AOSIS

# The ethical debate about the use of autonomous weapon systems from a theological perspective

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'Pope calls on G7 leaders to ban use of autonomous weapons' (The Guardian 2024) is the headline from statements which pope Franziskus made during the G7-summit on June 14th, 2024. In general it can be observed that the ethical debate concerning the use of autonomous weapon systems (AWS) is an extremely complex and contentious issue, raising both technical and ethical challenges. Through a comparative analysis of relevant literature the theological perspective is introduced into the debate and highlight potential implications for the use of AWS. The increasing autonomy, where machines can autonomously select and engage targets, raises questions regarding compliance with international humanitarian law, the preservation of human dignity and moral responsibility. The research question addressed in this article is as follows: 'What are the theological-ethical arguments regarding the use of AWS?' In conclusion, three key points for a theological-ethical examination consist of the question about the pessimistic human image as a premise of the pro-AWS argumentation and ethical questions based on the highest or preferable good as well as on moral responsibility. It is synthesised, that the pessimistic human image can be represented, that as highest good right to life should be preferred against human dignity and that moral responsibility always should stick on humans and not on AWS.

**Intradisciplinary and/or interdisciplinary implications:** This article positions theological ethics within the emerging field of ethical dilemmas arising from autonomous functions in the realm of technical ethics.

**Keywords:** autonomous weapon systems; international humanitarian law; human life versus human dignity; Christian responsibility consciousness; highest or preferable good.

## Introduction

As the author of this work, I bring experiences from the defence industry, where, as a technology-minded Christian, I worked for decades within the field of development of missile and air defence systems within a German company after completing engineering studies. My theological understanding[1] is reflected in the selection of theological literature, which overall aligns most closely with the evangelical-conservative camp.

'Pope calls on G7 leaders to ban use of autonomous weapons' (The Guardian 2024) is the headline from the statements given by pope Franziskus during the G7-summit in June 14th, 2024. This headline underlines the socio-political importance of the topic which is addressed within this article. The ethical debate concerning the use of autonomous weapon systems (AWS) revolves around military applications of artificial intelligence (AI). Autonomous weapon systems arguably stand among the most contentious applications of AI, as they not only raise the technico-ethical chapter of 'autonomy' of machines, as seen, for example, in autonomous driving but also extend into the ethically highly contested realm of warfare. Thus, it is not surprising that the Arms Control Association concludes, 'Ethical issues are at the heart of the debate about the acceptability of autonomous weapon systems' (Arms Control Association 2018). On its website, the Arms Control Association juxtaposes the ethically conflicting positions of the International Committee of the Red Cross (ICRC) and the United States regarding the ban on AWS. One side considers the deployment of AWS, which can make life-and-death decisions unethical, as it violates humanity. Regardless of how 'sophisticated' AWS may be, the violation of human agency, moral responsibility and human dignity would persist (ICRC 2021:8). The other side was primarily represented by the main protagonist Ronald Arkin, who is an American scientist in the field of robotics and robot ethics. He is a Professor at the Georgia Institute of Technology. He argues that the deployment could potentially be ethically obligatory. Arkin's thesis can be summarised as the

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conviction that the AWS may not only be capable of protecting the lives of one's own soldiers but also enable a more humane form of warfare overall (Grünwald & Kehl 2020:153). The authors distil this ethical dilemma into the following key moral question, which the entire ethical debate revolves around: 'Ob und inwiefern es erlaubt sein, Maschinen über Tod oder Leben von Menschen entscheiden zu lassen?' [Whether and to what extent it should be permissible to let machines decide over the life or death of humans? (Grünwald & Kehl 2020:20; *author's own translation*)].

An Internet and literature search during the planning phase revealed a lack of in-depth examination from a theological-ethical perspective regarding the AWS debate. This finding is based on a study commissioned by the German Bundestag for AWS by Koch and Rinke (2021), conducted by the Institute for Theology and Peace in Hamburg.

Therefore, the research question addressed in this article is as follows: 'What are the theological-ethical arguments regarding the use of autonomous weapon systems (AWS)?'

The aim of this article is to contribute to filling the aforementioned research gap, not least to prevent a newly emerged field of ethical application because of technological advancement from being solely left to secular ethics. It is intended to place theological ethics in this new application area.

## Research methods and design

According to Ott (2021:32), this research question was developed through a comparative and evaluative literature review. Along the lines of the research question, the texts of the ethical debate were engaged in dialogue with the texts of theological literature.

