a missile to be launched from a helicopter (Helicopter Launched, Fire and Forget Missile).

> At 8:41, the JTAC[7] in Afghanistan sent the "9-line" message containing coordinates for a strike once approved by the ground commander. The analysts at DGS[8] Indiana (DGS-IN) also saw the targets in the video feed. Their leader chimed in with a series of online messages raising questions about their identification as enemy.
>
> If the DGS-IN analysts meant that the figures were too grainy or shadowy to say for sure whether they were U.S. troops, but that the enemy would not be firing in that direction, they were unable to convey this information unambiguously, partly because they did not have a voice link to the Predator crew.
>
> After the strike, a member of the DGS team in Indiana told investigators about his team's reservations about the strike:
>
> At no time, to my knowledge, did any of the crew members feel comfortable firing upon the personnel," according to written testimony from an Air Force staff sergeant stationed in Indiana, whose name was redacted. (Laster and Iannotta: 2012)[9]

In this friendly fire incident an American marine staff sergeant and navy hospitalman were killed by their own troops who operated the aircraft from thousands of miles away. The friendly fire incident was the result of (a number of) moral decisions[10]. In these decisions, technology played a role, such as the thermal camera that provided the images. In the course of Laster and Iannotta's article a solution to prevent friendly fire incidents in the future is suggested:

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7 JTAC stands for joint tactical air controller. A JTAC guides the pilot from a ground position during an airstrike, to make sure that the right target is hit and no civilians, infrastructure or allied troops are harmed.

8 DGS stands for Distributed Ground System. It monitors real time video feed from unmanned aerial vehicles hovering the skies over any military area of operation. The DGS servicemembers process, exploit, and disseminate the video feed, providing intelligence to the ground commanders and war-fighting forces.

9 Laster and Iannotta gave this account of the Sangin fratricide incident based on transcripts of interviews conducted by Marine Corps investigators and the detailed timeline contained in the report. All times are local Afghanistan time.

10 More on moral decision making follows in Section 1.5.

> The investigators recommended that in the future, any intelligence or information that could prevent fratricide or a violation of the Law of Armed Conflict be posted to the crew's main chat room so that the entire crew would see it. However, despite the pilot's comments and their own recommendation, the investigators said they were doubtful that posting the conflicting information would have changed the outcome in Sangin on April 6.
>
> It was "likely that the strike would have occurred anyway due to the ground force's perception of friendly disposition and the source of enemy contact," the investigators said. In a January interview with Air Force Times, Air Force Maj. Gen. Robert Otto said the investigators' conclusion "rang true" about the near-inevitability of the mistake, given the circumstances. "You have to understand, the Sangin Valley is bad-guy territory," Otto said. "If you don't know where the friendlies are, it's pretty difficult for you to know [what] to overturn based on what one of the supporting forces thought". (ibid)

The solution is sought in adding more technology, by equipping the crew with voice communications on top or instead of the chat communications. One of the spokesman in the article however adds that merely adding more technology may not be a solution for solving moral concerns in decision making on the battlefield:

> Switching from listening mode to two-way conversations won't be as simple as flipping a switch. "There are technical and procedural rules that need to be followed. Some of those rules require installation of additional hardware to enable the two-way communications," Otto said. The right balance also will need to be struck on the issue of voice communication procedures, he added. "There's a point when a discussion's over," he said. "And while we always want somebody to have the ability to speak up when they fear a rule-of-engagement violation or wait a minute, there's women and children, you have to balance fighting a war by committee with a ground-force commander who is presumed to have the situational awareness and has the authority to say, we need to strike this target. (ibid)

The selected passages from Laster and Iannotta's article quoted above set the scene for the topic of this dissertation: moral decision making in modern military missions in which technology is ubiquitous. For now, moral decision making, is defined as *cognitive acts and judgements associated with norms, or with facts as they relate to norms* (Casebeer and Churchland: 2003). Later on in this

introduction an elaboration and justification for this loose definition will be given. The current debate on military technology, from newspaper articles to practical philosophy journals, focuses on drones, such as the Predator in this article. The discussions on legal and ethical aspects of the use of drones are important, but the underlying information and communications technology (ICT) system, without which a drone cannot even be conceived of in a meaningful way, is not addressed. This dissertation aims to bring clarification on what the use of ICT on the battlefield means for moral decision making.

> The research question of this dissertation is: How does technology affect moral decision making in network enabled operations?

In this introduction a clarification of some basic concepts that are important in this dissertation are given. These are network enabled operations (NEO)[11], normative practices and moral decision making. I map out the current status of ethical research on the topic of NEO and present and illustrate the outline of this dissertation. The philosophy of technology will serve as a theoretical background, because the research concerns an operational organisation reality that is strongly technologically mediated.

1.1. Terminology: Network Enabled Operations (NEO)

The military is increasingly making use of network technology to facilitate cooperation and information sharing within and between their organisations and also with non-military agencies. In these complex and ad-hoc, multinational settings, the label NEO is used to describe the added value of a well-networked organisation. The term NEO broadly describes the combination of strategies, emerging tactics, techniques, procedures, and organizations through which a networked force is believed to create a decisive advance (Alberts et al.: 2002; Alberts and Hayes: 2006; Alberts: 2007; Smith: 2006; Lambert and Scholz: 2005). Different countries refer to NEO in different terms, for example, Network

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[11] In this dissertation the term NEO or NEOs is used, which is equivalent to NEC (Network Enabled Capability), NCW (Network Enabled Warfare), NBD (Network Based Defence), and the like.

Enabled Capabilities (NEC) in NATO, the UK, and the Netherlands; Network Centric Warfare (NCW) in the U.S. and Australia; Network Centric Operations (NCO) elsewhere. There are slight differences between these approaches (see (Boyd et al.: 2005).

The underlying vision for establishing these complex and ad hoc multinational environments is the linking up of decision-makers via IT and communication networks in order to enable synchronised and therefore improved decision-making. The idea is that people with authorised access to the network can, wherever they may be in physical or hierarchal terms, log in and, for example, coordinate operations and retrieve and submit relevant information. Much has been written about network-enabled operations (see for example the CCRP series, in which Alberts and Hayes made major contributions (Alberts et al.: 1999). The use of network and information technology to facilitate cooperation and information sharing within and between the military organisations and also with non-military agencies during international missions has increased over the last few years. Military personnel working in NEO environment face more and more complex and ad hoc tasks. The social requirements of dealing with multi-national parties, the spatial dimension of transferring information over greater distances, the legal implications of exchanging information between allies are only a glimpse of the complex environment in which a military has to work (Essens: 2008). In Chapter 3 I structurally analyse the complexities by making use of an analytical tool called multi-aspectual analysis. In Chapter 2 some pitfalls that may come with this assumed improved type of cooperation, which enables for ad hoc sharing of military capabilities, are pointed out.

An example of NEO is the ability to have immediate air support in the case of a patrol coming unexpectedly under fire, or, as will be further elaborated upon in Chapter 2, in case of the hijacking of trucks that are assigned to a mission (in the Kunduz airstrike incident). Information about a patrol under attack is available at all levels of command, vertically from own command lines and horizontally from other units. This differs from the traditional hierarchically organised flow of information and coordination. Being better informed, with opportunities of instant organisation should enable a more adaptive approach to dynamic operational situations. Alberts and Hayes have been laying the groundwork for this NEO approach to military missions in the early nineties (Alberts and Hayes: 2003; Alberts et al.: 2002; Alberts et al.: 1999). Several scholars have further refined their theories (Moffat: 2003; Walker et al.: 2009; van Bezooijen: 2011).

Van Bezooijen (2011) investigated psychologically relevant characteristics of coordination in virtual teams and a special annual conference is devoted to this topic (International Command and Control Research and Technology Symposium (ICCRTS))[12]. In this dissertation, the term 'network' should be understood in a broad sense. It is the agglomerate of technology and organizations, which is broader than a social network or a strictly technological network. NEOs exist of a combination of ICT, technological assets (such as weapons), organization and people. In essence, the potential of NEO is to achieve enhanced military effect through the better use of information and collaboration. From the Sangin case that was presented above, it becomes clear that it is not necessarily true that NEO leads to better military effect. In this incident a marine staff sergeant and a navy hospitalman were killed during a mission to sweep a stretch of farmland and residential compounds along a key road in the Sangin Valley. They were killed by their own forces that were operating from thousands of miles away from where the incident took place. The empirical facts of this incident have been scrutinized in legal and technical reports describing the incident, trying to sort out how this could have happened and who was to blame (see Laster and Iannotta: 2012). This case has philosophically relevant aspects too, that will be systematically addressed in this dissertation. They relate to moral decision making (the focus of this dissertation) in networked military operations (the context of this dissertation).

1.2. Research on moral decision making in networked military operations: the current landscape

The key place to look for literature on moral decision making in NEO are the knowledge platforms for network enabled operations, of which the largest is ICCRTS. Their proceedings give no suggestions on the research on ethical issues or moral decision making. Further literature search in different military databases, databases on ethics, general scholarly online databases (for example *Journal of Military Ethics*, Proquest Military Database, Google Scholar, etcetera)

[12] The full name of the conference is the International Command and Control Research and Technology Symposium (ICCRTS). More information: http://www.dodccrp.org/html4/research_ncw.html

on moral competencies of military personnel suggests that virtually no research has been done on the ethical aspects or moral decision making in network enabled operations. The absence of literature on this topic raises two critical questions, namely whether network enabled operations have gone out of fashion lately, before the ethical concerns could be raised, or if the ethical questions are raised in a disguised manner and are therefore not recognized as such.

The first question can be answered negatively. Network enabled operations are the dominant way of doing military operations, although they are not always called network enabled operations (but for example network centric warfare, net-centric warfare, network enabled capabilities). The description of a network enabled operation that was given in the previous section applies to current and recent missions. The case study in this introduction is an example, but the International Security Assistance Force (ISAF) mission which started in 2001 and which still runs, the current anti-piracy mission in Somalia (Operation Atalanta, also known as European Union Naval Force Somalia (EU-NAVFOR-ATALANTA)), are examples of missions where different military and non-military partners are connected through ICT.

For the second question, about whether ethical questions are not recognized as such, a wider scope is taken, taking into account multiple discourses in different disciplines. Several authors, in particular from the US Army, have published on moral virtues and skills in the military (for example Cook: 2008; Lucas and Rubel: 2006). This gives a suggestion on where to look further. In the next section I provide an overview of what was found to be relevant literature concerning studying moral issues in decision making behaviour of military personnel in a NEO environment. Since including empirical data on these issues has a prominent place in this dissertation, also empirical data in literature was part of the scope for literature search.

There are virtually no findings in literature and no established field of research on moral decision making in NEO exists (yet). For this reason I propose three broad categorizations on the findings that were closest to the topic of moral decision making in NEO. It is a mishmash of literature from different disciplines. These are (1) *Philosophical discussion on military virtues*, (2) *Empirical behavioural research on networking militaries* and (3) *Empirical research on virtues and moral competencies of militaries*. The findings for the different directions are described below.

(1) Most recent articles on military virtues are published in the *Journal of Military Ethics*. Even a special issue was dedicated to virtues in 2007 ("Virtue Ethics and Military Ethics"). Olsthoorn (2011) wrote a book on Military Ethics and Virtues for the 21st century. However, no attention was paid to how these virtues affect decision making of militaries working in a highly technological environment, or how these technologies affect moral behaviour. (Robinson et al.: 2008) provide a helpful overview of the different sets of virtues per nation in their book on ethical programmes at different international military academies. Their overview is relevant for research on NEO, because working in a NEO environment implies working in multi-national settings. Awareness of the differences in what is considered a military virtue and of the different appreciations of military virtues might support successful cooperation. (Verweij et al.: 2007) have suggested research along these lines as well:

> It would be worthwhile to implement - and evaluate - such [sort of supranational ethical awareness among the multinationals' employees] approaches when setting up military missions involving national contingents that have not been working together before. (2007, 36)

(2) There are a few recent articles that focus on the human component of NEO, especially in Australia in the team of Warne, but unfortunately their publications are restricted to reports and publications in proceedings (for example Warne et al: 2004). Their publications are mainly focussed on psychology, social and behaviourial aspects and do not address the ethical questions in depth. Some (empirical) work on psychological and behavioural issues is published in proceedings of the ICCRTS, but none of them focuses explicitly on ethical aspects of NEO. Thus far, the discussion on moral implications of working in a NEO environment is more or less absent and what has been published has not made it to the academic floor.

(3) A relevant academic publication is from (Matthews et al.: 2006)), who empirically studied character strengths and virtues of military leaders. Again, his research does not take into account technological and network enabled environment in which military leaders work. The research was done with military leaders on the level of military

academies (cadets). However, especially in a NEO environment where the officers and the militaries in the lower echelons are connected through ICT, it is important to take into account the lower ranks as well when studying military character strengths and virtues. Although the NEO environment is not specifically mentioned, Matthews et al. address another issue that is important in a NEO environment, namely the multinational character of networked missions. The difference in values and how they are ranked in terms of importance might cause problems in the cooperation between militaries in multinational operations (2006, s65).

1.2.1. What is a missing element in NEO evolution?

The current status of research is insufficient to give an answer to the question if and how technology affects moral decision making in NEO. In most publications on NEO or military ethics, the potential influence of technology on the decision behaviour of its users is ignored. In other words, how people deal with technology and how it affects their moral behaviour is mostly overlooked in the military context.

The studies mentioned above focus mainly on virtue ethics, which seems the most popular approach to ethics in the military. In recent work done by Robinson et al. (2008), some critique on the current status of research on military ethics is given. For example, they argue that teaching of military ethics should go beyond traditional teaching of military virtues. Olsthoorn (2009) argues for a rethinking of the way ethics is taught to military personnel. He advocates a new and academically underpinned approach to military ethics and refers to Gabriel who states that the possession of a virtue is a disposition to behave well, yet in itself this is not sufficient to guarantee that someone will behave ethically (Gabriel: 1982, 8-9, 150, 152). Olsthoorn's call to rethink military ethics is timely and fits with aims of this dissertation, namely the development of a framework that addresses ethical issues within the context of NEO. In this dissertation I argue that in order for a soldier to behave morally right (independent of how one defines 'morally right'), the technologies with which these soldiers work should get attention in the evaluation of the moral wrongness or rightness of their behaviour. A philosophical framework that takes this into account may provide guidelines about the necessary mental and moral capacities for future soldiers who work in a highly technologically mediated

military practice. Subsequently, recommendations on ethical training and mission preparation that takes into account 'what technology does' to soldiers can be provided to military academies and operational forces.

1.3. Reflecting on Technology

Philosophers of technology reflect on technology and in the last decades this has been done in several different manners. An attempt to classify the discussions within this rather new field has been done by Mitcham (1994), who divides the field into four main domains for analysis: objects, knowledge, activity (further divided into making and using), and volition. Reydon (2012), in his entry on *Philosophy of technology* in the Internet Encyclopaedia of Philosophy (IEP), makes the following distinction after investigating the current status of philosophy of technology: (1) philosophy of technology as the *systematic clarification of the nature of technology* as an element and product of human culture, (2) philosophy of technology as the systematic reflection on the consequences of technology for human life, or (3) philosophy of technology as the systematic investigation of the practices of engineering, invention, designing and making of things. Using Reydon's classification, this dissertation falls (in a limited way) in the category (2) and (more extensively) in category (3). Using Mitcham's classification, this dissertation falls into the category of technological activity and volition, which are the focus of an ethical approach to technology. A dominant view in this class is that technologies mediate actions, perceptions, options, decisions, practices and moral values, beliefs and norms (Arnăutu: 2013). Another insight that stems from philosophy of technology is the fact that technologies have become part of social practices and have changed practices. Waelbers pointed out that technologies have consequences for embedded social preconceptions, the development of new skills, practices, options, moral norms and values, as well as the changes of adjacent practices (2011, 95). Borgmann (1984) argues that the moment technology enters a certain practice, it should no longer be evaluated from the point of view that it facilitates an easiest and more pleasant life, but from a more (morally) adequate point of view. He exemplifies the need for a more conscious assessment of the technological practices with the microwave oven that makes the meal preparation easier, but at the same time promotes junk food consumption and conduces to a bad health and standardized meals (1984, 94). In this dissertation the focus is on both insights (the mediating aspects of technology and the view that technology has entered and changed

practices) and tries to connect them. Social practices, conceptualized as normative practices (see Chapter 4 for an elaborate discussion on normative practices) play a key role in understanding the role of technology in moral decision making.

1.4. Philosophical background

How can we begin to understand moral decision making in NEOs? Consider the Sangin incident at the start of this chapter again. Many problems could be pointed out and all of them make sense. The problems can be phrased in terms of technology (a voice link should have been in place), in terms of people (the JTAC made a wrong decision), in terms of organization (the rules for handling confusing situations were not in place) or context (it was a "bad-guy territory" anyway). All of these approaches give insights in what went wrong in some way, however, they tend to simplify or reduce the situation to one aspect, thereby not doing justice to the complex reality in which the decision to strike was made. In order to do justice to the complexity, a multi-aspectual analysis is needed. A multi-aspectual analysis tries to structurally unravel complex situations, without losing sight of the coherence of a situation or an event. In the next sub-section I introduce the background of this approach, which shares the same philosophical roots as the normative practice approach.

1.4.1. Multi-aspectual analysis

As a prelude to the normative practice approach that will be employed throughout this dissertation, I explain some of its philosophical roots first. The philosophical foundation for the normative practice approach has been laid already in the 1930's by the Dutch philosopher Herman Dooyeweerd. He claimed that reality presents itself in terms of fifteen aspects or modes of existence (see his New Critique, Vol. II: 1953). Any entity exists in all of these modes. A tree, for example presents itself in a numerical aspect (it is one tree), spatial aspect (it has concrete dimensions), biotical aspect (the tree is alive), economic aspect (the tree can be sold), etcetera. See Table 3.1 in Chapter 3 for a full list of aspects. The assumption is further that the aspects, or modes of existence, cannot be reduced to one another, although different aspects can resonate in other aspects by ways of anticipations and retrocipations. For example, the notion of 'value' is primarily an economic aspect, but it resonates in

the social and psychological aspects. A pair of earrings for example, may have an economic value of 50 (euro's, dollars, yen), but also have a social value (it brings a certain status) or psychological value (they are inherited from a parent) that cannot be captured by amounts of money. What Dooyeweerd also claimed is that the different aspects have different 'laws' of their own, although there may be analogies between the laws in the various aspects. For example, in the selling of a tree, the tree functions as an object in the economic aspect, and the activity of selling the tree takes place according to economic laws. The selling of a tree cannot be reduced to the laws of the physical aspect in which the tree functions as an object too. Or, to use the example of Zeno[13], the laws that hold for the spatial aspect are insufficient for a meaningful explanation of the race between Achilles and the tortoise. One needs the laws that hold for motion, which belong to the kinematical aspect, in order to solve the paradox. It should be noted that the multi-aspectual approach to reality it is not a closed system or a fixed arrived philosophy, rather it is open to critique and adaptations. It is an approach to analyze the complexities in reality in order to get a better understanding of these complexities by structuring them in terms of these aspects, in which an entity can serve as object or subject in these aspects. In this dissertation it is used as a conceptual tool to analyze complex issues in military practice.

1.4.2. From social practices to normative practices

The multi-aspectual analysis applies to all things that exist. A tree is an entity, but a chair, a coffee, a hospital, a state, a business, an evacuation, are entities too. Social practices are entities too, such as medical practices, engineering practices, legal practices, etcetera. In anticipation to Chapter 4, I address some of the notions that relate to a specific understanding of a social practice that I use

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[13] Zeno's paradoxes are ancient philosophical paradoxes. In the paradox of Achilles and the Tortoise, Achilles is in a footrace with the tortoise. "Suppose Achilles runs ten times as fast as the tortoise and gives him a hundred yards start. In order to win the race Achilles must first make up for his initial handicap by running a hundred yards; but when he has done this and has reached the point where the tortoise started, the animal has had time to advance ten yards. While Achilles runs these ten yards, the tortoise gets one yard ahead; when Achilles has run this yard, the tortoise is a tenth of a yard ahead; and so on, without end. Achilles never catches the tortoise, because the tortoise always holds a lead, however small." (Black: 1951, 91). The original story can be found in Simplicius (1989, 1014.10).

throughout this dissertation, namely the concept of a normative practice. The concept of a social practice was reinvented by Alasdair Macintyre, who gave it a specific meaning, by referring to internal and external goods and standards of excellence. According to MacIntyre, the definition of a 'practice' is:

> Any coherent and complex form of socially established cooperative human activity through which goods[14] internal to that form of activity are realized in the course of trying to achieve those standards of excellence which are appropriate to, and partially definitive of, that form of activity, with the result that human powers achieve excellence, and human conceptions of the ends and goods involved, are systematically extended. (1984, 187)

Jochemsen, Hoogland and Glas (1997), inspired by the multi-aspectual view, extended MacIntyre's version of a social practice. Their understanding of a practice is that social practices have specific law-spheres of their own and that they are therefore structurally bound by specific rules, norms and principles. The normative structure of a social practice is not only the boundary of the practice, but also has a constitutive function. Some rules and norms and procedures are what makes the practice that specific practice, in the same way as the rules of the game of chess make what chess is as a game. These rules, norms, procedures are called the structural side of a practice. A practice has a directional side too. This is the way in which people who work in the practices 'open up' the structure, in other words, how they interpret the rules and norms that hold for the practice. This is often inspired by a persons' cultural or religious background and is related to worldview, or ethos (see Section 1.4.3.).

1.4.3. Military practice as a normative practice: structure and direction

A practice is a form of socially established cultural activity, which has an underlying normative structure. The socially established organisational form of the military practice is for example characterized by hierarchy, how and when to use force, and the explicit use of ranks. It has evolved from a societal need for security, and it is therefore rooted in society, but in such a way that it is not

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[14] The term 'goods' should be understood here not as a commodity, but as an internal value of practice, such as gaining experience, developing skilled behaviours, experiencing joy in excellence.

completely absorbed in civil society. In a democratic state, the monopoly on the use of force is delegated to the military and therefore one can say that the military practice functions on behalf of civil society. A distinction is made between civilians and militaries with regard to some fundamental issues, for example, there is a monopoly on the use of force, a special set of laws, such as military discipline, under which militaries do their job. For the further analysis of moral decision making in military missions, this distinction is important. Working in a practice means that one is not as free to act as one is when working outside the practice. Private actions are distinct from military actions. Some actions and decisions are appropriate within the practice, that would be very inappropriate outside the practice ('searching someone's house' is a good example for the military practice). MacIntyre refers to 'internal goods' and 'standards of excellence' to define appropriate actions for the practice. However, these notions are rather loose and are less coherent than in Jochemsen, Hoogland and Glas' version of a practice. They use the term intrinsic normativity, or inner nature of a practice. Intrinsic normativity is about the structural conditions that are given beforehand, or the ties by which the practice is naturally bound. Intrinsic normativity is not only about internal goods, or what is specific about a practice, but also about the guiding principles of a practice.

A distinction can be made between structure and direction of a practice (see Mouw and Griffioen: 1993). This distinction resembles with Searle's distinction between constitutive and regulative rules of a practice. Searle (1969) defines the constitutive rules (such as the rules of chess) as those rules that make institutional actions possible, whereas regulative rules (such as the rules of etiquette) are rules that regulate an activity that can exist independent from the regulative rules. In the normative practice view, intrinsic normativity of a practice is about the structure (constitutive side) and direction (regulative side) of a practice.

Structure

The structure of a practice is often captured in documentations, articles, manuals procedures and they relate to the formal aspects of the practice. They are different for different practices. The internal organisation of the engineering practice is different from a medical practice, and different from the military

practice. They have their own internal structure. These differences in structure are mainly caused by differences in the primary processes that drive these practices.

Direction

'Direction' refers to the different basic convictions about good and evil, right and wrong, that drive people to perform their tasks in that practice. In the military practice this can be seen in the different approaches to the use of force, for example the American approach, which tends to focus on technological superiority (for example, the quick invasion during Gulf War I)), which is different from the Dutch approach which is to 'win hearts and minds' of the local people. It also becomes visible in classic writings on how to perform a war in a good manner, for example Clausewitzian approaches to war differ from non-western military models, such as Sun Tzu's Art of War. 'Direction' is about ones deepest understanding of the actions that one performs, for example using force to 'win a war' or to 'bring stability' in a specific region.

In the case of NEOs, different practices are present. In the Sangin case at the start of this chapter there were pilots, data analysts, ground soldiers and a tactical air controller. They are all members of the military practice, but they are also members of their respective sub-practices. They share the rules and norms that hold for any military personnel (for example, rules for wearing a uniform), but they have also rules and norms that are specific for their own sub-practices (for example, rules for performing airstrikes). An elaborate discussion on how this further relates to moral decision making on the battlefield will follow in this dissertation, specifically in Chapter 4.

1.5. Moral decision making

Decisions about life and death, not uncommon in military operations, are inevitably moral decisions. In the Sangin case there was little doubt that, once the pilot would push the buttons to engage, people were going to be killed. In the Sangin case it was a decision that came with many tensions and complications. Some of these tensions related to uncertainty with regard to the facts (what is the direction of the firing?), some of the tensions related to the norms that hold for the killing of people (is it right to kill people?). The moral questions relate to the

norms, about what one *should* do. Many philosophers and professional ethicists disagree over what counts as a moral question, but this question is not discussed here in depth. This dissertation is about how technology potentially influences the way people perceive and judge moral questions that arise in military operations, irrespective of the moral background theory that one uses for describing moral questions.

In order to give some delimitation I quote Casebeer and Churchland:

> As moral philosophers would put it, moral reasoning is probably a species of practical reasoning about what we should do or think now, such as whether to negotiate with terrorists, not necessarily about what others have done nor about strictly empirical matters, such as whether there is water on Mars. [...] Broadly speaking, then, moral reasoning deals with *cognitive acts and judgements associated with norms, or with facts as they relate to norms.* (2003, 170-171, italics added by Casebeer and Churchland)

An important element in this definition is the notion of 'norms'. For the purpose of this dissertation I use the concept of norms as I have done in the normative practice model that was addressed in the previous section. Different aspectual norms exist, such as economic norms, functional norms, social norms and they can be made explicit in the normative practices approach. The norms for moral decision making in networked operations are moral norms and they are derived from the (sub-)practices. Moral norms can be both constitutive and regulative in nature. Moral decision making in networked operations is about the cognitive acts that concern the moral norms that hold for different practices. For example, a decision to strike or not, or the judgment to assign a level of threat (or safety) to a person or an event during a mission is a cognitive act that regards a moral norm in the practice of pilots or commanders. Also other norms often play a role in moral decision making. There are juridical norms (is it in line with the laws of armed conflict) or economic norms (is it a reasonable expense with regard to the budget). In short, Casebeer and Churchland speak broadly about norms, but not all norms are moral norms, since there are (amongst others) functional norms, economic norms, and social norms. Moral decision making is a cognitive act or judgment in which moral as well as non-

moral norms play a role and of which the outcome of the decision has moral significance.[15]

It is worth noting that the definition of moral decision making that is used here is not necessarily the best suited for all situations. For this research on the role of technology on moral decision making in NEO it is a suitable concept, because a military networked environment is a decision and act oriented environment. This is captured by the centrality of the 'cognitive act' in the definition. Another relevant aspect is the explicit mentioning of norms, which brings it in close relation to the broader philosophical framework that is used in this research, namely that of normative practices.

In any attempt to understand moral decision making, one should be aware of unarticulate foundational assumptions in research in the moral realm. Casebeer and Churchland have listed six points of concern and reasons why it is difficult to gain empirical knowledge that can make general claims about moral decision making. The bottom line of these concerns is that understanding moral decision making comes with many caveats, mainly on the level of assumptions. Casebeer and Churchland list the following caveats (2003, 186-188):

- moral decision making is "hot", meaning it is automatic, rapid and led by emotion, making it difficult to capture in experimental settings.
- moral decision making involves complex interactions of a neural, cognitive and social interaction nature that cannot be merely disentangled.
- moral decision making does not take place in a social vacuum.
- moral decision making takes place in a broader network of cognitive stimuli.
- moral decision making is context dependent.
- moral reason, moral emotion and moral action are deeply intertwined
- there is a directness about what we *should do in this world* in most instances of moral decision making.

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[15] A moral outcome only means that there is a moral issue at stake. The outcome of a moral decision can be morally right or morally wrong. The basis for the rightness or wrongness of the outcome depends on one's philosophical orientation (deontological, utilitarian, virtue based, value based, rights based, and etcetera).

Being aware of these assumptions[16] is important when theoretically and empirically studying our case of moral decision making in NEO, with its unique characteristics such as the use of lethal force in an often unpredictable and hectic environment.

1.6. Positioning the research

To which discussion does this dissertation make a contributing? Since this dissertation covers aspects from several disciplines, it addresses questions that are raised in current debates in the different disciplines.

Firstly, it addresses questions with regard to the normativity of technology, which is a question that is discussed in the realm of philosophy of technology. This dissertation contributes to this discussion by spelling out two relationships that are important for a normative view on technology, namely the relationship between technology and social structures and the relationship between technology and actions done by individuals. The role of technology is elicited in these two relationships. Another contribution to the philosophy of technology is the application of insights from the philosophy of technology to the military domain.

Secondly, this dissertation ties in with discussions in military ethics about moral decision making. The current debate evolves around alternative ways of teaching military ethics to those that take part in modern military missions, such as NEOs. A rethinking of military ethics is advocated with regard to questions about how to deal with cultural diversity between allied forces and how to evaluate, from a normative perspective, the multitude of technologies that are rapidly introduced on the battlefield. The technology debate in military ethics is often polarized, with proponents (Arkin: 2010; Strawser: 2010; Ducheine and Osinga: 2013) and adversaries (Royakkers and Van Est: 2010; Singer: 2010; Sharkey: 2010) of certain technologies, for example drones, non-lethal weapons or cyber warfare. Both ends claim to argue in accord with military ethical sound principles, often by referring to the existing framework of Just War theory. An important note at this point is that in this dissertation not the existing ethical

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[16] See also Kish Gephart et al. (2010) for a meta-analysis on theoretical and empirical research on moral decision making

framework of Just War theory is used as a starting point to determine the normativity of technology on the battlefield, but alternative philosophical approaches, namely philosophy of technology and a normative practice approach.

Thirdly, this dissertation makes a contribution to the development of the framework of normative practices, which was initiated by scholars in the tradition of reformational philosophy. The discussion in this tradition is about the extent to which the framework of normative practices can be used. A normative practice approach has been used in medical practice and business practices and this dissertation adds a new field of application, namely military practice. It also adds a novel insight, namely about how normative practices are interrelated.

Thinking through normativity of technologies on the battlefield is not a novel endeavour. The use of nuclear technology on the battlefield has been debated in the previous century; the use of anti-personnel mines is internationally banned; the use of non-lethal weapons and drones on the battlefield is now topical in discussion of ethics. What has however not been discussed, is the use information and communication technology (ICT) on the battlefield, which is a distinctive from of military technology in a strict sense (technologies that have immediate lethal of harmful capacities, such as mines, nuclear bombs, non-lethal weapons and armed drones are often categorized as military technology). ICT, in a subtle way, has become immersive on the battlefield. In this dissertation the question of ICT and networking technologies is addressed, because it underlies many of the other technologies and helps to understand the problems of moral decision making on the battlefield in a more profound way.

1.7. Outline of the dissertation

The outline of this dissertation is explained with reference to the triangle in Figure 1.1. The 'heart' of the triangle is the focus of this research, namely moral decision making. The context in which the triangle is situated is network enabled operations. The corners of the triangle are factors that influence moral decision making in network enabled operations. A *social, technological* and *psychological* factor of moral decision making in networked military operations is distinguished. The factors are explained below with reference to the Sangin case.

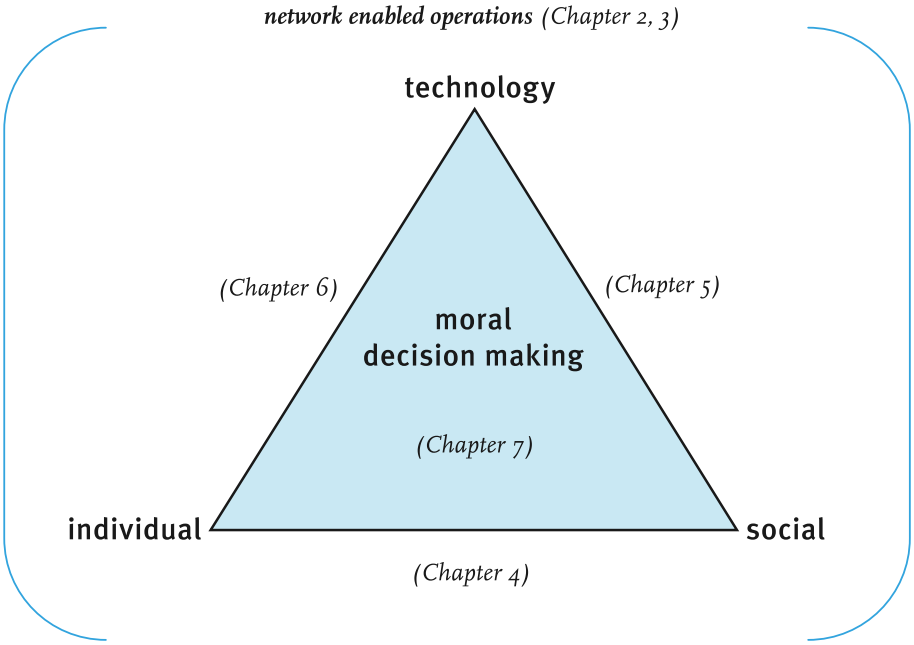

Figure 1.1.: Triangle representation of relationships that are addressed in this dissertation

1.7.1. Social factor

Multiple partners were involved in the friendly fire case that was described at the start of this chapter. The way in which the partners were connected or organized has a social dimension (as well as a technological dimension). The partners were geographically dispersed. The crew in California, a DGS in Indiana, a JTAC in Afghanistan all had different roles, tasks and responsibilities. Conceptualizing these different partners as normative practices, which is a specific way of (and not limited to) being socially organized, reveals relevant issues for moral decision making. The predator crew, DGS and JTAC were bound by procedures, norms and rules for acting. From the Sangin case it becomes clear that there are technical and procedural rules that need to be followed with regard to communications. Apart from rules, these partners have a broader vision and a certain 'drive' to perform their tasks, as the 'furiously looking for targets' reveals. This says something about the *ethos* of the members. Or the remark made by Otto: *"there's women and children"* (Laster and Iannotta: 2012), which reveals a worldview in which woman and children are regarded in a different manner

than men or combatants. This influences the social dimension of decision making. In Chapter 4 more a discussion on the social factor of moral decision making follows.

1.7.2. Technological factor

Several technological assets played a role in the Sangin incident. There was the airplane itself (the Predator) and ICT systems that connected the control stations in California and Indiana. There were radios, satellites, screens, chat interfaces, the world wide web, geographic information systems (GIS), maps, buttons and sticks for controlling the plane, missiles, etcetera. These technologies played a role in the moral concerns that were raised. The DGS-IN for example, perceived information on his screen (the direction of muzzlefire) on the basis of which a moral judgment was made: the judgment of who was an enemy that needed to be killed. The technology also allowed for exchanging (moral) concerns, namely by typing these concerns in the chat box. The chatbox had a 'built-in' moral option, namely the option for whisper chats, which in potential allowed for withholding important information (see Chapter 6). In Chapter 5 a detailed discussion on the moral significance of technology is provided.

1.7.3. Psychological factor

In the Sangin incident there are psychological factors that influence moral decision making. One of them is that technology allowed the crew, from a distance, to 'furiously' scan for targets. This reveals how the zoom functions on the Predator camera emotionally drags the crew into the fight thousands of miles away. Another psychological factor that comes to the fore is that the crew, although far away, did not do the job in a disengaged, robot-like manner. They stated that they 'did not feel comfortable firing upon the personnel' (Laster and Iannotta: 2012). More psychologically relevant factors can be determined in NEOs, some of which are further dealt with in Chapter 6.

In the different chapters the relationships between the factors, so actually, the *sides* of the triangle, are addressed. Firstly, there is the side that represents the *individual - social structure* relationship. This is the relationship between the individual and the way in which the individual is socially embedded in the highly technological military environment. Otto, quoted in the article at the start of this chapter, said:

> There are technical and procedural rules that need to be followed. Some of those rules require installation of additional hardware to enable the two-way communications. (Laster and Iannotta: 2012, 36)

What Otto referred to are the technical and procedural rules, rules of engagement and authority structures. They should not be overlooked when trying to solve problems in moral decision making of an individual on the battlefield. Secondly, there is the side of the triangle that represents the *technology - social structure* relationship. In this relationship moral decision making may not easily catch the eye, but philosophers of technology have called attention to the way technology structures and reorganizes societies, organizations, friendships, etcetera. An important insight in this dissertation is that technology connects different social structures. In the Sangin case there were many social structures connected through ICT, such as the DGS-IN, JTAC and Predator crew. Technology influences the way these social structures are arranged and the way individuals in these structures relate to moral questions. Thirdly, there is the side of the triangle that represents the *individual - technology* relationship. This part relates to the psychological process at work in an individual when working in a high tech environment. It focuses on the human aspect of the individual in a high tech environment, with his or her psychological responses that play a role in moral decision making. In Laster and Iannotta's article which describes the Sangin case, some of these psychological responses are named, be it in the vocabulary of emotions. For example the crew was '*furiously* scanning for targets', others had '*reservations* about the strike'; people may *fear* violating rules, or *see the importance* to say: "*wait a minute, there's women and children"* and they have a certain 'committee', for example with a ground-force commander. These behavioral responses are influenced by technology and affect moral decision making on the battlefield.

1.8. Overview

The objective of this dissertation is to develop a philosophical framework that can point out tensions in NEO, elicit new approaches to moral decision making and form a basis for organisational and training objectives in order to advance the development of NEO in a way that it supports moral decision making.

Moral decision making in this dissertation is in some chapters addressed in a direct manner, for example in Chapter 6 on empirical psychological research on

moral decision making, or in an indirect manners, such as in Chapter 5, on the mediation of technology. The context of the research is NEOs, which is briefly explained in Section 1.1. No further attention will be given to this concept, but it will serve as a continuing context throughout this dissertation, with exemplifications of NEO in real life cases.

In Chapter 2 an extended case study of NEO will be addressed, called the Kunduz airstrike, in which the role of technology in moral decision making becomes clear. Decision making in a NEO turns out to be a complex activity and therefore a more structural approach to map out the complexities is needed.

In Chapter 3 complexities in NEO are analysed in a systematic way, by making use of a multi-aspectual analysis. This brings the more important aspects of moral decision making in view. These are the social, technological and individual aspects of moral decision making. In the subsequent chapters an account is given of the different 'sides' of the triangle (Figure 1.1.), which represent the relationships between the *social*, *technology* and the *individual factors in moral decision making*.

In Chapter 4 the normative practice model will be explained and applied, in order to address the social dimension of moral decision making in NEOs. This chapter highlights the bottom side of the triangle, namely the relationship between the individual and the social practice. I argue that partners in a NEO are best equipped to make morally right decisions if the rules, norms and worldviews in the connected practices are not blurred and do not clash. If rules, norms and worldviews of the respective practices are not well aligned and clearly defined, it can be expected that problems arise in moral decision making. In cases where the rules, norms and worldviews do clash or blur, some rules and norms may need to be abandoned, as long as it does not harm the normative guiding principles of the practice.

In Chapter 5 the role of technology is under focus and an account is given of how technology in networked operations mediates moral decision making in various ways. The vocabulary of technological mediation that is used is enriched by the model of normative practices. This highlights the right side of the triangle, which represents the relationship between technology and the social practice. Understanding the mediating aspects of technology in light of the normative practices in which the technology functions leads to the insight that it

moral decision making depends on whether hermeneutical rules are in place, or whether certain threshold levels of imaging technologies can be adapted, or whether the inviting aspects of the technology are known and whether the amplifications and reductions that are realized by the technology are in line with the normative structure of the sub-practice. Now that it is known how the social aspects influence moral decision making, and it is shown how technology has an impact too, the focus goes to the person who actually is making decisions in NEOs and who exhibits certain psychological responses that may be triggered by a NEO environment.