The method of summary content analysis was applied to contribute to answering the research question. Firstly, textual material about the general international ethical debate around the use of AWS was described in a concise manner while retaining the essential contents. Secondly, there is an orientation towards Bleisch, Huppenbauer and Baumberger (2019), who extensively describe a scheme of ethical decision-making. This method led to the analysis of extensive literature reflecting the international state of the ethical debate on the use of AWS, as well as the theological-ethical literature capable of contributing to this debate.

With reference to the primary sources, a *tour d'horizon* through the international ethical debate was conducted as follows, largely following a chronological schema. Starting from the main authors of the discussion, namely Arkin (2009, 2010, 2017, 2018) and Sharkey (2012, 2016, 2017) through the international stage (CCW 2018, 2019) as well as ICRC (2018, 2021) and iPRAW (2018, 2019) and to the current overview literature (Bartneck et al. 2019; Grünwald & Kehl 2020; Koch & Rinke 2021; Solovyeva & Hynek 2018) a literature analysis was performed. Various positions with their various argumentations were considered without

claiming completeness. Given the 'multidimensional' nature of the argumentation (Solovyeva & Hynek 2018:172), the focus was on condensing the discussion to those core points, for which a theological-ethical examination seemed fruitful. For the theological-ethical examination, I primarily focus on contemporary theologians such as Kessler (2004), Härle (2018), Fischer et al. (2008), Mühling (2012), Konradt (2022), and Nullens and Mitchener (2010). Baumann (2007) exclusively dedicates himself to military ethics.

## On the function of autonomous weapon systems and their ethical criticality

A central role in the international debate is played by the definition of AWS, which the US Department of Defense presented as part of a formal policy on autonomy in weapon systems in 2012. This was the first definition with an official character, which has since been referred to repeatedly. According to this, an AWS is a weapon system that, once activated, can select and engage targets without further intervention by a human operator. This includes human-supervised AWS that allows human operators to override the system in operation. In contrast, a semi-autonomous weapon system is defined as a weapon system that, once activated, is intended to engage only individual targets or specific groups of targets selected by a human operator (Grünwald & Kehl 2020:39). Caton (2015:3) illustrates this definition from the Department of Defense (DoD) Policy as shown in Figure 1.

Staying within the targeting cycles, as illustrated in Figure 1, at the two ethically critical functions of target selection and engagement, a stronger differentiation can be found by Amoroso and Tamburrini, characterised by five different levels:

- L1: A human engages with and selects targets and initiates any attack.



| Semi-autonomous | Human-supervised | Fully autonomous |
|---|---|---|
| **"Human on the loop"** | **"Human in the loop"** | **"Human out of the loop"** |
| *Weapon system that, once activated, is intended to only* **engage individual targets or specific target groups that have been selected by a human operator.** *Includes "fire and forget" munitions* | *An autonomous weapon system that is designed to provide* **human operators with the ability to intervene and terminate engagements,** *including in the event of a weapon system failure, before unacceptable levels of damage occur.* | *A weapon system that, once activated,* **can select and engage targets without further intervention by a human operator.** |

(Note: Definitions per DoDD 3000.09, autonomy in weapon systems)

*Source*: Caton, J., 2015, *Autonomous Weapon Systems: A Brief Survey of Developmental, Operational, Legal, and Ethical Issues*, p. 3, US Army War College, viewed 22 Mai 2022, from https://press.armywarcollege.edu/cgi/viewcontent.cgi?article=1303&context=monographs

**FIGURE 1:** Autonomy levels according to Department of Defense Directive 3000.09.

- L2: A programme suggests alternative targets and a human chooses which to attack.
- L3: A programme selects targets, and a human must approve before the attack.
- L4: A programme selects and engages targets but is supervised by a human who retains the power to override its choices and abort the attack.
- L5: A programme selects targets and initiates attacks on the basis of the mission goals as defined at the planning/activation stage, without further human involvement (Amoroso & Tamburrini 2020:191).

From the two descriptions of different autonomy levels for weapon systems, it becomes evident that there is no unified definition of autonomy in the technical sense, but as Boulanin and Verbruggen (2017) express it:

> Autonomy has no established definition. It is not a specific technology area with well-defined boundaries, or a dedicated academic discipline or distinct market sector. Autonomy is not even technology per se; rather, it is a property that can be attached to very different types of technology. (p. 89)

Because of the fact that the ethical criticality heavily depends on the degree of autonomy levels of AWS, a meaningful differentiated taxonomy, as represented by L1 to L5, is required as a basis for discussion. The ethical criticality grows with the autonomy level. The transition from Level 4 to Level 5, along with the moral key question mentioned earlier, is at the centre of the ethical debate on AWS.