In Chapter 6 the attention goes to the psychological aspects of moral decision making. It focuses on the relationship between the individual and technology, which is represented by the left side of the triangle. Empirical data from psychological experiments is brought into the picture on moral decision making in NEOs. The two theories that are used are Social Cognitive Theory (SCT) and Moral Intensity (MI). From the psychological analysis it follows that some aspects of technology can endanger moral decisions making, while other aspects of technology are likely to support moral decision making. In order for a person to make well reflected moral decisions in NEOs, the psychological effects of certain technologies on moral decision should be made clear to the user and the user should be trained in dealing with potential psychological effects. Psychological effects may be intentionally accounted for in the design of technological artifacts that are employed in NEOs. Now that the problems of moral decision making in NEO's have been philosophically spelled out in terms of normative practices, technological mediation and psychological theories, the last chapter is devoted to the question what responsibility means for a person who is working in a NEO. Moral decision making and responsibility are related in various ways.

Chapter 7 serves as a reflection on the previous chapters and provides a perspective on what responsible moral decision making should look like in NEO. It adds new insights on responsibility by viewing responsibility in the context of normative practices. It first addresses the different meanings of responsibility, illustrated by the Kunduz airstrike and it makes a classification of the different meanings that resembles with the normative practice view. An ethics of responsibility for NEO is further proposed, which uses elements from different ethical approaches.

This dissertation is written in the context of an interdisciplinary research project. The research program is called "*Moral fitness of military personnel in a networked operational environment*"[17], and philosophers, psychologists, and social scientists study from diverse perspectives the role and behaviours of military personnel in the network, with a focus on the moral dimension of network technologies. There has been a philosophical analysis of the theoretical underpinnings, lines of argumentation and conclusions of real life cases concerning NEOs. The empirical content of this thesis is added not to *prove* the main thesis, but to give an empirically grounded reason for this research, namely a genuine concern for soldiers in a technology-immersed battlefield. The empirical part illustrates the theoretical reflections and insights of soldiers on a modern battlefield and it serves as a 'reality-check' for the theoretical findings.

The empirical content is derived from case studies, interviews, visits to experimentation sites[18] and literature on empirical findings in the realm of psychology.

1.9. Summaries of chapters

This dissertation is mainly based on previously published articles, or articles that are at the time of compiling this manuscript under review. Although based on articles, the chapters are not identical copies of the publications, but they are slightly rewritten to avoid doublings and repetition. For reasons of structure one may still find repetitions, which is unavoidable. Some of the concepts that are used have developed over the course of the articles, for example the concept of normative practices. Sometimes the words *theory* of normative practices, or the *model* of normative practice, or normative practice *view* is used, but for the main argument this 'status' is not important and can be used interchangeably.

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[17] Royakkers, L., Essens, P. & Verweij, D. Moral fitness of military personnel in a networked operational environment. Research grant (2009-2013) received from the The Netherlands Organisation for Scientific Research (NWO) under the Research Theme: Responsible Innovation. The grant number is 313-99-110.

[18] From January-August 2011 I visited the Centre for Network Innovation and Experimentation (CENETIX) at the Naval Postgraduate School (NPS) in Monterey, Ca. The centre is led by Dr. Alex Bordetsky and it runs an ongoing experimentation campaign to test the feasibility of network enabled operations.

Normative practices are incidentally referred to as 'social practices', in those cases in which using the words 'normative practice' requires too much explanation and an intuitive understanding of 'social practice' is sufficient for the argument (in some cases). Generally speaking, the view presented in this dissertation is that (most) social practices have an underlying normative structure. To make this explicit, the term 'normative practice' is used. Chapter 4 is devoted to further address the normative practice view.

Chapter 2: The Kunduz Airstrike Incident

Based on: Van Burken, C. G. (2013) 'The Non-Neutrality of Technology' *Military Review* 93(3): 39-47.

A Dutch translated and adapted version was published as: Van Burken, C. G. (2011) 'Valkuilen Van Genetwerkt Optreden: Een Techniek-Filosofische Analyse' *Militaire Spectator* 180(2): 77-86.

In order to show some of the problems in modern military operations, a case study is presented in Chapter 2. The Kunduz airstrike incident is an example of a Network Enabled Operation (NEO), which means that this type of operation aims at gaining military advantage by information sharing and cooperation through the use of technology. Working with technologies that make these modern military operations possible can involve a number of pitfalls that directly influence moral decision making on the battlefield. As a case in point, the Kunduz air strike is discussed. The Kunduz air strike was carried out in Afghanistan in 2009, with technology playing an important role that is too often overlooked. In trying to understand how this incident could have happened, the role of technology should get attention too, instead of merely pointing fingers to the soldiers that were involved. Three pitfalls, related to technology, are discussed in this chapter. These are firstly the "Predator view", secondly misinterpretation of information, and thirdly the prevention of streamlined communication. This chapter casts light on the reasons behind these pitfalls by making use of insights from the philosophy of technology and the concept of normative practices.

Chapter 3: Complexities in Network Enabled Operations

Based on: Van Burken, C.G. (2010) 'Complexities in Network Enabled Operations', in: *Proceedings of the 16th Annual Working Conference of CPTS 2010*, Maarssen, The Netherlands, May 2010. Interdisciplinary Research for Practices of Social Change, (2011), Roelien Goede, Leenta Grobler, Darek Haftor (eds.), CPTS: Maarssen: 66-84.

In Chapter 3 a further investigation of network enabled operations is given. From Chapter 2 it became clear that network enabled operations are complex activities and therefore a more systematic analysis is needed. A multi-aspectual analysis, which serves as an analytical tool to analyze reality in a systematic, non-reductionist way, is well suited to unravel complexities. It holds that reality presents itself in (at least) fifteen different aspects, which can be independently studied. For example, an entity (which can be an event, such as NEO) has a numerical aspect, a physical aspect, a social aspect, an historical aspect, etcetera. This allows for a more encompassing view of network enabled operations, by elucidating aspects that can be overlooked if a merely organizational or technical analysis of NEO is chosen. A multi-aspectual analysis also reveals interactions and dependencies between the different aspects in NEO, especially on the level of ethics and morality. Some of the pitfalls from the case study in Chapter 2 can be rearticulated in terms of one of the fifteen aspects. A multi-aspectual analysis serves as a precursor for the broader philosophical framework, namely the framework of normative practices, which is addressed in Chapter 4.

Chapter 4 Extending the Theory of Normative Practices: An Application to Two Cases of Networked Military Operations

Based on: Van Burken, C.G. and de Vries, M.J. (2012) 'Extending the Theory of Normative Practices: An Application to Two Cases of Networked Military Operations', *Philosophia Reformata* 77(2): 135–154.

In this chapter the theoretical apparatus which reveals on a deeper level why problems rise in NEOs is presented. It focuses on the social aspect of NEOs. The theory of normative practices has proven to be helpful in eliciting the normative dimension of social practices, because it offers a vocabulary for the normative structure that underlies social practices. In this chapter the theory is applied to

military practices, and in particular to the case of NEO. Current military missions are NEOs, which mandate a strong focus on cooperation with other military and non-military partners, an additional framework is needed to understand actual problems in such missions. In this chapter the theory of normative practices is extended, by making a distinction in the interrelations between the connected practices. Practice can be enkaptically interwoven, function as a part-whole relationship or are juxtapositional. Two cases from missions in Afghanistan are analyzed to show the usefulness of the theory of normative practices and its extension with interrelations. The chapter concludes with an extensive normative practice analysis of the Kunduz airstrike incident.

Chapter 5 Beyond technological mediation - a normative practice approach

A draft of this chapter is submitted at: **Techné (**July 2014)

The focus of Chapter 5 is on technology, which places a role in moral decision making in NEOs. In the Kunduz airstrike incident, the technology that played a prominent role was a device that allowed the sharing of visual information, called Rover. Several philosophers of technology have argued that technology mediates human actions. For example in the stream of post-phenomenologism, authors such as Don Ihde and Peter Paul Verbeek described the the mediating aspects of technology in terms of morality of technology (more prominent in Verbeek) as well as in the sense that technology changes our perception of ourselves and the world (more prominent in Ihde). In this Chapter 4 different existing types of mediation are presented, critiqued and enriched. The four types are illustrated by referring to military high tech environments with a focus on visual data and imaging technologies. These technologies can firstly invite certain behavior, secondly they mediate through amplification and reduction, thirdly they have built-in norms, and fourthly these technologies require interpretation. The four types of mediation mainly focus on the technology or technological artifact itself. What these approaches fail to grasp however, is the specific user practices in which most technologies function. In this chapter it is argued that to understand the mediating aspects of technology more fully, attention should be paid to the specific user context in which the technology functions. Therefore, an enriched understanding of the four types of mediation

of technology is proposed by taking the lens of normative practices and analyzing the different types of mediation through this lens.

Chapter 6 Morally responsible decision making in networked military operations

Based on: Van Burken, C.G. and Van Bezooijen, B. (*forthcoming*) 'Morally responsible decision making in networked military operations', in: J. van den Hoven, B.J. Koops, H. Romijn, T. Swierstra, and I. Oosterlaken (eds.) *Responsible Innovation*, Volume 2, Springer, Dordrecht.

In Chapter 6 the psychological aspect of moral decision making are addressed and how this is influenced by technology. In the previous chapters the technological and social aspects of moral decision making on the battlefield were studied. In this chapter the focus is on the role of the individual. People who work in a normative practice in NEOs do not merely behave according to rules, norms and procedures, inspired by a certain worldview, but there is a psychological component to their behavior and which plays a role in decision making. Moral psychologists have empirically investigated how certain cues influence moral decision making. Some of the cues can be effectuated through technology. Social cognitive theory (SCT), as developed by Bandura (1986, 1999) and moral intensity (MI) theory developed by Jones (1991) are theories that explain moral decision making mechanisms in terms of respectively moral (dis)engagement mechanisms and the perceived moral intensity of a situation. From both theories it is inferred how visual data sharing technologies can increase or decrease morally appropriate decision making in NEOs. The insights are meant to inform the normative structure of practice that partake in NEOs, such as remotely operated aircraft (RPA). As a case in point the Sangin friendly fire incident is used.

Chapter 7 The responsible solder in NEO

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Responsibility and Military Effectiveness. NL Arms. Netherlands Annual Review of Military Studies 2013. Asser Press, The Hague: 217-241.

Chapter 7 is a reflective chapter on moral decision making in modern military missions. It gives a framework for responsible moral decision making in NEOs, by focusing on different meanings of responsibility. This framework is illustrated with the Kunduz airstrike incident, which is the case that is used throughout the dissertation. The use of ICT such as Rover has implications for responsibilities of those who interact with Rover. A classification of different responsibilities by making a distinction between structural and directional responsibilities broadens discussions on who is a responsible soldier. A soldier is not only responsible for his task, but there are also responsibilities that go beyond organizational structure and relate to worldview and ethos. A responsibility ethics, which uses elements from virtue ethics, utilitarianism and deontological ethics, is proposed as an approach to ethics in NEOs. In NEO's different people from different (cultural) backgrounds cooperate, who are embedded in different normative structures. A responsible soldier is virtuous in the sense that he or she knows the rules and norms of their own practice, as well as sensitivity to the consequences of the actions and the effects of ones actions for other practices.

2 The Kunduz Airstrike Incident: A case study on the pitfalls of Network-Enabled Operations[19]

2.1. Introduction

'Light'm all up!', was the headline on the front page of a prestigious Dutch newspaper. The headline was accompanied by a still from video footage taken from a US attack helicopter in Iraq (Steketee: 2010).

'Yes, those pax are an imminent threat', answered the commander of the Provincial Reconstruction Team (PRT) camp in Kunduz in September 2009, after he saw black dots (thermal images of persons) on his computer screen (Chandrasekaran: 2009; Goetz et al.: 2010).

These newspaper quotes, emphasizing what can go wrong in the interpretation of images during military operations, are not isolated cases. They often appear after tragic incidents, particularly those involving civilian victims. The first quote is about an incident that took place in 2007, involving a group of journalists with their cameras who were erroneously seen as insurgents with weapons. Two of the news reporters did not survive the air strike that followed.

The second quote is about an air strike on two hijacked fuel trucks in Kunduz, Afghanistan. In this chapter an extensive description of the case will be given and be referred to throughout this dissertation. After the Kunduz airstrike incident several reports came out deciphering the strike in terms of who was to blame for the scores of victims.[20] The two main reports were the NATO investigation report (Bild.de: 2009)) and the report by the German military prosecutor (Houlton: 2010). Although the two reports came to two opposite

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[19] An earlier draft of this chapter has been published as: Van Burken, C.G. (2013) 'The Non-neutrality of Technology: Pitfalls of Network-enabled Operations', in: *Military Review 93* (3): 39-47.

[20] See an extensive exposure of this case in Baron and Ducheine (2010).

conclusions, they – or so I will argue – missed a key point. By focusing solely on the question of who is to blame, the role of technology in NEO such as this International Security Assistance Force (ISAF) mission, has been overlooked. As such, I wish to focus on the role of network enabling technology, and specifically its ethical impact, during what will be referred to as the Kunduz airstrike incident. My proposal is further to conceptualize this incident in terms of normative practices in order to open up the discussion, rather than narrowing it down to pointing fingers at one individual. A normative practice approach helps to answer the question on why certain decisions were made, it is sensitive to the context in which the decision to strike was made, it provides a language to articulate the moral aspects of the decision and it reveals the complexity of the situation in terms of different players that were involved.

A common factor in incidents such as the Kunduz airstrike incident is the use of technological assets, which allow several military officers to see the objective simultaneously. A network of observers and decision-makers are observing the same incident with the intention of gaining a military advantage, which is called NEO (see Chapter 1). The Kunduz airstrike incident was such a NEO. Several authors have paid attention to the difficulties in decision making, accountability and responsibilities in these complex networked military missions (Doty and Doty: 2012; Pryer: 2012; Major: 2012). In this chapter, I take these difficulties very serious and try to elucidate a factor that is often overlooked, namely the role of technology in NEO. First three pitfalls that can occur when making decisions in a NEO environment will be discussed. Specific reference will be made to the use and sharing of live video images, originating from manned or unmanned systems, in a network environment. The daily practice of the networking soldier is discussed and a number of problems that are inherently connected to the use of technology are discussed. These problems are presented as possible pitfalls and I use the case of the Kunduz airstrike to illustrate these pitfalls in daily military practice. More instances of NEO will follow in the following chapters, but the Kunduz airstrike will be referred to in almost every chapter.

In the following sections the Kunduz airstrike incident is used to illustrate the pitfalls of working in a NEO. The Kunduz airstrike incident is highly complex and I will disentangle the complexities in Chapter 3. The aim of Chapter 2 is to present the case and to show difficulties that may arise due to the presence of technology. I have called these difficulties pitfalls. The pitfalls are not previously presented elsewhere, nor do they come from a pre-existing

'pitfalls list' that can be mapped on the case. They have merely surfaced after specifically looking at the role of technology in the Kunduz airstrike incident and in conversation with soldiers who just returned after a deployment of 4 months. Their deployment was a NEO (International Security Assistance Force) in Afghanistan. The three pitfalls are my way of classifying, by lack of alternatives, some of the problems in NEO.

Although several other pitfalls could be found and discussed, three are discussed in this chapter. First, there is the danger of *developing a 'Predator view'*, second, the *misinterpretation of visual data*, and third, the *prevention of streamlined communication*. In Section 2.3. the pitfalls will be further addressed. Subsequently, I explain that the use of a technological network is not a neutral activity. This is a hidden dimension that is almost completely ignored and which may lie at the heart of the problems that rise to the surface. The insights that are discussed come from a technological-philosophical approach to network-enabled capabilities. I endeavour to clarify the underlying problems by use of the 'concept of practice', as developed by a number of philosophers (see Chapter 1.4.). I conclude with a suggestion aimed at alerting users to potential pitfalls at an early stage. This may contribute to a more responsible use of network-enabled capabilities.

2.2. Case study: The Kunduz airstrike incident

The case under attention is known as the Kunduz airstrike incident, referring to the province and equally named river in Afghanistan. This case will be used to illustrate and exemplify issues in NEO throughout the dissertation.

On Friday September 5th 2009, the following incident was reported:

> German warplanes fired on two hijacked military fuel trucks in the northern province of Kunduz, killing an estimated 90 villagers. The troops were given commands to conduct an airstrike after NATO officers reported that the military vehicles had been stolen. Controversy surrounded the reported casualties, as it was unclear whether the killed civilians were associated with the Taliban. (Reuters: 2010)

On Friday September 4th 2009, German colonel Georg Klein requested an airstrike after he was told that two fuel trucks were hijacked by the Taliban in Afghanistan south of Kunduz, the provincial capital. Colonel Klein was the

commander of a Provincial Reconstruction Team (PRT) camp, based in Kunduz, as part of the ISAF mission. With the knowledge that the fuel trucks were now in the hands of Taliban, the trucks formed a potential threat according to the Germans, because they could be used to attack NATO forces in their nearby camp. It is worth noting that in August 2009, an informant reported that the Taliban were talking about overrunning the German camp. He said that there were plans to crash the Kunduz camp using two trucks loaded with explosives and driven by a suicide bomber (Spiegel Staff: 2009a). In addition, reports had come in over the past few weeks that a number of suicide attacks were being planned against the Germans. On the night before the Kunduz airstrike, information was relayed to Klein by an intelligence officer ('J2'[21]) who had received a call from an Afghan informant ('C3'[22]) connected to the Afghan security forces. The C3 informant had told the J2 officer that only armed insurgents were on the ground, including four Taliban leaders. Based on this information, Klein requested air reconnaissance from the ISAF headquarters in Kabul (Spiegel Staff: 2009b). Not far from the scene of the incident, an American B-1B long-range bomber was flying overhead at the same time in support of a different mission. Klein requested that the pilots locate the trucks which they did (on their screens) at 9:14 p.m. Klein, operating out of the Tactical Operations Centre (TOC), which is a windowless office with a map of Afghanistan hanging on the wall, also had visual information available, namely an American ROVER (remotely operated video-enhanced receiver) device similar in appearance to a conventional laptop which shows live video feeds from the aircraft. It enables exchanging visual information between the people on the ground and the pilot.

At 1.08 a.m. two American F-15 fighter jets appeared in the skies over Kunduz to take over the surveillance from B-1Bs surveillance planes who needed to refuel. *Forward air controller* (FAC)[23] Wilhelm, a German Master Sergeant who

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[21] 'J2' in NATO terminology, which is the staff division responsible for military intelligence.

[22] A 'C3' informant means that his reports have proven to be reliable on a number of occasions and this classification is the minimum requirement in order to be able to work with the information.

[23] A *Forward Air Controller* (FAC) guides the pilot in determining the bombing coordinates, because the pilot mostly cannot identify the target clearly and is not aware of the locations of friendly forces.

was operating out of the Tactical Operations Centre (TOC) at the Kunduz PRT Camp, told the F15 pilots to prepare to drop six 500-pound bombs. The pilots were not sure if releasing a bomb was the best option, so at 1.22 a.m. the pilots asked if they should fly over the scene at a low altitude, in order to possibly chase people away. But the German FAC answered: "Negative", and the request from the pilots was rejected. Klein had asked the informant on location if there were any civilians, children or buildings nearby and the answer in each case was "no". After these checks Klein issued the order: "permission to engage" (Spiegel Staff: 2009a). At 1:31 a.m. the Germans gave the F-15 crews the precise bombing coordinates. According to the NATO report which investigated the incident, the US pilots who ultimately carried out the air strike then asked their wing commander (the FAC) whether they were to target the vehicles or the people. According to the radio communications report, the German FAC replied on Klein's authority that he wanted the people targeted (Goetz et al.: 2010). At 1:46 a.m. the American pilots asked the Germans one more time whether the people on the ground truly constituted an "imminent threat" and indeed Klein referred to them as "time sensitive targets" (Spiegel Staff: 2009a) and he replied: "Yes, those pax [military jargon for people] are an imminent threat"(Goetz et. al: 2010). Klein said that the insurgents were trying to tap the gasoline from the trucks, and when they had finished, they would "regroup and we have intelligence information about current operations" and they would probably be "attacking Camp Kunduz" (Goetz et al.: 2010).

The US pilots then proposed another option, namely to use remote-controlled drones and other reconnaissance measures. But this would have meant involving the ISAF headquarters in Kabul and the German command rejected the proposal. A few minutes later the FAC urged the US pilots to treat the trucks as a "time-sensitive target" and to arm the bombs (ibid). The interviews with the pilots and the radio communications records show how contentious the military and legal assessment of the situation was before the strike. During that night, there was an exhaustive debate between the German soldiers on the ground and the American pilots in the air, which lasted about 45 minutes and which was characterized by suspicion on the part of the pilots. The pilots suggested obtaining the approval of the higher-ranked US Combined Air Operations Center in Qatar on the Persian Gulf, so that both sides would be in the clear. In the pilots view, dropping the bombs was not the right thing to do, at least not in this manner, and they kept presenting new arguments against the airstrike (ibid). There are strict rules of engagement within NATO before an

airstrike can be approved and the pilots were under the impression that a number of these rules were about to be violated. Once again, they repeated their request to be allowed to fly at low altitude over the river as a deterrent, but German base was clear: "Negative. ... I want you to strike directly" (ibid). A quarter of an hour later, the fighter jets reported "weapons impact" after dropping two GBU-38 bombs, each weighing approximately 550 pounds (Spiegel Staff: 2009a).

One of the US pilots later told the investigative commission that he had had an "uneasy feeling about everything". The usual procedure for pilots in such cases when they have any doubt about the presence of civilians when going through their checks before a strike, they are meant to hold their fire. One of the pilots told the investigators that he even considered abandoning the operation altogether, but when the FAC confirmed that there was indeed an "imminent threat", the pilot set aside his concerns and continued the mission. (Goetz et al.: 2010). If he had known that one of the tanker drivers was present in the target area, he would not have fired his weapons (Gebauer and Goetz: 2010). In the NATO interviews Klein himself stated that he had asked over and over again if there were no civilians and his informant had replied that there were only insurgents. He said it became extremely difficult for him when the US air operations center decided not to send any additional aircraft after a first jet had been ordered to leave the area. In Klein's perspective, without the fighter jets, there would have been no mission, and the Taliban would have escaped, possibly taking the tanker trucks with them and Klein wanted to prevent this from happening at all costs. According to Klein, he had to create the impression that there were German "troops in contact", in order to get the air support he wanted. He admitted that he had deliberately used false information to obtain the US air support (Goetz et al.: 2010).

The information on the hijacking reached the commander through an Afghan informant, who had spoken to an intelligence officer by telephone. That night, the commander received images of the trucks via video footage transmitted from an aircraft flying over the location. These images were projected onto a screen in the Tactical Operations Centre (TOC).[24]

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[24] The video images were released online by Bild: http://www.bild.de.

In reality, not everyone in the vicinity of the fuel trucks was an insurgent. Most of those close to the trucks were civilians from a nearby village. The trucks had become bogged down in the riverbed and the insurgents had asked the civilians to tap some of the fuel in order to lighten the trucks (BBC NEWS: 2009). The final result was that the majority of the victims of the airstrike were civilians.

This news was all the more painful in view of the fact that shortly before ISAF commander General McChrystal had drawn up a new tactical directive aimed at preventing civilian casualties as far as possible. The new directive tightened up the rules regarding air support. The incident led to fierce debates, particularly in political circles in Germany. Various investigative reports, intending on pointing the finger at the guilty party, were published (NRC Handelsblad: 2010). However, this chapter focuses on the role of technology in decision-making and not on who was responsible for the tragedy.

In this particular case, the ROVER (remotely operated video-enhanced receiver) device played an important role. Manned or unmanned aircraft use the ROVER system to capture video images and immediately transmit them to ground locations. These live images can be seen on a screen, such as on a conventional laptop computer, making real time information on the situation on the ground available to the Joint Tactical Air Controller (JTAC) and third parties in the network. In the case of the Kunduz air strike, the ROVER images were available to both the JTAC and the PRT commander.

In addition to the JTAC and the PRT commander, two US F-15 pilots were involved in the air strike. After arriving at the location, the JTAC requested that they prepare two 500 pound bombs for release. The pilots, however, wanted to have more certainty on the situation before launching an air strike and were continuously searching for alternatives. For example, they made a request to first carry out a show of force, i.e. make a low-level pass and let people possibly run for cover, before launching an attack (Deutsche Welle: 2010). The PRT commander had a different interpretation of the situation and was not convinced that further delays would benefit the confusing situation. The pilots wanted to consult senior commanders from the US Combined Air Operations Center in Qatar. A 45-minute discussion between the pilots, JTAC and commander ensued about what should be done and who should be involved (Goetz et. al: 2010). Finally, the JTAC and the PRT commander managed to allay the pilots' concerns by designating the trucks as an imminent threat (ibid).

2.3. Three Pitfalls

The promises of NEO (see Chapter 1.1.) are optimistic, however, critical notes have been brought up against the high expectations of NEO. Osinga (2003; 2004) for example, has laid bare the underlying beliefs and over-simplified promises "...to fulfil military dreams – the dream of omnipresence, the dream of omniscience, the dream of empowerment" (Lambert and Scholz: 2005, 11). NEO may have disordering effect when put upon traditional paradigms of command and control (C2), as the real first tests of the NEO-concept in Afghanistan and Iraq have shown (see for example Ferris 2003; Warne et al. 2004). The case that was described in the previous section hosts a number of pitfalls that may be seen more often in NEOs. I have selected three of them and have called these pitfalls the *'Predator view'* pitfall, the pitfall of *misinterpretation* and the pitfall of *preventing streamlined communication*.

2.3.1. First pitfall: the 'Predator view'

The first pitfall in NEOs is the development of a 'Predator view'. This term is described by Call in *Danger Close* (2007) and refers to the addictive quality of footage captured and sent back by the Predator, the most frequently-used UAV in Afghanistan. The "Predator view" comprises two aspects. First, observers can get so caught up in what they are seeing on the screen, that they lose sight of what is happening elsewhere. Second, there is the powerful tendency to, at any given moment, mistake the view through the camera lens for the 'big picture'. The real time images only show a specific part of an area and these images are screen-filling, suggesting that there is nothing more going on other than what the screen shows.

This combination of two problems is called the 'Predator view'. This seems to have occurred in the case of the PRT commander in Kunduz. Rear Admiral Gregory J. Smith, a senior member of the US assessment team for the Kunduz incident, states the following:

> When you're sitting at a command center, it may look like you're seeing nothing but insurgents, but the reality can be pretty complex. (Chandrasekaran: 2009)

This statement appears to allude to the Predator view phenomenon. Call describes the consequences:

> When the two problems combine – when people in headquarters get sucked into the Predator's tiny view of the unfolding action and insist they have a real lock on the battle and try to influence events based on that view – it can lead to some unfortunate, even unprofessional, confrontations as different observers argue over what needs to be done where and when. (2007, 72)

In this quote, as well as in the Kunduz airstrike incident, the interaction between man and technology becomes visible.The consequences result from decisions made on the basis of limited images. In the following chapters I will further elaborate on the interaction between man and technology.

The associated pitfall of the Predator view is directly related to knowledge and experience. The JTAC in this example had gone through intensive and ongoing training in the interpretation of maps, aerial photographs and the use of the ROVER system. From March 2009, he had directed between 40 and 50 air strikes (Goetz et. al: 2010). On the basis of his training and experience, he was the so-called 'qualified observer' and, by extension, the 'release authority'. A commander can request an air strike, but he or she has no authority as to where, when and how a bomb should exactly be released. These are not part of the 'rules' connected to his position. Likewise, during Close Air Support (CAS), the pilot is not authorised to eliminate a target without permission from the JTAC. Guaranteeing the safety of friendly forces, civilians and infrastructure during air strikes is inextricably linked to the position of JTAC.

The ROVER system serves to *support* the JTAC in this process; the JTAC has been trained to interpret the images. In contrast, the commander must keep a clear overview of the situation and guarantee the tactical direction. It seems that the PRT commander in Kunduz was less engaged in keeping a clear view of the situation and more on focusing on the details shown on the screen. In this way we can say that the technology is not a neutral thing, but that it has a tendency to distracting or persuading people in a certain direction. The commander's task is to keep a clear view of the overall picture of the operation, including respecting the general Rules of Engagement (ROE) valid for the mission, and the Standing Operating Procedures (SOP), in the Kunduz airstrike case SOP 311 regarding CAS (Spiegel Staff: 2009a).

2.3.2. Second pitfall: misinterpretation

The second pitfall concerns the misinterpretation of video images. The commander had the opportunity to watch the ROVER images on the screen, which are initially meant to guide the JTAC, who was guiding the air support from the TOC (ibid). These images however, are projections of temperatures within a certain range, and result in grainy, grey images with imprecise black dots. It was quite possible to distinguish the trucks that were stuck in the river bed and the people around them from the surrounding area, however, what they could not see was whether these people were or were not carrying weapons. In interpreting the ROVER images, it seems that the PRT commander acted on his own insight only and subsequently made decisions without accepting the views of others in the network. For example, the F-15 pilots made suggestions to consult ISAF Headquarters in Kabul and the US Combined Air Operations Center in Qatar (Goetz et. al: 2010). However, the commander did not want to lose the window of opportunity of eliminating actual terrorist threats. Given the information that the commander had then, his understanding of the situation was rather threatening and this coloured his interpretation of the images on the screen.

His decision shows that, sadly, he misinterpreted the persons on the screen for insurgents, partly due to the previously mentioned information relayed to him by an Afghan informer (Chandrasekaran: 2009). This information led him to believe an attack was forthcoming. It was hard for him however, to tell from the screen, whether some of the persons identified with the black dots might be villagers coming to take free fuel from the trucks (Farrell and Oppel: 2009).[25]

This misinterpretation of video images is an example of the second potential pitfall of network-enabled capabilities. Although IT and network technologies can even out the differences in information available to the various partners, it cannot bridge the differences between partners in respect of the knowledge of specific 'rules of the game' that determine how to deal responsibly with the information in the network. This may lead to people taking matters into their own hands and assuming authority, without actually being authorised to do so.

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[25] This report circulated by the media is contradicted in a leaked report. In the leaked report, district managers claim that the media made hay with the story about free fuel. The report was leaked via wikileaks.org.

A similar incident is the Apache incident in Iraq in 2007, quoted at the beginning of this chapter, in which US airmen misinterpreted video images. The helicopter crew was convinced that the group of men they were following on-screen were carrying weapons and a rocket launcher. In reality, they were following a team of news reporters who were carrying cameras and who had just been close to an incident site. Two reporters were killed in the ensuing attack, on account of their cameras being mistaken for weapons by the air crew and the military on the ground (NRC Next: 2010).

The way in which information is interpreted is therefore related to specific expertise, the situation of the observer, and the way the information is presented. Technology plays a vital role in this respect, especially when it comes to the way information is being presented. Therefore, the pointing of fingers to certain persons who were involved is a one-sided assessment of the situation. I argue that in incident assessments the role of technology should be accounted for as well.

2.3.3. Third pitfall: prevention of streamlined communication

The third pitfall is related to communication between the various partners in the network. It is to be expected that missions such as the one in Afghanistan will generate more tension owing to conflicting rules between coalition partners. There are sometimes also differences in the interests of the various Allies' headquarters.

These tensions are especially noticeable at lower levels, where soldiers have to act rapidly in dealing with situations. Wood expresses this as follows:

> It used to be, the ground commander requested a bomb, and a bomb he got. Now, the ground commander requests a bomb, and the joint terminal attack controller, the aircrew, and the ground commander talk about it. (2010, 30)

Discussions are amplified by, among other things, the multinational character of network-enabled capabilities. ROEs may, for example, differ. The aim, the direction is clear: namely to find a better solution than release of a bomb. However, sometimes these discussions only serve to complicate the situation, as we saw in the Kunduz air strike. This is the third pitfall, the prevention of streamlined communication during an operation: it took 45 minutes of arduous

debate between the German commander, the JTAC and the US pilots to get clarity in how best to act (Goetz et. al: 2010). The commander did not want to request support from Qatar, because of the emergency of the situation. For the commander, the involvement of more partners in the network would further delay, and block a fast interpretation, which was needed in his view (ibid). This understandable need for a fast interpretation made things even worse.

2.4. Technology connects practices

The question is: why do these pitfalls develop? Without claiming to have a ready-made answer, in this dissertation an attempt is made to uncover the deeper dimensions of network-enabled operations, as these may be the prime causes of pitfalls developing in NEO. I will look at the problem from two perspectives. The first is the insight, originating from the philosophy of technology, is that technology mediates human actions. The second perspective examines the concept of 'practices'. These two insights have been shortly introduced in Chapter 1 and receive in depth philosophical attention in Chapter 4 (normative practices) and Chapter 5 (technology mediation). In this section, some preliminary observations are presented.

Technology often plays an important, but strikingly underestimated role in military practice. Contemporary rhetoric for example, refers to actors in a network-enabled operation as nodes in a network (see for example Dekker: 2005). This terminology reveals a mechanistic view of how military personnel work in NEOs. Developers and users of these technologies tend to think that the technologies are neutral. Connecting the different nodes by means of technology is also assumed to be a neutral activity.

From the case of the Kunduz air strike it becomes clear that as soon as technology is introduced, it is not merely nodes in the network that are being connected. Moreover, practices (such as the pilot-practice, the JTAC practice, the commander-practice, etcetera), that previously operated more or less separately, are being connected. The use of the ROVER system, intended to *support* the JTAC, linked the pilot with the PRT commander, causing a 'blurring' of the structure and direction of the two separate practices. This blurring of practices can cause a number of pitfalls, mentioned in the previous sections. Particularly misinterpretations of information and subsequent procedural errors can be seen as direct consequences of the blurring of practices. As I will argue in the following chapters, the role of technology cannot be understood without

reference to the specific social context in which the technology is used. Furthermore, the concept of practice enables us to view a soldier not only as a node in the network, a task performer (for example, pushing a button) directed by rules, a goal-driven agent, but also as someone with a conviction about how he or she should perform his or her task in the right way. This conviction relates to the 'rules of the game' within the various practices. A pilot who does a good job does this in a different way than an army engineer in the field. In a network environment, practices, all with their own set of rules, can be connected up to each other with unprecedented speed, leading to a possible blurring of practices and consequences as mentioned above. A more profound analysis of the Kunduz airstrike incident in terms of a blurring of practices will be presented in Chapter 4.

2.5. Traditional versus network technologies

A critical reader might remark that, in military practice, there has always been a great deal of cooperation between the practices within the military setting. That is certainly true. However, the variety of practices within the overarching military practice was traditionally connected via hierarchical structures and means of communication. The more traditional means of communication, such as radio, served to confirm this hierarchical structure, enabling vertical information exchange via lines of command. What is different today is that all these various practices are connected by means of network technologies. These supposedly 'neutral' technologies can cause clashes between the different standards, rules and principles – what is referred to as 'structure' in this dissertation – that are applicable to these various practices. It has suddenly become unclear – or less clear – which rule should prevail and who has which role. Given the hierarchical nature of the military practice, this problem did not previously arise: if clashes did occur, the hierarchy prescribed the solution. With the introduction of network technology, the number of interactions have increased and have become multidimensional. As a result, the likelihood of clashing rules and guidelines increases. The conclusion can therefore be drawn that a technology, that was presumed to be neutral, linked up practices that were previously unconnected. And, even if they did interact in the past, it was along clear lines, namely via one commander communicating with another commander.

If we take a closer look at the individual level of the various practices in which soldiers make decisions and act, it can be concluded that network-enabling

technologies may in fact have been partially to blame for the tragedy in Kunduz. It was assumed that it was clear which rule should prevail, while in reality, there was no such clarity (Gebauer and Goetz: 2010). After the incident, several (confidential) reports came out, of which the NATO report and the German military investigation were the most authoritive. The German prosecutor concluded that the decision to strike was the appropriate thing to do for the German Colonel (Houlton: 2010). The NATO report concluded that the airstrike was inappropriate and that the decision to strike was wrong (Bild.de: 2009).

The two conclusions of the reports are strikingly conflicting. What is needed is a third framework that can explain in a more encompassing way how two thorough investigations can come to conclude so differently. In this chapter a suggestion was made to an alternative framework, namely that of normative practices. It is a philosophical framework that tries to overcome a one sided view which occurs in existing frameworks (for example those that explain moral decision making solely in terms of power relations (Foucault: 1982), or needs (Maslow: 1943), or human reasoning (Rest: 1979). In the next chapters this alternative framework will be investigated in relation to NEOs in general, and in Chapter 4 in relation to the Kunduz airstrike incident specifically.

2.6. Conclusion

One of the assumptions for NEOs is that it will improve communication and decision-making. This does not always prove to be the case. Sometimes the opposite may even be true, as was illustrated though the Kunduz air strike. In dynamic communication such as in network-enabled operations, a clear view is missing of who the relevant expert in the field is and who is authorised to make decisions. Military personnel working in a network environment may therefore encounter a number of pitfalls. The first is the danger of developing a 'predator view', the second is misinterpretation of on-screen images and the third is the prevention of streamlined communication and information exchange at critical moments in military operations.

In order to clarify the underlying causes of these pitfalls of network-enabled operations, a more profound analysis is needed. I briefly introduced the concept of *practice* in order to demonstrate that tensions can arise during network-enabled operations. These tensions arise due to a blurring of structure and direction of different practices of users in the network. In the Kunduz air strike

case, the differing rules of the JTAC, the pilots and the PRT commander clashed. In Chapter 4 I will give more examples of how this concept of *practice* can contribute to a better understanding of potential problems in networked missions.

Underlying tensions do not surface as long as circumstances are predictable. Visionaries in the area of network-enabled operations tend to forget about the social context in which these military operations take place, namely in military practice. It is inherent in this practice that circumstances are not always predictable. Only when stressful and nebulous situations occur (such as the hijacking of a fuel truck) it becomes apparent that these technologies are not neutral and that they have persuasive and behaviour-shaping aspects to them. Therefore, the complexities that arise with the introduction of networked operations need further reflection. The next chapter provides a complexity analysis of network enabled operations.

2.7. Recommendation

In order to avoid further incidents such as referred to in this chapter, it is essential that military personnel become aware that technology is not merely facilitating communication, but can lead to an imperceptible blurring of practices. It is therefore important for military personnel to identify the potential pitfalls of network enabled operations with respect to their own daily practice, including their specific responsibilities and rules. The aspect of responsibility in the different practices of networked operations will be further addressed in Chapter 7. In Chapter 4 the precise nature of the relationship between different practices will be examined more closely, in order to establish whether good cooperation is possible. A case in point is the relationship between the JTAC and the pilot, where there is excellent cooperation. But what is especially needed after a preliminary analysis of the pitfalls of NEO (derived from a case study in this chapter), is an analysis of the complexities at work in NEO. Oversimplifying the complexities has led to two conflicting reports, that came out after the incident. An analysis of the complexities will be done in the following chapter, titled "multi-aspectual analysis of NEO".