# The main ethical lines of discussion

Firstly, during the literature analysis, it was confirmed that the *tour d'horizon* has identified the main lines or main lines of argumentation, as already noted by Grünwald and Kehl (2020:23–24). The discussion is essentially divided into three branches, namely adherence to international humanitarian law (IHL), human dignity and responsibility. Secondly, a division into consequentialist and deontological lines of argumentation emerged as the main ethical lines, focussing primarily on adherence to IHL in the consequentialist branch and on genuinely ethical issues such as human dignity and moral responsibility in the deontological branch. This division essentially describes the result concerning the main lines of the ethical debate against the backdrop of the moral key question.

## The discussion strand concerning adherence to international humanitarian law

Baumann explains that IHL represents the utmost limit of legitimate military force and applies to all states and armies. For armies, IHL imposes the obligation to establish norms that comply with IHL and to adhere to them in mission planning and execution (Baumann 2007:378). Based on Baumann (2007:378), its basic principles are as shown in Table 1.

The principle of humanity encompasses the command of human dignity in terms of prohibiting degrading treatment as well as prohibiting cruel treatment of humans. The principle of restriction requires that prohibited weapons, such as chemical or biological weapons of mass destruction, must not be used. Additionally, even permissible weapons must not be used if they would cause unnecessary suffering or avoidable damage. The principle of distinction states that only military objectives and combatants may be attacked and not civil people. Surrendering, wounded or unarmed combatants, however, must be spared, whereas regular soldiers of state armies are considered as classic combatants. They have the privilege of not being legally held accountable after an operation for lawful acts (classically: killing in war) they have committed during the mission (Baumann 2007:559). In terms of proportionality, there must be a reasonable relationship between the expected military advantage and the loss of human life, damage to objects and nature. The principle of necessity refers to the measures of the use of force, which are only permitted if they do not violate the law of armed conflicts and are necessary to fulfil the mission (Baumann 2007:385).

The thesis mentioned in the Introduction, as proposed by Arkins, is based on various premises. One of them is the premise about the pessimistic human image because Arkin believes that robots can ultimately adhere to IHL better than human soldiers.

Taking into account the statements of Leveringhaus (2016), Geiß (2015), Sharkey (2019) and the ICRC (2018), the overall view of human nature appears relatively optimistic, even in the context of armed conflicts. A philosophical background that coherently aligns with this view is Kant's theory of the supremacy of reason over sensual drives, assuming that moral obligation implies the ability to fulfil it (Grünwald & Kehl 2020:36; Nullens & Mitchener 2010:152–154). However, Arkin (2009) counters this positive view of human nature by arguing primarily that empirical data paint a much more pessimistic picture. Arkin (2009), cf. May et al. (2005) also refers to the following quote from Saint Augustine:

> Saint Augustine is generally attributed, roughly 1,600 years ago, with laying the foundations of Christian Just War thought (Cook 04) and with introducing the idea that Christianity helped humanise war by refraining from unnecessary killing (Wells 96). Augustine (as reported via Aquinas) noted that emotion can clearly cloud judgment in warfare: The passion for inflicting harm, the cruel thirst for vengeance, an unpacific and relentless spirit, the fever of revolt, the lust of power, and suchlike things, all these are rightly condemnded in war. (p. 1)

When assessing ethical adequacy according to IHL, the arguments presented by AWS sceptics may suggest that the

**TABLE 1:** The five basic principles of international humanitarian law.

| Number | Basic principle |
| --- | --- |
| 1 | The principle of humanity |
| 2 | The principle of distinction |
| 3 | The principle of restriction |
| 4 | The principle of proportionality |
| 5 | The principle of military necessity |

*Source*: Adapted and translated by the author from Baumann, D., 2007, *Militärethik – Theologische, menschenrechtliche und militärwissenschaftliche Perspektiven*, p. 378, Verlag W. Kohlhammer, Stuttgart.

ethical deficit, in terms of compliance with IHL, is not as dramatic as portrayed by Arkin based on empirical percentages. Furthermore, AWS opponents seem to believe that deficiencies can largely be eliminated through training and that soldiers can even demonstrate greater ethical behaviour beyond the requirements of IHL, by showing human greatness and exercising their freedom, grace and mercy in certain situations.

In contrast, one might gather from Arkin's perspective a belief in a much larger ethical deficit in compliance with IHL and a conviction that humanity must reconcile with this ethically deficient behaviour – Arkin refers to it as 'cruelty' – of soldiers in war. Arkin deems it unrealistic to expect normal individuals, confronted with the horrors of the battlefield, to adhere to the laws of war, even if they have been trained for it (Arkin 2009:36). This contributes to explaining why Arkin believes that AWS can behave more ethically than humans in the battlefield. However, it is important to note that AWS is not expected to always act ethically on the battlefield (Arkin 2009:30–31).

## The discussion strand on human dignity

It is difficult to discern a clear argumentative logic regarding the ethical debate about human dignity as a counterargument against AWS. As expressed in the quote by A. Sharkey, the argumentative logic is most appropriately labelled as 'indeterminacy' or 'ambiguity' (Sharkey 2019):

> There are other weapons, and other technologies, that also compromise human dignity. Given this, and the ambiguities inherent in the concept, it is wiser to draw on several types of objections in arguments against AWS, and not to rely exclusively on human dignity. (p. 75)

The argumentation lacks clarity, and it sometimes happens that the discussion is perceived as diffuse and unclear or that in the discussion, the derivation of a violation of dignity by AWS encounters narrow argumentative boundaries (Grünwald & Kehl 2020:168). The authors Grünwald and Kehl also mention an important reason why the aforementioned assessment arises: among other things, there is a lack of criteria for a dignified killing act in war (Grünwald & Kehl 2020:168). This is a significant difference compared to the argumentative strand on adherence to international law. Here, as described in Table 1, globally accepted criteria are available.

This lack of constants increases the number of variables in the discussion. While, for example, for some authors, a dignified killing act without human empathy and personal conscience examination is inconceivable, others base it solely on combatant status. The importance of human dignity is also evaluated differently. For some, it is the highest good, higher even than the right to life, while for others, the principle of human dignity has already found its way into IHL and is contained in the principle of humanity, as a benchmark for IHL. While on one side, human dignity is considered more fundamental than the right to life (Bartneck

et al. 2019:151), the other side attempts to optimise the protection of innocent, legally protected life (Arkin's thesis). In other words, the ethical principle of human dignity is brought into play against the ethical principle of the protection of life. One principle is predominantly deontologically oriented, and the other is consequentialist, more precisely utilitarian. A higher valuation of human dignity from an ethical perspective may also be justified by the fact that the deontological principle is based on the constitution and corresponding interpretation through jurisprudence in countries such as Germany. This controversial discussion is therefore a core point that needs to be considered from a theological-ethical perspective.

## The discussion strand of moral responsibility

As already noted in the argumentative analysis of the discussion thread on human dignity, the argumentation regarding responsibility also presents a multifaceted picture. Altmann reflects this ambiguity when accurately referring to the uncertainty in responsibility and listing the manufacturer, programmers or the commander who deployed them (Altmann 2017:798).

The question of the responsibility gap remains unclear in the discussion. One side sees it, the other does not or sees it but considers it not extraordinary regarding civilian life. For proponents of AWS, onboard data recording technology even holds the potential to close possible responsibility gaps and lead to new legal practices.

From a moral perspective, the authors aforementioned emphasise the issue of agency. Agency is closely linked to decision-making ability and freedom of action. As previously explained, agency sits at the intersection of human dignity and responsibility and serves as a sort of bracketing function. Therefore, it is not surprising that the argument of responsibility gap is linked to human dignity, which affects the classification of argumentation in the same way as in the case of the human dignity argument. As Koch and Rinke (2021:166) put it, significant uncertainties remain in both cases that cannot be fully resolved through argumentative means.

Ultimately, the analysis of the discussion on moral responsibility yields a focal point that can be divided into two parts, which should be treated from a theological-ethical perspective. On the one hand, there are questionable considerations in the debate about whether AWS can be equated with combatants in terms of responsibility. On the other hand, the agency in connection with unforeseen consequences (negative deviation from expectations) is seen as requiring clarification.

## Extracted key points from the three discussion threads

Summarising in a tabular format, Table 2 shows the results that can be subsumed from the three discussion threads.