3 Multi-aspectual analysis of complexities in Network Enabled Operations (NEOs)[26]

3.1. Introduction

The need to address the complexities in NEOs becomes more pressing, as we have learned from the former chapter, in which a case study on the airstrike in Kunduz province, Afghanistan, in September 2009 was described. Many civilians died during that airstrike. In the case of the Kunduz airstrike, the different roles and responsibilities of the observer, pilot and the commander were blurred with tragic consequences. After the incident, several (confidential) reports came out, of which the NATO report and the German military investigation were fiercely discussed. The German military investigator concluded that the decision to strike was the appropriate thing to do for the German Colonel. That many of the people on the scene turned out to be civilians does not make the decision illegal in retrospect (Houlton: 2010; von der Groeben: 2010). The NATO report, however, concluded that the airstrike was inappropriate and that the decision to strike was wrong (Bild.de: 2009). A closer examination of the reports (as far as they have been disclosed or have been discussed in newspaper articles) reveals two one-sided views, which may have been the reason why the conclusions are conflicting. The German prosecutor argued in a strictly legal sense, focusing upon objective facts:

> Das einzig objektive Beweismittel sind die vorhandenen Videoaufzeichnungen der Kampfflugzeuge, auf denen 30 bis 50 Personen

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[26] An earlier draft of this chapter has been published as: Van Burken, C.G. (2010) 'Complexities in Network Enabled Operations', in: *Proceedings of the 16th Annual Working Conference of CPTS 2010*, Maarssen, The Netherlands, May 2010. Interdisciplinary Research for Practices of Social Change, (2011), Roelien Goede, Leenta Grobler, Darek Haftor (eds.), CPTS: Maarssen: 66-84.

> zum Zeitpunkt des Luftangriffs auf der Sandbank zu erkennen sind. (Der Generalbundesanwalt beim Bundesgerichtshof, 19.4.2010-8/2010).[27]

Critical questions can be raised at this point about the objectivity of video feeds, however, they will not be addressed here. In Chapter 5 a more comprehensive evaluation of the role of technology in moral decision making will be given. The outcome of the German prosecutor, namely that the decision to strike was legally correct, is in striking contrast with the NATO investigations. The NATO report argued from the perspective of the intentions of the ISAF commander General McChrystal, who had expressed that civilian deaths could no longer be tolerated, and had therefore issued rules limiting the use of airstrikes. In an interview with Spiegel, McChrystal explains the directive:

> Well, the tactical directive was designed not just to give people specific guidelines, but to give them intent. That was to explain that killing the enemy was not the best route to success. [...]What I've found is that in any big organization, people interpret guidelines or intent differently. However as long as I'm in command here, I will be making some of those same points, constantly. (Spiegel Staff: 2010)

Analyzing the Kunduz incident from the perspective of the intentions of the highest commander of the mission, General McCrystal, the decision to strike was wrong. It seems that the two reports are unable to grasp the complexity of this case of moral decision making in NEOs. Analyzing moral decision making from mere intentions or from legal rules seems too simplistic and does not lead to a coherent conclusion. What is needed is a different framework that can evaluate moral decision making in complex NEOs, such as the Kunduz case, in a more systematic and encompassing way. This alternative framework may be able to explain how thorough investigations can come to conclude so differently. In this chapter the alternative framework is discussed in relation to NEOs in general, and in Chapter 4 in relation to the Kunduz airstrike incident specifically and to three other cases. The framework, or analytical tool, called multi-

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[27] Translated by author as: "The only objective evidence are the existing video records of combat aircraft, where 30 to 50 people can be seen at the time of the raid on the sandbank." (The Attorney General at the Federal Court, 19.4.2010-8/2010).

aspectual analysis, will be unpacked in this chapter. Its relevance will be shown with reference to several interviews.

3.2. Moral Concerns in NEOs

Philosophical analyses directed to human behaviors in the context of NEO are rare. A framework that pays attention to the complexities, including moral issues, and also manages to provide a more or less coherent picture of NEO could help users (and designers) of network enabling technologies in making more informed choices about further developments and training. Therefore, the aim of this chapter is to make a start with developing an instrument that helps gathering empirical data on the specific (moral) problems that arise when soldiers are working in a NEO –environment. Once these problems have been systematically mapped, they can be included in new training programs and inform soldiers regarding mission preparation. Three behavioural assumptions which have a moral aspect to them and that will arise in a NEO environment are posed. The assumptions are related to *sharing of information*, *collaboration* and *delegation of authority*. Below I have listed the assumptions.

(I) *Information sharing* beyond automated data distribution assumes intentional consideration of the 'information needs' of the other parties in the network. It assumes that those who are part of the network actively upload or distribute information if it presents itself (Kamvar et al. 2003; De Man 2008; Smith 2006; Alberts and Hayes 2003; Smith 2006; Han and Venkatasubramanian 2003). The partners in a network are regarded to do this with the trusted efforts of correctness, completeness and timeliness, despite possible costs. (Kamvar et al.: 2003; De Man: 2008; Smith: 2006; Alberts and Hayes: 2003; Han and Venkatasubramanian: 2003). This assumption implies that users will pro-actively intervene in the network systems when something goes wrong. An example of this assumption is given by van Diggelen et al. who develop information sharing devices for soldiers on the battlefield:

> when a user knows the quality of the wireless network connection is bad, he or she can choose to communicate the message by using the radio instead of sending a text message. (2012, 12).

The authors assume that people will put deliberate effort in the sharing of information, even if this requires extra actions of them.

(II) *Collaboration* as a joint effort between independent parties assumes willingness to partially sacrifice own goals or take risks in order to achieve a higher, common goal (De Man: 2008; Alberts and Hayes: 2003; Ballou and Pazer: 2003). Also, in networked operations, the risk and organizational relationships are presumably based on shared commitments to safety, although they may not be equally shared among members (Grabowski and Roberts: 1998). The sacrifices involved for successful information sharing may vary between the parties. It may also challenge moral principles of self-interest and concern. In networked operations with multiple parties involved in situation-driven collaborations, this requires of each party responsibility of reciprocity and trust in fairness of the eventual distribution of the load. It also assumes that partners will invest considerable effort in maintaining trust and loyalty towards other members in the network (Van Alstyne: 1997).

(III) *Delegation of authority,* related to mission command, refers to the command principle which puts decision making authority at the lowest levels of command. Also the lowest levels should be able to have capability to maintain situational awareness and direct and coordinate actions with networked information. In doing so, one realises NEOs added value of decentralisation and agility (Albert and Hayes 2003). Van Alstyne states that:

> many refuse to subordinate their interests to the interests of the community, and the distribution of authority in networks affords them the ability to act on their own behalf. (1997, 126)

This command arrangement requires additional competences at lower levels to handle the responsibility of integral command. At the same time it assumes considerable discipline and responsibility on the part of senior commanders: they must work primarily to support and make subordinates effective and only intervening when necessary (Bell and Kozlowski 2002; Stanton et al. 2012).

3.3. Research Method

The assumptions stated above are derived from literature on NEO and formulated according to expectations on how military personnel operates in a network environment. Interesting for the development of ethical theories about moral decision making in general, and highly relevant for addressing the research question about moral behaviour in NEO, is an empirical study of these assumptions. In the previous chapter an empirical case was discussed and later on in this dissertation also additional cases, derived from interviews, will be addressed. Prior to the further analysis of empirical cases, the assumptions about information sharing, collaboration and delegation of authority are tested against a philosophical tool, which is called multi-aspectual analyses. Authors in various disciplines have used this tool, especially in information science research (see, for example, Basden 2008). The multi-aspectual analyses takes a broad perspective and at the same time tries to give a coherent account of its object of analyses. It can help decide on the relevance or the irrelevance of certain aspects at stake in the assumptions on NEO. The multi-aspectual tool will be used in two ways. On the one hand it helps in gathering empirical data on the three above mentioned assumptions. For example, the formulation of questions for semi-structured explorative interviews is guided by the multi-aspectual analyses. On the other hand it will be used to interpret the data that is gathered in interviews. For example the observation that roles and responsibilities have become blurred, as we have already seen in the Kunduz airstrike case, can be explained in terms of a collision between differences in rules and norms between the different hierarchical levels. These concepts will be shortly explained in this chapter and in more depth in Chapter 4. The set-up for the semi-structured interview, including the questionnaire, can be found in the Appendix.

3.4. Explanation of Dooyeweerd's multi-aspects theory

Before applying the multi-aspectual theory to networked operations it is helpful to explain some more about this theory. The philosophical background for the multi-aspectual theory comes from Herman Dooyeweerd, a Dutch philosopher who initially developed his theory in the late 30's. Basically, what Dooyeweerd claims is that reality can be analyzed in terms of 15 aspects, or modes of existence (see his New Critique, Vol. I: 1953, 1). Those aspects are listed in Table 3.1.

Table 3.1.: Aspects of reality according to Dooyeweerd (free to De Vries (2005) and Bergvall – Kareborn (2006)).

Aspect	Application
1. Numerical	1. Discrete quantity
2. Spatial	2. Continuous extension
3. Kinematical	3. Motion
4. Physical	4. Energy
5. Biotic	5. Vitality
6. Psychic/sensitive	6. Feeling, sensing
7. Logical/analytical	7. Analytical distinction
8. Historical/formative	8. Human formative power
9. Symbolic/linguistic	9. Symbolic representation
10. Social	10. Social intercourse
11. Economic	11. Frugality
12. Aesthetic	12. Harmony
13. Juridical	13. Justice
14. Ethical	14. Love
15. Pistic	15. Trust

Any entity exists in all of these modes: it has a numerical existence, a spatial, a kinematical, etcetera. The multi-aspectual analysis applies to things and events and therefore it can be applied to military operations, in our case network enabled military operations. Thus, in networked operations, different kinds of problems may arise in the different aspects of these missions.

An important insight for NEO is that the aspects are not reducible to one another. This is important to keep in mind, because in NEO the different societal spheres (for example, NGO's, local civil partners and allied military forces) and hierarchical levels are intertwined and problems arise when the rules and norms of one sphere clash with that of another. Therefore it is important to distinguish and make explicit what is specific about military personnel, what rules and norms hold for, for example, a commander, a pilot or an informant. As could be seen in the Kunduz airstrike, the different roles can blur with dramatic consequences.

It is interesting that the multi-aspectual analysis has been used by philosophers with different backgrounds. In particular in the field of systems technology the Dooyeweerd approach is now used to gain insights into the complexity of systems and the design of systems. Examples are Bergvall-Kåreborn (2002) on Soft Systems Methodology and others can be found in Proceedings of the annual conferences organized by the Centre for Philosophy, Technology and Social Systems (CPTS). The multi-aspectual analysis has proven to be helpful also in several other research areas such as Information technology (Basden: 2010), Systems Thinking (Strijbos and Basden: 2006), Health Care (Hoogland and Jochemsen: 2000), Organizational Sciences (Eriksson: 2007) and Engineering and Design studies (Verkerk et al.: 2007). These examples show how the analytical instruments that Dooyeweerd developed can have a wide implication and have a multi-disciplinary scope. In order to advance knowledge about its full scope and usefulness this philosophical tool will be applied in this specific field of military operations. The multi-aspectual analyses is not a closed system or a fixed arrived philosophy, rather it is open to critique and adaptations. With this in mind it can serve as a basis for a possibly more refined version of the multi-aspectual analyses which suits best in the military context.

3.4.1. Aspects as spheres of meaning

Basden has rephrased the aspects as 'spheres of meaning' (Basden: 2010). Network enabled operations have meaning in the different aspects, although not all aspects are equally important. A quick analysis shows the following: NEOs exists of a number of partners who are part of the network (numerical aspect), NEOs allow for communication over greater distances (spatial aspect), NEOs are assumed to speed up the distribution of information and decision making, thus having material and personnel quicker at the scene (kinematical aspect), NEOs

require a soldier to carry around more batteries and energy storing devices to keep communication means standby (physical aspect), soldiers are replaced by sensors to take over reconnaissance functions, thus soldiers are assumed to be less exposed to life threatening situations (biotic aspect), NEOs can create the feeling of being tele-present (psychic aspect), NEOs raise the need for interpreting digitally processed data (analytical aspect), keeping up the network and the related technologies requires human formative power (formative aspect), NEOs are highly dependent on a mutual understanding of different representations in the form of chat, symbols, interactive maps, language, etcetera (symbolic aspect), hierarchical relationships become virtual as opposed to face-to-face (social aspect), NEOs cost money (economic aspect), NEOs involve user interfaces that are designed in a better or worse way (aesthetic aspect), NEOs are bound by laws and conventions (juridical aspect), NEOs involve respecting and taking care of others in the network (ethical aspect) and trust in the communication technologies and other partners in the network are part of NEOs too (pistic aspect).

This quick analysis only serves to give a glimpse of how complex the issue of NEOs can be. In all of these aspects, problems can occur. A further analysis is needed that focusses on the underestimated or neglected issues in network operations, especially those that influence moral decision making. That some aspects have not been addressed might be because some aspects are not deemed relevant, but it can also be the case that they are overlooked. The multi-aspectual analysis is a tool to help identify what else is perhaps at stake in networked operations, besides what has been the point(s) of focus up till now. In case of the Kunduz airstrike for example, no attention was paid to the symbolic aspect in the two reports that came out. Colonel Klein misinterpreted the visual representation of the situation on the ground which was shown on a screen, with tragic consequences.

For the NEO case more aspect are important. Explorative interviews are done to elucidate relevant aspects for NEO. Doing empirical research on the everyday life world of military personnel is helpful to conceptualize what this life world of a military entails, what role ethics and morality play and how technology possibly influences military behavior. In this subsection section a provisional multi-aspectual analysis of NEO was given, which was theoretical in nature and served as a way of opening up and categorizing the complexities of NEOs. In the next subsection a more elaborate analysis is given, with reference to interviews.

3.4.2. Aspectual analysis of NEOs

In this section additional empirical insights are gained through interviews with soldiers after their return from the International Security Assistance Force (ISAF) mission in Afghanistan in 2009. The multi-aspectual framework has been helpful in gathering relevant questions here[28]. It has also offered a way to deal with the complexities of networked operations as these were present in the empirical data. The respondents were working in a highly technologically mediated environment and had experience with network enabling technologies during their mission in Afghanistan.

One of the questions to the respondents was about situations in which they had to make major (moral) decisions. In all cases the respondents used words such as 'warm and fuzzy feeling' or 'gut feeling' to describe their motivations on making these decisions. For example, Lieutenant Dennis, who worked as a forward observer (also called JTAC (Joint Tactical Air Controller), said that the 'warm and fuzzy feeling' is a prerequisite for engaging a target[29]:

> I need to create a 'warm and fuzzy feeling' for the pilot, we must both make sure we are both talking about the same target. If that is not the case, we will not release a bomb. Although I am the release authority, so the one who says yes or no, if the pilot is not sure I'm still thinking to myself whether I have to release a bomb."[30] (Lieutenant Dennis, in an interview with the author, 8 December 2009, translated by the author).

Both the forward observer and pilot need to have this feeling and according to Dennis this feeling cannot be created by technology alone. This relates to the psychic and symbolic aspect, which should not be overlooked or reduced when providing the observers with real-time video streaming of cameras attached to the fighter plane. The symbolic representation needs to be supplemented with

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[28] The questionnaire is attached in the appendix of this dissertation.

[29] 'engaging a target' is military jargon for bombing, shooting or any another kind of use of force.

[30] Original transcript: "Ik moet bij een piloot een 'warm and fuzzy feeling' creëren, we moeten beiden zeker weten dat we over hetzelfde doel praten. Als dat niet het geval is gooien we geen bom. Ondanks dat ik de release authority ben, dus degene die zegt ja of nee, als de piloot het niet zeker weet dan ga ik toch bij mezelf nadenken moet ik wel een bom gaan gooien".

something else prior to making a decision, and this 'something else' is hard to describe, but relates to the tacit knowledge of the expert, or just the general impression of the situation, according to the respondents.

The possibility for transferring real-time video images over the network can create problems in the social aspect, namely the occurrence of micro-management on the higher levels. This phenomenon is called the 'predator view' (see Section 2.2.1) in military jargon, and the Kunduz airstrike is an example of this. The 'predator view' means that a higher commander in a command center thinks he or she has an overview of the situation on the basis of feeds on a screen. The commander then interferes on the lower levels on the basis of this screen, whereas this role in fact belongs to the forward observer and the pilot. The higher officer in the command center does not have the full situational awareness, but only a limited version, namely what the screen presents; from the screen alone one cannot overlook the real situation on the spot.

Another aspect is the pistic aspect, which is about trust in technology. This aspect also turned out to be important and was mentioned by almost all respondents. Lieutenant Nick for example, did not trust the coordinates generated by the system which connected his reconnaissance vehicle to a grenade launcher. Due to a software bug in this system the coordinates were shifted and it happened that a grenade exploded next to him, instead of in front of him where he had aimed it and expected it to explode. He explains:

> So if I stood here and I pointed the laser over there, then the distance on the map did not match the actual physical distance. And that was just in the Baluchi Valley, so where it was all about. So my first actual deployment of the BAA [Beobachting Aufklarings und Anlage] was that I pointed the laser at a mortar installation and I requested mortar rounds. And here was Chora West and mortars fell here. So they fell next to us. So, one of my guys pointed the laser at him. I asked: "Do you have a view?" No, he could not see, because of course he was looking in the direction in front of him. And suddenly we saw a big cloud of smoke over there.[31] (Captain[32] Nick, in an interview with the author, 15 February 2010, translated by the author)

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[31] Original transcript: "Dus als ik híer stond en ik laserde dáár op, dan klopte de kaartafstand niet met de daadwerkelijke fysieke afstand. En dat was precies in de Baluchi vallei, dus waar alles om draait. Dus mijn allereerste daadwerkelijke inzet van de BAA

The information that was generated and processed by the technology could not be trusted. This aspect of trust is important for the way the technology is used and for whether the technology will be used at all.

The social aspect plays a leading role in the assumption about *cooperation* stated earlier on in this chapter, which is an important characteristic of NEOs. Cooperation cannot be fully effective unless it involves, next to the social, the aesthetic aspect of harmony, the juridical aspect of fairness, the ethical aspect of willingness to share, the pistic aspect of trust and commitments, etcetera. Assuming the multi-aspects framework is a valid means to get a more coherent understanding of human actions, it could also give practical guidelines to excellence in human functioning in a network enabled environment.

3.4.3. Irreducibility of aspects

Dooyeweerd claims that the aspects are irreducible, meaning that no one aspect can be reduced to another aspect. The irreducibility of the aspects provides a foundation for diversity. The irreducibility of the aspects resembles in societal spheres and it implies that the different societal spheres, such as family, school, businesses, etcetera are not reducible to one another. The norms and principles that hold for one aspect or societal sphere should not be overruled by the rules and norms from another societal sphere. To keep a family 'healthy', one should not apply the norms of a business to it, or bring its internal structure under control of the state. Walzer (1983) in his 'Spheres of Justice' argued in a similar way to distinguish between different spheres in which justice is distributed differently in each sphere. This diversity and irreducibility of societal spheres leads to differences in responsibilities too. For example, legal responsibility is different from social responsibility, they are considered to be different kinds of responsibility. Different kinds of responsibility will be further addressed in Chapter 7. Dooyeweerd stressed universality in reality, meaning that the aspects

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[Beobachting und Aufklarings Anlage] kop laserde ik aan op een mortierstelling en ik vroeg ook mortieren aan. En dan was hier Chora -west en de mortieren vielen hier. Ze vielen dus naast ons. Dus, één van mijn lui die laserde hem aan. Ik vroeg heb je wel zicht, nee, hij had geen zicht, want die zat natuurlijk naar vóren te kijken. En ineens zagen we dáár een grote rookwolk."

[32] Nick was promoted from Lieutenant to Captain after his deployment.

are closely intertwined, leading to coherence and harmony among the aspects. It means that the aspects are not absolute, but relative and reaching beyond themselves to all the others. The rules and norms that hold for the respective aspects can be anticipative and retrospective to other aspects. 'Anticipation' means that a concept in a certain aspect contains a reference to a concept in a later aspect, 'for example, the concept of emotional value in the psychic aspect refers to the concept of value in the economic aspect' (De Vries: 2005, 73). 'Retrocipation' then, is the reference of a concept in one aspect to a previous aspect. Dooyeweerd called the rules, norms and principles that hold for the different aspects 'law-spheres' (see his New Critique, Vol II: 1953, 556). One should however not perceive of the aspectual laws as dogma's:

> Though the aspectual norms are given, it is important not to confuse them with human rules and social norms or even with our knowledge of the norms, which are human constructions and context sensitive. (Basden: 2002, 261)

In applying the aspectual norms, context should be taken into account, as well as an understanding that the aspectual norms can never be fully known by theory or grasped in language.

3.5. Qualifying function

Dooyeweerd opened up the concept of 'function', by distinguishing between qualifying and foundational functions of an entity. The concept qualifying function is:

> a modally defined concept that refers to the function that characterizes an entity, determines its inner structure, and makes us experience a specific identity in relation to this entity despite all the changes that may occur to it over the years. As such, it can be seen as the manager or foreman of the internal structure of a particular thing and is, therefore, sometimes also referred to as the guiding or leading function (Bergvall-Kåreborn: 2002, 313).

It indicates what defines the entity's purpose or reason for existence. It is different from the foundational function. The term foundational function says something about how the entity came into being. The foundational function of the coin, for example, can be found in the formative aspect, sometimes called the

technological aspect, which means that the coin came into existence through human formative power. The qualifying function of a coin is in the economic aspect, where the coin functions as an object. The functioning of entities in the various aspects is further analyzed by Dooyeweerd in terms of the 'laws' that hold for the various aspects (see Section 1.4.1. and 3.4.). To continue the example of the coin: for its proper functioning we need to take into account a 'law' that holds in the economic aspect, which says that each coin can only be spent once at a time. That is why we have to calculate how much money we need to buy something before we commit ourselves to the transaction. Dooyeweerd distinguished descriptive laws (such as natural laws) and prescriptive laws (of which examples can be found in the technological domain: technical norms and standards, good practice, etcetera). The different aspects have different laws, although there may be analogies between the laws in the various aspects (de Vries 2005). This insight can be used in studying modern military operations. Here also different laws and norms hold for the different cooperating practices (such as commanders, pilots, JTACs), but they do not stand on their own. They are connected in different ways and sometimes this is done well and sometimes this causes tensions. An example of this tension was given in the explorative interviews by Major Marc, one of the respondents who served in Afghanistan in 2009. He explained that it was a rule that the civil partners attached to his unit needed to be protected from any threat at all costs. They were told that their explicit role as soldiers was to protect a Dutch Foreign Affairs civilian worker and that in case of serious danger for the civilian this meant that the soldier needed to put his life at risk.

> So, at the moment he [the official of the Ministry of Foreign Affairs] walks ahead of us and starts doing crazy things, the soldiers have to sacrifice themselves, that was: literally the rule: civilians were not allowed to be killed, the militaries were, the citizens were not.[33] (Major Marc, in an interview with the author, 16 December 2009, translated by the author)

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[33] Original transcript: "Op het moment dat hij [de ambtenaar in dienst van het ministerie van buitenlandse zaken] vooruit loopt en gekke dingen gaat doen dan moeten dus militairen zich dus opofferen, dat was dus letterlijk de regel: de burgers mochten niet sneuvelen, de militairen wel, de burgers niet."

Different aspects only get their meaning when the various aspects are integrated, which we do when we move from the theoretical multi-aspectual analyses back to the reality of everyday life. Also the normative dimension becomes visible when the aspects are related to the everyday military practice as we have seen in the above example from Major Marc. The normative dimension here relates to the element of responsibility. In this case the structure of the military operation and that of the soldier practice makes that the soldier is responsible for the safety of the civil representative. This resembles also the qualifying function of the soldier. In the next chapter it will be further shown that normativity is not externally added 'on top' of the practice, but that it is intrinsically present in the practice correlates with the qualifying function of the practice. Therefore the concept of a normative practice (with a structure and direction) is used, which is helpful on the level on which actions take place and in which the military operations are realized.

3.5.1. Application of the qualifying and foundational function to military practices

What is the qualifying function of military practices? This question needs to be addressed in order to get a better understanding of what it means to be a soldier and what this looks like in a network enabled environment. As a working definition in this dissertation, a soldier is taken to be someone who, in service of the government, bears weapons in an organised manner to promote justice (adapted from Van Riessen: 1963, 8). The military practice is the pre-given framework in which a soldier fulfils his or her task. It is the disciplined use of force, within the boundaries of the law, in an organized manner to defend and promote (international) justice. The way in which this is institutionalized differs for different states. The Dutch constitution states that the Armed Forces have three tasks, namely (a) to defend the interests of the Kingdom, (b) to protect international legal order and (c) to promote international legal order (Article 97, first paragraph, Dutch Constitution). The state has this right to use force, but within the borders of the law (Zwart: 1994, 65). Weber defines the state as a political organization whose "administrative staff successfully upholds a claim to the monopoly on the legitimate use of physical force in the enforcement of its orders" (Weber: 1947, 154). In Dooyeweerdian terms, armed power is the typical *foundational function* of the state. However, according to Dooyeweerd, armed power can never be its *qualifying function*, for the state as a *res publica* is always in

need of the subordination of its armed force to the civil government in order to guarantee stability of its public legal order which is characteristic of a state (Zwart: 1994, 63). Chaplin emphasizes the link between "the state" and a common understanding of justice and argues against positions that declare the state as merely a means for sustaining social order, or as an arbitrary social construct or as a complex organization that is the mere instrument of individual self-interest. He states that:

> ... it is a historical response to the inescapable imperative arising with ourselves for just public relationships [...]. Political community exists to secure, for human beings, a lawful arrangement of their public interactions, embodying the requirements of justice. (Chaplin: 2004, 2)

In this dissertation I adopt Chaplin's position that the state is defined by a single, integrating and directing norm, the establishment of 'public justice', from which the state derives its qualifying function. Accordingly, all the rules and norms that hold for that military practice (as subordinate practice to the state) should rest upon this qualifying function which lies in the judicial order. The rules and norms that hold for the military practice can be distinguished according to the same distinctions: there are qualifying rules and foundational rules to the military practice. In the next section the analysis in terms of qualifying and foundational rules will be continued. In Chapter 4 the different rules will be further elaborated upon.

3.5.2. Application of the different rules

Going back to the example of the Kunduz airstrike, in Chapter 2, the aspectual analysis provides the insight that problems occurred in different aspects. These were for example:

- in the social aspect, when the pilots requested more people (Qatar headquarters) to be involved in the decision to bomb;
- in the ethical aspect, because the commander deliberately withheld information;
- in the psychic aspect, as the pilots felt not at ease with the situation;
- in the analytic aspect, where the distinction between who was an insurgent and who was a civilian was not clear;

- in the kinematic aspect, as the flying time of the nearby military airplane was ending and having a new plane on the scene would take too long;
- in the juridical aspect, because weapons release is bound by military law;
- in the pistic aspect, as the informant's statements about the presence of insurgents needed to be trusted;

Each of the partners involved in the airstrike were guided by different qualifying rules, characterized by different aspects. From the interviews it followed that what mattered most to one soldier during a mission was very unimportant to the other soldier, depending on their respective practices. For example, Bart stated:

> the economist, for sure important for the Defense organization and for me not so much. Whether that thing costs 1000 or 10.000 euro's, as long as it functions.[34] (Lieutenant Bart, in an interview with the author, 31 March 2010, translated by the author)

For the Defense organization as a whole, the economic aspect is important since it is publicly funded and needs to give an account to the taxpayers. For the reconnaissance soldier in the field, this concern was less prominent, but the concern for the quality of the technical means was more important, since lives depend on them. This difference in weighing the aspects, depending on the practice in which one functions, makes cooperation in networked mission complex. In case of the Kunduz airstrike, there are rules for the command-lines in the hierarchal structures between the commander and the pilot (foundational rules), rules of engagement which hold in an operation (ISAF in this case) (qualifying rules), rules for requesting an airstrike in a specific situation (foundational rules), rules for communication between the informant and the command centre (foundational rules), rules for actual releasing a bomb (foundational rules), etcetera. Military missions are often highly complex and decision making takes place in chaotic circumstances. How can one distinguish which rule should prevail and when? Generally speaking, in military operations the rules and norms that hold for specific tasks and decisions are clear and quite well anchored in an hierarchical structure; they serve as guide within what Clausewitz called the 'fog of war'. But technology has made it possible nowadays

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[34] Original transcript: "de econoom, zeker belangrijk voor Defensie en voor mij niet zo. Of dat ding nou 1000 of 10000 euro kost, als hij het maar doet."

for the different levels to access specific information and decide and act upon the basis of the technologically mediated information throughout all levels of the military organization. This is one of the reasons why NEOs are complex and problems occur in the different aspects. Clashes between the different practices in the network can be expected, since different practices have different qualifying or foundational rules. In the case of the Kunduz airstrike incident this clash eventually resulted in the fact that a German general and the minister of Defence resigned from their positions. Since networking technologies and information sharing devices continue to be introduced on the battlefield, it can be expected that more NEOs will take place, and therefore may lead to more clashes with tragic consequences. The Kunduz airstrike incident may not be an exception.

Another insight that results from a multi-aspectual analysis is that implicit norms and rules are connected to working with networking technologies. For example, the tacit norm for reconnaissance soldiers is that air support (F16's or Apache helicopters) is always there as back-up. A reconnaissance soldier states:

> And it was often the case that when those guys [fighter pilots] took off and they hung above you then the Taliban went off. So it was something you always had in mind, that should it run completely out of hand, I still have them available.[35] (Lieutenant Bart, in an interview with the author, 31 March 2010, translated by the author)

This norm is a tacit norm towards technology, relating to the pistic aspect of trust.

A multi-aspectual analysis is helpful in order to distinguish the complexities at work and the characteristics of the different rules and responsibilities connected to the structure and direction of the different practices, which will be explained in Chapter 4. Therefore it is advocated in this dissertation that these issues need more profound analyses. In the next chapter a more elaborate explanation of the concept of normative practices will be given, with four case studies to prove the usefulness of the concept in NEO.

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[35] Original transcript: "En het was vaak zo dat als die lui [gevechtsvliegers] opstegen en dan boven je hingen dan ging de Taliban weg. Dus het was wel iets wat je altijd in je achterhoofd had, van nou mocht het helemaal uit de klauwen lopen dan heb ik die nog altijd"

3.6. Conclusion

The multi-aspectual analysis has provided insights about aspects of networked operations that could not be grasped by a one sided view, such as a legal analysis, or an analysis in terms of adherence to mission intent such as given by two reports that came out after the Kunduz airstrike incident. The multi-aspectual analysis has not solved the problems of NEOs, neither has it been able to provide a single authoritative answer to the question what went wrong in the Kunduz airstrike incident, but it shows the complexities and has categorized these complexities. The framework has shown for example that the interpretation of data, which relates to the symbolic/lingual aspect, is important in making decisions in NEO. Misinterpretation of the data created problems in the Kunduz airstrike incident, where the commander ordered an airstrike on the basis of a screen with thermal images, which caused a tragedy in the Kunduz province. This case also breaks down the assumption about delegation of authority and reduced importance of hierarchy: the forward air controller (FAC) was overruled by his commanders in headquarters. It indicates that the hierarchal structures have specific levels of responsibility. The specific norms that hold for a colonel in a command centre differ from the norms that hold for a forward observer and their responsibilities differ accordingly.

Working in a NEO environment requires an understanding of each other's roles and responsibilities. This has always been the case, but now the information is dispersed all over the network and a vision and it is no longer clear who is responsible to decide upon the basis of which information. Recognizing this diversity in NEO does not mean that hierarchical structures should be seen as fragmentations of responsibility, rather they are closely intertwined and should cohere. Further questions of responsibility in network enabled operations will be addressed in Chapter 7.

A multi-aspectual analysis elicits problems that are present in a NEO environment. It also creates a way for grasping how the aspectual problems are related to one another. Cases where these rules and responsibilities clash, such as the Kunduz airstrike incident, can be expected to happen more often if NEOs will occur. Real-life cases or psychological experiments can be useful in understanding how people cooperate and make moral decisions in a NEO if responsibilities clash and if and how technology is involved in this process of cooperation. In the next chapter four cases are described in which people cooperated in a networked setting. The analysis in the next chapter is a follow up

on the aspectual analysis. The aspectual analysis revealed that different aspects play a role in network enabled military missions. In the next chapter, I discuss the framework of normative practices, which is based on the aspectual analysis.

4 Extending the theory of normative practices: an application to four cases of Networked Military Operations[36]

4.1. Introduction

Several philosophers have developed a theory of normative practices over the past decade(s). Jochemsen, Hoogland and Glas (1997)[37] initiated this development using Alasdair MacIntyre's theory of a practice (1981) in combination with concepts from Reformational philosophy to show that normativity is inherent in the medical practice (Glas: 2009; Hoogland and Jochemsen: 2000; Jochemsen: 2006). The normative practice model was also used by Verkerk et al. (2007) to understand the practice of engineering. This case adds a new field of application, namely military practice. Some work has been done in this field, namely by Toner (2006), who used MacIntyre's concept of a practice to reappraise a virtue ethics for military practice, and recently by de Vries (2013). The aim of this chapter is to show that the framework of normative practices clarifies complexities in real life cases. In current military practice, this complexity is often caused by the use of communication and networking technologies in military operations, as was shown in the former chapters. During implementation and operationalization of these technologies, several

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[36] This chapter is based on: Van Burken, C.G. and de Vries, M.J. (2012) 'Extending the Theory of Normative Practices: An Application to Two Cases of Networked Military Operations', *Philosophia Reformata* 77(2): 135–154. [The contribution of M.J. de Vries lies in several sessions with regard to the setup of the article and M.J. de Vries has written parts of Section 4.3 of the article, and has done a number of suggestions for improvement of the article as a whole. After publication, the article has been thoroughly rewritten by C.G. van Burken and has been extended with two cases to serve the purpose of this dissertation.]

[37] Chapter 3, on the normative structure of medical practice, was co-authored by J. Hoogland.

problems arose that were not accounted for during the development of the NEO doctrine.

In this chapter it is argued for that the concept of normative practices is an analytical model that can clarify the underlying normative dimension of these problems. I start with a description of the concept of normative practices, as developed by Jochemsen, Glas and Hoogland in various publications. Then an extension of their work in terms of *relations* between practices will be presented, which is an addition to the existing theories of normative practices. This extension is necessary in order to address the networked cases in military practice. Dooyeweerd's description of different types of relationships will be used (in particular the difference he makes between part-whole relationships and enkaptic interlacements). This is followed by four NEO case studies, in which empirical data collected during an early phase of the study is used. Finally the concept of normative practices (including the theoretical extension) is used to show how this concept can clarify, in a real life case, what works well and what can go wrong. This chapter aims to contribute to the growing number of studies that show the value of the concept of normative practices.

Prior to the analysis of the cases, it should first be noted that the cases themselves do not in the first place serve to prove that the framework of normative practices is useful. The cases were selected because they show (potential) conflicts in military networked missions. Other conceptual frameworks that were used to give an account of these conflicts turned out to be only helpful to a certain extent, and that a richer language to explain the (potential) problems was needed. The normative practice concept provides that language, which I aim to show.

4.2. Literature on interrelations in military missions

Various scholars have paid attention to the difficulties arising in (postmodern) cooperative network settings. In military literature on this topic, Oliver (1990) provides a good overview of different causes for difficulties in network enabled operations, but he leaves out any 'formal' issues in explaining the problems. D'Souza (2008) puts an emphasis on the importance of encouraging 'unity of effort', and De Nevers (2007) and Byman (2006) ascribe the problems between military alliances to caveats and discrepancies in rules and mandates. Duffey (2000) and Elron et al. (1999) pay attention to culture, thereby recognizing that in multinational peacekeeping operations, there exist 'distinct perspectives on

soldiering', and thus what it means to be a good soldier is not universal among allied partners in a military mission. Soeters and Tresch (2010) are especially worth noting because they recognize both the organizational styles and cultural aspects in networked operations. Later on in this chapter I will argue that this sensitivity to organizational styles and cultural aspects (as well as perspectives on soldiering) is necessary for clarifying the complexities in network enabled operations.

Besides the military literature on cooperation between different stakeholders, Koppenjan and Klijn (2004) are also worth mentioning. They pay attention to the organizational and rule side of the network and the perceptions of the actors in these networks. "What we see and what we do not see is highly influenced by our expectations and by what we find to be relevant: *our frame of reference*" (2004, 29). Their understanding of 'frame of reference' has similarities with the concept of a normative practice, which will be explained in the next section. The 'rule' side in Koppenjan and Klijn, however, is considered to be regulative for behavior and this is a crucial deviation from the normative practice framework. In the framework of normative practices, the *regulative* side is not (only) in the rules, but also in what is perceived to be important, which is influenced by underlying values and worldviews. More on this will follow in the next sections.

4.3. Normative practice: explanation of the concept

MacIntyre (1981) developed a theory of 'social practices', by which he referred to a meaningful coherence of human actions through which certain values are realized.[38] MacIntyre criticized the individualistic and liberal ethics and reappraised a normativity that is 'inherent' to practices by referring to 'internal goods'[39] :

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[38] Aristotle and many others in the history of philosophy paid attention to the 'practice concept'. For an overview of a number of definitions by e.g. Marx, Bourdieu, Calvin, see http://www.unc.edu/depts/practice/definitions.html.

[39] The term 'goods' should be understood here not as a commodity, but as an internal value of practice, such as gaining experience, developing skilled behaviour, experiencing joy in excellence.

> Any coherent and complex form of socially established cooperative human activity through which goods internal to that form of activity are realized in the course of trying to achieve those standards of excellence which are appropriate to, and partially definitive of, that form of activity, with the result that human powers achieve excellence, and human conceptions of the ends and goods involved, are systematically extended. (1981, 175)

In this chapter a reworked version of MacIntyre's theory of a practice is used and further developed, which is called a 'normative practice' theory. The normative practice theory was initiated by Jochemsen, Glas and Hoogland (1997). Also others have developed a normative practice theory, for example Postema (2007), who was inspired by Brandom (1994) and who uses it in the context of legal practices. Jochemsen and Glas adapted MacIntyre's theory and refined some notions, especially the distinctions between 'internal goods' and 'external goods' and 'standards of excellence'. MacIntyre's distinction between internal and external goods insufficiently grasps what practitioners do and what motivates their actions in the practices. Therefore Jochemsen and Glas replaced MacIntyre's notions with concepts from Searl and which provides a more refined language of what practices are, compared with MacIntyre's broad definition. Another reason for initiating the theory of normative practices is that they, as medical practitioners and scholars, had experienced difficulties in translating ethical principles, rules and obligations into the medical practice. Their main goal was to develop an approach in which normativity is seen as intrinsic to different practices, and in this effort they argue against the view that professional human actions become normative only after adding norms, principles, rules and obligations, as if professional actions are neutral in themselves. The inherent normative dimension of social practices lies in the professional actions that are characteristic of the practice and that emerge within the practice itself. These actions, or patterns of actions, have normative force for those engaged in the practice that distinguishes behavior in accord with it from other modes of behaving, treating them as wrong, or mistaken, or violations (Postema: 2012, 715). In other words, there is a notion of how one *ought to* act in a practice, which is captured by the rules, norms, tasks and responsibility descriptions that make the practice recognizable as that specific practice. The rules and norms are not externally imposed, but arise within and are constitutive

of the practice.[40] Therefore the practices have an inherent normative dimension. The philosophical framework of the multi-aspectuality of reality (see Chapter 3) is helpful in describing the inherent normativity of different practices.

The aspects function as ways to evaluate the correctness of the actions in the practice (including the correctness of the goals in the practice). Take for example the practice of kite-surfing. Several rules and norms hold for the practice of kite-surfing. The actions of the individual kite-surfers can be evaluated, among others, in terms of social rules (always help each other with getting the kite down on the beach), economic rules (the wind that you make use of is for free), juridical rules (a kite-surfer falls juridically under the rules for small boats), aesthetical rules (the beauty of the jumps and figures one makes with the kite) and according to ethical rules (kite-surfing is ethically correct because it only uses wind-energy and brings no harm to nature, if done in the proper place). The example of kite-surfing is given to demonstrate that people that partake in a practice are not totally free in their actions, but once a person enters the practice there are already responsibilities, rules and (tacit) norms established in the practice to which the kite-surfer 'ought to' adhere, although the rules, norms and responsibilities may change over time.