**TABLE 2:** Extracted key points for theological ethical examination.

| Main discussion strands | Extracted key points |
| --- | --- |
| Adherence to international humanitarian law | Question about the authorization of the pessimistic human image according to Arkin |
| Human dignity | Question about the highest good (human dignity against right to life) |
| Moral responsibility | Question about responsibility when autonomous weapon systems are used |

The first question is about the validity of Arkin's pessimistic view of humanity. A central point appears to be the second question about the highest good concerning the argument for human dignity and the right to life. Lastly, the third question concerns the argument of moral responsibility in the use of AWS.

# The question about the pessimistic human image from a theological perspective

Theology can attempt to engage Christian-theological aspects of the concept of humanity with the human images described above. According to the theological background of the author of this article, this should involve, at least in a rudimentary manner, the statements of the Reformers up to contemporary biblically grounded theologians.

According to Kessler (2004), the Reformers were convinced of a one-sidedly negative view of humanity, which has often persisted in Protestant communities to this day. Luther was convinced that when a person does good, it is only by chance and only in relation to earthly, not heavenly, matters that they are capable of doing good (Kessler 2004:90, 104; Luther 1963:95–96). Calvin (1997) taught that our whole nature has become so corrupted that sinning remains our only capability. In his view, only a small remnant of the image of God that distinguishes humans from animals remains (Inst I.15.4; Inst II.2.12,17; Kessler 2004:93–94). Luther acknowledges that there is still some good left in humans because of their humanity, but he emphasises the loss of the likeness to God and, unlike the Roman Catholic Church, the dependence on God to live a godly life. Calvin approaches the topic by differentiating between heavenly and earthly matters. From his perspective, all outstanding gifts in believers and unbelievers come from God. Even the person who believes in Christ cannot freely choose to do good. Calvin sees the reason for this in Romans 7:15: 'For I do not understand my own actions. For I do not do what I want, but I do the very thing I hate', which he believes applies to Christians as well. Therefore, according to Calvin, truly good deeds only come through God's work in humans. Thanks to the Reformers, the centrality of faith has been focussed on the need for the redemption of humanity. This redemption is solely based on the sacrifice of Jesus and, therefore, solely on the basis of grace without human effort. By emphasising the sinfulness of humanity, they wanted to prevent people from believing that they could compensate for their sinfulness before God with their good works. However, despite their good intentions, mainly focussed on soteriology, they may have overemphasised the sinful side of humanity. Taking the

Reformers Luther and Calvin into account, it can therefore be concluded that the statements of the Reformers primarily focussed on soteriology. In order not to distract from the corruption of humanity, they were very cautious about mentioning humanity's ability to do good, as Jesus says in Matthew 7:11a: 'If you then, who are evil, know how to give good gifts to your children'. However, the remaining likeness to God, which can have a positive ethical impact, is not able to completely eradicate the sinful nature of humanity. Therefore, humanity remains in need of redemption and, because of its sinful nature, will continue to possess unethical potentials in the future, which can manifest itself in initiating wars and perpetrating cruel atrocities in war (Kessler 2004:90–106).

A characteristic evangelical finding regarding the Christian view of humanity shall be highlighted by Wilfried Härle, an evangelical theologian and Professor Emeritus of Systematic Theology and Ethics at the University of Heidelberg. He describes an important anthropological component, namely, that of the human heart, as the deep seat of evil (Härle 2018):

> *Deswegen hängt das christliche Menschenbild nicht der Illusion von einem vollkommenen oder zu vervollkommnenden Menschen nach, sondern kennt die tiefsitzende, zerstörerische Realität des Bösen, die aus dem menschlichen Herzen kommt und sie weiß um die Notwendigkeit von Vergebung, Umkehr und Neubeginn …* [Therefore, the Christian view of humanity does not subscribe to the illusion of a perfect or perfectible human, but acknowledges the deep-seated, destructive reality of evil emanating from the human heart, and it understands the necessity of forgiveness, repentance, and new beginnings … (*author's own translation*)]. (pp. 435–436)

Härle mentions an important anthropological component here, namely that of the human as the deep-seated locus of evil within humanity, while also describing the moral turning point in a person's life as an ethical transcendent dimension of human experience, triggered by faith in Jesus Christ as a new centre of life. Only at this turning point, Christians receive the capacity to do good not in the sense of 'non posse peccare' (the inability to sin) but rather in the sense of 'posse non peccare' (the ability not to sin).

Taking into account the described insights from Kessler and Härle as a result, it turned out that Arkin's fundamental pessimism regarding the human condition, especially from a reformational and evangelical perspective, is undeniable.

# The question about the highest good from a theological perspective

First of all, let us delve into the distinction between the theory of preferable action and the theory of good action. Markus Mühling, a protestant theologian and Professor of Systematic Theology at the Kirchliche Hochschule Wuppertal/Bethel prefers the former theory for theological reasons. For him, the aim is not to realise actual goodness but rather to responsibly shape the preferable action under the condition of a potential conscious assumption of guilt. Therefore, ethics

is not the theory of good action but the theory of preferable or preferred action (Mühling 2012:37).

Mühling explains that even the trusting Christian is always simultaneously a sinner and righteous (simul iustus et peccator) and without God's help does not even know what is good (Mühling 2012:36). Nevertheless, humans are obliged to act responsibly, which leads Bonhoeffer (2020:275) to state: 'From what has been said, it is evident that the structure of responsible action includes the willingness to assume guilt and freedom' (*author's own translation*). According to Mühling, this assumption of guilt is not actually an exception but corresponds to the normal condition of human existence. Therefore, ethics should not be understood as the theory of 'good' action but as the theory of preferable action. 'Preferable' refers to the situation of human action under the conditions of sin, where it may be necessary to realise a lesser evil through action (Mühling 2012:36–37).

Thus, Mühling's concept of preferable action encompasses a broader scope than that of the highest good. Coming back to the question about the highest good, it can be asked what is the highest good or the highest good on Earth from a theological perspective. Rienecker et al. (2017) provide the following answer to this question:

> Gott ist der Geber von Leben, Leib und Seele (1. Mose 2,7); er blies dem Menchen ,den Odem 'ein, ,und also ward der Mensch eine lebendige Seele'. Gott ist also 'der Gott des Lebensgeistes für alles Fleisch' (1. Mos 16,22; 27,16), ,die Quelle des Lebens' (Ps 26,10) … Unter den Gütern, die Gott dem Menschen gibt, ist das Leben das erste und höchste (Hiob 2,4; vgl. 5. Mose 30,15) [God is the giver of life, body, and soul (Genesis 2:7); He breathed 'the breath' into man, 'and thus man became a living soul'. God is therefore 'the God of the life spirit for all flesh' (Genesis 16:22; 27:16), 'the source of life' (Psalm 26:10) … Among the goods that God gives to humanity, life is the first and highest (Job 2:4; cf Deutoronomy 30:15; *author's own translation*)]. (p. 728)

God gives life, he desires it, and he sustains it according to 1 Timothy 6:13: 'God, who gives life to everything'. The connection between God and life is unmistakably expressed in the New Testament scriptures. Jesus calls himself 'the life' (Jn 11:25; 14:6), and John 3:16 promises eternal life to everyone who believes in him: 'For God so loved the world, that he gave his only begotten Son, that whoever believes in him should not perish, but have eternal life'. The biblical concept of 'life' therefore takes on a further dimension beyond earthly, natural life (Rienecker et al. 2017):

> Neben dem natürlichen Leben, dessen Anfang und Ende durch die natürliche Geburt und den natürlichen Tod bestimmt werden, kennt die Bibel – vor allem das NT – ein anderes Leben, das mit einer übernatürlichen Geburt beginnt (Joh 3,3;5) [Besides natural life, whose beginning and end are determined by natural birth and natural death, the Bible – especially the New Testament – knows of another life that begins with a supernatural birth (John 3:3; 3:5; *author's own translation*)]. (p. 728)

Mühling sees the kingdom of God as the highest good of human striving, expectation and hope, which, in terms of human ethical action, is manifested in bearing witness to the gospel and thus in the communication of God's love, that is in mission: 'In every historical-social condition as well as in every personally realised and realisable condition, nothing remains as the highest good of ethical action other than this testimony' (Mühling 2012:166, [*author's own translation*]). In this testimony, 'bearing witness to and communicating the Gospel and thereby the love of God, not simply through verbal or non-verbal communication, but through every action of humans' (Mühling 2012:166, [*author's own translation*]) lies the part of humanly possible action in the realisation of the kingdom of God. Eschatologically, it is about providing people with the opportunity, as Konradt puts it, 'to be connected with Christ in faith' (Konrad 2022:64, [*author's own translation*]) and thus to partake of eternal life. Against this background, the protection of life takes on the utmost significance. According to Hebrews 9:27, 'And just as it is appointed for man to die once, and after that comes judgment', a person must be called by God during their lifetime. Killing a person deprives them of this opportunity.

This profound respect for human life is also reflected in early Christianity. Schmidt (2009:51–87) states under the heading 'How human life became sacred' (*author's own translation*) in one of his chapters that the Romans' disregard for human life was shocking to Christians. They entered into confrontation with many customs where human life, regardless of its biological or societal 'value', was disregarded.