All practices function in all aspects, although in different ways, which makes the practices distinguishable. For the military practice the distinguishing aspect is the legal aspect. Military practices are constitutionally bound and ultimately act under the supreme authority of a state.[41] The monopoly of (physical) violence

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[40] "It is true that a custom does not exist unless it is instantiated in the behavior of people allegedly governed by it. But, strictly speaking, there is no such thing as the custom's rule—the regularity of behavior—viewed on its own. It is a commonplace view of contemporary philosophy that the problem is not that no rule or pattern can be constructed from a collection of bits of behavior, but rather that an indefinite number of such patterns are logically projectable from the same collection. But if there is an indefinite number of such projectable patterns, then there is no rule. For a rule is a discrete pattern with some claim to normative status for those engaged in the practice that distinguishes behavior in accord with it from other modes of behaving, treating them as wrong, or mistaken, or violations. No pattern that exists simply as one among an indefinite number can make that claim" (Postema: 2012, 715).

[41] Dooyeweerd directly relates the use of force to the "state": "In whatever way we consider the matter, this foundational function of the genotype "State" can nowhere else be found but in an *internal monopolistic organization of the power of the sword over a particular cultural area within territorial boundaries*. The reader should remember that this typical historical

lies with the state, and this is an indispensable premise for maintaining a just society (Besselink: 2008, 5). Given that the state is constitutionally bound, it automatically follows that the military practice can only use force within the legal framework provided by that state. The military practice is juridically bound and also qualified in the juridical realm. The actions of a soldier are first and foremost bound by legal norms and procedures that are connected to the state. They form the 'constitutive patterns of behaviour' and are often responses to situations of (gross) injustice. As a normative practice, within the legal boundaries provided by a *res publica*, the military practice is the only practice that can solve the problems of gross injustice (where the diplomatic means of the state have exhausted). If we disconnect the use of force from its legal boundaries, there is intrinsically no difference between an army and a group of bandits. If we leave the intervention in situations of gross injustice to a company, it will often not solve the problem of injustice, but solve an economic problem often enhancing or maintaining an unjust situation[42].

Military practices function in all aspects and the qualifying aspect is the legal aspect, with justice as its 'inner value'. Military practices also function in, for example, the economic aspect, but this is not the leading or qualifying aspect of military practice. If there is, for example, a single valuable natural element like oil or diamonds, which is often the case in poor countries, the use of force may be employed by military practice to protect a war economy which is fuelled by the trade of natural treasures. In fact, the military practice ceases to exist if it does not realize this inner value of justice (and the practice changes into another practice, for example a company for property protection). This can be true for poor as well as for well-established nations. In view of the above, for the military practice the intrinsic normativity (or inner moral value) is 'justice'. It is a practice

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structural function may in no way be naturalistically misinterpreted. According to its *modal* meaning it is a normative structural function implying a *task*, a *vocation* which can be realized in a better or worse way." (1953, Vol III, 413)

[42] The Dutch constitution had a law that stated that hiring a mercenary army is forbidden (artikel 100, according to text 1983). The government withdrew the law, motivated by the assumption that it was not relevant anymore for present-day practice (TK 1996-1997, 25, 367 (R 1593), nr 3, p 2), thereby not foreseeing contemporary developments with companies such as Blackwater and commercial armed personnel on trade vessels on piracy-risk routes.

that responds to situations with a normative demand that evolve around an intuitive understanding of justice.[43]

4.3.1. Structure and direction

Practices continuously develop, and the introduction of NEO is an example of that. In order to address the character of this development, the concepts of 'structure' and 'direction' are used. The practice theory can help define in what way and to what degree certain skills and tasks (for example developmental tasks) belong to the military practice; furthermore, it can provide a language for professionals to explain their worries with regard to (political) developments that directly affect military practices (for example the decision to employ soldiers for a foreign policing mission). Outside the military context, the concept of a practice can contribute to a better understanding of relationships between different parties with different interests. Hospitals, for example, often deal with the same kind of issues in the complex relationships between interests of specialists, patients, the board, and municipal authorities. In this chapter I refer to the different parties with their interests in terms of different 'practices'.

I now turn to defining the concept of the normative practice in the case of military practice. A practice is not merely the collection of specific actions but a "socially established complex of related actions, for which a characteristic pattern of norms holds." (Jochemsen and Glas: 1997, 72, translation by the author). Conform Jochemsen and Glas, a military practice is therefore a socially established complex of related actions, for which a characteristic pattern of norms holds. For example, in military practice the wearing of a uniform already indicates a certain norm. The *structure* of a practice is characterized by the rules and norms for actions that define the practice; they establish the practice while also being the boundaries of a practice. What the practice aims for (also called its

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[43] What I have in mind is put into words at the United Nations General Assembly in 1999 by former Secretary-General Kofi Annan. He posed the central question, about how to respond to cases of injustice, starkly and directly: *"...if humanitarian intervention is, indeed, an unacceptable assault on sovereignty, how should we respond to a Rwanda, to a Srebrenica — to gross and systematic violations of human rights that affect every precept of our common humanity?"*

telos) is also part of the structure of the practice. The totality of the rules and aims of the practice can also be called the *constitutive* side of the practice. Searle (1969) uses the example of the game of chess to make the distinction between the constitutive (*structure*) and the regulative (*direction*) side of an action. The rules of chess determine what constitutes chess as a game. These rules indicate what is allowed and what is not. They do not suggest good strategy (that is where 'direction' comes in; see later). Neither do they determine who will win the game.

Jochemsen, Hoogland and Glas (1997) distinguish three types of constitutive rules: foundational, qualifying, and conditioning rules, see also Figure 4.1.

The *foundational rules* refer to the formative side of the practice and are "those rules that prescribe the activities that give a particular practice its characteristic content." (Jochemsen: 2006, 105). They often refer to the technicalities of the practice and also ensure the continuation of the practice. Using the kitesurf example, foundational for kitesurfing are those rules that tell which actions count as kite-surfing and which not (standing on top of a board in the water, with a kite in the air pulling the board over the water counts as kitesurfing, but letting yourself be pulled by a boat not). They are foundational because kitesurfing was created on the basis of these particular rules, and if we alter these rules, we can no longer speak of the kitesurfing (but perhaps of a different kind of surfing). The foundation of the military practice is the use of force in an organized manner, and the foundational rules are the rules which enable and restrict the use of force. They also reveal the organizational structure of the practice, which is of a highly hierarchical character in the military case.

The *qualifying rules* are the rules that define the destination of a practice. The 'intrinsic destination' (*bestemming*) of a practice, must be sharply distinguished from any '*external* purposes' (*doeleinden*) a practice may pursue (Dooyeweerd 1957). For the military practice, the internal destination is the promotion of justice, while its external purpose may be to win a war. This is in contrast with for example the police, who also uses force within legal boundaries but her external purpose is not about winning wars, but to keep the order in society. Practices may have multiple purposes at the same time. To draw upon the example of kite-surfing: there are norms and guidelines for what the process is ultimately about. Kitesurfing is a sport, which is ultimately about having fun in using the wind, water and human skills. The qualifying rules are about enjoyment and leisure, although there are also juridical and economic aspects. The primary process of the military practice is about promoting justice (at least,

in my view, I am aware that one can argue differently), and therefore all other rules, norms and principles should always be under the guidance of this qualifying aspect. This is an important distinction because it points out that the foundational rules (for example about how to perform an airstrike) are always subordinate to the qualifying rules (rules that tell if the airstrike falls within the legal boundaries for the promotion of justice). The use of force as such is not what drives military practice. However, force can be used in an organized manner, within legal boundaries, in order to promote justice. In other words, shooting itself does not make someone a soldier; a soldier is in the first place someone who is in service to promote justice and is therefore allowed to shoot, under certain (legal) conditions. Jochemsen states that the insight:

> ... that for a certain practice the skills (methods, techniques) used by the professionals to realize the *telos* of that practice are foundational and not qualifying, is crucial. It implies that that practice should not be characterized by the goal-rationality of technical (methodical) intervention, but by the normative principle of the qualifying aspect ('care' for the caring practices, justice for juridical practices, efficiency for economically qualified practices etc.). (2006, 108)

The *conditioning rules* formulate conditions that should be observed in performing a practice, but they neither define the "technicalities" of the practice, nor its finality (Jochemsen: 2006, 105). Using the kitesurf metaphor again, there are rules regarding the sizes of the board and kites. In the case of the military practice these are for example social and economic norms that limit the practice. An example is the age limit or budgetary limits to the practice.

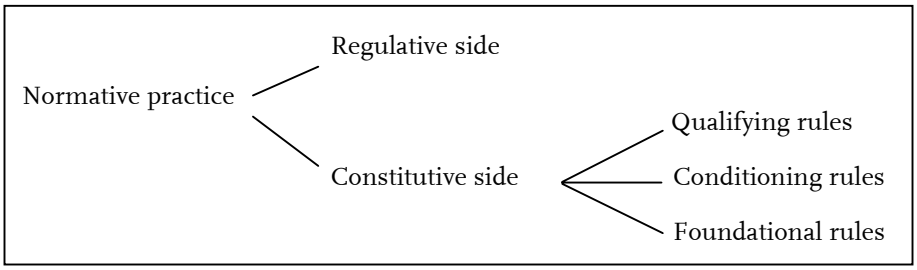

Figure 4.1.: The normative structure of a social practice (Jochemsen and Glas: 1997).

Direction refers to the regulative side of a normative practice. It is about the virtues required to competently perform practices (Jochemsen: 2006, 107) and implies a view on what is good in life. It involves the different basic convictions that drive people to perform their tasks in different practices or the *ethos* of the profession. This affects the way in which rules are interpreted, positivized and developed in everyday practice. It refers to the set of worldviews, beliefs and motivations that steer the action.

Returning to the kite example again, the *directional* side could be, for instance, kiting 'with the fastest possible speed' or 'just enjoying riding the sea'. These directions do not change the structure of kitesurfing, but instead involve applying the rules in a specific way, expressing the practice of kitesurfing itself. A possible *direction* for the military practice is, for example, to win a war (this is the qualitative aspect) with the 'least number of fatalities' or by 'winning the hearts and minds' of the locals. The underlying worldview here is that human life is valuable. Another example of a directional side of military practice is the acceptance and use of torture by some soldiers. In the cases that their own lives and those of others depend on the information that can be potentially released by a prisoner of war, questionable methods are suddenly considered acceptable because the prisoner of war is an 'evildoer'. The rules for interrogation are then interpreted in a very loose way and another human being is treated less humanely.

It is important to note that in the concept of 'normative practice' the 'normativity' is not only in the regulative side but also at the constitutive side. Practices are not neutral in what defines them; there is a normative element in the structure itself. In other words, practices are normative both in what constitutes them as well as in what regulates them. One is not as free to perform actions within a professional practice as one is in the 'private' realm. The tension between the rules and the degree of freedom and responsibility with regard to the interpretation of the rules is conceptualized in the concept of a 'normative practice'. One final remark is that one should keep in mind that practices develop and society changes, and therefore the formulation and interpretation of the principles and rules require a constant process of reflection and debate. Practices change gradually through reinterpretation, adaptation or rejection of rules in daily behavior (see also March and Olsen: 1989; Klijn: 1996).

4.4. Extension of the theoretical framework

In the case of NEO's, the question is not how to deal with one homogeneous (military) practice, such as that described in the former section, but instead with a variety of interrelated practices. Soldiers work together with local officials and international governmental and non-governmental organizations. Yet, also within the military organization itself different 'sub'-practices can be distinguished. Take, for example, a fighter pilot who is in a different sub-practice (the 'pilot practice') than the supervising generals (the 'command practice'): they each have different structures and directions. Verkerk and Zijlstra (2003) coined a similar idea and have paid attention to the different 'sub-organizations' within organizations and they distinguish between the different sphere sovereignties and sphere universalities in organiations. In this chapter I speak about 'sub-practices', because this gives room not only to point at differences at the structural level, but also at the directional side of a (sub-)practice.

In traditional missions, exchange of information between the different sub-practices was done along the lines of the 'chain of command', whereas soldiers now interact in a network enabled manner, which assumes a higher degree of cooperation and also involves information sharing beyond the boundaries of one's own (sub-)practice. This networked way of working creates a completely new dimension to military practice. Firstly, the respective sub-practices are constituted by different rules. Yet, their values and *ethos* ('direction') are also likely to be different. These new interrelations, which are due to the network, can cause a confusion of boundaries between the now related practices. A pilot and a ground commander can develop difficulties in distinguishing which actions and decisions belong to their respective practices because now they suddenly share information that originally was only available to one of them. In reality, therefore, problems can be expected due to this confusion of practices. There could be a clashing or confusion of rules or directions of the different practices during a NEO. Following from this, problems can be expected with regard to trust (for example, not trusting that the other in the network will respect your rules or goals), responsibility (for example, not acting according to one's own responsibilities but taking up responsibilities that belong to another practice) or a lack of willingness to share information (for example, withholding information out of fear for decisions that could turn out negative for one's own practice). In the case studies I will show examples of this.

4.4.1. Part-whole relations and enkaptic interlacements

Because of the interrelations between the different (sub-)practices in a network, an analysis of NEO's cannot be complete without part of the analytical framework being dedicated to these relations between practices. For that, I turn to Dooyeweerd's analysis of relations between entities. In the first place he differentiated between part-whole relations and enkaptic relations. In doing so, he argued against a strictly functionalist standpoint. In the case of part-whole relations, Dooyeweerd said:

> In all those things whose structure is not that of a homogeneous aggregate, a part is essentially qualified by the structure of the whole. In this case the structure can never be construed by means of its parts, because the parts, as such, are entirely dependent on the whole. (1953, Vol. III, 638)

In other words, the part loses all meaning when detached from its whole. Van Riessen applied this to technical devices and gave the example of a lathe (De Vries: 2008). Most parts of the lathe only make sense in the lathe, for example, the sledge. They do not have a meaning of their own outside the lathe and once taken out they cannot be meaningfully inserted into a different device. Dooyeweerd used the example of the lungs, liver and heart in the human body to illustrate the part-whole relationship.

An enkaptic interlacement however,

> pre-supposes that the structures of things and events, or those of societal relationships functioning in it, have an independent internal leading function and an internal structural principle of their own. (Dooyeweerd: 1953, Vol. III, 637)

In other words, the part contributes to the functioning of the whole but it does not lose its sense outside that whole.Van Riessen gave the transistor as an example of enkapsis in the lathe. The transistor is a standard electronic element that can be used in a large variety of devices and does not lose a sense outside of the lathe environment. To stay closer to the military practices, the example of the job of the barista in the canteen for pilots is something that could just as well be performed in the canteen of a factory. That change would impact neither the structure nor the direction of the 'canteen-'practice. The situation, however, is different in the case of pilots, because a civil pilot cannot be merely replaced by a

military pilot or *vice versa*, without completely shifting the practices. They have different rules and norms (as well as similar norms for flying in general) that they adhere to. Moreover, the civil pilot has a different qualifying function (for example 'pleasure', when the pilot flies a sports jet) in comparison with the fighter pilot (for example 'provide air support' when he or she is flying a F16 fighter jet). The concept of enkapsis can be further differentiated (see, for example, Basden 2008), but for this analysis it suffices to distinguish between part-whole and enkaptic interlacements.

4.4.2. Juxtapositional relations

During the application of Dooyeweerd's theory of interrelations to the cases, the need for a third option became evident, namely for those situations in which two practices stand next to each other and interrelate but are not part of one another. I have called this a juxtapositional relationship. Juxtapositional practices may be part of the same larger whole, as is the case with enkapsis, but the sub-practices are not part of one another's practice. In clarifying the relationships between soldiers, pilots, and NGO-workers the term 'juxtapositional' resembles more closely the nature of the relationship between these practice and also its practical usefulness. Juxtaposed practices sometimes operate in a coordinated setting or next to each other without any strict ties. This is often the case when working in a NEO, however, sociological and organisational research on NEO's shows a tendency to think about such cooperations in terms of a 'team'. Numerous experiments on a better understanding of team coordination and decision making in NEO's have been conducted (see, for example, Van Bezooijen 2011, Walker et al.: 2009; Zornoza et al.: 2009; Jarvenpaa et al.: 1999). In the cases that are presented in this chapter though, it was found that in NEOs this team-element is often not present. Practices (and the people who work in these practices) often do not work together towards a common goal at all, as is assumed in team research. In the cases in this chapter, examples of this juxtapositional way of working are discussed.

4.5. Case description and analyses

This chapter started with reappraising the theory of normative practices and also a new element was added, namely the observation that practices are interrelated. A distinction was made between the nature of the interrelations by

distinguishing between part-whole relationships and enkaptic interlacements and a third option was added, namely the juxtapositional relationship. These distinctions provide a vocabulary to clarify problems arising in NEO. The concepts that were introduced provide insights into when people are willing to share and gather information, whom they trust, and how questions of responsibility can best be understood.

Four NEO cases are evaluated in this section. They share a common characteristic, namely that of cooperation between different practices. Apart from a better understanding of the reality of NEO, the cases also provide insights into the context in which this study takes place, which is a military context. The cases are unravelled in terms of structure and direction of different practices (to see where clashes take place) as well as in terms of part-whole, enkaptic interlacement or juxtapositional relationships (to see how an (in)correct understanding of the relationship influences potential clashes).

The cases used in this chapter are derived from interviews with Dutch soldiers who returned from their mission in Afghanistan where they had been deployed for (mostly) four months in 2009. The cases they describe were ones that they were personally involved in and that took place in the context of the ISAF (International Security Assistance Force) mission in Afghanistan in which the Netherlands was actively involved between 2006 and 2010. I hope to make clear which problems can be expected in future NEO missions and how they can be clarified in order to prepare soldiers for specific challenges in networked missions. The first case is about cooperation between a soldier and a civilian and serves to show the relevance of a structural analysis to understand the different natures of the practices. The second case regards problems that arose within the military practice itself, namely, between a ground soldier and a helicopter pilot with different nationalities who found themselves in an unclear situation. The third case is the most elaborate case, namely the Kunduz airstrike incident. The Kunduz airstrike case was presented in detail in Chapter 2. The fourth case gives an example of how a networked mission can go well.

A normative practices framework can show why things may have gone wrong at a deeper level, which we call the confusion or clashing of practices. It has an openness to both the structural side, which can explain why individuals (had to) make certain decisions, and vision behind the structures, which gives insight into peoples deeper motivations that steer the decisions. Furthermore, in each case a different aspect of the framework of normative practices stands out. In the first case, this is an enkaptic interlacement and in the second, it is a

juxtapositional relationship, in the third case many relationships are at work, but the part-whole stands out and the fourth case is a juxtapositional relationship.

In order to gain understanding in complexities of networked missions, the following steps were taken:

1. Determine which different practices are present. A practice is recognized as one or more socially established complexes of related actions for which a characteristic pattern of norms holds.
2. Formulate the structural (constitutive) side of the practice, followed by the directional (regulative) side of each practice. This sequence is needed, as starting with the directional side would make it hard for the reader to figure out what this direction applies to.
3. Make a visual representation of the different practices to support a better understanding of the complexities (helpful in highly complex situations). An example of this is overlapping (Venn-type) circles, each circle representing a practice with its own structure and direction. The interior of the circles (where they overlap) symbolically represents the commonalities of the practice (be it in structure or direction), while the exterior represents elements of the practice that cannot be shared with other practices. For instance, in a two-set circle, one circle may represent the practice of a military mission and the other, the political practice of a certain country, of which the practice of the military mission is only a part. As with every diagram, one should keep in mind that they are only schematic, and not all aspects of a practice can be represented into diagrams.
4. Look for clashing or confusion of rules or directions between the different practices. This can be done from a theoretical (for example, which clashes can we expect?) as well as from an empirical (for example, which clashes or confuses can we see in reality?) viewpoint.
5. After having conducted steps 1-3 for each of the practices, distinguish what kind of interrelations are present: part-whole (part loses its meaning when detached from whole), enkaptic interlacement (part does not lose meaning outside the whole), or juxtapositional (part has no shared meaning with whole). The answers from steps 2 and 3 provide help in determining the interrelationship.

The steps above help to unravel the complexities of NEO's and give answers to different questions that lead to a better understanding of these missions. For

example, can we speak about a practice, how is that practice characterized, and how do they interrelate with other practices?

4.5.1. Case 1: Image Analyst

In the Image Analyst case, clearly some problems arose due to cooperating in a network enabled environment. It is worth noticing that the number of troops in contact (TIC's, meaning a 'traditional' attack between the forces, for example a firefight) was relatively low compared with other missions. The guerrilla type of attacks in the ISAF mission, in the shape of encountering improvised explosive devices (IEDs) on a daily basis, demanded a different approach to security in Afghanistan. Therefore, novel technologies and new ways of working were needed. This also meant evolving of new relationships between practices.

Case description

Lieutenant Peter (an alias) was deployed as a senior search advisor and advised the reconnaissance teams on their search for intelligence about the possible positions and likely types of IEDs. He cooperated with several military and non-military people in order to make the sharing of IED information as complete, accurate and timely as possible. In his team he had to cooperate with a civil image analyst. This image analyst was added to Peter's team who developed a system which connected a database with 'IED events' to a geographic information system (GIS). This database of 'IED events' needed to be continuously updated by the soldiers who actually found them, the personnel who dismantle them (Explosive Ordnance Disposal, EOD) and the weapons intelligence team (WIT) who try to find the background of components and makers of IED's. Information about location, type of IED, environmental setting, etcetera was uploaded in the database and automatically connected to the GIS. Every time a search team went outside the camp for a reconnaissance, their commander was briefed by Lieutenant Peter about the IED threat in the area. Also a light version of the GIS with relevant data was uploaded to the team commander's personal palmtop so he had all relevant information about the latest IED events in his search area and could geographically represent it on his palmtop while being off-base.

The task of the image analyst in this respect was to interpret digital aerial photographs of the search areas and inform Lieutenant Peter about his findings, who on his turn passed this information on to the search teams. The information for the image analyst came from photographs made by manned or unmanned aerial vehicles (UAVs). On these images one could indicate tossed soil, relocation of vehicles, or other peculiar changes in the landscape that indicate a possible IED location.

The cooperation between the military search advisor Peter and the civil image analyst was not always smooth. Several times when the analyst advised Lieutenant Peter about IED locations the advice did not make sense to Peter. He, as a soldier with experience in searching and finding IED's, said this sense making had to do with a kind of knowledge only a soldier who has encountered IED threats has. This feeling cannot be explained or argued for by reason or facts alone, but a soldier *knows* that sometimes a location pointed out by a non-military is very strange and highly unlikely for an IED to be found there. Peter said "I just don't *see* an IED there", (Lieutenant Peter, in an interview on 10 December 2009, translated by the author). He did not mean physical seeing with his eyes, but the tossed soil that the analyst appointed as possible threat could mean anything to him and certainly not the location of an IED *per sé*. According to Lieutenant Peter, more aspects of reality need to be taken into account when it comes to interpreting images. The problem was not the difficulty with the analyst as a person, because Peter trusted very well that the analyst had seen something peculiar which he needed to take into account, from his perspective, and inform Peter about it. But Peter, trained as engineering soldier in interpreting the landscape, altitude, infrastructural traits, vegetation, etcetera in the search for IED's, refused to act upon the basis of that information. According to him, what is very important in analyzing IED threats is the kind of gut feeling. It was in part this gut feeling which told him that the conclusion of the image analyst was not useful to him. Not trusting the conclusions of the image analyst affected Peter's work. He chose to not share the information from the image analyst with the commander of the search team. He withheld the pictures with tossed soil when he executed the pre-patrol briefing with the search team commander. Peter admitted that his decision of withholding information had given him a hard time. Of course no one wants something bad to happen to a reconnaissance group and certainly not when you had information that could have mattered, which relates to questions of responsibility. But in the end he

said, I concluded that the information the image analysis specialist gave me was nonsense.

Analysis

Can the image analyst be considered part of a normative practice? In terms of the normative practice framework: does he have a structural and a directional side to his work? Certainly this is the case, because the image analyst performs his task according to procedures, codes, and the application of evaluation standards in analyzing data. There's a directional side to it as well, which is how best to give meaning to graphical data of aerial pictures.

The search advisor is part of a practice, namely the reconnaissance practice. In this practice there are strict rules about moving on roads, next to roads, searching houses and there are norms for interpreting peculiar situations. For example, every reconnaissance soldier knows that if there's a bag or box on the road one never drives over it, but passes it, for it could indicate the presence of a mine, it's a norm. The direction of the reconnaissance practice is to enhance knowledge about safety in a certain area that can be used in broader and higher command structures.

Now follows an analysis of the relationship between the senior search advisor and the image analyst in terms of *part-whole, enkaptic interlacements or juxtapositional relationship*. From a historical point of view, the image analyst is rather new to the military organisation. It was due to the large amount of IED's that the Dutch soldiers encountered in their ISAF mission that the need for mapping IED threats evolved. In co-evolution with new technologies such as making use of cameras in combination with aerial vehicles and geographic information systems, the need for people who can interpret this information grew. The image analyst has a civil background, but now works as a civilian in a military setting. He functions in a supporting structure to the reconnaissance practice. He and the search advisor can therefore be viewed as an *enkaptic interlacement*. It means that they can both function independent from one another, without losing their inner nature when taken apart and put in a different setting. In this case both the image analyst and the search advisor contribute to the realization of the greater aim: the fight against IED's in general. Their respective tasks do not lose sense outside of this greater aim. For example, the image analyst can also be placed in the national land registration office to interpret aerial pictures from new buildings or illegal waste dumping.

Which problems were caused in the cooperation between the soldier and the analyst? There was no problem with willingness to share information between the different practices as such. It was only after Peter had received the information from the image analyst, that he decided that for his frame of reference ('practice') he could not trust the conclusion of the image analyst. Therefore he decided not to share this information any further in the network. He was aware that he took the responsibility not to share this information.

Looking at the problems that did arise between the analyst and the search advisor, it might well be the case that an *enkaptic* interlacement is not the most suitable relationship in this setting. Here it did not contribute to mutual trust and sharing of information between the partners. Perhaps, if one looks at the specificity of the endeavour that both have to accomplish, a part-whole relationship would be more suitable. A part-whole relationship can be established if the image analyst can only perform meaningful actions together with the search advisor. They need to be part of one another. His training as analyst would go beyond analysis of geographic information. It would involve a thorough military training, designed to closely work with the IED search teams. In this way, his job only makes sense in this setting of a search team. Also, the image analyst should be part of the same practice in a hierarchical sense. Further (empirical) research could provide insights about how enkaptic interlaced practices deal with levels of trust and responsibility in information sharing compared with part-whole relationships.

4.5.2. Case 2: Kiowa

In this case it is helpful to first point out that, in most military missions, it is of major importance, both before and during the mission, to perform a thorough reconnaissance of the (prospective) working area. This includes gathering information about the physical environment (including infrastructure), social and governmental structures and the security situation. The name of the following case is derived from a helicopter type, named Kiowa.

Case description

The commander of a reconnaissance team, Lieutenant Bart (also an alias), was operating in an area in Afghanistan during the ISAF mission in 2009. His mission was to chart out the safety situation in a certain area and report back to headquarters. He thus had to operate off base and was in the field for a few days,

checking out several *qualas* (Afghan villages) in his designated area. While he was doing so, an American Kiowa helicopter pilot happened to fly nearby where Bart and his soldiers were operating. The pilot asked Bart over the radio if he could be of any support since he was in the area. Lieutenant Bart had to 'search' one of the nearby *qualas* the next day, so he asked the pilot if he could perhaps gather aerial information on the *quala* which could be of use for him. The pilot did as Bart requested and returned with information about the *quala*. The pilot told Bart that he saw a circle of people sitting on the ground and in the centre he saw two men fighting. The pilot added: "I think I see a Taliban training camp, shall I take 'em out?" What the pilot meant by 'taking out' was the killing of the people. Bart, as a reconnaissance lieutenant, felt this might be too quick an interpretation of the situation. Bart decided merely to thank the pilot for the information and go out and look for himself the next day. The next day, when Bart arrived in the *quala*, his team found out that the villagers had been celebrating the end of Ramadan with a village feast and had been competing to see who was the strongest man of the village. Had Bart agreed with the pilot to 'take them out', innocent people would have been killed.

Analysis

To start with, two different practices are involved in this case. These are the 'pilot practice' and the 'reconnaissance practice'. They are both very specific and distinct, both require extensive training and unique skills, and both have their own standards of excellence. A pilot does not merely fly around, but he is embedded in a structure in which he fulfils meaningful actions and which has a certain *telos* to it, and the same is true of the reconnaissance soldier. The pilot has to provide air support for his own and allied troops. The structural side of a pilot is that he is bound by very specific rules about where one can fly and when one can engage a target. For example, the pilot has to conform to the 'standing operation procedures' (SOP's) for air support and run standard checklists and procedures about the presence of surrounding buildings, infrastructure, and people when releasing a bomb. The Rules Of Engagement (ROE) for the American pilot differ from the ROE for the Dutch reconnaissance team. The pilot could have been part of the ISAF mission, but it is also possible that he was waging the US Global War on Terrorism, called Operation Enduring Freedom (OEF). The helicopter pilot is allowed to engage a target upon his own initiative, and therefore the pilot could make the proposal to 'take them out'. In fact, the pilot did not even have to propose this to Bart because the pilot could engage

upon his own initiative without Bart's approval. There are also certain norms about what is acceptable behaviour for a pilot; sometimes these norms remain inside the pilot practice and are tacit and unspoken.

The structure, so the rules and norms that hold for a reconnaissance practice, is quite different. This is partly because the soldier is part of the Army and not part of the Air Force, where a different 'language' is often spoken. The words and signs used for indicating ranks, for instance, are different. The reconnaissance soldiers need to gather information and are trained to do so in a way that is most safe for them, the people they visit, and other partners in the mission. Therefore, they need to stick to norms regarding reporting, confidentiality, and appearance. They also need to stick to certain drills in case of an attack because they are one of the first to encounter dangerous situations, such as IEDs. The qualifying function of the reconnaissance soldier is, in the first place, in the juridical aspect (because he is part of military practice). However, on the level of sub-practices, making good observations is what distinguishes him from any other soldier. Therefore, one could say, that the qualifying function of the reconnaissance soldier, on the level of sub-practices, is to make good observations. The pilot and the reconnaissance soldier had a different direction on the individual level. The pilot interpreted the ROE in a way that exploited every opportunity to use force against whatever he thought was Taliban, which to him represented all that was bad and evil. Lieutenant Bart, however, felt that it was better to provide security by withholding force instead of using it. He was investigating the security situation in the area, and, although he had the means and authority to use force in this task, he chose to limit it. Part of his underlying worldview is that the use of force does not necessarily bring security. This affected his interpretation of the situation.

In Figure 4.2 it is shown how these two practices were connected to each other. The characters (a, b, c, etcetera) correspond with the practices that were distinguished and listed below. The different structure and directions of the pilot and the reconnaissance are also listed, since they are the main characters in this case.

It is important to see that the soldier and the pilot worked in the same practice, namely military practice, but approached things from different national backgrounds. This influenced the structure and direction both for the pilot and the reconnaissance soldier. The structural side of the American pilot's practice was different from that of the Dutch soldier: the American pilot's ROE allowed

him to engage a target on his own initiative. According to Bart, no Dutch soldier or airman works under such a 'broad' ROE.

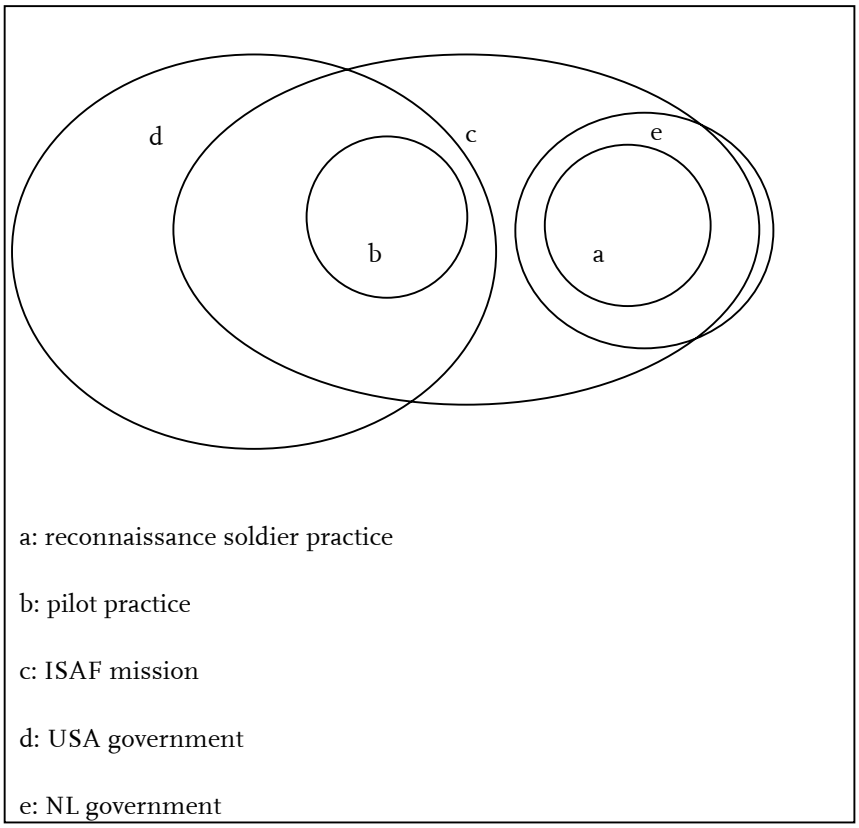

Figure 4.2.: Relationship between American pilot and Dutch soldier practice in ISAF mission and their embedding.

a. Dutch reconnaissance soldier

structure:

- ISAF mandate
- scouting (qualifying rule)
- narrow ROE (conditioning rule)
- gathering information on security situation (foundational rule)

direction:

- 'winning hearts and minds' of locals (directional norm)
- human life has high value, including that of adversaries (directional norm)
- providing security

b. American pilot

structure:

- OEF mandate (Operation Enduring Freedom) (qualifying rule)
- broad ROE (conditioning rule)
- providing air support (foundational rule)
- can perform a strike upon own initiative (conditioning rule)

direction:

- Taliban represents terrorism (directional norm)
- all Taliban is an immediate threat and should be eliminated (directional norm)
- fighting against terrorism

Bart pointed out that their ROE did not match, which in the framework of practices could have caused a clash at the structural level. The confusion took place on the level of direction: it seemed that the pilot leaned towards exploiting the ROE in his strive for destroying Taliban, whereas Lieutenant Bart aimed at withholding force if there was no urgent need to use it. He was more concerned about the overall security situation in the area. The pilot respected the choice of Lieutenant Bart to go and check out the situation himself, thus leaving the villagers unharmed. The reconnaissance soldier referred to the structural side (ROE), and this shows an important aspect of the network dimension: one can no longer assume that the same rules, norms and command hold for anyone wearing a camouflaged suit. In an international, networked mission, there exist different sub-practices, with different rules and norms for different nationalities and different specializations. Because of the different directions, Lieutenant Bart did not trust the information provided by the pilot about the Taliban training camp. It was at the level of interpretation of the situation where the different directions became visible.

With regard to the relationship between the Dutch commander and the American pilot, this can be labelled as an enkaptic interlacement: both practices

were not part of one another but were instead working next to each other, in their respective practices, and bound within a larger whole, namely military practice. So they were both, as sub-practices, in a part-whole relationship with the military practice, as well as part of their specific governments (Dutch and American), in which their practices were interwoven: in their inter-individual relationship, they were enkaptically interwoven with one another. The American pilot was occasionally around and leaving or staying did not alter the inner value of the reconnaissance commander. The soldiers were aware of the difference in each other's structure and sensed that further cooperation could cause confusion. A possible scenario would have been that the reconnaissance solder mixed up his rules and direction with the Kiowa pilot practice that aimed at taking out Taliban and had ordered a strike on the villagers. Lieutenant Bart in this case choose to find out more about the information the American pilot gave him before making decisions which involved the use of force.

In this case it was clarified that in an enkaptic interlacement a blurring of practices may occur. The limit and enkaptic nature of this relationship was clear: soldier and pilot practice were distinct and different and detachable from one another without losing their respective meanings, while, at the same time, they were part of a bigger whole, namely military practice. In his daily challenge as a networked soldier, the reconnaissance soldier was immediately aware of the difference in ROE between him and the pilot. The consequences, however, could have been disastrous if a real application of the rules of the Kiowa pilot practice had taken place in the reconnaissance practice. The reconnaissance practice would then consist of a mixture of 'gaining insights in the security situation in an area' (foundational rule of the Dutch reconnaissance soldier) and 'engaging upon own initiative' (conditional rule of US pilot).

This case showed an enkaptic interlacement between two different practices that were part of the same bigger whole. The rules of the different practices appear to be further apart than one might have first thought and a structural analysis reveals those differences and their nature.

4.5.3. Case 3: Kunduz airstrike incident

This case was suggested by one of the interviewees. The incident happened during his stay in Afghanistan, although he was not involved in the case himself. Data for the case has been gathered from the reports and many newspaper articles that have appeared since the incident took place. One of the secret

reports leaked out on the Wikileaks website (wikileaks.org) is also used in this dissertation. The case is very broad and many aspects can be taken into account. I have tried to reconstruct a coherent picture of the events on the basis of the available information, but I realize that much more could have been taken into account (for example legal issues).

Case description

In September 2009, during the *International Security Assistance Force* (ISAF) mission in Afghanistan, a German *Provincial Reconstruction Team* (PRT) commander ordered an airstrike on two fuel trucks who had become stuck on the sandbanks of the Kunduz river. The fuel trucks were told to be hijacked by the Taliban. Many civilians died during the airstrike. The reader is referred to Chapter 2, which gives a detailed description of the Kunduz case, which runs throughout the dissertation.

Analysis

Firstly, this case might look way too complex to illustrate the practical usefulness of a theory of interrelated practices. But exactly for its complexity this case has been brought in, because it is this complexity that caused the problems in the networked operation and therefore needs to be made transparant. It makes clear that if situations become more complex, one cannot intuitively determine why and what has gone wrong in a certain situation. Therefore a structural analysis is needed. In case a conflict arises somewhere in a complex networked environment a structural analysis can serve as a tool to get a deeper understanding where and why exactly the conflict arose.

A structural analysis of this case will be made in terms of interrelated practices with different structures and directions. I have visualised the different practices in the ISAF mission, who were all involved in some way in this case, see Figure 4.3.