Lauxmann (2022), in her research on discovery of human dignity in theological ethics, describes a development that attributes the tension between human dignity and the protection of life to a change in theological language: 'In this, human dignity not only became associated with ideas of life protection but replaced them' (Lauxmann 2022:294, [*author's own translation*]). She refers to the Federal Constitutional Court, which in 1975 established the close relationship between human dignity and the protection of life as it was also contained in previous statements on human dignity in church and theological contexts:

> Das menschliche Leben stellt, wie nicht näher begründet werden muss, innerhalb der grundgesetzlichen Ordnung einen Höchstwert dar; es ist die vitale Basis der Menschenwürde und die Voraussetzung aller anderen Grundrechte. (BVerfGE 39, 1 [42]). [Human life, as need not be further substantiated, constitutes the highest value within the constitutional order; it is the vital basis of human dignity and the precondition for all other fundamental rights (*author's own translation*)].

She cites the biblical primaeval history where the unconditional right to life of every individual is a direct consequence of their being made in the image of God (Gn 9:6) for the theological foundation (Lauxmann 2022:297).

This means that embedded in the theological-philosophical principles of humanitarian law, the protection of lives considered as protected (such as combatants or civilians protected by international law) as well as wounded or surrendering combatants is of paramount importance.

That means that based on the described prioritisation of life protection as the highest value, Arkin's thesis cannot be sufficiently refuted by the argument of human dignity alone. Ultimately, according to Fischer et al. (2008:443), it also makes a difference whether only the value of a person is respected or the person themselves, that is the person with their highest need (for survival).

The question of the highest good led also to the theologically grounded concept of the 'preferable good'. After theological-ethical analysis, the importance of the protection of life over human dignity was deemed preferable. Therefore, as long as Arkin's thesis is not scientifically refuted, a ban on AWS is premature even in light of the recent Pope's statement during the G7 summit.

# The question of responsibility from a theological perspective

Regarding the consideration of whether AWS should be held accountable akin to a combatant, Armin Grunwald, Professor for Technology Philosophy and Technology Ethics, Director of the Institute for Technology Assessment and Systems Analysis in Karlsruhe, provides a practical example involving a military robot. This example blurs the boundaries between humans and machines and the associated responsibility. It illustrates the sensitivity of the issue by describing the example of the robot Boomer. It served in the Iraq War for defusing landmines and had evidently done good work 'as a colleague'. His human colleagues had come to respect and appreciate him. However, when the fate of his dangerous profession meets him one day, his remains were not simply scrapped. Instead, the soldiers organised a funeral with burial. Post mortem, one might say, Boomer was even awarded a medal as a thank you for his bravery, just like a human (Grunwald 2022:18–19).

Grunwald interprets this and other examples as indications of the humanisation of robots. One reason for this humanisation, according to him, lies in the linguistic attribution of human attributes, such as thinking, planning, showing emotion, deciding, learning, acting, always being at service, being brave and courageous. Through this anthropomorphic language, robots are, so to speak, drawn into the 'aura of humanity' (Grunwald 2022:18, [*author's own translation*]). From his perspective, this humanisation lacks justification, as algorithms simply compute and analyse data and do not think and act like humans. He fears that the dominance of anthropomorphic language will imprint a digital view of humanity, seeing humans as data-processing machines, as 'homo calculans' (Grunwald 2022:19) with the brain as a computer based on algorithms, memory as a data storage like a hard drive, sensory organs, such as the eye and ear, as sensors, and nerves as data lines (Grunwald 2022:19).

This would reduce humans to biological machines, functioning according to the same physical-chemical principles as other living beings, as defined by modern natural sciences and anthropology. A categorical difference from animals, as perceived by the founder of the machine models Descartes through the soul component, is increasingly rejected by modern natural sciences. This development would lead to the reduction of everything human and thus of humanity itself because if humans are not modelled as calculating machines for specific purposes in a specific context, but classified in their essence as calculating machines, then there would be no place for aspects of humanity that cannot be captured in the digital view (Grunwald 2022:19).

If, as Grunwald's remarks suggest, there are mindsets that equate humans with homo calculans, it is likely that human responsibility will also be transferred to machines in the future. Akerson (2013:70) believes that because of their human-like qualities in processing complex matters, AWS should be treated like humans. Also, for the international lawyer Dederer, the question of whether AWS are weapons or rather combatants is by no means as trivial as it may initially appear (Dederer 2018:394).