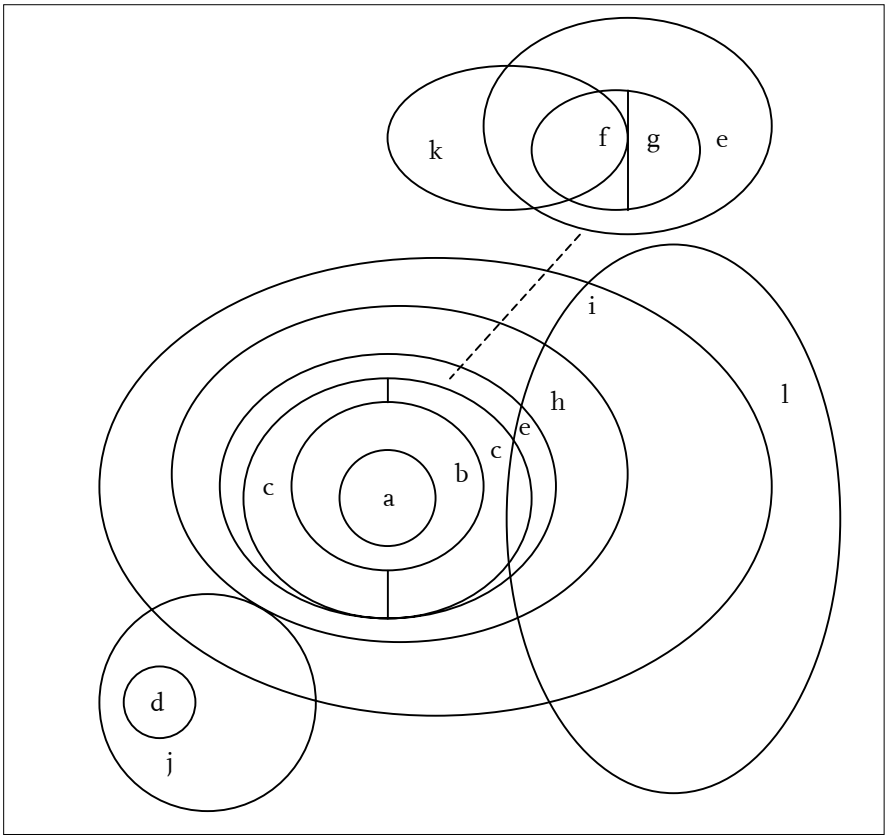

Figure 4.3.: Model of embedded and interconnected practices in Network Enabled Operations

a – pilot practice

b – Forward Air Controller (FAC) practice

c – PRT commander practice

d – informant ('C3' in NATO jargon) practice

e – Task Force practice

f – Provincial Reconstruction Team (PRT) practice

g – Battlegroup practice

h – ISAF (higher command) practice

i – NATO alliance practice

j – Afghan Army (ANA) practice

k – Non Government Organisations (NGO's) -practice

l – USA government practice

It is evident from Figure 4.3 that this is a complex network of relationships here. It is not the aim to describe all the details and therefore I will not bother to describe all the relations, but rather focus on the ones that were related to the disaster in the Kunduz strike. In particular, I want to point out the insight that some relations were not present in traditional (non-networked) situations and are new in a networked setting. The commander of the PRT and the pilot now share information and thus are closely related with a single piece of technology (Rover device). These practices are no longer disconnected. The Rover information was actually meant for the FAC to do his job (guiding the pilot in releasing a bomb), but in the Kunduz case the Rover information was also available to the PRT commander. The commander's eyes were at the same screen as where the FAC was working from. This also sheds light on the role of technology, namely that it connects practices that were not connected in a traditional setting, or at least it was clear when this happened: a commander talked to another commander via a radio. In the Kunduz case, the PRT commander, the FAC and the pilots all shared the same screen, which caused a blurring of their respective practices. In the next step I will show how this blurring of practices caused several problems. Therefore for each of the practices their *structure* (rules, procedures, legal boundaries, hierarchical authority) and *direction* (beliefs, motivation) at the time of the airstrike is distinguished.[44] They are listed as follows:

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[44] I agree that this list is not complete and perhaps not fully in accord with the actual situation at the time of the airstrike, because the author does not have in depth knowledge of these practices herself. Information has been derived from interviews and quotes in newspapers and reports and insights were gained during interviews with personnel from the Task Force and Battlegroups and a Forward Air Controller (see Appendix).

a. pilot

direction:

- Protecting own troops (US and allied)
- High value of human life (also from 'enemy' forces)

structure:

- Can decide about exact location of bomb
- Can decide to not release a bomb
- Needs to run through checklist (location, infrastructure, own troops, civilians)
- Checks 'gut feeling'

b. FAC

direction:

- Protecting own troops
- High value of human life (also of 'enemy')

structure:

- Can decide about exact location of bomb } together with pilot
- Can decide to not release a bomb
- Needs to do checklist (location, vicinity, own troops, civilians)
- Needs to inform higher command (c)

c. PRT Commander

direction:

- Safety of own troops
- Safety of local people
- Loyal to home country

structure:

- Rules of Engagement (when (not) allowed to engage, falls inside Geneva conventions)
- ISAF mandate (not stable) (for example rules for PRT, decision protocols, airstrike request protocols)
- National military doctrine

d. Informant (C3)

direction:

- Contribute to peace of own country

structure:

- Requirements for trustworthiness of information (NATO)
- Requirements for communication
- Requirements for encryption

e. Task Force

direction:

- Supporting Allies
- Rebuilding Afghanistan
- Protecting home country (= fight 'enemy')

structure:

- ISAF mandate
- ISAF tactical directive
- Standing operational procedures (SOP's)

f. PRT

direction:

- Rebuilding Afghanistan (security, infrastructure)

structure:

- PRT mandate (different from Battlegroup mandate)
- Rules of Engagment for PRT actions
- ISAF mandate

g. Battlegroup

direction:

- Protecting own country (= fight 'enemy')
- Protecting own people

structure:

- Rules Of Engangement
- ISAF mandate
- Battlegroup mandate (rules about how to seize 'enemy')

h. ISAF practice

direction:

- Bring security in Afghanistan

structure:

- UN Security resolutions
- ISAF mandate

i. NATO alliance practice

direction:

- Assist the Afghan Government in rebuilding Afghanistan

structure:

- UN security resolutions

j. Afghan National Army

direction:

- Providing security in Afghanistan

structure:

- Tribal/warlords system
- NATO Combined Security Transition Command
- Afghanistan (CSTC-A)

k. NGO practice

direction:

- Development of Afghanistan
- Remain neutrality

structure:

- (Inter)national agreements about development and cooperation

l. USA government practice

direction:

- Fight Global War On Terror

structure:

- International humanitarian law
- National military doctrine

The overview above shows that there are many partners involved in one mission, each with different *structures* and *directions*. What I would like to point out here is the complexity of such missions and that one cannot just assume that different partners will smoothly cooperate. There is a close connection that gets even closer by the use of the network technology, of different practices with different

goals, different responsibilities and different authorisations. Often developers of network enabling technologies and partners in NEO assume that this is no problem, but the Kunduz airstrike incident shows to the contrary. By focusing on the key-players in this case, namely the pilots, the FAC and the commander of the PRT, I show that the clashes took place at the level of *structure* as well at the level of clashing *directions*. See Figure 4.4 for a clarification of the command structure between the US Forces and the German Forces.

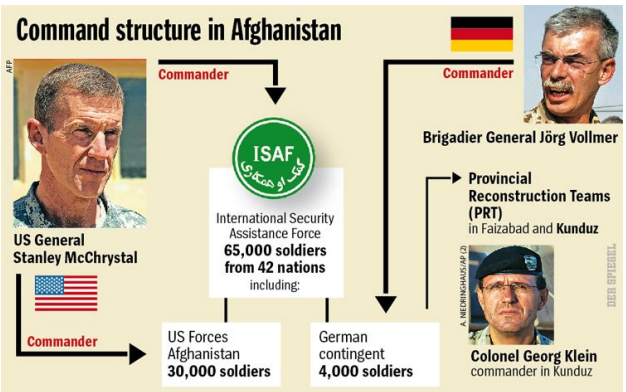

Figure 4.4.: US German command structure in ISAF (source: Spiegel Staff: 2009a)

The first clash was between the *direction* of the pilots and the commander. The pilots were concerned about the safety of civilians and infrastructure and not sure if releasing a bomb was the correct thing to do (Goetz et al.: 2010) while the commander wanted to protect his own troops and therefore declared the fuel trucks an 'imminent threat'. Assigning a target as an 'imminent threat' freed the way for releasing a bomb. This shows that one cannot make completely 'free' choices in a practice, such as in private actions, but here the commander had to account for the structural side as well. He solved this tension by interpreting the trucks an 'imminent threat', so he could, within his structure, realize the direction of his practice. Also problems arose on the level of *structure*, because everybody was sharing information with everybody and all of a sudden it was not clear anymore which rule should prevail for which practice (ibid). The pilots for example, are trained to hold their fire in case it goes against their 'gut feeling' and this is part of the procedure preceding the actual releasing of a bomb. During the night of September 4th, the pilots expressed their concerns, but the FAC, speaking on behalf of Klein, made the pilots belief that no civilians were involved, and thereby solved the 'gut feeling' check. In fact the commander

overruled the FAC by withholding information about the location of the truck drivers to the pilots. This information is vital for the pilots when going through their check-ups (Goetz et al.: 2010).

Another clash took place, because the *direction* of the ISAF higher commander and the *structure* for the PRT commander did not line up. ISAF Commander General McCrystal issued a tactical directive in which he urged to reduce civilian deaths and in case of any risk of civilian casualties, ISAF commanders should call off air support. However, the Germans earlier in 2009, had deleted several restrictions on operational capability in Afghanistan from a NATO document such as:

> The use of lethal force is prohibited unless an attack is occurring or is imminent. (Spiegel Staff: 2009a)

Another example of this change was the revision of the so-called pocket card with instructions for German soldiers. The emphasis was put on the measures involving the use of force that are permitted in order to accomplish the mission, instead of use of force only in case of self-defense. These changes, which arose within the same period, make clear the clash of German *structure* and General McCrystal's *direction*.

The distinction between *part-whole* relationships and *enkaptic interlacements* provides insights in the way the different practices relate. In Table 4.1, an overview on the relevant relationships in this case is given. The table does not do justice to the complexity and the deeper coherence of the relationships, but it tries to clarify the difference between them. The relationship between the FAC and the pilot differs from the relationship between the pilot and the commander. The FAC's task, essentially, can still be done without the PRT commander. Taking apart this relationship does not affect the typicality of both practices. This is different for the FAC and the pilot. The pilot cannot perform a meaningful action (for example releasing a bomb), without guidance from a ground controller who can interpret aerial pictures and knows the destructiveness of the type of bomb. They form a *part-whole* relationship, for example the FAC cannot be replaced by a civil air traffic controller, and neither can a fighter pilot be exchanged for a civil pilot in order to perform a meaningful action in the context of NEO.

This scheme also shows that the traditional hierarchical relationships between practices were mostly considered as *part-whole* but now there's an evolution into more *enkaptic interlacements* if one gets higher up in the

hierarchical lines. For example, both in a traditional and a NEO setting, the FAC and the pilot are in a part-whole relationship (in this case they were both part of the lower hierarchical echelons). In the higher echelons, this is different. Traditionally, part-whole relationships are found on this level, for example a General and a Colonel were typically both part of the same practice (for example Air Defence). In a NEO setting however, the Colonel (in this case the PRT commander) has an enkaptic interlacement with the General (the ISAF commander). It is not uncommon that in NEO's the Colonel for example is part of a maneuver unit while the General is part of the Air Force.

It would be interesting to empirically test which type of relationship is better suited when it comes to working in a network enabled manner. Studying the difference in how the practices collaborate (with regard to trust, sharing of information, taking responsibility) could give some general insights in this respect.

Table 4.1.: overview of relationships (part-whole or enkaptic interlacement)

Pilot 1	-	-	PW	EI	PW
Pilot 2	-	-	PW	EI	EI
FAC	PW	PW	-	EI	EI
PRT Commander	EI	EI	EI	-	EI
ISAF commander	EI	EI	PW	EI	-
	Pilot	Pilot	FAC	PRT Commander	ISAF commander

On the level of trust certainly difficulties are present in this case, because the pilots kept on bringing up alternatives for releasing a bomb in the debate preceding the airstrike. They did not trust the decision of the commander that bombing was the best thing to do. On the level of information sharing things went certainly wrong, because the commander withheld information about the location of the truck drivers from the pilots. After the incident some reports investigated who was responsible and it was interesting that the two main reports came up with two different conclusions. According to the report from the German prosecutor the commander had acted legally right and could therefore not be held responsible, while the NATO report concluded that it was a wrong decision. These contradicting conclusions can be captured in the concept of 'normative practice'. The structural side (the rules, juridical in this case) and the directional side (motivations and interpretation of the rules) both have a normative dimension and make up one and the same practice. The reports each emphasise a different side of the practice.

4.5.4. Case 4: Poppy counting

The poppy case shows how a NEO can work out very well, while also illustrating where complexities may arise that could have caused an impasse in the continuity of a mission. The context of this case is the Task Force Uruzgan (TFU), which is the name of the Dutch mission within the larger ISAF mission in Afghanistan. Major Marc (an alias) worked in a Taskforce staff function at a Regional Command Centre in Afghanistan. He worked in a network with several local, national and international partners and also with non-governmental organisations (NGOs). His main task was to organize and support the daily agenda of the regional commander. Thus, he had to interact continuously with many partners in the network.

Case description

On one occasion a development worker of United Nations Food and Agriculture Organisation (UNFAO) was attached to Marc's Task Force. It was a Japanese civilian who needed to map the transformation of 'poppy' fields into wheat fields during the last year. The goal to reduce poppy farms in Afghanistan was part of the mission, called the ISAF Counternarcotic program. The UNFAO worker was assigned to monitor this program. Marc was asked to support the UNFAO worker in performing his task, and, at first sight, this does not sound like a real

challenge. However, some complexities were not accounted for higher up in the mission organisation. Major Marc realized that it is not possible for the UNFAO fieldworker to order the soldiers to go out on a patrol in the area to count the surface of wheat fields because soldiers are never under the command of a civilian during a mission. Soldiers are bound to a specific mandate and work with military lines of command, whereas the development worker falls under the authority of a civil representative. However, because it would be too dangerous for the UNFAO worker to go out in the fields without any military protection, the UNFAO worker could not perform his task without the soldiers. Major Marc also had serious concerns about sending a patrol out in the first place, on account of the dangerous situation. He did not want to put his soldiers at risk merely to check out vegetation in an area. So Marc came up with an innovative idea in which he could help the UNFAO worker without exposing anyone to unnecessary risk. He requested support from a F16 military fighter jet, which, with a camera-pod mounted onto the jet, could take detailed aerial pictures of the area under investigation. In these pictures it is easy to distinguish poppy from wheat fields by texture and colour. The F16 request was approved, and, after completion of the flight, the digital aerial pictures were recorded on CD and given to the UNFAO worker. The UNFAO worker could then count the crops himself without any further help needed from the soldiers.

Analysis

At least two different practices can be distinguished in this case. First, it should be recognized that the practice of the developmental worker is in an international organisation (United Nations). The structure of the development practice is of a specific organisational nature and differs from that of a military organization (for example, less hierarchical). There are rules and norms where the workers (tacitly) adhere to (for example, rules for who gets aid, rules that express neutrality and norms for how to deal with bribery). There is also a qualifying aspect to the practice of developmental work. Although not explicitly mentioned as qualifying aspect, we could derive the qualifying aspect from Wortel (2009), who investigated original underlying values for humanitarians. Her finding was that the value of 'humanity' is an intrinsic value (as opposed to 'neutrality', which is an instrumental value). Yet, there is also a directional side to the developmental practice. Some development organizations hold that human flourishing is only possible in the absence of weapons. Some even openly condemn the use of force and often do not want interference from

military organizations. In the Poppy counting case, this extreme position is not the case (the UN is not against the use of force). However, the underlying motives of the UNFAO can be made more specific, namely that narcotics is bad and humanity flourishes through support of legal entrepreneurial (agricultural) activities. These motives are grounded in a specific view on reality (direction).

The second practice that I recognize is military practice. Major Marc worked in the structure of a military staff command. He had been given a mandate and mission, which gave him the rules of his task and also the bigger picture of the mission in which his task fell. For soldiers in international missions, it is always important to have a clear vision under which mandate they are allowed to use force. They face national (bound to the soldiers' nationality) specific legal boundaries with regard to the use of force, as well as mission specific procedures that can even change over the course of the mission. The specific qualifying function of Marc's practice as a secretary was supporting the commander of the Regional Command in his task to build up security in the province of Uruzgan. 'Support for security' is the inner value of the practice, spelled out for a specific region. The practice has a directional side as well. In Marc's case, this was the vision that through (democratic) negotiation with stakeholders one can reach security.

From applying the theory of interrelated practices with the distinction between structure and direction here, it follows that Marc had a clear understanding of the structure of his own practice and that of the UNFAO worker who could not *order* the soldiers; the only thing he could do was voice a request. Directions differed, and this could have led to an impasse (for example, a soldier might find that building poppy in Afghanistan is a good thing because people can make a good living out of it, which supports safety in the area, and therefore he is not supporting UNFAO in any way, given that there is no mandate that tells him he has to). However, Marc was able and willing to dedicate some of his resources to help the UNFAO worker get his job done. So when no structure is in place for a proper cooperation, it requires additional capabilities of the soldiers in a network. Mutually respecting the different structures and directions of the military and developmental worker enables cooperation and sharing of information in an effective manner. Both the Major and the UNFAO worker respected these differences in structure and direction by realizing that counting crops was not a soldier's task but was instead the job of the UNFAO worker.

With regard to the interlacements, the situation is clear. Obviously, the UNFAO worker and Major Marc were not part of the same practice (development versus military).The UNFAO worker was part of a bigger whole that was concerned with counternarcotics, while Marc's bigger whole was about providing security by establishing trust relationships with local governments and other stakeholders. Because of these differences in the greater aim, I call this relationship juxtapositional. Removing the UNFAO worker or Major Marc from the working relationship would not affect what their respective practices were ultimately about. Their relationship was also on a very temporal basis. This is not a necessary feature of the juxtapositional relationship, but it is often the case. Other frameworks mainly focus on the differences in either functional or goal-oriented terms, or offer cultural insights, without taking into account the normative aspect of the different practices or how the different practices are related. The framework of normative practices and its extension with a theory of interrelations offers a perspective on why and how different practices can successfully cooperate, or why not. In the Poppy counting case, one could even think about the question of how it is even possible to fruitfully work together as civilians and soldiers in demanding environments. Revealing the structural limits and potentially diverting directions to these two different practices and treating them as juxtapositional rather than as forced relationship (of whatever kind) can help soldiers and civilians to come up with creative ways for looking for solutions within the boundaries of their own rules and responsibilities.

4.6. Conclusion

In this chapter we have shown that Reformational philosophy provides useful tools for analysing ambiguous military situations. The theory of normative practices, with its distinction between *structure* and *direction* (and context, although I did not address this here), helps us understand the problems that can occur in contemporary military situations in which a networking technology creates new connections between practices. I have broadened the existing framework of practices with Dooyeweerd's theory of interrelations, namely by distinguishing between part-whole relationships, enkaptic interlacements and juxtapositional relationships.

The analysis of the cases confirms the usefulness of the concept of practices and their intrinsic normativity. Practices by their very nature are not neutral but have rules and norms that can clash or become confused if practices become

related. By means of a structural analysis of four cases I have shown that problems in NEO's may arise for several reasons. For example, there can be a friction in interconnectedness between practices, resulting in clashes or confusions between different structures (for example, it is not clear which rule or norm prevails in a situation or whether the rule of one practice is being applied into another practice).

Also, there can be a clash between different directions (for example, worldviews which motivate the actions are irreconcilable). Or the structure of one practice does not allow actions evolving from the direction of another practice. This can be due to a bad 'fit' between practices, which is seen more often in NEO. Another option is that a practice is not well defined or the practice itself does not function properly, in that its structure and direction are not aligned.

From the analysis of four cases it can be concluded that in situations where a soldier cooperates with a civilian in the same mission, one needs a clear distinction between what belongs to the task of a soldier and what does not. A structural analysis is needed in order not to get stuck in an operational impasse of the mission due to incompatible structures and different worldviews or values. The case showed that such clashes take place not only incidentally within a NEO, but it is possible that even within the military practice itself dangerous situations can develop that can better be understood in terms of confusion of practices. In the fourth case the confusion did not actually take place, but could have easily occurred.

In view of recommendations for the military practice, the framework of normative practices can be used in order to support responsible behaviour in NEO's. It could help to train and prepare soldiers with regard to potential clashes or confusions between different practices when working with network enabling technologies. These clashes are sometimes unavoidable, and therefore a structural analysis can help in determining whether cooperation should take place at all and, if so, what its limits and pitfalls are. Furthermore, a structural analysis brings attention to normative elements, which is important in light of training soldiers in their practices. Being aware of one's own structure and direction and of these of others (or being aware that they are different and relate to one another in a specific way) can create openings for fruitful cooperation and responsible behaviour in a NEO.

5 Beyond technological mediation - a normative practice approach[45]

5.1. Introduction

In the previous chapter it was shown, through the case of the Kunduz airstrike incident, that during a NEO complexities exist on the social level. Through an analysis of the Kunduz airstrike incident in terms of normative practices, it became clear that some sub-practices had become blurred, resulting in unfortunate decision making. In this chapter the focus moves from the social to technological level. The Colonel in the Kunduz airstrike incident, together with his Sergeant who was a Joint Tactical Air Controller (JTAC) (trained to guide the pilots prior to and at the time of an airstrike) interpreted dots on a screen, provided by live video feed from a fighter jet flying overhead, as insurgents. The Colonel assigned to the event on the ground the status of 'imminent threat'. Sadly, after the bombs had dropped, the majority of casualties turned out to be civilians (Gebauer and Goetz: 2010).

This case, and its serious consequences, forces us to re-think the normative aspects of military technology. It provides a context for philosophical analysis of the use of technology on the battlefield. Several philosophers of technology have offered a framework of understanding the moral significance of technology. For example, Verbeek (2006) tries to do justice to the role of technology in ethics and morality by offering a framework of technological mediation. My aim is to go beyond this framework in order to grasp the moral impact of technology on the battlefield. This chapter, therefore, does not deal with military technology as such, but focusses on the role of technology, in particular network enabling technology, on the battlefield. Analyzing this case from an enriched technological mediation perspective reveals important insights about the use of technology on the battlefield, especially networking and information and communication technologies (ICT).

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[45] This chapter has been submitted as article to *Techné*.

The Kunduz airstrike case is also an example of what is seen more often in modern military missions; soldiers are being equipped with information systems through which they are supposed to receive and send information over a network, which includes other soldiers and non-military actors. Technology is usually perceived as a neutral enabler or facilitator of information exchange in such NEOs. What this case makes clear is that the consequences of introducing technologically sophisticated (visual) aids into a high stake decision environment, such as airstrike scenarios, can be enormous and harmful, although they are designed for reducing casualties. In case of the Kunduz airstrike described above, the interpretation of visual data by members of a military network, resulted (amongst other factors) in the killing of many civilians. Often it is the case that people who develop and use these technologies are unaware of the mediating aspects of devices such as the Rover (the device that provided the grainy images in this case). It is just too easy to say that the commander who ordered the airstrike should have known better what was going on in reality at the Kunduz river banks and should never have ordered the airstrike on the basis of grainy images on a screen. For the commander, the grainy images on the screen were an important part of his reality. Analyzing how individuals experience technology and the world around them is therefore much needed and several philosophers of technology have conceptualized this. What scholars thus far have failed to address is that often, technologies and their users are embedded in a specific social structure, which was referred to as *normative practice* (see also Chapter 4). The normative evaluations of technology have so far focused either on what users (or designers) should or should not do with technology (resulting in ethical guidelines or phenomenological approaches about how the user experiences the technology), or the normative evaluation has focused on the technological artifact, adopting an analytic approach to, for example, norms in artifacts. Both approaches have genuinely revealed normative aspects of technology, some of which are addressed in this chapter, but these approaches, including the technological mediation thesis (more on this in Section 5.2.) alone cannot fully explain the moral impact of technology.

Some existing theories, mainly in the field of organizational science, call attention to the relationship between technology and its mediated user context. For example, structurational perspectives (Giddens: 1984; Orlikowski: 2008; DeSanctis and Poole: 1994) or Actor Network Theory (Latour: 2005) look at technologies in practice, and how technology and the organizations in which technology functions mutually shape both technology and the structure in which

technology functions. However, these theories, at large, abstain from pointing out the normative issues at stake.

Some philosophers of technology have paid attention to how technology or technological artifacts help shape specific practices on a 'macro-level', in the practice of science (Latour: 1987), politics (Winner: 1980; 1988), or societies (Feenberg: 1991). I argue that by revealing the normativity that is inherently present in the specific 'meso-level' user practices (for example healthcare, business, military practice) one can get a better grasp of the moral role of technology in that specific practice. In this chapter concepts found in reformational thinking (for example, the distinction between structure and direction) are used in order to fill this gap. The military practice will be used in addressing the normative dimension of networking technologies such as the Rover in their context.

5.2. Mediation theory: four types of mediation

The claim that technology mediates human action and therefore has a moral dimension is not entirely new. Günther Anders (1987), for example, already described how technologies affect our empathy when he discussed the bombing of Hiroshima. To drop a bomb, the pilot only has to push a button. He neither sees the face of the victims nor the consequences of his action. Without seeing or hearing the impact, he is able to kill millions of people, while, as Anders claims, listening to classical music (Anders: 1987, example taken from Waelbers: 2009). The same kind of argument is made for contemporary drone pilots, who operate in a Rover type of setting. They are sitting behind a screen in a cubicle in Nevada, observing potential insurgents. Upon request they perform airstrikes thousands of miles away and go back home for dinner after 8 hours of work. The way in which the moral dimension of the battlefield is being presented, perceived and 'digested' is altered by these technologies.

Before carrying on with the investigation which deals to an extent with the way people experience themselves and the world around them in a highly technological environment, I will make clear that this chapter does not so much deal with specific behavioral aspects or the way people reason about, for example, moral issues. This is the task of the psychologist and moral philosophers, who respectively search for general psychological processes that underlie the behavior that can be registered in experiments, or try to understand the nature of deliberations concerning right and wrong. The aim in this chapter

is of a different nature, namely to bring to light the context of technology for evaluating the moral dimension of technology. In case people have to make high stake decisions, and this is often the case in military network environments, their decisions will be influenced by the way the technology has shaped their interactions with others and their environment. Four types of mediation that are found in literature are discussed now in a brief manner.

Verbeek argues that neither humans nor objects exist in isolation, but that they always exist in relation to each other. He refers to this relation as technological mediation: technological artifacts can direct our actions and experiences and therefore they play a role in moral deliberations. According to Verbeek, the *ensembles* of humans and technology possess moral agency (Verbeek: 2009). He claims that moral agency should be seen as a result of the interaction between humans and technology rather than as an intrinsic property of humans as in traditional philosophy. In this chapter several ways in which technology mediates human actions are interpreted with reference to a technological artifact that is used on the battlefield, namely visual imaging technology. In this chapter it is argued that the moral dimension of technology should be understood in light of the normative practices in which technologies often function and that technological mediation alone is insufficient to grasp the moral dimension of technology. The ensembles of humans and technology are not enough to understand the way in which technological artifacts steer behaviors. Technological mediation theories fail to grasp that technologies are often embedded in predefined social structures, which I refer to as normative practices. Human beings are moral agents that often decide and act within these normative structures and in these structures technology mediates human actions and behaviors, as well as the normative structures themselves guide human actions. Therefore, not merely technology steers and co-constitutes moral actions but both normative structure and technology (and psychology, see next chapter) are of moral significance for human actions. In the following subsections the different ways in which technology mediates human actions are spelled out for the case of Rover, the visual data sharing device that was used in the Kunduz airstrike. These are firstly that technologies invite certain behavior, secondly they mediate through amplification and reduction, thirdly they have built-in norms, and fourthly these technologies require interpretation. Technological mediation is contextualized and its moral relevance is evaluated in light of the normative practice in which the Rover functions.

5.2.1. Technology invites action

The first way of understanding mediation of technology, is that technological artifacts invites certain behavior. Pols (2011) distinguishes between artifacts inviting (cf. Verbeek 2008a) and prescribing (cf. Akrich 1992 and Latour 1982) actions[46]. Following Verbeek's (2008a; 2008b) approach to technology, technology not only poses new moral problems (for example to request an airstrike to eliminate potentially dangerous subjects or to refrain from doing so in case of the presence of a Rover), but the way technology represents an actual situation influences the way we evaluate the problem and are invited to make a choice in a certain direction. Technology mediates in (moral) decision-making, because it not merely shows the person in the camera, but it shows the person in the Rover camera in a specific manner, thus influencing ones evaluations and consequently ones decisions concerning the person in the camera. This is also the case when visual imaging technologies reduce friend and foe to merely moving objects, distinguishable as a black or gray dot on a screen, as the Rover did during the Kunduz Airstrike. The problem with this approach to the mediating aspects of technology is, however, that it neglects that technology mediates in a very specific practice in which people are not completely free in their decision making. The technology is embedded in a specific structure and understanding the way in which technology mediates moral decisions in these structures is necessary for evaluating the normative aspects of technology. Decision making structures that to a great extend define the (correctness of) actions are already in place, prior to introducing of technology into the practice. It does not mean that these defining structures have become redundant and play a lesser role, as if solely technology counts as action steering. The mediation approach is right in that technology can create new moral problems. However, what counts as a problem often depends on the user practice. What set of

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[46] I received further helpful comments from Auke Pols in this respect. He pointed at the distinction between real and perceived affordances, which he explains as follows: real affordances are the available options for acting with the artifact; perceived affordances are those actions that the user thinks she can do with the artifact. A good affordance is immediately visible as such; but also the 'unusable' microwave has (real) affordances, although you would not recognize them as such due to the bad design (they are not also the perceived affordances).

alternative actions is available for the user and what kind of invitations are helpful (or not) for moral decision making depends on the context in which the technology is used.

5.2.2. Reduction and amplification in technology

Rover is a technological device for sharing visual data. The technological mediation of perception is said to work through the mechanisms of 'amplification' and 'reduction'. In other words, technology enhances what is often difficult or impossible to see with the bare eye and weakens or hides what cannot be captured by the mediation technology. Don Ihde reminds us that:

> with every amplification, there is a simultaneous and necessary reduction. And the amplification tends to stand out, to be dramatic, while the reduction tends to be overlooked. (1979, 21)

Rover has the option of zooming in and out and it can function as well as a thermal camera for night vision. In the thermal camera mode it only shows that what is within a certain temperature range and therefore it amplifies things that would not even be visible with the bare eye (we can not "see" temperature in a direct sense). With the Rover you can see more, especially at night, however, there is a reduction at work too. The reduction is that the objects that are presented on the screen are reduced to merely images corresponding with temperature variances (leaving out color, fabric, expressions, size, etcetera.). It discriminates what is being presented on the basis of temperature. Through this mechanism of amplification and reduction, it imposes or removes (moral) significance: a truck engine may look more significant than a child, since its 'hot-surface' is more profound than that of a child. Therefore, the presence of a truck is amplified on the screen, while one needs to look closely to notice the presence of a child on the screen. Also, what happens outside the scope of the thermal camera is simply hidden from the eye of the observer and therefore often and understandably neglected. This insight is certainly helpful in pointing out the mediation aspects of technology through amplifications and reductions, however, it does not say when and how this amplification or reduction is morally significant. For a normative evaluation of the role of this mediation technology one needs reference to a specific user context. This type of mediation (reduction and amplification) in Rover may be morally problematic for a commander, but it may not be problematic for a pilot. A commander may be distracted by the

amplifications, while for a pilot the amplifications are helpful in distinguishing various objects prior to an airstrike.

5.2.3. Technology has built-in norms

The third type of mediation is related to built-in norms in technology. A majority of imaging technologies operates on the basis of underlying software algorithms. Kraemer et al. (2011) have argued that some algorithms are value-laden. For example, designers of detection technologies often make value-judgments when programming an algorithm, resulting in differences in, for example, detection thresholds, offsets, color, exemplifications, sensitivity, etcetera that are seemingly external factors. Kraemer et al. use the example of tagging cancerous cells in medical image analysis. Depending on the software designer's preference between avoiding false positives and false negatives, a certain threshold is chosen in the algorithm for detecting diseased cells. What Kraemer et al. also recognize, is that preferring false positives over false negatives (or vice versa) depends on the operational setting in which the detection tool is used. This sensitivity to the context is very helpful in understanding the technological mediation. For Rover, the soldiers have the option to choose between a 'white hot' or a 'black hot' algorithm in the device, and they usually determine on the fly whether they choose to present everything that is 'hot' in black and everything 'cold' in white or vice versa. However, depending on the context, this option could lead to a hidden bias, think for example of the possibility of using the tool around sunset, when the earth has heated up and some materials (roofs, rocks, cars) radiate heat longer than others, which may change the contrast of equally important items. It may even lead to an increase of false positives or false negatives, depending on the chosen setting. Taking into account the context in which the Rover is used (for example not in an office, but outside in the sun) helps determine which algorithms may cause problems or unwanted biases in case of Rover (and how this may cause problems or not).

5.2.4. Mediation through translation and interpretation

For the fourth type of mediation of technology, the work of Ihde is exerted. He speaks of a hermeneutic relation of technology with its users or the world (2002). Hermeneutic relations are relations in which the technology gives a representation of the world. An example is the thermometer. A traditional

thermometer exists of a liquid column in a glass tube with a calibrated scale marked on the tube. In order to know what the temperature is, one looks at where the column ends at the scale. The technology mediates through translating temperature to a scale or a number on a digital device. The hermeneutic dimension of mediating technology refers to a necessary interpretation of what is presented as a liquid column or depicted by a number in case of a digital thermometer, before understanding the representation on the screen or scale. For some of the applications of imaging technology, a highly specialized or critical hermeneutical 'reading' is needed to understand the meaning of what is presented (for example in spectroscopy). For the case of Rover, it may seem obvious how to read the screen and how to interpret the thermal dots, but in reality this is not so clear, as the Kunduz Airstrike Incident made clear. The first level of interpretation are the distinctions between the dots, which can be cars, people or weaponry for example. The second level of interpretation concerns the meaning of the dots in a normative different sense. The normative interpretation of the dots went dramatically wrong, because of the (mis)interpretation of the dots as insurgents instead of civilians.

Ihde's insights into the hermeneutic dimension of imaging technologies is helpful, because it offers a ways of understanding technological mediation, but it has not so much to offer in terms of a normative evaluation of this type of mediation. Ihde seem to overlook that evaluating the correctness of the interpretation is related to the practice in which the mediating device is embedded. This practice has certain norms and values to it and even embodies a certain worldview (more on this in Section 5.4), which may affect the interpretation of what is depicted. Problems may even arise if no univocal hermeneutical reading exists within the practice or amongst different collaborating practices.

5.3. Problems for technological mediation approach

Verbeek seeks to answer the question of the moral dimension of technology in the human-technology relationship itself, and many criticisms have been brought in against that point. For example Peterson and Spahn (2011) or Kroes, Meijers and van de Poel (in different short essays in the Book Symposium on Peter Paul Verbeek's *Moralizing Technology: Understanding and Designing the Morality of Things* (2011)) who critique Verbeeks understanding of the moral agency of technical artefacts and attempt to (re)focus on the agency of the user

who uses the technology (without denying that technology is of moral significance). The proposal in this chapter is of a different kind, but has some similarities with Illies and Meijers' proposal to evaluate moral significance of technology in view of how artefacts affect the *set of actions* available to the agent (they call this *Action Schemes* (2009). It is a shift in perspective, away from looking at how artefacts influence individual actions, to a wider focus on agents and their context in which they use technology. According to them, actions are always embedded in a dynamic *context* and the Action Scheme is relative to this context (Illies and Meijers: 2009, 427). In this Section 5.4 a further thematization is given to this context. The evaluation of the correctness of the actions done with technological objects is determined by the normative practice in which the action takes place. It is a thematization of the rules and regulations that are in place in the context in which people use technology. These rules and regulations promote certain actions and discourage others, also technologically meditated actions.

The traditional question of the morality of the man-with-gun and man-without-gun should be understood with reference to the context in which the man-with-gun is embedded. The man-gun association by itself is insufficient to evaluate the moral dimension of the gun. Verbeek is right when he considers the gun as mediating moral actions (killing another person), but the question of morality should not be solved with reference to the man-gun relationship alone, but with reference to the social structure in which man-gun ensemble stands. The normative practice determines the morality of killing another person. Shooting another person is not necessarily morally wrong, but can in some contexts be the morally right thing to do, depending on the normative practice in which the action takes place.

It is argued here that to answer the question of the moral dimension of technology one needs to understand the context in which the human-technology relationship stands. Not to avoid the problem of moral agency, but to do justice to the reality in which technology and humans often function and from which the moral dimension of technology can be better conceptualized. Moral agency should be understood in the context of the normative practice in which the technology and user are embedded. Of course there are also technologies that function outside normative practices, but very often they are embedded in a context of professional actions. In the following section a recapitalization of the normative practice concept is given, which is the key concept which serves as a means to thematize the context for technological mediation.

5.4. Normative practice approach

In this section technological mediation and its different shapes is taken a step further, namely by focusing on the embeddedness of technology in social practice, rather than focusing on the individual or technology itself to understand the moral aspects of technology.

While I argue that in speaking about mediation of technology, one needs to recognize the specific context in which the technology functions. The perspective of 'normative practices', is a conceptual tool to clarify the specific context in which technology is often used. Often, people who work with technology have entered a structure that already existed and in which certain rules, norms, procedures, etcetera are in place. People are not as free as one may wish in using technology (in the sense that people can make choices as they like with regard to the use of technology), but that there are rules and norms in place on how to use technology. This may influence the way technology is deployed and therefore matter for an evaluation of the moral dimension of technology. A focus on the technology itself in analyzing the moral dimension of technology is only helpful to a certain extent. Verbeek's mediation thesis reveals the profoundness with which technology affects moral actions, but it is not convincing in the way it conceptualizes the moral role of technology. The context in which human-technology ensembles exist are important for the moral role of technologies. A 'normative practice' perspective is a way of thematizing this context.

Hoogland, Jochemsen and Glas were inspired by Dooyeweerd and have argued that entities have a qualifying aspect, which determines the intrinsic normativity of the entity (see also Strijbos: 2006a, 2006b; Jochemsen: 2006; Jochemsen and Glas: 1997; Basden: 2008, 2011). See Chapter 4 for a further explanation of the concepts. The approach in this chapter is in support of the views presented by Jochemsen, Hoogland and Glas, but it also suggests an addition to their view, namely that professional actions that are performed in these normative practices cannot strictly be separated from technologies; often technologies enable professional actions. The norms, rules and regulations also concern the use of technological artifacts that are embedded in the normative practice. For example, the chair of a judge is interwoven with the structural side of the legal practice, or in other words: there are rules about the position, occupancy etcetera of the chair. One cannot just sit on the chair of the judge, because sitting on that chair brings certain responsibilities and duties. The qualifying aspect of the chair of the judge is found in the juridical aspect:

through the sitting of a person in that specific chair, certain juridical norms are being expressed and ought to be respected. The judge-practice even revolves for a great deal, at least in many cultures and throughout history, around the judges' chair. The person sitting in that chair during a sitting of a court is the one who's verdict counts as binding. Not the verdict of the person on another chair in the room. Therefore, the chair of the judge plays an active role in moral actions (what one ought to do when sitting in that chair and what one not ought to do), but the core of the moral agency does not lie in the human-technology ensemble, but in the person who sits in the chair. The normative structure of the legal practice is leading for the evaluation of the moral actions. For the chair in the room of the dentist there are different norms, to mention another example. These are the norms that hold for the aspect of (medical) care: the person who is sitting in that chair receives medical attention. The design of a chair often gives expression to the normative context in which the chair is used. The chair of a judge is decorated or expresses certain seriousness, while the chair at the dentist is designed to optimize care-giving and the chair in the museum has an aesthetic or historical appearance. These are expressions that affect the appearance of the technology or the design of the chair. The design of technological artifacts is thus influenced by the normative practice in which the technology functions and the rules and norms with regard to what one should and should not do with the technology are supported (or discouraged) through the design.

For the case of the military practice this may be more apparent. Technology can be employed in a way that it (dis)respects the norms that hold for the specific practice. This is the case if, for example, Rover device is used for committing genocide, or controlling rather than guiding a pilot in executing an airstrike. The structural rules are about the relevant aspects that hold for the practice and they can be applied in a good or in a bad manner. Technology is often interwoven with the rules and norms and in the following section some examples are given of how this is the case for Rover. Different practices and even sub-practices exist (for example the pilot practice and a reconnaissance practice, and they have differing rules and norms and procedures they work with, as well as differing objectives and goals). This means that one and the same technology can disclose as well as close down and hinder the flourishing of a specific practice, depending on the qualifying function of that (sub-)practice. I will now show that the normative practice view takes into account the differences in structure and direction and allows for a normative evaluation of technology on the level of the user practice. The types of mediation of technology that have been discussed in

the first part of this chapter did not account for the user practices in which the technology was used. In the following section some additional insights that follow from a normative practice approach are addressed by making use of the Rover example again with respect to structure and direction.

5.5. Beyond technological mediation in case of Rover

The moral significance of technology can be shown in a two-fold manner, namely with a focus on the technological artifact itself and with a focus on the context in which the technology is used, namely a specific practice. For both explanations one can employ the distinction between structure and direction. The technological artifact itself has a structural side: there are limitations and characteristics that are constitutive, for example the guiding principles are to support the tactical air controller in determining a univocal target or other principles, thermo-radiation principles for a Rover, but also aesthetic principles which one can ignore or respect, resulting in a better or worse aesthetic design. It also has a directional side, which refers to the underlying worldview: for the Rover this could be the view that collateral damage (harming local people or infrastructure) during airstrikes is bad and must be reduced by gaining optimal "situational awareness" using thermal cameras that are linked to different parties in the network. The directional side guides the realization of the structural side, for example designing or rolling out this system throughout the organization to optimize situational awareness on all hierarchical levels (as opposed to providing Rover only to a very specific user group).

The second line of thought relates to the qualifying function of the technological artifact in perspective of the user practice. Technologies can disclose (cf. Strijbos 2003) and thereby create room for the realization of the specific (moral) value inherent in a practice. The Rover in the military practice can leave room for realizing the promotion of justice, by using it to make better distinctions prior to the use of force. However, technology might form an obstacle for the normativity of the practice to be realized, and in case of the

military practice, it might hinder the promotion of justice[47] by the employment of thermal cameras in specific sub-practices. This may be the case when the Rover is employed to control people rather than support soldiers in their daily work. The deployment of Rover may also cause communication chaos, since more people want to have a say on what they see on the screen. Streamlined communication is vital for the qualifying function of the military practice: often decisions about life and death need to be made in demanding circumstances and therefore discussions with multiple partners about what is happening on the screen can have disastrous consequences as we have seen in the Kunduz case. Therefore, the normative practice view can add valuable insights, not as an addition in the sense that it is a new type of mediation of technology, next to the types that were presented earlier, but that this theory of normative practices can be interwoven with the four presented types on mediation. An enriched view of the mediation of technology is proposed. It shows how the four different types of mediation of technology are enriched by viewing them through the lens of normative practices. It reveals that normative issues related to working with these technologies are often dependent on the user context.

5.5.1. Rover poses different questions and invites different behaviors

Analyzing the moral dimension of Rover in light of Verbeek's mediation thesis gives us the insight that the use of Rover, which is a visual data sharing device, raises new (moral) questions and invites certain behavior. The normative practice model however reveals that what counts as a problem may differ and depending on the qualifying function of the practice in which Rover is used, and also the moral evaluation of the problem may differ, depending on the (sub-) practice. For example, the Rover gives the possibility to view trucks that are hijacked on a riverbank, such as was the case in Kunduz. A view on the trucks would not have been possible without Rover, since it was 2:00 am in the morning and therefore the Rover raised the moral issue to the commander,

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[47] Elsewhere I have argued that the intrinsic normativity (related to the qualifying function) of the military practice is the promotion of justice. See van Burken, C. G. and De Vries, M. J. (2012).

namely to bomb the trucks or to leave the scene, running the risk that the fuel trucks would be used in a suicide attack against his camp. The Rover, showing the black dots next to trucks, also may have invited the bombing, because it would mean that a host of insurgents could be eliminated at once. These inviting aspects of Rover depend on the normative practice in which the technology functions. For example, Rover will not be inviting for the pilots, because it is not in the structure of their normative practice to bomb a truck upon their own initiative. Another example is the (moral) issue to either bomb the fuel truck directly, or to bomb the river bank next to the trucks. This issue can be evaluated differently, depending on whether one reasons from the perspective of a commander or from the perspective of a pilot. The practices of the commander and the pilot have different structures and directions. The Rover may be very helpful and contribute to the qualifying function of the pilot practice, for example to gather insights with regard to avoiding collateral damage. On the other hand, it may close down the commander practice: focus on the details may distract from keeping general oversight, which is typically what the commander is there for; it is the guiding principle of the commander. The Rover evoked the commander in Kunduz to behave badly (killing civilians), while for the pilots it invited moral behavior (a low flight over the people to scare them before the actual strike). This moral evaluation of Rover cannot be spelled out by Verbeeks mediation thesis alone, but one needs the normative structure of the practice in which the technology is used.

In the Kunduz Airstrike Incident, the Rover connected different practices, which lead to disagreement between the commander and the pilots over the course of action to be followed, after the commander assigned the dots on the screen as an 'imminent threat'. This was due to the difference in norms and procedures for the different practices. Within the structure of the commander there was no guideline for handling data received through this Rover device. In other words, the structure of the commander practice did not account for this novel technology. Rover was also not designed to serve the qualifying function of the commander practice. Therefore, it has invited inappropriate behavior in case of the Kunduz airstrike. Rover was designed for the pilot and air controller practice, where it invited a different, more appropriate behavior.

5.5.2. Helpfulness of 'amplification and reduction' depends on practice

The mediation principles of amplification and reduction are inherently present in visual aids such as Rover. The "Predator view", described by Call and addressed in Chapter 2, is a phrase used by tactical air controllers and describes what typically happens at the level of staff members at a headquarters (2007, 72). They see the live video feeds on their screens and are sucked into the events that evolve on the screens in in front of them, forgetting about the bigger picture. The dangers of creating this tunnel-vision on the higher military levels are more poignant than on the lower levels, because the higher up in the military hierarchy, the more important it is to have an overview of the overall situation. The insights provided by technological mediation thesis show the problems that can arise due to amplifications and reductions, but mediation alone is not enough to determine the moral significance of amplification and reductions. What the normative practice approach adds is that in some (sub-)practices the addictive aspects of moving images, or a focused view of the Rover device, may cause moral problems, while in other (sub-)practices these amplifications and reductions are very helpful. Therefore, whether a certain technological device is morally desirable, depends on the practice itself. In some situations the principles of amplification and reduction are very helpful to make good decisions, whereas they may hinder as well in a different situation. Within the structure of the practice there may be norms or procedures that create awareness for this reduction, but this may not always be the case. For example, part of the procedures in performing an airstrike such as in Kunduz is that a tactical air controller needs to have 'eyes on' the target, meaning that the controller needs to be at a visual distance from the target (be it with binoculars). In modern military missions with more and more visual data and live feeds available, the 'eyes on' criteria for performing an airstrike is met if the air controller has a camera view on the situation. In Kunduz, the tactical air controller was not watching the river banks with binoculars, but through the live video feeds on the screen. The camera, which only gives a reduced view of reality, has recently entered the normative structure of the tactical air controller party. The 'eyes on' criteria is one of the constitutive rules of the practice; guaranteeing safety for own troops and local infrastructure is the guiding rule for this practice. This guiding principle may be hindered by mixing it up with the 'eyes on' principle in case of (thermal) cameras, thus harming what the practice of tactical air controllers is ultimately about. The added value of the extended theory is that the moral significance of the amplifications and reduction of Rover, which is evident for

many cases, depends on the user practice with regard to evaluating the moral role of the amplifications and reductions.

5.5.3. Different threshold and value settings needed

Kraemer et al. (2011) pointed out that imaging technologies mediate decisions through the value-ladenness of algorithms. The moral evaluation of this mediation however cannot be accounted for by reference to the value-ladenness of algorithms alone. The way in which thresholds matter in a moral sense needs a reference to the context in which the technology is used. The normative practice approach conceptualizes this context. In terms of structure and direction of normative practices this means that the direction of the practice (for example, no collateral damage is tolerated) guides the level to which the threshold of a thermal camera is set. If one wants to be absolutely sure that no living entity is present in a certain area (for example prior to a bombing), the threshold for temperature in Rover may be set very low, in order not to miss out anything alive. In the Kunduz Airstrike for example, the threshold was set in such a way that both hot car engines as well as people were presented on the screen that presented the thermal images. But if the thermal camera is used within a different user practice, for example the traffic controller practice, the threshold of the camera may be set very high, in order to being able to follow a certain convoy. The thermal camera then only presents hot car engines. These settings may differ for different situations, for example on the 'technical level' (military jargon for the work-floor level) the accuracy of the device is important. Therefore, the threshold levels may be part of the procedures that hold for the different practices. The Rover was designed for the purpose of supporting a soldier on the ground in his or her communication with the pilot about the exact location for the impact of a bomb, as was the way in which it was used between the tactical air controller and the pilots in Kunduz. However, very often the device is used by higher commanders in order to get a sense of control when tactical or even strategic decisions have to be made. A higher commander needs to get a general impression of a where an incident unfolds and what its scale is for which the Rover device may be used, however, there is the pitfall of tunnel-vision, leading to harmful decisions, such as the killing of innocent people. From a moral perspective, the mediating role of the Rover device is problematic in the higher military level practices, because it may hinder good decision making.

5.5.4. Hermeneutic rules in structure of practice

The hermeneutic mediation of technology, in which technology provides new representations in need of interpretation, itself is not sufficient to understand the moral role of technology. The standards for correct or incorrect interpretations arise within a specific practice of use and the moral effects of an interpretation can be large or futile, depending on the context of user. A critical reading of a thermometer is often more morally laden in case of a person who is seriously sick than in case of deciding if it is a good temperature to go to the beach. A practice-oriented-view on Rover conceptualizes the context of use of the device and recognizes that in the process of interpretation a soldier already stands in a relationship with the Rover; Rover is embedded in his working practice, which has certain norms and values to it as well as a worldview. For example, the commander in the Kunduz airstrike was looking for ways to create a safe working environment for his subordinates, which influenced his interpretation of the events on the screen. He should have been aware while interfering with the pilot's decision. The interpretation of the grey images on the Rover screen was driven by the commander's conviction to bring safety to his own troops and the region under his responsibility. That is what the commander's ultimate task was about and this task cannot be dissected from an underlying worldview towards what safety is, what a good commander is, and how to bring stability in a region. Also, it should be noted that the commander in the case of the Kunduz airstrike had not been trained in interpreting the thermal images that the Rover presented, so he lacked sophisticated hermeneutical skills to interpret the images on the screen. The tactical air controller who was sitting next to the commander was skilled, or at least he was experienced in working with the Rover. Even though the hermeneutical interpretation may have seemed easy to do for him in the case of Rover, still things can go dramatically wrong due to a misinterpretation of what presents itself on the screen. Therefore, we need a view on mediation that takes into account the differences in specific hermeneutical rules that hold for specific user practices. The concept of normative practice provides this view. Also, it adds that the hermeneutical rules are part of the structure of a practice and thus that different practices may use different hermeneutical rules, causing potential problems when more people work together in a joint military operation.

5.6. Conclusion

In order to understand and evaluate the moral significance of technology, the notion of technology mediation has been applied to a case with dramatic consequences and where technology clearly played a role. It confirmed the claim that is made by advocates of the technological mediation thesis, such as Verbeek and Ihde who claim that technology mediates our perceptions and actions and thus can have profound effects on human beings, such as in case of the Rover device. In order to understand the meaning of technological mediation in the case of the Rover, a further categorization was made of the different ways in which Rover mediates human actions and perceptions. The distinctions have sharpened the discussion on the moral role of technology, but are insufficient to give an adequate explanation of the moral significance of technology. The main critique on the technological mediation thesis is that it is not sensitive to the different shapes and forms in which technology mediates human actions and neither has it thematized the context in which technological mediation (often) occurs. In order to understand the moral dimension of technology, a sensitivity to the context in which technology mediates human actions is needed.

In this chapter four different types of mediation were discussed. The types were derived from post-phenomenology and other streams in philosophy of technology. These four types are chosen, since they contribute to a better understanding of military high tech environments with a focus on visual data and imaging technologies. It was shown:

(1) how technology can invite certain behavior (for example an airstrike),
(2) how technology often mediates through amplification and reduction (for example, Rover imaging amplifies temperature, but important other aspects are reduced, such as color),
(3) that technology has built-in norms (for example, threshold levels for temperature determine what is visible on the screen or not), and
(4) that technology requires interpretation (the dots on the screen of the Rover required a hermeneutic skill).

With these four different types, headed under the umbrella of technological mediation in this chapter, an attempt was made to get a moral understanding of technologies that enable the sharing of visual data on the battlefield. However,

the focus of these aforementioned approaches has been mainly on the technology or technological artifact itself whereas I have argued that it is more helpful to recognize its social context to be able to understand the moral role of technology on the battlefield. The practices in which technologies often function are normative and give guidance to its use. There are guiding principles that are constitutive to the practices in which technologies are employed. Technology may alter or mix up the guiding principles of the practice, which sometimes leads to unfortunate decisions. For example, if the guiding principles for pilots are mixed up with the guiding principles for higher commanders, the information that is presented in the practice (through for example Rover) may be interpreted according to the rules and norms of another practice. Technology can be used in accord with the guiding principles of the practice or not, which results in a flourishing of the practice or a hindrance of what the practice is about.

Evaluating the moral significance of technology from a normative practice perspective is not about judgments in the sense that technology is inherently good or inherently bad. Rather, it deals with the specific implications for the people who act and decide in the normative structure in which technology is embedded. Many accounts of the mediation of technology only focus on the artifact or the user. In this chapter I have raised a banner to include a broader and deeper kind of moral evaluation, which includes worldview, ethos and an orientation towards certain values in addressing technology and its user context.

The different distinctions found in existing philosophy of technology and reformational thinking reveal the moral dimension of technology and in this case, the Rover device. It revealed how the use of visualization technologies affects decision behavior in military practice for better or for worse. This chapter focused on the technological factor in decision making. In the next chapter the psychological factor in moral decision making will be discussed.

6 Morally responsible decision making in networked military operations[48]

6.1. Introduction

Is it less morally acceptable for a soldier to kill a man either in a firefight in Afghanistan than through pushing a button as drone pilot in a cubicle in the homeland? While the net result is identical (one man has died), there is compelling empirical evidence that the underlying moral decision making processes differ. When technologies make it psychologically easier to kill, by for example lowering the psychological 'threshold' for pushing a button, the latest military innovations such as drones have an inherent moral dimension. The question therefore is not arguing whether it is morally better to kill someone with or without a high tech weapon system, but to see how technology influences military personnel that make such decisions. In the previous chapter the question of how technology mediates human actions was addressed and it was argued for that the moral dimension of technology should be seen in light of the normative practice in which the technology mediates human action. It described the relationship between technological and social factors that both influence moral decision making in NEO. In this chapter, in addition to the social factor, the individual factor will be addressed, through discussing the role of technology on soldiers from a psychological perspective. In order to understand the relationship between technology and individual factors, research on the impact on its users is needed and therefore the psychological realm is brought into the discussion. The technological make-up of military working environments may influence their moral decision making. Possible effects of technology on moral decision making may however not be easily understood. To

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[48] *Based on:* Van Burken, C.G. and Van Bezooijen, B. (*forthcoming*), in: J. van den Hoven, B.J. Koops, H. Romijn, T. Swierstra, and I. Oosterlaken (eds.) *Responsible Innovation*, Volume 2, Springer, Dordrecht. [B. van Bezooijen has suggested relevant psychological literature and has written parts of Section 6.4 of the article].

illustrate this, I have inserted comments about the use of force in recent operations in Afghanistan by Britain's Prince Harry, who was a helicopter gunner, and by a US drone pilot in the same military mission. While Prince Harry described his tasks as: "It's a joy for me because I'm one of those people who loves playing PlayStation and Xbox, so with my thumbs I like to think I'm probably quite useful" (see Crilly: 2013), the drone pilot described his tasks as "I see mothers with children, I see fathers with children, I see fathers with mothers, I see kids playing soccer" before the call comes to fire a missile and kill the man (see Bumiller: 2012). Clearly the role of technology on moral decision making, such as the decision to strike, is more complex than that pressing buttons make it easier to fire lethal missiles.

So how *does* technology affect decision making? I aim to answer this question by first providing a structural analysis of the technologically mediated context in which soldiers make decisions. This structural analysis has been used in the previous chapters to understand the nature of complexities in military missions. The theoretical analysis is enriched with empirical research from the realm of psychology that encompasses technology and decision making. The focus of the inquiry is on military operations in which information and communication technology (ICT) is being used, because in these settings technology and moral decision making are deeply intertwined. Information is shared between different members in NEOs, on the basis of which moral decisions are made.

The aforementioned examples of Prince Harry and the drone pilot were unthinkable a decade ago. The fact that one can draw an analogy between killing a real person with playing a video game -at least if one phrases the analogy in terms of bodily movements, namely manipulating a stick and buttons while watching a video screen in an air-conditioned room- says something about how military practice is changing. Military practice is technologically mediated by all sorts of innovations. In the quotes from Prince Harry and the drone pilot this becomes clear. The analogy with the play station shows that innovations on the battlefield are often mediated by the screen and that soldiers are acting from a geographic distance. Royakkers and Van Est state:

> For a soldier in combat fighting an enemy is something that costs a lot of effort, literally 'blood, sweat and tears'. Remote control warfare has gone rid of the 'blood and sweat'. (2010, 292)

Albert Borgmann, a philosopher of technology, brought similar developments under attention by phrasing them in terms of alienation powers of technology

and moral commodification (1984). Borgmann considers it a loss to be detached from the means that bring certain ends. It may be that NEOs lead to a furthering of what he names 'moral commodification'. How can the ways in which soldiers deal with technology on the battlefield be further understood, taking it beyond a rather pessimistic view of how technology negatively affects individuals and society? The 'empirical turn' in philosophy of technology attempts to approach technology from an internal perspective, emphasizing empirical facts about technology that can be used in ontological, epistemological, ethical or more general discussions in the philosophy of technology (Kroes and Meijers: 2000). In this chapter, the empirical turn is taken a step further by bringing empirical data from a different discipline, namely psychology, to discuss technological mediation on the battlefield. A structural analysis of UAV pilots serves as a case in point in this chapter. The structural analysis is extended with empirical data from psychology. The structural analysis starts from the assumption that soldiers do not decide and act in a 'void', but in a very specific context. This context is conceptualized as normative practice (see also previous chapters) and the structural analysis is therefore called a practice analysis. The aim of this chapter is to enrich the practice analysis with empirical data.

The chapter is organized as follows. A philosophical account of the UAV practice is given in the first part of the chapter. It shows the normative structure of decision making processes from a theoretical perspective and is, to some extent, prescriptive. In the second part of the chapter two theories or lines of research from psychology are discussed that give insights into how moral decision making actually takes place in a technologically mediated environment. The experimental data is used to inform deliberations on how technology changes military practices in NEOs and if this change is desirable. The aim of connecting these two types of analysis (the normative practice analysis and the psychological analysis) is to be able to adopt the structural side of the practices in NEO in such a way that it support moral decision making.

6.2. Case presentation: Remotely Piloted Aircraft

The following case, described by Laster and Iannotta (2012), will be used to analyze a specific case of NEOs, namely that of UAVs. In the military, the preferred way of speaking about UAV's or drones, is Remotely Piloted Aircraft (RPA). The type of RPA that was used in this case is a Predator, which is an armed aircraft, piloted from a distance.

> A Predator pilot in California saw a "splash" on his video screen as a Hellfire missile slammed into a small group of people thought to be Taliban fighters. Almost immediately, he knew something was wrong.[...] The morning of April 6, 2011, in Afghanistan's Sangin River Valley turned out to be a Predator pilot's worst nightmare, and one that prompted intelligence analysts to gain a greater voice during the fast-paced discussions preceding the firing of weapons. [...].Given the situation, the Predator crew was furiously scanning for targets to strike with one or more of the plane's Hellfire missiles. [...]
>
> The Hellfire missile killed [a US marine and sailor]. An [investigative report] redacts the names of those involved and finds no one negligent. But it recommends changes in Predator processes that in January were blessed in a formal Joint Urgent Operational Need statement.[...]In the Sangin case, the mission intelligence coordinator hesitated to bring the controversial whisper chat[49] [about conflicting assessment regarding the direction of fire away from friendly forces] to the attention of the pilot. The coordinator told investigators the crew was trained not to address whisper chats "during a dynamic situation."[...] "You have to understand, the Sangin Valley is bad-guy territory," [...]"If you don't know where the friendlies are, it's pretty difficult for you to know [what] to overturn based on what one of the supporting forces thought." (Laster and Iannotta: 2012, 24-27)

In order to be able to make a structural analysis of the incident, Fitzsimmons and Sangha are quoted, who describe a typical RPA crew.

> Both [Predator and Reaper] aircraft are operated from ground control stations by teams consisting of a pilot, a sensor operator (SO), and a mission intelligence coordinator (MIC). Seated side-by-side in a trailer on any one of the eight USAF facilities on U.S. soil where combat RPA units are currently based, each of these individuals faces three monitors: one displaying live footage from the RPA's cameras, another displaying data pertaining to flying the aircraft, such as its altitude and fuel level, and another displaying an array of other data. While the pilot is responsible for flying the aircraft and launching weapons, the SO conducts

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[49] 'whisper chat' is a chat message that can only be viewed by the mission intelligence coordinator (Laster and Iannotta: 2012, 26).

> reconnaissance and, using the aircraft's laser targeting system, guides weapons into targets on the ground. The MIC coordinates the flow of information between the aircrew (the pilot and the SO) and outside sources, such as any ground units the RPA is supporting in theatre. Collectively, these individuals perform a number of valuable functions, including providing real-time surveillance to personnel around the globe; guiding and protecting ground forces from enemy attacks; locating and eliminating weapons caches and enemy combatants; and conducting damage assessments following airstrikes...." (2013, 3)

> [I]t is important to recognize that RPA operators do not decide if and when to launch hunter-killer missions. Rather, they conduct the missions and fire weapons at the targets that their commanding officers order and authorize them to engage with. (2013, 12)

6.3. Practice analysis of the RPA case

In this 'friendly fire' incident, resulting in the death of two allied soldiers, some unfortunate moral decisions were made. How can we understand why and how this decision to engage was made? And how did technology play a role? For this, a practice analysis is done. The analysis does not give a full account of the incident, but sheds light on why people (had to) make decisions, instead of going to a quick conclusion about the lack of technological assets, such as Laster and Iannotta (2012) suggest. In the Sangin case, there are different sub-practices at work. There is (at least) the pilot practice, the sensor operator practice, mission intelligence coordinator practice, and a joint tactical air controller (JTAC, or ground controller) practice. Below a structural analysis of each of the (sub-)practices is given. A distinction is made between the structural and directional side of the practice. Most information for this analysis is derived from newspaper articles or online sources, from both critical and non-critical nature, to ensure a more or less balanced view on the practices[50].

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[50] The author gathered quotes and descriptions about the different practices, although fictional descriptions could have done the work as well. The point is to show that there are differences (as well as similarities) between the sub-practices. I am aware that a comprehensive overview of each sub-practice cannot be given in a few sentences.

a. RPA Pilot:

Structure:

- flying the aircraft and launching weapons
- rules for classification[51] (unlike other military operations (Fitzsimmons and Sangha: 2013, 11)
- Geneva Conventions and other legal procedures
- under authorization of commanding officers
- working in shifts
- gut-feeling check

Direction:

- protect the people on the ground (Schogol and Ricks: 2012)
- fear of repercussions in case of collateral damage (Groetken: 2010)

b. Sensor Operator:

Structure:

- conducts reconnaissance
- guides weapons into targets on the ground
- Geneva Conventions and other legal procedures
- working in shifts
- under authorization of commanding officers

Direction:

- making a difference in the world (ibid)
- job satisfaction from releasing bombs (Schogol and Ricks: 2012)
- fear of repercussions in case of collateral damage (Groetken: 2010)

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[51] Classification rules are the rules for having access to secret or confidential information. Classified information cannot be shared with others, which also means that combat experiences cannot be shared with friends or family or not even the majority of colleagues.

c. Mission intelligence coordinator:

Structure:

- coordinating flow of information between the aircrew (the pilot and the SO) and outside sources
- rules for classification
- under authorization of commanding officers
- Geneva Conventions, Rules of Engagement (ROE) and other legal procedures (Walker: 2010)
- working in shifts

Direction:

- coalition forces should not be injured or killed
- trust but verify information (Laster and Iannotta: 2012, 26)

d. Ground Commander:

Structure:

- release authority[52]
- standing operation procedures for airstrikes

Direction:

- priority is saving lives of own troops (Corcoran: 2012)

A practice analysis emphasizes that decision making in these practices should be seen in the context of rules and norms and procedures and also in the context of specific aim (*telos*) of the sub-practice. Also, people in the different sub-practice have a degree of freedom to interpret the rules and norms (structural side) of the practice. For example, the mission intelligence coordinator had the freedom to withhold or present the whisper chat from or to the pilot. Especially with new technologies such as RPA, sometimes the rules and norms are insufficient for guiding what is the best decision. In this case, the friendly forces on the ground divided into two groups, but from a black-and-white screen in California it was unclear which group was now the friendly and which group was the opposing force. The coordinator chose to withhold the whisper chat about this confusion, since the attitude amongst the coordinators was to 'trust but verify' the

[52] The person who gives final authority for releasing a bomb.

information (Laster and Iannotta: 2012, 26). This trust attitude in this case belonged both to the structural and to the directional side of the practice. The attitude amongst coordinators 'to trust but verify' was a norm that had arisen within the coordinators practice. But trust also belongs to the directional side of the practice. It is connected to culture and worldview. It is suggested that, depending on one's cultural background, people are more or less likely to trust others, especially those one has never met (Fukuyama: 1995). In networked operations, decisions may be influenced by the different levels of trust people have towards others in the network, especially when the sub-practices are geographically and culturally distanced (Buskens: 2002). When investigators asked the pilot in the Sangin case what he had done, had they presented the whisper chat about the concerns, the pilot told them he was "90 percent likely" to have informed others and would have "considered putting a hold on the engagement." (Laster and Iannotta: 2012, 26).

This last remark from the pilot is an important aspect of the structural side of the pilot practice. As part of the procedure, a pilot needs to perform a 'gut-feeling check'. If the pilot has any doubts about the planned attack, he should abort the engagement. It seems that for the others in the RPA crew this gut-feeling check is not part of their procedure. A former sensor operator confesses that during the many engagements he took part in, some situations could not have passed this 'gut-feeling' check, had it been in his procedure. He recalls one engagement and states that he "wasn't convinced that they were bad guys.", but as a young airman, "he didn't think he had the standing to ask questions" (Engel: 2013). What a practice analysis reveals here, is that in traditional piloting, the ground commander and the pilot could abort the mission if they had doubts regarding the engagement (for example, in case they suspected that the strike was not according to the rules of engagement). In the RPA missions however, with much more people involved, who have diffused tasks and responsibilities, an appeal to the gut-feeling check may be hindered. This can be due to hierarchical reasons, such as the young airman suggested above, or simply because it is not accounted for in the structural side of the sub- practice. In other words, there is no part in the procedure that calls attention to the gut-feeling check. Moral decision behavior of soldiers and airmen cannot be accounted for by the rules and norms, or the structural side of the practice alone. The directional part plays an important role too. For example, if the airman from the quote had had a different understanding of his position and role in remotely piloted missions in general (i.e. direction, or *ethos*), instead of doing his job as if his role would not

matter in the decision making process, he may have raised questions, and thus perhaps have prevented airstrikes in which civilians died. The normative structure of the practice, with the attention for worldview that influences decision making in the practice, reveals the social dimension of moral decision making. What is lacking however is the way soldiers deal with decision making on an individual level. Therefore, in the next section an additional factor of moral decision making is brought under the attention, namely the psychological dimension. In the next section two psychological theories about moral decision making are introduced.

I conclude this section as follows. Due to the innovations on the battlefield new (sub-)practices emerge. These new sub-practices do not always have their structure in place (yet) for the difficult task that they are supposed to do. The view that the RPA pilots and analysts who are working on the remote end do exactly the same things as manned planes or analysts close to the battlefield is too simple. The practice of an RPA pilot is different from a traditional pilot, because a technologically mediated environment requires different rules and norms for decision making, as the case made clear. People who are working in the newly evolving sub-practices, which are inevitably networked, give normative structure and direction to their practices. If this is done well, it supports moral decision making in networked missions. Clashes between practices, or one practice potentially overruling another practice, are then recognized as undesirable situations and it may prevent accidents from happening, such as the friendly fire incident in the Sangin Valley.

In this chapter, the normative practice analysis functioned in a descriptive-analytical way. A practice analysis however does not say anything about how people actually behave in technologically mediated practice. Therefore empirical data from psychological research are discussed in the following section.

6.4. Moral psychological theories[53]

Analyzing moral decision making in terms of the practice framework gives us a broader understanding of why soldiers (have to) make certain decisions. Some rules or norms are lacking or are inappropriate for network enabled missions (for example the gutfeeling-check rules that are absent for sensor operators, or the norm about whisper checks is often difficult to interpret) and therefore people make unfortunate decisions. What is missing in this perspective actually is that not only there are rules, norms and underlying worldviews that steer behavior in the practices, but there is also a psychological aspect that plays a role in acting and deciding. For example, technology enabled the soldiers in the Sangin case to stay physically distant, while having lethal capacity to destroy persons or villages that they assigned as 'bad' and that were thousands of miles away. The concepts of good and bad may be inspired by a more fundamental view of the world (direction), however, this does not explain how assigning certain people as 'bad', resulting in specific behavior, is influenced by technology. For these questions psychological tools that can point out behavioral patterns are needed. It can be questioned whether the remote way of working - away from where the bullets fly - makes it easier or less easy to use force. This question can be answered by looking at behavioral responses from empirical psychology.

Another example from the Sangin case, in favor of adding psychological reflection, is that the behavior described as 'furiously scanning' (Laster and

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[53] In an earlier draft of this chapter two other theories in psychological research were considered, namely *Construal Level Theory* (CLT) and *Trolley Dilemmas* (TD). CLT predicts that moral rules and principles are more likely to be activated when people consider psychologically distant situations, relatively ignoring contextual, situational information (Eyal and Liberman: 2010). TD research suggests that technological mediation affects moral decision making processes insofar technology reduces the personal force that is required to set in motion the outcomes of the act (Cushman et al.: 2006). Another strand in TD research claims that *emotional engagement* accounts for evaluating the rightness or wrongness of an action (Greene: 2003). These theories may look helpful at first sight, however they are too much contested in literature (CLT at least), they assume or emphasize a one sided view of morality (rule-based morality for CLT and utilitarian in case of TD). In TD little attention is given to the specific contexts of decision making and their research concerns random people, while soldiers face decisions of life and death for real and they are highly trained to deal with these situations (TD).

Iannotta: 2012), which decribes a specific cognitive state, may be activated or upheld by technology. The camera allowed for a scan of the scene and the way in which the camera presents reality (close-by, zoomed-out, sharp, blurred) may trigger behavioral responses, such as furiously scanning. Technology plays an active role in decisions that follow from the 'furious scanning' that cannot be explained in terms of structure and direction alone. In the following sections some relationships between the way the military practice is technologically mediated and psychological processes that partially underlie the decision behaviors of soldiers who work in technologically mediated environments are clarified. It adds empirical reality to the normative practice model. It should be noted that in the discussion of the psychological theories, the Sangin case will get little attention as a case. In the section below it is showed how technology affects the practice of RPA in a more general way. It is a practice in which the use of lethal force is sometimes demanded. Can it be the case that technology such as RPAs makes it easier to use lethal force, thus affecting moral decision making?

6.4.1. Social cognitive theory

Below two theories are presented, discussed and a (sub-)conclusion on the relevance of these theories for NEOs is formulated.

One psychological theory that has been applied often in the context of military operations is Bandura's (1986; 1991) social-cognitive theory (SCT). The basic premise of SCT is that:

> (...) moral thinking is a process in which multidimensional rules or standards are used to judge conduct. Situations with moral implications contain many decisional ingredients that not only vary in importance, but may be given lesser or greater weight, depending on the particular constellation of events in a given moral predicament. (Bandura: 1991, 64-65)

In other words, what keeps people from behaving inhumanely and stimulates people to behave humanely is not only determined by moral reasoning, but other factors such as standards, motivation, and self-control also play a large role. An important distinction between SCT and other well-known moral psychological theories (for example Kohlberg: 1969; Rest: 1979, 1986) is the emphasis on mechanisms other than moral reasoning for describing why people behave

(im)morally. Bandura proposed that people have self-influence mechanisms that control behavior, for instance that violating one's moral standards will bring self-condemnation. These self-regulative mechanisms, either positive or negative, are a key component of SCT. Self-regulation, however, requires effort, and people may not be motivated to engage in self-sanctioning at all times. From this it follows that selective activation of self-regulatory mechanisms and disengagement will lead people to immoral behavior. Bandura formulated several ways in which people can disengage their moral self-sanctioning from their behavior. These disengagement mechanisms will be briefly discussed below (based on Bandura: 1999).

The first three mechanisms are related to the re-construal of behavior (Bandura: 1986).

1. People may make immoral behavior acceptable by portraying it as socially worthy or serving moral purposes (moral justification).
2. People may sanitize or camouflage their immoral behavior (euphemistic labeling).
3. People may further compare their behavior with other behavioral options that would have been worse (palliative comparison).

The second set of disengagement mechanisms is related to the structuration of personal responsibility.

4. People may obscure or minimize the effects of their behavior (displacement or diffusion of responsibility). The power of this mechanism, some have argued, has been demonstrated in atrocities such as My Lai massacre, the Nazi mass executions, and the Milgram studies. In these cases people displaced the responsibility for the immoral conduct.

The third set of mechanisms is as follows:

5. To minimize, disregard or misconstrue the consequences of one's behavior. It is easier to pursue harmful actions when minimizing the effects of actions, or to discredit the sources of the reported harm.

The final set of disengagement mechanisms is related to the recipients of the harmful acts, for instance in the following ways:

6. By treating the recipients as being less than human (dehumanization). Self-censure for immoral acts can be disengaged by stripping people from human qualities, such as hopes, dreams, feelings.
7. By making recipients partially responsible for the harmful actions (attribution of blame). This may even cause people to feel good about their immoral actions.

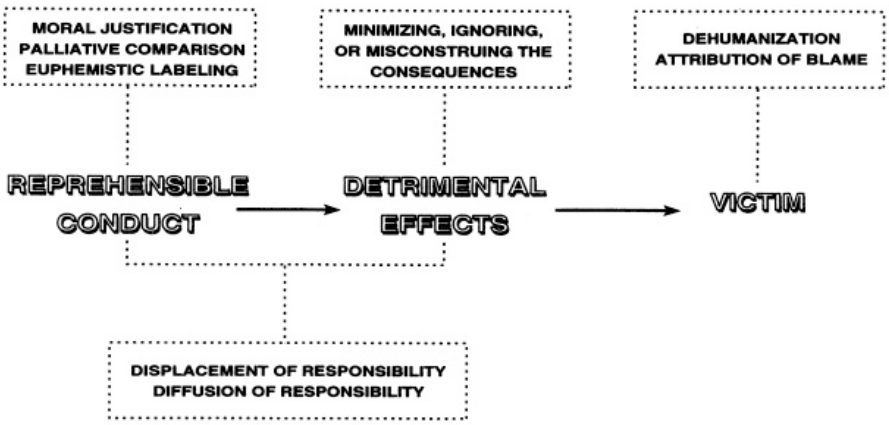

Figure 6.1. Psychosocial mechanism through which moral self-sanctions are selectively activated and disengaged from detrimental behavior at different points in the self-regulatory process. (*Source:* Bandura: 1986, 376).

Others have elaborated on the work of Bandura and have refined the concept of self-regulation[54] by distinguishing for example the role of motivation and self-esteem on self-regulations, and by assigning fatigue and strengthening characteristics to the mechanism of self-regulation (see for example Baumeister, Heatherton and Tice: 1994; Baumeister and Heatherton: 1996; Baumeister and Juola Exline: 1999; Muraven, Baumeister and Tice: 1999; Muraven and Baumeister: 2000). Baumeister and Juola Exline used the metaphor of a muscle to explain the mechanism of self-regulation, which regulates clashes between selfish motives and behaviors that promote social acceptance:

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[54] Self-regulation is often used interchangeably with self-control.

> The resource needed for self-control is a limited, consumable strength, much like a muscle's ability to work. (1999,148)

Muraven, Baumeister and Tice (1999) extended the muscle analogy beyond the fact of fatigue and depletion, in arguing that self-regulation can be trained, in the same way as muscles grow stronger through exercising. Direct evidence for this hypothesis is difficult to come by, however, empirical research by Muraven, Baumeister, and Tice indicates that people's capacity for self-control can be strengthened by repeating patterns of moral behavior over time (1999). Irrespective of the weak evidence, the hypothesis resembles with a much longer tradition in ethics, namely the virtue ethics approach.

Relevance for networked military operations

The disengagement mechanisms have been used by others to think about the morality of actions in military operations (for a discussion, see Bandura: 1999). When zooming in on the mechanisms that may be affected by technology, I consider three mechanisms to be relevant: diffusion of responsibility, disregarding harmful consequences, and dehumanization.

First, technology offers new possibilities to organizations for *diffusing or displacing personal accountability* for immoral actions. For instance, dividing labor so that work becomes more routinized is a powerful way to diffuse personal accountability. Corcoran (2012) states that there is at least a team of 10 people involved in flying an unmanned aircraft in combat, each with their own tasks and responsibilities:

> In the Kandahar control room are a pilot, a pay load operator and an electronic warfare section comprising intelligence officers, technicians and locally hired "cultural advisers" and linguists.

They can be conceptualized as sub-practices in the framework of normative practices. That some of those members described by Corcoran get routinized in their job, potentially leading to a dehumanization process, becomes clear from the following quote:

> After participating in hundreds of missions over the years, Bryant said he "lost respect for life" and began to feel like a sociopath. He remembers coming into work in 2010, seeing pictures of targeted individuals on the wall – Anwar al-Awlaki and other al Qaeda and Taliban leaders -- and musing, "Which one of these f_____s is going to die today? (Engel: 2013)

This last remark entails a part of the process of dehumanization that is not necessarily directly influenced by technology. However, ICT makes this scene a real option. Bandura calls it 'euphemistic labeling', and in this case it is done by sticking pictures of people (whom you will never meet face to face) on the wall of your office, with the real option that you may kill them the same day. Routinizing of work is influenced by the way the practice is structured. The normative structure of the broader practice of which Bryant, the airman in the quote, was a member, namely military practice, may have been in disharmony with the primary process of his sub-practice. In Bryant's case, the primary process of his sub-practice, was to kill bad people. The primary process of the military practice as a whole is to promote justice and not merely to kill bad people, as Bryant perceives his job to be about. This misalignment of normative structures can cause problems in moral decision making. Relocating the work of killing people to one group of people, such as drone pilots, means that only they have to cope with the outcomes of their offensive acts. There are numerous quotes available from drone pilots who say that they are the ones that see the nasty part, for example:

> "People say that drone strikes are like mortar attacks," Bryant said. "Well, artillery doesn't see this. Artillery doesn't see the results of their actions. It's really more intimate for us, because we see everything." (Engel: 2013)

Bandura's diffusion of responsibility interrelates with another effect in SCT, namely humanization (later more on this). For some people, the routinization of killing may become more intimate when technology is introduced.

Second, technology may be used for disregarding or distorting of consequences. To use Bandura's own words:

> Our death technologies have become highly lethal and depersonalized. We are now in the era of faceless warfare, in which mass destruction is delivered remotely with deadly accuracy by computer and laser-controlled systems. (1999, 199)

The example Bandura gives corresponds with Bryant's vision. In hierarchical organizations, those who decide on the killing of people are often not those who execute the actual killings. They are also not the ones who are faced with the consequences of their decisions. The feedback the decision maker gets is a written or oral statement in which the impact is confirmed (note that this is the structural side of the practice). Not only does Bandura emphasize the role of

technological mediation between actor and recipient in the words quoted above, he also illustrates the working of a third mechanism of moral disengagement with technology.

The third mechanism is dehumanization (see also Detert et al.: 2008). Dehumanization occurs when technology estranges military personnel from the people who are affected by the outcomes of their actions. In other words, this mechanism could occur for military personnel that are working with 'depersonalized' technologies, fighting a 'faceless warfare' watching dots or thermal images on a screen. Grossman has referred to this as 'mechanical distance':

> Mechanical distance, which includes the sterile "Nintendo Game" unreality of killing through a TV screen, a thermal sight, a sniper sigh, or some other kind of mechanical buffer that permits the killer to deny the humanity of his victim. (Grossman: 1996, 189)

It can be created by technology, enabling soldiers to deny that they are killing humans but instead are attacking a group of pixels (Grossman: 2009, 181). In sum, SCT generally suggests that military personnel in NEOs may disengage their moral standards when fighting a faceless enemy.

However, SCT also accounts for one way in which technology leads to moral *engagement*: humanization (see Bandura: 1999). Within SCT, humanization holds that when people see the suffering that they have caused, and when people are made aware of the social linkages between moral actor and recipient, this makes actions personal (thereby inhibiting disengagement mechanisms). One example of this would be one of Milgram's (1974) studies in which participants directly witnessed the outcomes of their actions for recipient of the electric shocks. This humanization of the recipient dramatically lowered the tendency of participants to cooperate with the experimenter in Milgram's studies. In NEOs, humanization would be a possible explanation for why the hair on the back of drone operator's neck stood up when he had to fire a missile, just as it did when he used to line up targets in his F-16 fighter jet: one can get immersed in a digitized version of reality (see Bumiller: 2012). The following quote by an official, who did not want to be identified in Schogol and Ricks (2012), could serve as an illustration of this humanization aspect of technology. As a UAV operator, he observed with his crew a bomb-maker for weeks to find out who was financing the bombs and providing explosive materials.

> "We watched him wake up in the morning; we watched him leave for work in his vehicle; we tracked him to where he was building these weapons; we watched him eat lunch; we watched him go home and play soccer in his yard with his family — with his two little girls," the official said. "We watched him live with his wife, watched him sleep, we watched him sleep; we watched him get up in the middle of the night, go to the back of his house and build weapons"

So the drone operators knew this man well when the time came to kill him.

> "We've been watching him for so long that we have that part of the history with our operators, who are having the thought in their head of, 'I don't care what you think of this individual, he does have two daughters; I have seen him with his family,'" the official said. (Schogal and Ricks: 2012)

Unfortunately, no studies that estimated the relative weights of disengagement mechanisms, or empirical studies on humanization, were found to date. Studying (de-) humanization of technology and the relative effects of following a person for a longer time, (thus getting familiar with the daily routines of those whom are potential targets) needs to be done. The claims of SCT for the effects of technology on moral decision making remain theoretical at this point. I have used some quotes from soldiers who are working in NEOs in order to, in a limited way, illustrate or question the theoretical findings. It is not clear if and how the normative structures in which people decide affect the disengagement mechanisms and this is another point for further investigation.

6.4.2. Moral intensity

Similar to Albert Bandura, Thomas Jones emphasized that moral actions do not merely follow from moral cognitions. Jones (1991) developed an issue-contingent model and recognized the influence of multiple characteristics that are associated with the ethical situation itself that influence moral decision making, which make up the dimensions of moral intensity. Moral Intensity theory holds that six characteristics collectively comprise moral intensity: (1) Magnitude of Consequences, (2) Probability of Effect, (3) Proximity, (4) Temporal Immediacy, (5) Social Consensus and (6) Concentration of Effect. According to Jones' model,

> [a]s the moral intensity of a situation increases, awareness of the ethical nature of the situation should increase; judgments regarding the appropriate action to be taken in the situation should lean more toward ethical action; behavioral intention should be to act in a more ethical manner; and behavior should be more ethical. (McMahon and Harvey: 2006, 352)

A research on factor structure of moral intensity revealed that moral intensity has three, rather than six dimensions. McMahon and Harvey (2006) distinguished between: probable magnitude of consequences (Jones' dimensions 1, 2 and 4), proximity (Jones' dimension 3), and social consensus (Jones' dimension 5). Moral intensity holds that insofar consequences of moral actions are: severe, certain, and immediate (Factor 1), psychologically close (Factor 2), and socially acceptable (Factor 3), this increases the likelihood that individuals will behave morally.[55]

Relevance for networked military operations.

Technology potentially plays a role in all of these dimensions. This can be exemplified when this model is taken into the context of NEOs. First, the probable magnitude of consequences can be directly related to the type of weapon or ammunition, which defines the magnitude of the consequences and the probability of effects. In RPA strikes the probability of effects is known to a great degree, as well as the magnitude of the consequences, because of the precision bombing made possible by the networking technology. The probability factor is even part of the structural side of the practice, since there are procedures that hold for airstrikes that prescribe which type of ammunition and degree of precision is allowed in which case. Therefore, in RPA airstrikes just as in manned airstrikes, the magnitude of the moral situation is often high (people will be killed during the airstrike) and probability of effects are known (precision bombing leaves little uncertainty). According to Jones, magnitude of consequences and probability of effect would increase the moral intensity of a

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[55] Thompson et al. (2006) elaborated in a ludic manner on Jones' dimensions with regard to moral decision making in military operations and I refer to them for numerous examples.

situation, thus leading to better moral decision making. Further the NEOs are focused on increasing the speed of decision making through the use of ICT systems, which raises the temporal immediacy of outcomes. This seemed to have been the case in the friendly fire incident described in this chapter.

> With the clock ticking down toward the missile launch, the mission intelligence coordinators scurried to assess the conflicting information about the direction of fire. (Laster and Iannotta: 2012, 26)

The intelligence coordinators knew that, once the decision to strike was made and the buttons had been pushed, the impact would be very immediate. These outcomes suggest an increase in moral intensity. Second, proximity holds that physical distance between actor and recipient is negatively related to moral intensity. Since spatial distance between actor and recipient (or other actors) is dramatically increased in current operations, this suggests decreasing moral intensity in networked operations. In literature, this objection is often heard, see for example Royakkers and Van Est (2010), who fear that killing might become easier, the more distance (psychologically and physically) a soldier has from the battlefield. However, listening to what the UAV pilots themselves state about this distance, the opposite may be the case. Technology may increase the physical distance between the pilot and the target, but it seems that pilots themselves do not always perceive this as a great distance. This can be illustrated by the following quote:

> You are 18 inches away from 32-inch, high-definition combat, where you are in contact [by headset with] the guys on the ground," the official said. "You are there. You are there. You fly with them, you support them and a person you are tasked with supporting gets engaged, hurt, possibly killed, it's a deeply, deeply emotional event. It's not detached. It's not a video game. And it's certainly not 8,000 miles away. (Engel: 2013)

The quote above suggests that the moral intensity may be increased due to technology, rather than decreased, because the perceived distance is 'only 18 inches'. Third, 'mixing and matching' of military units such as soldiers and sailors, or such as mixing different nationalities in networked operations, may lead to a potential decrease of social consensus between involved parties, thereby lowering moral intensity of the situation. However, one of the quotes from an RPA official suggests that there is not much concern for the decrease of social consensus amongst those involved in missions:

> We have a lot of other agencies that we're working with, whether we're supporting them from above with them on the ground or other agencies that we're coordinating with during the missions — not too concerned that amongst the agencies that we're working with or supporting that they will be able to make right decisions. (Schogol and Ricks: 2012)

This quote suggests that within NEOs, members assume that the parties in the network are able to make moral decisions. However, an empirical test whether this is really the case has not been done and no conclusion can be formulated at this stage.

6.4.3. What have we learned from psychological theories?

The previous section discussed potentially relevant psychological theories which may contribute to a better understanding of moral decision behaviors of soldiers in a networked mission. These theories were illustrated with quotes from RPA crew members. The theories of Bandura and Jones were chosen because they reveal potential changes in behavioral patterns of people when they are exposed to situations that are morally laden and in which technology is used. Depending on the specific dimension under study, the moral intensity of the situation can either be increased (for example by using weapons with enhanced power and precision) or decreased (for example by operating weapons from the homeland). Moral intensity theory offers good ways to link morality, decision making, and technology, and the theory is identified as a powerful theory to describe moral behavior in organizations (for a meta-analysis, see Kish-Gephart et al.: 2010). Technology may subconsciously and in a subtle manner play a role in the activating or deactivating mechanisms described by Bandura in SCT. Similar to SCT, moral intensity theory may account for the different effects of technology on moral decision making, but this has not been tested empirically and neither is it clear what the relative weight of the dimensions is. Integration of the social (normative practice) and the individual (psychological theories) level has not taken place in this chapter, and is not yet possible at this stage, because the currently available empirical research is insufficient for drawing general conclusions with regard to the relationship between the social structure and psychological factors in moral decision making.

Irrespective of the lack of a general conclusion, further empirical research may provide insights that are helpful for designers of networking technologies on the battlefield. Psychological theories suggest that the technological design of

unmanned aircrafts affects the moral decision making of operators. Taking into account the way in which (characteristics of) technologies affects decision making can inform designers in such a way that technologies support moral decision making on the battlefield.

6.5. Conclusion

This chapter provides insights in moral decision making on the battlefield where technology is ubiquitous. It described two factors that influence moral decision making. First, there is the social side, which was addressed by an analysis in terms of normative practices. People do not make decisions 'out of the blue', but they are often embedded in a practice, which means that the technologies that are used on the battlefield do not stand on their own or in a one-to-one relationship with an individual, but they are embedded in the practice. Thus, there exist rules and norms with regard to the (use of) technology. The normative practice analysis of the RPA crew in this chapter served as a theoretical way of grasping the complex social dimension of moral decision making in NEOs. Sometimes the normative practices are ill-defined or misaligned with other practices in the network, which hinders moral decision making, as was illustrated in the Sangin Valley case. People's behavior however is not only the result from the rules, norms and procedures in the practice, but there is also a psychological component to their behavior and which plays a role in moral decision making. In the case of technologically mediated practices, such as RPA crews, the psychological component affects the way people make decisions on the battlefield. A short introduction of two psychological concepts was given in this chapter. Social cognitive theory and moral intensity provided clear descriptions of how people are likely to respond to certain morally problematic situations. These situations can be linked to technological mediation. However, it remains difficult to integrate the findings into the case of NEOs, because the psychological concepts seem unable to grasp that soldiers do not make decisions 'out of the blue', but they are embedded in a practice, namely the military practice. The theories suggest which psychological responses can be expected from people in general, but no general conclusion could be formulated with regard to soldiers who are exposed to certain technologies, or who work in a technologically mediated environment. The psychological theories are contradicting at certain points, meaning that some features of technology may

(theoretically) evoke morally better as well as worse decision behavior at the same time.

There are different ways of working at the intersection of philosophy and psychology. In this chapter I have discussed the issue of moral decision making in the context of military practice where there is an increased use of technologies that connect people and enable technologically mediated actions. The psychological theories could be enriched by doing specific research of which some is suggested in the next section.

6.6. Recommendations

If the claim that soldiers are embedded in a practice is taken seriously, research for understanding the moral behaviors of soldiers in network enabled missions should move towards lab research with people in the practice that answers specific questions, such as the questions of proximity and displacement of responsibility. Also, anthropological research, focused on soldiers in their practices, could give better insights in the way soldiers act and decide in the face of an increasingly technologically dominated working environment. Another helpful type of research is case studies and interviews. Current military missions host multiple novel technologies to deal with pressing problems, such as improvised explosive devices, suicide attacks and tracking down of terrorists. Soldiers who work with these technologies, either for reconnaissance or attack, could be a source of information for better understanding the way the military practice changes, making it more explicit what this means for (interpretation of) the rules and directions of sub-practices. Semi-structured interviews may spark off empirical psychological research to study how technology affects moral decision making in military practices. The rules and norms for appointing soldiers, as well as the rules and norms of the practice, may need to change given the insights from psychological research. The military (sub-)practices can then improve the rules, norms and procedures accordingly, and perhaps in an early phase discard of certain technologies in the practice, since their (subconscious) effect on decision making behavior is detrimental for the practice. If for example, it turns out that soldiers are more likely to bypass certain rules and procedures that are important to distinguish between soldiers and civilians, these technologies may do more harm than good in the practice.

Some interesting suggestions are done by Sripada and Stich (2006) who bring the interplay between the normative structure of social practices and

psychology of individual decision making to the fore. They argue that the 'philosophical intuitions about the subjective power of norms reflect an empirical truth about the psychology of norms' (2006, 285). According to Sripada and Stich, norms have powerful *motivation effects* on the people who hold them (ibid). They state the following:

> People are disposed to comply with norms even when there is little prospect for instrumental gain, future reciprocation or enhanced reputation, and when the chance of being detected for failing to comply with the norm is very small. (ibid)

This suggests that the norms in the practice may be an important intrinsic motivator for moral decision making. Psychological research should move towards investigating how people deal with conflicting norms and underlying worldviews between different partners in NEOs, because the future of military missions will be networked missions, where rules, norms and directions may clash.

This chapter may further be informative for reconsidering the psychological profile for soldiers that work in highly technological environment. On the level of mastering physical and intellectual skills there is already a shift going on in the appointing of, for example, UAV pilots. The 'functional' profile that the US Army is looking for nowadays, on the level of intellectual, physical and technical skills, are gamers (The Canadian Press: 2013). Knowing better in which ways soldiers are affected by technology in their decision making may inform the hiring policy for people in the UAV job or networked operations in general. Cummings, a researcher at MIT, studies which personality traits would be helpful to deal with boredom, which is a key aspect of flying UAVs, and usually gamers are not very good at dealing with boredom (2013). Previously conducted studies on the sample means for proneness to boredom of the US population (Winter: 2002) can be used to inform policies for appointing pilots. Research suggests that the only personality trait to help predict who will be better UAV operators was conscientiousness, because those who scored high on conscientiousness did better when the environment became boring (Mkrtchyan et al.: 2012, 1444). In the next chapter a further elaboration on the character traits for NEO personnel will be given. One should further study which 'psychological profile' fits best in this technological mediated battlefield. Currently before a soldier is hired, she undergoes a psychological test to see if the required character traits fit with the job, for example if, she is likely to be

trustworthy according to her profile. In this chapter I suggest that not only the profile on the level of technical and intellectual skills should be reconsidered, but also on the level of psychological skills.

7 The responsible soldier in Network Enabled Operations[56]

7.1. Introduction

In this reflective chapter an outlook is given on what it means to be a responsible soldier in a network enabled operations (NEOs) environment. NEO's are characterized by the sharing of (real-time) information throughout the organization, aiming at creating 'information superiority'[57] on all hierarchical levels by making use of information and communication technologies (ICTs). Connecting different people on the battlefield through ICT is a complex activity, that not merely facilitates cooperation between soldiers (and third parties), but that can cause problems at the level of moral decision making. In Chapter 2 of this dissertation a complex case, namely the Kunduz Airstrike incident was used to illustrate these complexities. A number of pitfalls were identified and addressed. The complexities were further analysed in Chapter 3 where a multi-aspectual analysis of NEOs was done. From the multi-aspectual analysis it followed that different practices, each with a different normative structure, interacted on the battlefield, which caused clashes, resulting in bad decision making, causing the deaths of many civilians in the Kunduz airstrike case. A multi-aspectual analysis of NEO's also broadened the discussions on moral decision making, by including technological, social and individual factors in the evaluation of moral decision making on the battlefield. The clashes between

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[56] A previous draft of this chapter is published as C.G. van Burken, L.M.M. Royakkers, (2013) Responsibility in ICT Networks: Reflections on using the Battlefield Super Soldier Suit (BSSS). In: Amersfoort, H., R. Moelker, J. Soeters and D.M. Verweij (eds.) *Moral Responsibility and Military Effectiveness. NL Arms. Netherlands Annual Review of Military Studies 2013*. The Hague: Asser Press, pp. 217-241 [The contribution of L.M.M. Royakkers lies in several sessions with regard to the setup of the article and in suggestions for improvement of the article].

[57] Information Superiority (IS) is defined as the "degree of dominance in the information domain that permits the conduct of operations without effective opposition" (*Chairman of the Joint Chiefs of Staff Instruction S-3210.01*, January 2, 1996).

practices were further analysed in a structural manner in Chapter 4, where the theory of normative practices was applied and extended for the Kunduz airstrike case and two other cases of NEOs. That chapter focussed on social factors, and added the insight that practices can be related to one another in different ways, for which additional concepts were introduced. In Chapter 5 the focus was on the technological factor in moral decision making, and an elaborate discussion of the mediating aspects of technology was given. In military doctrine and procedures the implicit belief that technology is neutral is often present[58]. However, technology affects the way in which people actually do their jobs and also affects decision making. This was shown in an empirical manner in Chapter 6, where the psychological factor of moral decision making was analysed for the context of NEO.

The endeavour of connecting people together through technology, striving for cooperation at all hierarchical levels, goes hand in hand with shifts on the level of organizational and individual responsibilities. In cooperative settings, responsibilities can become blurred when different partners are connected through ICT and networking technologies. In joint efforts such as NEOs questions as "Who is responsible for what and in what way?" may arise. These questions are important to ask, because the moral decisions that need to be made are often high stake decisions, such as the decision to perform an airstrike. A blurring of responsibilities may even lead to unfortunate actions, for example, when someone assumes certain responsibilities that actually belong to others, or avoids taking up responsibilities by shirking responsibility in joint efforts.

In this chapter it is shown, through the example[59] of the Kunduz airstrike incident, how connecting different members of a network affects the way(s) in which soldiers and others in the network are responsible. The 'responsibility' of

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[58] Several philosophers of technology have argued that technology influences the way people decide and act, which goes beyond an understanding of technology in which technology merely facilitates interaction. Langdon Winner for example, argues that too many (particularly social science) analyses of technologies simply looked at side effects and impacts, thereby often continuing the implicit belief that technologies are neutral, and employing a simple cause/effect mode of analysis (Ihde: 1993).

[59] In an earlier draft of this chapter I have used the example of the Battlefield Super Soldier Suit, which is a health status monitoring system that is integrated (literally interwoven) with the suit of a soldier and at the same time can fulfil a drug administrative function. (co-authored with L.M.M. Royakkers, see footnote 56).

technological systems, as some scholars argue for (see for example Stahl 2002), is not addressed here, but in this chapter the discussion is about the responsibility of human beings (who are connected through technological systems). Van de Poel et al.'s (*forthcoming)* taxonomy of responsibilities is initially adopted in order to analyse in what way the use of networking technologies changes concepts of responsibility. Van de Poel et al.'s classification is later redefined in light of a 'normative practice' perspective and applied to understand responsibility in NEOs. The Kunduz airstrike incident is used as a case in point, in order to illustrate how networking technologies affect different concepts of responsibility[60].

7.2. Blurring of normative practices

In the previous chapters it was shown that networking technologies *connect* different practices; civil practices and non-governmental practices are connected with military practices and also within military practices different sub-practices are connected. This connecting of practices, each with different normative structures, can cause problems and even accidents, since the distinctive norms, rules and worldviews may clash or become blurred. Examples of this blurring of practices, with tragic consequences, have been demonstrated in the previous chapters. The Kunduz airstrike incident in 2009, where different practices shared information over a tactical network and could not agree on which rule(s) prevailed (See Chapter 2 and 4) has returned as a case in point throughout this dissertation. The airstrike caused many civilian casualties. In the next sections I will argue that the blurring of practices, due to the introduction of networking technologies, also has consequences for the way in which people are responsible for their actions and (moral) decisions. To give an example, it is difficult to define collective responsibility, or distribution and allocation of responsibility in ad-hoc networks. The ambition in this chapter is to come to an understanding of the different ways in which people can be held responsible in NEOs. The framework of normative practice and existing theories of responsibility are used

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[60] Responsibility is used for persons and actions. They are connected, but will be used in both senses in this chapter.

to sketch a vision of what (moral) responsible soldiering, which includes responsible decision making, looks like on the future battlefield.

7.3 Meanings of Responsibility

At first sight it may be concluded that the rules, norms and procedures that hold for the military practices as such will not change due to the network dimension: a pilot remains a pilot, a commander remains a commander and their corresponding responsibilities will not change either. However, a view on responsibility that only focusses on the roles and tasks is rather narrow. The concept 'responsibility' is used in different contexts, has no univocal meaning and is fiercely debated till date.[61] In this chapter, Van de Poel at al.'s distinctions are initially followed. They have distinguished a number of different meanings of responsibility, see Table 7.1. Their taxonomy is partly derived from literature on the concept of responsibility (for example from Hart (1968) and Bovens (1998)).

Table 7.1.: Adaptation of Van de Poel et al.'s (*forthcoming)* taxonomy of meanings of responsibility (with the Kunduz airstrike as example).

1. Descriptive[62]

Responsibility-as-cause	Being the cause. As in: the flames are responsible for the death of the casualty.
Responsibility-as-task[63]	Having the task. As in: the pilot is responsible for flying the aircraft.
Responsibility-as-authority[64]	Having the authority or being in charge. As in: she is responsible for the mission, meaning she is in charge of the mission.

[61] In this chapter I only aim to unravel different kinds of responsibility and leave aside the metaphysical dimension, such as discussions about free will, determinism and responsibility. Scholars who have extensively written on this topic are for example: Berofsky: 1966; Dennett: 1984; Frankfurt: 1988; Kane: 2005; Pink: 2004; Watson: 1982; Widerker and McKenna: 2006; Wolf: 2013.

[62] For now the descriptive- normative distinction as proposed by Van de Poel et al. is used. In a later section this distinction is questioned.

[63] This is what Hart (1968) calls role-responsibility.

Responsibility-as-capacity	The ability to act in a responsible way. This includes for example the ability to reflect on the consequences of one's actions, to form intentions, to deliberately choose an action and act upon it.
2. Normative	
2a Normative and Forward-looking	
Responsibility-as-virtue	The disposition (character trait) to act responsibly. As in: she is a responsible person.
Responsibility-as-(moral) obligation	The obligation to see to it that something is the case. As in: she is responsible for clearing the area before an airstrike, meaning she is responsible to see to it that the area is cleared (from civilians for example).
2b Normative and Backward-looking	
Responsibility-as-(moral) accountability	The (moral) obligation to account for one's actions and their outcomes. For example, she was responsible for releasing a bomb on the house.
Responsibility-as-blameworthiness.	The appropriateness of blame. As in: she is responsible for killing civilians, meaning she can be blamed for the killing happening.
Responsibility-as-liability	The obligation to remedy a situation or to compensate for it. As in: she is liable to pay damages.

7.3.1. Blurring of responsibilities

NEOs consist of multiple roles and tasks blurred together (the connecting of different practices). Since roles and tasks are connected to responsibilities, this NEO way of working may lead to conflicts on the level of responsibilities. Van de

[64] This may also be called responsibility-as-office or responsibility-as-jurisdiction. It refers to a realm in which one has the authority to make decisions or is in charge and for which one can be held accountable.

Poel et al. (*forthcoming*) state that it is often believed that responsibility-as-task or responsibility-as-authority leads to responsibility-as-accountability, especially if the former responsibilities are not properly discharged. In hectic situations, with geographically remote experts, who are of different nationalities and who are functioning within different hierarchical and juridical structures, it can become unclear who is responsible for what, when, in which way and when one is discharged of one's responsibilities. Therefore in a NEO, the complication lies not only in the different ways in which for example a remote expert is responsible for the analysis of an on-site event or situation, but that the responsibilities of the expert and others who are (remotely) involved in an event can become blurred. Questions that are important in this respect are for example: is the remote expert responsible for a correct diagnosis of the situation, or has she only an advisory role? And is she responsible to act upon the availability of information provided through the networking technologies, such as Rover? What in case there is an information overload? In the case of information overload it means that the remote expert has all the information on the basis of which she should be able to make a decision, but that due to an overload, her capacity to act responsibly is diminished. Also, when working in a network further complications may occur or the responsibilities of people working in the different practices may not be distributed in a clear and fair manner (Doorn: 2010). In those cases that civilians die due to actions performed by the remote hands of tactical air controllers, battlefield commanders and local pilots, or due to bad cooperation between them, who is responsible? Different views on shared, collective, and distributed responsibility exist, but they will not be addressed here. In this chapter the analysis is restricted to individual responsibilities.

7.3.2. Meaning of responsibility in NEOs

Studies on how procedures and routines may change due to the introduction of network enabling technologies were done in several fields, for example by Lehoux et al. (2002) in the medical practice. One of the main findings of their study was the physicians' need for "redefining clinical responsibility" (ibid) in this new way of working. In other fields of research such as organizational sciences, changing of responsibilities due to network technologies has been identified as a concern too, see for example Denning and Lin (1994). In the military domain only little attention is given to responsibility with respect to

networking technologies. Wallace (2005) for example suggests that 'the network' does not take away the responsibility of the *commander* to be physically present with the soldiers who are in a dangerous environment. Cummings et al. (2010) advocates a rethinking of responsibility and accountability in NEOs:

> Automated tools are designed to improve decision effectiveness and reduce human error, but they can cause operators to relinquish a sense of responsibility and subsequently accountability because of a perception that the automation is in charge. (2010, 67)

Sheridan (1983) maintains that even in the information processing role, individuals that are using a system may disclaim personal accountability for any error or performance degradation, because they feel that the machine is in complete control.

In NEOs clashes between roles and responsibilities will be inevitable. Different rules, norms, procedures and underlying worldviews exist, and some rules, norms and procedures belong intrinsically to the practice and cannot be abandoned merely for the sake of cooperation. The question should therefore be in terms of how to deal with the clashes in a responsible manner, rather than seeking how to avoid clashes. What a 'responsible manner' of dealing with clashes in NEOs entails will be further addressed in this chapter and cannot be seen apart from a more structured approach to responsibility. An analysis of NEOs in terms of normative practices and responsibilities is not merely a philosophical endeavour to get clarity on a conceptual level, but may also meet the concerns of actual practitioners, such as Lehoux et al. (2002) suggest. It may even be useful for updating decision cycles on the battlefield and in civil-military operations.

7.4. Responsibility in NEOs

Van de Poel et al. make a distinction between descriptive and normative understandings of responsibility. In this section their taxonomy is discussed and questions are raised with regard to their distinctions. An alternative distinction is proposed and illustrated by making use of examples in the Kunduz airstrike incident.

7.4.1. Descriptive versus Normative responsibilities

In their list of responsibility-meanings (see Table 7.1) Van de Poel et al. distinguish between the first four meanings, which they consider descriptive in nature, and the latter five meanings, which they call normative. Sometimes these two classes of responsibilities are related to each other, but this is not always the case. For example, not every task or role defines a moral obligation. They illustrate this with the example of Eichman:

> ...it might be said that Eichmann had the task (responsibility) that the Jews were effectively transported to the concentration camps. However, it does not follow that he had a (moral) obligation to see to it that they were effectively transported. In fact, since the transport was part of an immoral plan, aiming at the extinction of the Jews, he might even have had a moral obligation to see to it that they were not effectively transported. (Van de Poel et al.: *forthcoming*).

Van de Poel et al. recognize that the distinction between normative and descriptive responsibilities is not always a strict separation, as became clear in the quote above. However, there is another concern, or perhaps critique, on the descriptive-normative distinction. Namely, that Van de Poel et al. fail to recognize that descriptive responsibility often has a normative dimension. For example, the supposedly descriptive responsibility-as-task has a normative dimension, because a 'task' always entails that someone *ought* to do something, which makes the description therefore normative. Indeed, tasks can be described, and may therefore be considered descriptive, however, the content of the task is normative; a task is about what people ought to do (and not about what they actually do). The descriptive responsibility-types as proposed by Van de Poel et al. are now further scrutinized and rephrased in such a way that the normative dimension in almost all of the responsibility-types becomes clear, be it in different degrees:

- Responsibility-as-cause says something about how an event was brought about; this is a non-normative responsibility.
- Responsibility-as-task says something about what an agent *ought* to do, therefore it is normative.
- Responsibility-as-authority says something about what an agent is *allowed* to do, which also bears some normative content.

- Responsibility-as-capacity says something about what an agent *can* do. How this is normative is not immediately clear, but it is normative to some extent. For example, some authors argue that a *can implies ought,* and therefore capacity implies normativity (Vedder: 2001; Singer: 2009). Another argument for classifying responsibility-as-capacity as normative type of responsibility can be that it often says something about how *well* an agent is able to bring about an event. In some cases the capacity to bring about an event is directly related to the choices of the agent, for example the choice to refrain from alcohol, which is related to the likelihood that an event will take place (for example a car accident in the case of drunk driving); or the choice of a soldier to train physically for a mission (which increases the likelihood to successfully finish patrols), this indirectly influences the responsibility-as-capacity.

7.4.2. Structural and Directional responsibilities

As I have argued above, the distinction between normative and descriptive responsibilities in Van de Poel et al. s' taxonomy does not always suit the types of responsibilities in an adequate manner. Some descriptive responsibilities have an inherent normative dimension and therefore an alternative distinction is proposed in the following section. In the next section responsibilities are viewed as interwoven with normative practices, from which it follows that responsibilities can be classified according to the structure - direction distinction (see section 3.3.). The structure-direction distinction somewhat resembles the normative-descriptive distinction, however, in the view of normative practices, normativity is both in the structural and in the directional side. The types of responsibility that deal mainly with the *structural* side of a normative practice, are responsibility-as-cause, responsibility-as-task, responsibility-as-authority and responsibility-as-capacity. These responsibility types are constitutive of the practice and have formal, descriptive, rule-oriented and procedural characteristics that are often related to the primary process and the *telos* of the practice. They have a normative dimension, since it is about how things *ought* to be done in the practice. Sometimes these responsibility-types are taken into account with the introduction of a new technology in a practice (for example Rover into the JTAC practice). In such cases a new project-leader is assigned to

the case (responsibility-as-authority) or job-descriptions are adapted (responsibility-as-task). This extension and adaptation of responsibilities (-as-task and -as-authority) is necessary and is well intended, however, it reveals a one sided, technical-instrumental perspective on technology-use in practices. Other types of responsibility deserve attention too when considering technology in practice. Besides being technically competent, other competences such as moral wisdom and discernment are important requirements, especially in military practices. These competences are part of the directional side of the normative practice and concern the latter types of responsibility that were discerned in Table 7.1. The directional responsibilities are influenced by worldviews, ethos, by different understandings of morality and ethical frameworks that people adopt for reasoning about responsibility. For example, one could have a merit-based perspective on responsibility, which views responsibility in terms of blame and praise. But one may also distinguish a consequentialist perspective (focus on desired outcome) or a rights-based perspective (fits into an ethics of rights and freedoms) (Van de Poel et al.: *forthcoming)*.

Considering the list of Van de Poel et al. further, responsibility-as-virtue is related to worldview, which belongs to the directional side in the normative practice view. Responsibility-as-virtue is the characteristic of people who in general have a (great) sense of responsibility. However, what counts as a virtue is influenced by worldview and therefore, for some people, responsibility is not considered an important virtue. For the military practice it is an important virtue, at least in western military practices. What it means to be a responsible(-as-virtue) soldier, however, may differ in different cultures, as well as what a responsible(-as-virtue) soldier looks like in the different sub-practices. Also responsibility-as-(moral)-obligation is a directional responsibility, because moral obligations are inspired by ethos and worldview. For example, loyalty to the family or tribe is considered a moral obligation in some cultures, while in other cultures this is less important and people may have great loyalties to their practice. In NEOs this directional side of responsibility can clash, since people involved in NEOs often come from different backgrounds. Responsibility-as-accountability falls under the directional side of responsibility too. The question about accountability is related to the question to whom or to what one has to give an account of ones actions. People can feel accountable for their actions to a variety of entities, such as future generations, their genealogy, God or humanity in general. This may cause problems in NEOs, where differences in the way in

which people consider themselves accountable may influence their actions and decisions, leading to problems or clashes between partners in NEO.

Since forward-looking responsibilities are more relevant for this research, which focuses on actual decision making, some backward-looking responsibilities (see Table 7.1) are left out or have been rearranged, for example responsibility-as-accountability, because this type of responsibility is related to forward-looking responsibilities. One may hold someone accountable already prior to an event (although the actual 'giving an account of one's action' takes place after the facts). Responsibility-as-accountability assumes that an agent can, at least to a certain degree, make explicit why he or she acts in a certain manner (or fails to do so). A disposition for the willingness to give an account of ones actions needs to be already present, before one can hold someone accountable (in the sense that an agent needs to have the capacity to give an account of his or her actions).

7.4.3. NEOs evoke changes in responsibilities

The list below shows an adapted version of Van de Poel et al.'s list, completed with an application for the Kunduz Airstrike case. The focus is on a potential change in responsibilities when shifting from a traditional to a NEO setting. The structure-direction distinction is applied. Structure responsibly relates to the rules, norms and procedures. Direction responsibilities relate to moral dispositions and ethos. As one may notice in the overview below, I moved responsibility-as-liability to the structural side of responsibility, because in this dissertation responsibility-as-liability is understood in a juridical sense. This is divergent from Van de Poel et al., who mention responsibility-as-liability in the normative (as distinctive from descriptive) side of responsibility.

Structural side of responsibility

On the structural side we can distinguish:

(1) Responsibility-as-cause:
There is no difference for an event to be caused in a traditional or in a NEO setting. For example, the flames caused the Kunduz people to die, irrespective if these flames started off from a NEO airstrike or a Molotov cocktail that was thrown onto the trucks by an individual.

(2) Responsibility-as-task:
Individual roles of soldiers or pilots or specialists do not change in a NEO; a pilot remains a pilot, also in a network. However, their tasks may be affected; for example, the task of a pilot now also implies the sharing of information over the network. Whereas in the traditional setting information was verbally and hierarchically 'transmitted', now information may need to be uploaded actively and requests can be made back and forward with regard to camera positions that capture events on the ground. Therefore, the description of a pilot's task may be altered and include a responsibility to actively share information over the network. This means that a pilot can be held responsible for withholding information. In the Kunduz Airstrike the commander withheld information from the pilots, because he knew the information would affect their task. In NEO settings an additional task may need to be created, which includes a responsibility-as-task to regularly check if the network is actually sending and receiving information.[65]

(3) Responsibility-as-authority:
In a NEO, authority structures may change. The hierarchical ranks may not change, but the existing authority structures may become less visible and become blurred. For example, in the case of the Kunduz airstrike, different authorities interacted in a NEO manner and it was not clear who had the last say in a decision, and in which field of expertise. The JTAC is the release authority during an airstrike, but it in the Kunduz airstrike it was the commander who overruled the functional authority of the JTAC and he told the pilots to strike directly, rather than making a low-pass, as the pilots suggested. Conflicts may also be caused if the actors tacitly assume a democratic decision making

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[65] An interesting case in this respect took place in the Netherlands in 2012. The national emergency number 112 network was down for a couple of hours due to maintenance and no one, except those who were in urgent need for (medical) assistance, noticed this. The backup line was not working, but no one had checked this before the maintenance started. Neither the network provider, maintenance company nor 112-agency took the responsibility-as-task to check this. Some of the people in need claimed that a life could have been saved, had the network not been down. (Officiele bekendmakingen: Vragen van het lid Kuiken aan de minister van Veiligheid en Justitie over het bericht "Telefoontjes onbeantwoord door storing 112" https://zoek.officielebekendmakingen.nl/h-tk-20112012-100-4.xml, retrieved 26 april 2013.)

structure in the network. Another cause for conflicts in NEOs may be haziness in the relationship between the remote expert, the JTAC and the local informant. What are their respective roles? Are the remote experts playing an advisory role, or are they the decision makers? Thompson's (1983) criteria[66] for the way in which an advisor can be hold responsible may be helpful, if one considers the remote expert to be in an advisory role.

(4) Responsibility-as-capacity:
In a NEOs, the ability to act in a responsible way may not be derived from mental capacities, resources or freedom to act alone, but it may also include technical abilities and constraints. For example, Rover may hinder the ability to act, in cases where no access to the system from the remote end can be made. Also the technological options of technologies such as Rover, for example thermal camera's that enable night vision, may increase the responsibility to act, due to the fact that multiple technological means are at ones disposal in NEOs. Reasoning from the *can implies ought* argument: more *potential* capacities increases an agent's responsibility-as-capacity to act.

(5) Responsibility-as-liability:
Cooperating with different nationalities may be a source for complex legal situations, due to the variety in rules and regulations for every country. In the Kunduz airstrike there is still ambiguity about the proper target of the claims that are brought in by victims, who compensation for the losses. The airstrike was a NATO airstrike, ordered by German soldiers, carried out by American pilots. The Kunduz victims were paid an *ex gratia* payment by the German armed forces, which means that it is a voluntary payment that does not recognize any liability for the actions (Gebauer: 2010). Another question to

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[66] Thompson formulates his criteria as follows: "From the idea of causal responsibility comes the criterion that holds an advisor responsible only if his advice would not have acted the way he did but for the advice (or its omission). That an advisor intended a certain result may be a further reason to criticize him, but such intent is not necessary to blame him for the result. An advisor is responsible for the consequences of decisions based on his advice insofar as he could reasonably be expected to foresee that they would follow from his advice. Finally, although the requirements of role can create a prima facie excuse, an adviser is responsible for any foreseeable harm his role-bound advice causes when that harm is greater than the harm that would result from breaching requirements of his role" (1983, 559).

consider is whether remote actions fall under the legislation of where the remote actor physically sits (and pushes the button), or where the actions takes place (where the bombs drop).

Directional side of responsibility

On the directional side we can distinguish:

(1) Responsibility-as-virtue:
The network dimension may put higher demands on this aspect, because it includes dealing responsibly with information. Also other virtues that were traditionally important may become less important or vice versa or they may even change.[67] For example, the virtue of integrity already entailed that you "'do and say nothing that deceives others' ... '[are] honest and truthful'" (Olsthoorn: 2011, 102). In a NEO, where the sharing of information is one of the key characteristics, it means that a notion of integrity now includes that a person does not withhold or shield off information that may be relevant to others. In the Kunduz airstrike the commander withheld information about the location of the truck drivers, which was relevant information to the pilots. Had the commander told them that one of the drivers was still present at the river, the pilots would have withheld fire (Gebauer and Goetz: 2010). A reformulation for responsibility-as-virtue may be needed in NEOs and also criteria for distinguishing a responsible commander from an irresponsible commander may need to be updated. Subtle and miscellaneous behavior, such as walking away from a strategic post during the moments in which nothing interesting

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67 Garreth Williams lists character traits which he associates with people that have this [responsibility as a moral] virtue as follows: (i) a person who has this virtue is reliable, (ii) she has commitment to- and carries through with projects once she has started them, (iii) she has initiative, (iv) she can exercise her own judgment, (v) she is trustworthy, (vi) she identifies with her actions and omissions, (vii) she can answer- or is accountable for her actions and omissions, (viii) she makes up for her actions and omissions, (ix) she is conscientious in discharging her responsibilities, (x) she recognizes and deals appropriately with her various and sometimes-conflicting responsibilities, (xi) she can judge whether others are fulfilling their responsibilities, (xii) she can judge who should hold whom responsible for their actions and omissions (2008, pp. 459-462), and (xiii) if appropriate she steps in when others neglect their responsibilities by reporting this to the relevant authorities so that appropriate measures can be taken, and maybe she even takes on those responsibilities herself if no one else can take those measures (2008, 467).

happens, may be considered irresponsible in the on-scene mission, but no problem on the remote end (where it means that you walk away from a monitor for a minute). A reason for why it is deemed less problematic to walk away in the NEO, is because it is assumed that other partners in the network also monitor and take over in the case in which immediate action is needed.

(2) Responsibility-as-(moral)-obligation:
In a NEO environment, 'seeing to it that something is the case' may not be well defined in the cases where multiple partners come together, with (sometimes) overlapping fields of expertise. Therefore, more attention should go to this responsibility type, in order to reduce catastrophes. Questions to ask are for example, who sees to it that the network link is active? Can it be expected from a JTAC or a soldier to take up this responsibility? Or who sees to it that targets are being traced, if the tracing can happen from multiple remote sites? Or who sees to it that there are no children or non-combatants in a risk zone prior to an airstrike? Many experts may be involved, but who actually takes up the obligation is not always clear. It was not clear if the informant in the Kunduz airstrike felt morally obliged to check if there were no civilians at the location of the fuel trucks. The commander felt morally obliged to ask about civilians in the vicinity and he even repeated the question several times, but the answer he got was that there were only insurgents (Chandrasekaran: 2009). From the hesitations of the pilots it can be derived that they felt morally obligated to make sure that no civilians were present near the trucks and they requested a show of force to chase away potential civilians. It is the JTAC's responsibility-as-obligation to check that no civilians are present prior to an airstrike, but it looks like this responsibility was blurred with the commander's responsibility.

(3) Responsibility-as-accountability:
Since airstrikes have become a joint effort of experts in geographically dispersed places, it may not be clear beforehand how one will be held accountable in a NEO. An account of one's actions can perhaps be articulated in cases of individual actions, but it is much harder to give an account of a joint action. In a strict (philosophical) sense, one may wonder if it is possible at all. The difficulty is firstly, in terms of who should give the account, since in the NEO there is no hierarchical top-position, or representative, or spokesperson. But also in terms of what should be the content of the argument (the reason for why certain actions were performed or decisions were made). Here the directional side of responsibility comes into play again: arguments for why an agent considered his

or her action to be a valid action, may differ, depending on one's worldview. One may adopt a utilitarian based account, while others think the account should be given in terms of rules or procedures that needed to be followed. With the question of responsibility-as-accountability, the blurring of responsibilities comes most clearly to the surface. In the Kunduz airstrike still confusion exists about who should be held accountable: is it the NATO, the commander who ordered the airstrike, the German armed forces, or the German government (Bleiker: 2013)?

(4) Responsibility-as-blameworthiness:
In a NEO environment, where one is highly dependent on technological assets, blame can easily shift from the level of persons onto the technical level. For example, members of the network who are watching Rover images may not only blame engineers responsible for system failures, but also the technical breakdowns, network problems, etcetera itself. They become all candidates for blame in case of accidents or incidents.[68]

The list above does not give a complete account of the potential conflicts in the different meanings of responsibilities (and changes in what these responsibilities entail) when working in a NEO. It aims to show that, with the introduction of novel technologies such as the Rover, there is a need to rethink the way roles, tasks and responsibilities are formulated. In the Sangin case in Chapter 6, where the pilots were flying an RPA from thousands of miles away, this rethinking of practices was called for as well, but there the argument was socially and psychologically inspired. NEOs will become more and more remotely operated, so there is a need to rethink the different ways in which responsibilities change. Clashes and blurring of responsibilities may take place not only in the level of roles and tasks, so at the structural side of the practice (these can be captured in doctrines, procedures and job descriptions), but also on the directional side where worldviews come into play (where it is often difficult to give a clear description of the responsibility). From a functional perspective, it may look like a redefinition of tasks and roles and lining up the different legal norms may win half of the battle in the blurring of responsibilities in NEOs. However, there is also a directional side to responsibilities, which is much more

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[68] Del Frate's (2011) interdisciplinary taxonomy for failure may be helpful to better understand who the proper recipient for praise or blame is.

difficult to grasp, but becomes more important. For example, people who work with Rover may have different cultural backgrounds and therefore may have different worldviews. Rover can link up a Chemical Biological Radiological Nuclear (CBRN) expert in Poland with Singaporean technicians and Afghani informants at the same time. Misunderstandings following from differences in worldview, leading to different understandings of responsibility, may follow. Therefore, the following can be concluded from the overview in this section, namely, that a redefinition of responsibilities on the structural side is needed, but that this alone cannot avoid a blurring of responsibilities. With the introduction of new technologies such as Rover there should be awareness that responsibilities become blurred and that this is unavoidable. In anticipation of this, there is the need for a 'revival' for the directional side of responsibility in NEOs, which was brought under the attention with the rearrangement of Van de Poel et al.'s taxonomy. Responsibility-as-virtue and responsibility-as-accountability should gain more attention in NEOs and serve as direction point in the case of a blurring of, for example, responsibility-as-task or responsibility-as-authority, which belong to the structural side of responsibility. Soldiers, irrespective of their sub-practice or worldview, do have a view on what it means to be a responsible soldier. That these views are different does not necessarily mean that a clash in NEO is unavoidable and harmonious cooperation is out of reach. In the next section a discussion on how the directional side may be given shape follows.

7.5. Responsibility in NEOs

What should 'responsible soldiering' look like in future missions, given that the use of networking technologies will be increasing? In the previous sections it was suggested that the directional side of responsibilities should become more prominent. The directional side of responsibility leaves room for worldview, ethos and views on how one should live. A responsibility-ethics is therefore employed, which harbours different understandings of a right action. There are different versions of "responsibility ethics" see for example Goodin (1985) and Jonas (1984). The version of responsibility-ethics in this chapter however

resembles with Jochemsen (2006)[69]. Responsibility-ethics in his sense basically uses elements of responsibility from three ethical views, namely from deontology, consequentialism and virtue ethics.[70] It recognizes certain duties, in the first instance independent of the intentions and consequences of the actions. Therefore an actor is required to become familiar with the rules and norms that hold for his or her practice. But sometimes there are real-life cases that do not fit any of the duties, as well as that there is always room outside the duties and obligations in which responsible (re)action is required. Especially in these cases, and also when duties conflict, acting should also be accounted for from a consequence perspective. In military practices, deliberating consequences is an important phase for military actions, as the principle of proportionality is one of the key principles for military actions. These principles should have become stable behavioural patterns, that become like a virtue to the actor, making him or her a virtuous practitioner. This requires prudence, clear insight and moral diligence in order to distinguish moral implications of actions. A prudent practitioner also knows how to implement the normativity of the practice in the concrete situations. This may be extremely difficult, especially in the case of soldiering in contemporary NEOs. A responsible soldier not only follows rules and obligations that are connected to his task (structure), but he or she holds certain virtues, dispositions and moral duties (direction) when working in that

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[69] Jochemsen (2006, 109):
The focus on the virtuous practitioner links the ethical reflection on professional performance to the virtue ethical approach. The idea of principles and rules of a practice to be followed in competent performance provides an opening for deontological reflection. And the notion of telos, the finality of the practice implies that also the teleological and consequentialist approaches must contribute to the ethical analysis and assessment of moral conduct in practices. By combining the different perspectives in what I call a responsibility-ethics, we want to refer to our understanding of human being as homo respondens (Geertsema: 1979) and stress the integrality of the individual's responsibility.

[70] The deontological view focuses on the duty to live by one's promises and commitments, but also norms, rules and duties are important. The consequentialist view takes as starting point the desirability of certain state of affairs and it weights the options (in the sense of outcomes) against one another. The virtue view takes as starting point that virtuous agents expose certain virtues and thus focus more on the agent's character or dispositions. A responsible agent for example is reliable, shows commitment and he or she can be entrusted with something.

practice. Soldiers often have a deeper understanding of what their practice means in relation to their worldview. This can range between serving ones country to defending religious values or fighting for ideological reasons. This is inextricably linked with what one considers a responsible soldier.

7.5.1. Finding an integrating concept in the complexity of NEOs

How should different ethical theories be integrated in this network approach? Different theoretical approaches are possible, for example Rawls' reflective equilibrium (Rawls: 1971), Habermas' discursive ethics (Habermas: 1984), Ross *prima facie* duties framework (Ross: 1930), Garrett's principle of proportionality (Garrett: 1966) or care ethics (Held: 2006). Doorn (2011) even particularly discussed responsibility in networks. These 'hybrid' ethical approaches share some of the traits with a responsibility-ethics that is suggested in this chapter. However, they are often not the most helpful for the case of NEOs.

The reflective equilibrium (Rawls: 1971; Doorn: 2011) and discursive ethics (Habermas: 1984) approaches are mainly procedural approaches that require space for discourse, time for feedback (sessions) and a number of other requirements that are difficult to realize in many cases of military decision making. The practices that interact around Rover and other ICTs on the battlefield are act-oriented practices, where people push buttons, send patrols into the field, sail oceans and in all these activities ad hoc (moral) problems arise. For these situations, there is no space or time for discussing moral decision making with others in the network. Furthermore, the reflective equilibrium may be too much 'inward' looking, mainly concerned with finding coherence in moral principles on an individual level. Less attention is paid to openness to the perspective of others in the network, where co-existence of moral principles is sometimes the best option and coherence is beyond what can be reached, due to the different normative structures of the practices that cooperate in NEOs. In responsibility-ethics, there is awareness that structure and direction may be different for others in the network. Discursive ethics has an openness to others in the network, however, the discursive ethics approach is highly procedural and therefore not suitably for ad hoc moral decision making in NEOs.

Care ethics (Held: 2006) holds that all other moral values are trumped by the moral value of care. In responsibility-ethics, the moral value of care reveals itself in all life spheres and practices in different ways. However, this does not mean that in all practices the moral value of care is the leading value. Responsibility-

ethics advocates that different moral values are qualitative for different practices. Responsibility-ethics recognizes diversity in moral values for different life spheres and practices, rather than advocating that one universal moral value should rule all others in all practices.

Garrett's proportionality principle (1966) may be useful for decisions-oriented environments such as NEOs. It forces a decision maker to consider the consequence that one's own action has for other stakeholders. The weak point in Garrett's principle for NEO's is, that it remains unclear how to judge a minor versus a major negative outcome. What constitutes a minor versus a major negative outcome may depend on the practice. For example, a major financial loss may be morally acceptable in the one practice, but morally unacceptable for another practice, depending on the qualifying function of the practice. In a responsibility-ethics this is taken into account; moral decision making in NEOs is not only about the outcomes, but also about virtues and principles.

Ross (1930) recognised the prima facie duties of fidelity, justice, beneficence, and nonmaleficence. In his framework, conflicting duties should be reconciled on the basis of 'utilitarian urgency', which means that one should produce as much good as possible. However, the "goods" may be weighed differently for different practices and cannot be calculated on a utilitarian scale. Moreover, moral decision making involves more than weighing the consequences. Responsibility-ethics encourages one to consider the moral problem in light of virtues and principles, next to consequences for others in a NEO.

What the hybrid ethical approaches described above all have in common is that they tend to neglect the importance of rules and procedures, which, in the normative practice view, are constitutive of practices. Responsibility-ethics recognizes the constitutive sides of practices, which leaves the qualifying moral norms for the different practices unaffected. The moral explication of responsibility in NEOs should be in terms of 'giving an account' of ones actions within a network of actors, rather than coming to an agreement or equilibrium with the actors in a network. A responsibility-ethics advocates this approach to ethics.

7.5.2. Responsibility-ethics as an integrating concept

The Kunduz airstrike incident highlights the complexity of working together with practices that are defined differently in terms of responsibility. In the Kunduz airstrike there were allied soldiers, informants and local authorities

involved, that all seemed to have used a different ethical view. In military practices it is important to expose certain virtues (such as loyalty and courage, see for example Olsthoorn (2011) and Olsthoorn and Verweij (2012)), but also rules and regulations are guiding actions. For the local informant and local authorities practice it may be that the consequences counted most, at least this seems the case for the Kunduz airstrike, because, according to some reports, the German soldiers were praised for the airstrike by the governor of the Kunduz province. The reason for their praise was that the Taliban were killed and that with the killing also local civilians had died was less important (Demmer and Najafizada: 2009). A responsibility-ethics allows for these different focusses between rules, virtues and consequences. If more practices become linked in NEO, for example, the practice of diplomats, a consequentialist or rights-based understanding of 'right behavior' gets under the attention.

Responsibility-ethics encourages practitioners to judge situations not only by the ethical perspective that is most prominent in one's own practice, for example by a consequentialist perspective, but to also think about the structural and directional responsibilities in other practices. It requires, in Topolski's words, a relationality ethics (2010). In relationality ethics one considers the needs, goals and dignity of the other and goes beyond one's own perspective in moral decision making.

> Rather than the traditional pyramid structure, NEO has given room to develop a dynamic tension between horizontal and vertical forms of relationality each of which is marked by different values, norms of judgment and standards of responsibility. It is this somewhat 'post-modern' reality that the military today must strive to understand and to train its peacekeepers to think from within a NEO rather than view themselves as somehow separate from the network. (Topolski: 2010, 48)

Relationality ethics is not rooted in what is shared or common, but in societal plurality. Therefore it is not a consensus-oriented theory. This is an important observation, which resembles with the responsibility-ethics that was proposed in this chapter. In a way, responsibility-ethics that is proposed in this chapter, gives 'content' to Topolski's relationality ethics. Responsibility-ethics gives an answer to the question of *how* one can relate to others in the network. The military practice, the practice of local civil government, informants practice, all with their different normative structures, can be grasped by the multi-facetted concept of responsibility. The distinctions between structure and direction, as well as the

notion of a qualifying function of practices are helpful to articulate ones moral concerns towards each other.

A responsibility-ethics uses elements from different ethical views and it is therefore a helpful guide to responsible actions in NEOs. A responsibility-ethics does not solve the tensions between the different ethical views, nor does it prefer one view over another, but it advocates that responsible behaviour is about knowing when which ethical route (cf. Van de Poel et al.: *forthcoming)* is most appropriate to follow. In the last subsection an integrated model of responsibility-ethics for NEOs is presented.

7.5.3. Responsibility-ethics for NEOs

Van de Poel et al. (*forthcoming*) provide a suggestion for what should be expected from the partners in a NEO:

> As suggested by Williams' quote, a responsible agent is one who shows initiative, i.e. who actively takes certain responsibilities and who does so with judgment. A responsible person is then one who deliberates about which responsibilities to assume and which not. It is the kind of agent that takes the 'right' responsibilities and the 'right' amount of responsibilities, i.e. neither too many (so that one cannot live by her responsibilities) nor too few (which would imply a lack of initiative and commitment).

In accordance with Jochemsen and Glas (1997), who argue for a responsibility-ethics which resembles the model of normative practices, the quote above recognizes different aspects of what it means to be a responsible agent, namely that the agent is virtuous, holds certain deontological principles and deliberates consequences.

A responsible agent shows initiative and commitment, which is a *virtue-side* of responsibility. It belongs to the directional side of responsibility and assumes an anthropological view in which 'showing initiative' and 'commitment' are considered *good* traits of a person. Values such as freedom, emancipation and self-determinism are implicit underlying values in this view. Important in this respect is that, when working with others in a network, these underlying

directional notions may be different for the different partners and practices, resulting in a different appreciation or realization of directional responsibilities.

'Integrity', meaning that 'one can live by ones responsibilities', is part of this virtue side of a responsible soldier too[71].

'Integrity' in this sense has a *deontological* aspect, namely that to 'live by one's responsibilities' also means that one remains faithful to (moral) principles. Especially in the military practice, this deontological aspect is important, since adhering to the rules and norms that hold for a soldier are often associated with responsible soldiering. The military practice itself is a very rule-oriented practice. Geneva conventions, Rules of Engagement, or Standing Operation Procedures and mandates are enabling (as well as constraining) military actions. In NEOs it may even be the case that certain rules and norms are no longer valid, since they are incompatible with the characteristics of NEOs. For example, the norms and rules that hold for sharing of information may need to be widened or abandoned in order to partake in a NEO.

Consequences cannot be seen apart from it. Deliberating which responsibilities to assume and which not, implies a forward looking attitude, including a view on what it means *in future* to take up these responsibilities. Unpredictability is inherent in many NEOs, and therefore becoming sensitive to what situations and consequences can be foreseen is an important aspect in this deliberation process. It entails including deliberating the consequences of actions for others in the network. Also, a sensitivity for norms and rules should be present, so that consequences can be judged against standing norms in order to be a responsible soldier.

A responsibility-ethics may guide moral decision making in the sense that it brings about openness to argue both for or against the authority and legitimacy of certain rules, norms and obligations, depending on the normative structure of a practice. In some cases a responsibility-ethics nudges a soldier to step beyond his or her own practice with regard to decision making and in some cases it calls

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[71] Different scholars have argued differently over the question whether integrity is a virtue or not and over the meaning of 'integrity' in general. See for example Scherkoske (2012) and Williams (1973).

a soldier back to his or own practice, leaving a decision to others in the network when it is more appropriate to do so.

7.6. Conclusion

Moral decision making in a NEO environment was the theme of this dissertation. The research question was how technology affects moral decision making in network enabled operations. Factors that influence decision making have been discussed in a structural manner in the preceding chapters. These were social, technological and individual factors, which all play a role in moral decision making in NEOs. The Kunduz airstrike incident has been used to illustrate the complexities regarding moral decision making. In this chapter it was shown how concepts of responsibility may gain or lose importance or become blurred when working in NEOs, potentially leading to bad moral decision making.

It may in NEOs be helpful to be able to voice concerns in the responsibility terms that were discussed in this chapter. Van de Poel et al.'s taxonomy served as a general framework to do so, however, their framework was also critiqued in this chapter with regard to the normative-descriptive distinction; Descriptive responsibilities assume to a great extend normativity, which was overlooked in Van de Poel et al.'s framework. Therefore an alternative distinction, namely structure-direction was used. Normativity applies to both classes of responsibility. An analysis of the Kunduz airstrike incident in terms of responsibility types revealed that introducing network technology such as Rover on the battlefield requires a redefinition of roles, tasks and corresponding responsibilities. An adapted version of Van de Poel et al.'s taxonomy of responsibilities may be helpful in spelling out which responsibilities change and in what way. A categorization of the taxonomy in terms of structure and direction is helpful in showing which type of responsibility should or may change in case of problems in a NEO environment and which types of responsibilities are much harder to change in case of clashes. The 'structural' responsibilities are easier to chart out, get clarity on, and change if needed, because they can often be captured in procedures and task descriptions that can be altered according to the demands of the NEOs. The directional responsibilities are not captured by roles and tasks that may change, such as 'responsibility-as-virtue' and 'responsibility-as-accountability'. Therefore, in order to understand why and when the directional responsibilities clash, a

deeper analysis is needed that refers to underlying worldview and ethos. The normative practice view with its distinction between structure and direction, which lead to an adapted version of Van de Poel et al's taxonomy, brought the importance of these latter two types of responsibility under attention.

In order to support moral decision making in NEOs, a responsibility-ethics is proposed, which may guide actions in future NEOs. The responsibility-ethics that is adopted in this chapter uses elements from three main ethical theories, without attempting to harmonize them. The elements are taken from deontology, virtue ethics and utilitarianism. Working as a responsible soldier requires a posture in which judgement and discernment over which ethical theory is most appropriate for the situation. In some occasions this means that rules and norms that hold for the different practices need to be abandoned, since they are no longer compatible with NEOs. A responsibility-ethics guides moral decision making in that it The distinction between structural rules and norms and directional rules and norms may be helpful in this respect, to decide which rules and norms can be abandoned and which not. An agent may realize that he or she cannot take up *this* responsibility-type for this moment, but can take up *that* responsibility type now. For the different partners in the network, different responsibilities may be more appropriate, or less appropriate, depending on the circumstances and actual demands, but also dependent on rules and consequences that hold for that moment.

In the previous chapters an account was given of relationships between the *social*, *technology* and the *individual factors in moral decision making*. The problems of moral decision making in NEO's have been philosophically spelled out in terms of normative practices, technological mediation and psychological theories and this last chapter was devoted to the question what responsibility means for a person who is working in a NEO. Chapter 7 served as a reflection on the previous chapters and provided a perspective on what responsible moral decision making should look like in NEO. In this chapter new insights on responsibility were addressed by focusing on the different meanings of responsibility in relation to NEO. The different meanings were illustrated by the Kunduz airstrike and a classification was made of the different meanings that resembled with the normative practice view. An ethics of responsibility for NEO was further proposed, which uses elements from different ethical approaches.

The insights in this dissertation can be further extended from the level of individual responsibilities to the level of institutional and technical design of NEOs. For example, the distinction between part-whole relations, enkaptic

interlacements and juxtapositional relations can guide the institutional embedding of practices and sub-practices. This theoretical finding may give practical guidance on an organizational level. To illustrate this, I use the example of the image analyst in Chapter 4. After the experiences in the ISAF mission in Afghanistan a new platoon was established in the Dutch military organization which structurally harboured image analysts that were trained to interpret the pictures in military contexts. In the terminology of this dissertation: the platoon had redesigned its structure from an enkaptic interlacement to a part-whole relationship with the image case analysts. It is to be expected that this new institutional design supports moral decision making in NEOs.

Another example relates to institutional design of NEOs as well as to technical design specifications of NEOs. The design of (sub-)practices around new technologies, such as drones, could be done in such a way that the new rules and norms, or the abandonment of certain rules and norms, supports moral decision making. For some (sub-)practices this means major changes in order to support moral decision making, while for other (sub-)practices only minor changes suffice. In the development of drones there is room for improvement in many different ways, and it may be helpful for moral decision making if the improvements are guided by the moral demands of different practices. In this way, practice-specific drones are developed, in the same way as practice-specific cars exist (ambulances that support moral value of care in medical practices, sports-cars that support the moral value of joy in racing practices, eco-friendly trucks that support the moral value of sustainability in logistic practices).

The overall theoretical contribution of this dissertation has been in the first place the integrative view of three perspectives on moral decision making. Furthermore, there has been a theoretical contribution to the theory of normative practices, by distinguishing different types of interrelations between (sub-)practices, namely the distinction between part-whole relations, enkaptic interlacements and juxtapositional relations. Another theoretical contribution has been made with regard to the moral significance of technological artefacts, by including normative practices in the evaluation of technical artefacts. In this last chapter a contribution has been made to responsibility-ethics, by distinguishing structural and directional types of responsibility.

The conclusions of this dissertation are that responsible decision making entails that the soldier has taken into account the mediating and psychological effects of technology on moral decision making and that he or she is aware of the

boundaries of his or her own practice in terms of structure and direction. It also means that the soldier is aware that he or she plays an active role in the shaping of the structural and directional side of a practice. Working as a responsible soldier in NEOs requires discernment in order to assess which ethical theory is most appropriate for the situation, and awareness that one's decision affects other practices.

Appendix

Questionnaire explorative interviews

Verkennend onderzoek bij militairen naar de invloed van technologie op het nemen van ethische beslissingen gedurende hun missie in Afghanistan.

Plaats: Kreta

Datum: 15 november 2009 – 29 november 2009

Interviewer: Christine van Burken

Beoogd aantal respondenten: 15

Doel: Algemeen inzicht verkrijgen in de rol die technologie speelt in het nemen van morele beslissingen tijdens militaire operaties. Specifiek inzicht verkrijgen in de rol van NEC tijdens het ethisch handelen in gevechtssituaties.

Methode:

Mondeling diepte- interviews houden bij militairen aan de hand van de onderstaande vragenlijst. De interviewer, Christine van Burken, interviewt persoonlijk de respondenten. De respondenten krijgen allemaal dezelfde vragen. De interviews worden (indien toestemming wordt verleend)) opgeslagen op voicerecorder.

Selectie van respondenten:

De respondenten wordt gedurende hun adaptatieperiode in Kreta gevraagd mee te werken op vrijwillige basis. Er wordt geen onderscheid gemaakt in rangen. Militairen die in een commandocentrum gewerkt hebben, hebben de voorkeur

(hoog tactisch - laag operationeel niveau). Er is een pool van circa 50 militairen per shift van 2 dagen beschikbaar. Er worden 4 shifts verwacht over een periode van 2 weken.

Achtergrond informatie van respondenten:

De militairen komen rechtstreeks uit het missiegebied (Afghanistan) en krijgen een 2- daags ontspannings programma aangeboden alvorens ze naar huis gaan. Gedurende deze periode zijn ze niets verplicht, behalve een gesprek met een geestelijk verzorger of maatschappelijk werker.

Opmerkingen:

Van te voren duidelijk maken dat het om een wetenschappelijk onderzoek gaat door een onafhankelijke onderzoeker die in dienst is van TU Eindhoven.

Stimuleer medewerking door duidelijk te maken dat dit onderzoek kan leiden tot verbeteringen waarvan andere militairen in operaties profijt kunnen hebben. Dat is de reden waarom ik, ook als militair, graag dit onderzoek wil uitvoeren.

Het onderzoek is anoniem en er wordt geen waardeoordeel gegeven over het vertoonde gedrag, er zijn dus geen 'goede' of 'foute' antwoorden.

Het onderzoek gaat niet over goed of fout gedrag, maar of de technologie wel of niet geholpen heeft bij het nemen van morele beslissingen.

Sommige vragen kunnen emotionele reacties oproepen, daarom de respondent vertellen dat hij/zij niet verplicht is vragen te beantwoorden en zelf kan aangeven te willen stoppen met het interview. Ik zal dan niet doorvragen.

Uitleggen wat je verstaat onder NEC en relatie leggen met C2 technologieën, communicatiemiddelen.

Duur ongeveer 30 minuten (?)

Vragen:

Heb je met NEC technologie gewerkt en zo ja, welke systemen/apparaten?

Heb je gewerkt met een joint common operational picture (JCOP)? Zo ja, was dit behulpzaam en gaf het de informatie die je nodig had?

Welke communicatiemiddelen gebruikte je het meest? Welke overwegingen speelden een rol bij die keuze? Waren dit voor jou organiek aangewezen middelen of gebruikte je ook niet-organieke middelen van derden of privé? Zo ja, waarom?

Veranderde er iets aan de keuze voor een bepaald communicatiemiddel in een stress-situatie? Zo ja, wat veranderde er, waarom veranderde dit en welk communicatiemiddel verkoos je? Waarom koos je juist deze?

Als je de mate van vertrouwen die je had in een JCOP/ NEC technologie/ communicatiemiddel zou moeten weergeven in een schaal van 1 – 10 (1=geen vertrouwen, 10= 100% vertrouwen), welk cijfer zou je dan geven, ongeacht de persoon die aan de andere kant van de communicatielijn staat? Met vertrouwen bedoel ik onder andere of je het idee had dat je communicatiemiddel goed liet zien wat er in werkelijkheid plaatsvond. Maakt het uit of je de persoon aan de andere kant van de 'lijn' wel of niet kent? Wat bepaalt je cijfer?

Heb je zelf ethische dilemma's ondervonden of weet je van anderen in je groep die hiermee te maken kregen? Kun je voorbeelden geven? Wat voor beslissingen moest je nemen? Wat was er ethisch aan voor jouw besef? Hoe ging je met die ethische beslissingen om? Hielpen de technische middelen, zoals communicatiemiddelen in het nemen van een beslissing, of stonden ze juist in de weg?

Had je het idee dat de technologie je volledig vrij liet in het maken van morele keuzes? Waarom wel, of waarom niet?

Zie lijst met mogelijke ontwerpers van NEC technologie. Geef met behulp van nummers 1 t/m 13 aan wie er volgens jou deel uit moeten maken van het team dat NEC technologie ontwikkelt. De volgorde in nummering geeft aan hoe belangrijk je het vind dat juist deze persoon erbij betrokken is (1 is heel belangrijk, 13 is minst belangrijk). {opmerking voor mezelf: leg eventueel de verschillen uit tussen de vakgebieden}

Psycholoog - jurist - IT'er – ethicus – antropoloog – econoom – organisatiewetenschapper – militair – filosoof – arts – geestelijk verzorger – socioloog - planoloog.

Wie mis je in deze lijst? Waarom moet die categorie vertegenwoordigd zijn volgens jou?

Wat zou een ontwerper van NEC systemen NOOIT mogen implementeren? Denk aan bijvoorbeeld een bepaalde functionaliteit, keuzeoptie, automatisme, knop, schermweergave of communicatiemedium. Waarom niet? Wat zou er in het geding komen? Hoe zou dat beter opgelost kunnen worden?

Was je zekerder of juist minder zeker in het nemen van een beslissing op basis van informatie die je uitsluitend had verkregen via NEC? Kan je dit verklaren?

Hoe zou een ontwerper van NEC systemen een NEC omgeving kunnen verbeteren? Waarom zou dit een verbetering zijn?

Samenvattend, denk je dat de technologie je helpt of juist in de weg staat bij het maken van morele keuzes? Waarom?

Aanvullingen / Opmerkingen?

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Summary

A commander ordering an airstrike on the basis of images on a screen, a pilot flying an aircraft thousands of miles away, a group of reconnaissance soldiers tracking each other's positions through a Global Positioning System (GPS), and a prime minister watching live video feeds about the capture of his declared enemy, are examples that are not fictional, but take place in actual military operations.

One of the characteristics of current military operations is the ubiquitous use of information and communication technology (ICT) which enables information sharing between military and non-military entities. This way of working is called network enabled operations (NEOs). NEOs are known to be complex missions, in which difficulties and conflicts often arise, especially with regard to moral decision making. An example of a NEO in which conflicts took place on the level of moral decision making is the Kunduz airstrike incident, which is an airstrike in 2009 in Afghanistan which resulted in the killing of many civilians.

In Chapter 2 an elaboration is given on three pitfalls that may occur in NEOs, by referring to the Kunduz airstrike. The first pitfall is the danger of developing a 'Predator view', the second pitfall is the misinterpretation of visual data, and the third pitfall is the prevention of streamlined communication. The 'Predator view' is a phrase used by soldiers themselves to describe how one can get occupied with the screen, forgetting other important aspects that take place outside of the scope of the screen.

In Chapter 3 a multi-aspectual analysis, which is a structural analysis in order to understand complexities in NEOs, reveals that different practices are connected through technology, which influences moral decision making. Moral decision making in NEOs is affected by three factors, namely a social factor, a technological factor and a psychological factor.

The social factor is conceptualized in Chapter 4. By conceptualizing different cases in terms of normative practices, it follows that different rules, norms and procedures that make up the *structural* side of the practice, can clash, due to a blurring of different (sub-)practices, which was the case in the Kunduz airstrike. Also different worldviews and ethos, which make up the *directional* side of the practice, clashed, resulting in morally problematic decision making.

In Chapter 5 the technological factor of moral decision making is addressed, by focusing on the mediating aspects of technology. Four different ways of technological mediation are distinguished that are relevant for NEOs. Firstly, technology can invite certain behavior (for example an airstrike), secondly, technology often mediates through amplification and reduction (for example, in case of thermal imaging that temperature is amplified, but color is reduced), thirdly, technology has built-in norms (for example, threshold levels for temperature determine what is visible on the screen or not) and lastly, technology requires interpretation (the dots on a screen require a hermeneutic skill). The normative evaluation of technological mediation should be understood with reference to the normative practices in which technology functions.

In Chapter 6 the psychological aspects of moral decision making are addressed, by making use of empirical data from psychological research, namely Social Construal Theory and Moral Intensity theory. From these theories tentative conclusions are inferred, because no empirical research was done in a genuine NEO context. The psychological theories suggest that working with technology in NEOs may support as well as hinder moral decision making, through mechanisms of humanization and dehumanization and diffusion or displacement of responsibility.

Chapter 7 is a reflective chapter that addresses what responsible soldiering in NEOs may look like, given that moral decision making is influenced by social, technological and psychological factors. It shows a classification of the different meanings of responsibility that resonates with the normative practice model and shows the importance of worldview and ethos for responsible soldiering. It concludes with spelling out a 'responsibility-ethics' for soldiers in NEOs. Aspects from deontological, consequentialist and virtue ethics are used in describing responsible soldiering in NEO.

Samenvatting

Een commandant die tot een luchtaanval over gaat op basis van beelden op een computerscherm, een piloot die een vliegtuig bestuurt dat duizenden kilometers verderop vliegt, een groep verkenners die elkaar kan volgen door middel van een Global Positioning System (GPS) en een minister-president die live kan meekijken wanneer de door hem verklaarde vijand door speciale eenheden wordt gevonden zijn geen fictieve voorbeelden, maar deze situaties vinden plaats in daadwerkelijke militaire operaties. Eén van de kenmerken van de huidige militaire operaties is de alomtegenwoordigheid van informatie- en communicatietechnologie (ICT), die de uitwisseling van informatie tussen militaire en niet-militaire entiteiten mogelijk maakt. Deze manier van werken heet *genetwerkt optreden,* of *network enabled operations* (NEO's). NEO's zijn over het algemeen complexe missies, waarbij moeilijkheden en conflicten kunnen ontstaan, vooral met betrekking tot morele besluitvorming. Een voorbeeld van een NEO waarbij conflicten ontstonden op het niveau van de morele besluitvorming is het Kunduz incident, waarbij in september 2009 in de provincie Kunduz in Afghanistan veel burgers omkwamen door een luchtaanval.

In Hoofdstuk 2 worden drie valkuilen die zich kunnen voordoen in NEO's nader uitgewerkt en geïllustreerd met behulp van de Kunduz luchtaanval. De eerste valkuil is het gevaar van het ontwikkelen van een 'Predator view'. De 'Predator view' is een uitdrukking die door militairen zelf wordt gebruikt om aan te geven hoe men zó ingezogen kan worden in de beelden op het scherm, dat men andere belangrijke aspecten, die buiten de kaders van het scherm vallen, vergeet. De tweede valkuil is misinterpretatie van visuele data, en de derde valkuil is het hinderen van gestroomlijnde communicatie.

In Hoofdstuk 3 wordt een multi-aspectuele analyse van NEO's uitgevoerd om de complexiteit van deze missies te begrijpen. Daaruit blijkt dat in NEO's verschillende praktijken worden verbonden door middel van technologie en dat dit de morele besluitvorming beïnvloedt. Hierbij spelen drie factoren een rol: een sociale, een technologische en een psychologische factor.

De sociale factor is geconceptualiseerd in Hoofdstuk 4. Een aantal casussen van morele besluitvorming in NEO's is uitgewerkt in termen van normatieve praktijken. Een normatieve praktijk is een samenhang van complexe menselijke handelingen, die historisch is gegroeid en die gericht is op de realisering van een

waarde. De normatieve praktijk kent een *structuurzijde* en een *richtingszijde*. De structuurzijde verwijst naar de (*tacit*) regels, normen en procedures die de praktijk begrenzen en ook mogelijk maken. De richtingszijde verwijst naar wereldbeelden, levensbeschouwing en ethos die het handelen in de praktijken sturen. Tijdens NEO's, waarin meerdere praktijken verbonden worden door technologie, kan er een vertroebeling van praktijken plaatsvinden. Dit betekent een verwarring van de verschillende structuurzijdes van de (sub-)praktijken, waardoor morele besluitvorming bemoeilijkt kan worden. Dit lijkt het geval te zijn geweest bij de Kunduz luchtaanval. Tevens kan de *richtingszijde* van de praktijk botsen, wat eveneens kan resulteren in gebrekkige morele besluitvorming in NEOs.

Hoofdstuk 5 is op de technologische factor die van invloed is op morele besluitvorming gericht en hierin worden de mediërende aspecten van technologie behandeld. Er zijn vier verschillende manieren van technologische mediatie te onderscheiden die relevant zijn voor NEO's. Ten eerste kan technologie bepaald gedrag uitlokken (een luchtaanval bijvoorbeeld), ten tweede medieert technologie vaak door middel van *amplificatie* en *reductie* (bij warmtebeelden bijvoorbeeld, waarbij temperatuur zichtbaar wordt, maar waarbij kleur wegvalt), ten derde heeft de technologie ingebouwde normen (bijvoorbeeld drempelwaarden voor temperatuur die bepalen wat zichtbaar is op het scherm en wat niet) en ten slotte, technologie vereist interpretatie (de grijze en zwarte stippen op een beeldscherm vereisen een hermeneutische vaardigheid). Het morele belang van technologische mediatie kan beter begrepen worden door de normatieve praktijken waarin de technologie gebruikt wordt, mee te nemen in de morele evaluatie van de technologie.

In Hoofdstuk 6 worden psychologische aspecten van morele besluitvorming behandeld door gebruik te maken van psychologisch onderzoek, namelijk Social Construal Theory en Moral Intensity theorie. Uit deze theorieën kunnen geen eenduidige conclusies getrokken worden, omdat er geen empirisch onderzoek werd gedaan in een echte NEO omgeving. De psychologische theorieën suggereren echter dat het werken met technologie in NEO's morele besluitvorming zowel kan ondersteunen als belemmeren, via mechanismen van humanisering en dehumanisering en diffusie of verplaatsing van verantwoordelijkheid.

Hoofdstuk 7 is een reflectie hoofdstuk dat focust op verantwoordelijkheid in NEO's. Er wordt een classificatie van de verschillende betekenissen van verantwoordelijkheid gegeven die resoneert met het normatieve praktijk begrip

en die het belang aantoont van wereldbeeld en ethos voor verantwoord soldaat-zijn. Er wordt in acht genomen dat morele besluitvorming wordt beïnvloed door sociale, technologische en psychologische factoren. Het eindigt met een uiteenzetting van een 'verantwoordelijkheids-ethiek' voor soldaten in NEO. Aspecten uit de deontologische, consequentialistische en deugdenethiek worden gebruikt in het beschrijven van verantwoord soldaat-zijn in NEO.

Curriculum Vitae

Christine van Burken was born on January 29th, 1980 in Opheusden, the Netherlands. She holds a BSc in Human Kinetic Engineering (The Hague University of Professional Education, 2002), a BSc in Mechanical Engineering (Eindhoven, Fontys University of Professional Education, 2004) and a MA at the Amsterdam Vrije Universiteit, faculty of Philosophy (2006). She worked several years as a mechanical engineer before starting her PhD studies in June 2009. She was affiliated to Eindhoven University of Technology, Delft University of Technology, TNO Human Factors and the Netherlands Defence Academy as a NWO PhD candidate in the field of ethics and military technology. The results are presented in this dissertation. Since 2000 she is a reservist at the National Reserve Corps in the Ministry of Defence in the Netherlands. She worked as project secretary for the Nuclear Security Summit 2014 at the Ministry of Defence.

She is married to Richard and lives in Voorburg.

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Simon Stevin (1548-1620)

'Wonder en is gheen Wonder'

This series in the philosophy and ethics of technology is named after the Dutch / Flemish natural philosopher, scientist and engineer Simon Stevin. He was an extraordinary versatile person. He published, among other things, on arithmetic, accounting, geometry, mechanics, hydrostatics, astronomy, theory of measurement, civil engineering, the theory of music, and civil citizenship. He wrote the very first treatise on logic in Dutch, which he considered to be a superior language for scientific purposes. The relation between theory and practice is a main topic in his work. In addition to his theoretical publications, he held a large number of patents, and was actively involved as an engineer in the building of windmills, harbours, and fortifications for the Dutch prince Maurits. He is famous for having constructed large sailing carriages.

Little is known about his personal life. He was probably born in 1548 in Bruges (Flanders) and went to Leiden in 1581, where he took up his studies at the university two years later. His work was published between 1581 and 1617. He was an early defender of the Copernican worldview, which did not make him popular in religious circles. He died in 1620, but the exact date and the place of his burial are unknown. Philosophically he was a pragmatic rationalist for whom every phenomenon, however mysterious, ultimately had a scientific explanation. Hence his dictum 'Wonder is no Wonder', which he used on the cover of several of his own books.

This thesis is an attempt to understand the moral significance of the use of information and communication technologies (ICTs) on the battlefield. Modern military missions are often characterized by an extensive use of networking and information sharing devices and are therefore called Network Enabled Operations (NEOs). This dissertation shows that moral decision making in NEOs has a social, technical and psychological factor. From the perspective of philosophy of technology, as well as empirically, it is argued that technology influences (moral) behaviors of military personnel. The use of ICT on the battlefield enables sharing information between partners, which may cause a blurring of different practices in a NEO. The blurring of practices causes clashes between rules and norms that hold for the practices, eventually confusing moral decision making. A case in which this became clear is the Kunduz Airstrike Incident in 2009, which is an example that is used throughout this dissertation. The case is also used to describe the mediating aspects of technology with regard to moral decision making on the battlefield, especially with regard to visual data sharing devices. Psychological theories such as Bandura's Social Cognitive Theory and Jones' theory of Moral Intensity are used to further refine knowledge about the mediating aspects of technology in an empirical way. Knowing the mediating aspects of technologies may lead to discarding or enhancing the moral desirability of certain technologies, to informing designers about alternative designs that increase moral decision making or to adapting the rules that hold for the practice in which the technology is used. The dissertation concludes with a reflective chapter on responsibility in NEOs. It is a structural analysis of the concept of responsibility in light of the Kunduz Airstrike Incident. In addition it provides the contours of a responsibility-ethics for military personnel in NEOs.

'Wonder en is
gheen wonder'

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