In contrast to such a mindset, Swiss theologian Emil Brunner identifies awareness of responsibility as the most significant difference that makes a human a human (Brunner 1958):

> *Dass Gott die Kreatur ins Dasein 'ruft' (1. Mos 1, Röm 14,17, 2 Kor 4,6), trifft einzig beim Menschen im wörtlichen Sinne zu. Die Art dieser doppelseitigen Bezogenheit heißt von Gott aus 'Anruf', vom Menschen aus 'Antwort'. Das Sein des Menschen ist so nach seinem Kern verstanden: verantwortliches Sein.* [That God 'calls' the creature into existence (Genesis 1, Romans 14:17, 2 Corinthians 4:6) applies literally only to humans. The nature of this double-sided relationship is called 'call' from God's perspective and 'response' from human perspective. Thus, the essence of human existence is understood as responsible existence (*author's own translation*)]. (p. 22)

And further Brunner (1958) states:

> *In der christlichen Lehre vom Menschen geht es um die wahre Erkenntnis des verantwortlichen Seins. Wer das Wesen der Verantwortlichkeit verstanden hat, der hat das Wesen des Menschen verstanden. Die Verantwortlichkeit ist nicht ein Attribut; sie ist die Substanz des Menschseins … So ist auch das Wissen um Verantwortlichkeit das, was jeden Menschen zum Menschen macht.* [In Christian doctrine of humanity, the true knowledge of responsible existence is at stake. Whoever has understood the nature of responsibility has understood the essence of humanity. Responsibility is not an attribute; it is the substance of human existence ... Thus, the knowledge of responsibility is what makes every human a human (*author's own translation*)]. (p. 14)

God creates humans as his earthly representatives and gives them the task of subduing the earth and ruling over all living creatures, except their fellow humans (Gn 1:28). As God's representatives, humans are accountable to their Creator, for which God has also equipped them by embedding responsibility as the ontological 'substance of human existence', as Brunner calls it.

It follows that human responsibility consciousness is not something that could be trained from its origin through learning processes. It may be sharpened through learning processes, yet it is already inherent in human nature from the

beginning by the Creator. This connection, recognised by Emil Brunner, is also confirmed by the events that occurred after the creation of humans. Without reading about periods of learning or developing responsibility consciousness, after the so-called 'Fall of Man' according to Genesis 3:1–7, there is a reaction that can only be explained by the fact that the inclination towards responsibility was already given to humans: the two individuals hid from God because they did not want to face responsibility. The effect of responsibility on human nature is evident: they fear God's questions because an honest answer, as announced by God, has negative consequences. There is another phenomenon regarding responsibility consciousness, namely the attempt to shift responsibility.

Responsibility consciousness is therefore bestowed as a gift to every human by God from a biblical perspective. Thus, humans are capable of assuming responsibility from the beginning. While humans exhibit a tendency to evade responsibility, as evident since the Fall, it is completely inconceivable from the entire biblical context that the Creator would engage in having answers to his questions given by the supposed representative of his representative, a robot. Because, from a Christian perspective, it is not only about human judgements but also crucially about divine judgement, as mentioned in Hebrews 9:27: 'And just as it is appointed for man to die once, and after that comes judgment'. In this judgement, robots will certainly not be held accountable.

These considerations, specifically aimed at the techno-anthropological significance of AWS, lead to the conclusion that based solely on the aspect of Christian responsibility consciousness discussed here, AWS cannot be attributed to responsibility. The moral responsibility remains with humans, who ultimately decide how to utilise the means of violence that AWS represent.

The next step would now be to clarify from a theological perspective who among the circle of potential human stakeholders mentioned by Altmann (2017:798) is the primary responsible party. For more information on this and other aspects related to theological ethics in connection with the use of AWS, interested parties are encouraged to have a look on Engelhardt (2024).

# Conclusion

It is important for theological ethics to have a voice in this discussion, and theological principles should inform the evaluation and regulation of AWS. The findings of this study can contribute to ensuring that the theological perspective is more adequately considered in the ethical debate surrounding AWS and that potential impacts on the deployment and operation of these systems are understood and assessed. Various lines of argumentation focussing on IHL, human dignity and moral responsibility have been illuminated. Firstly, it became evident that IHL provides a crucial framework for evaluating the legitimacy of AWS deployment. The principles of this body of law, such as the principle of humanity, the

principle of distinction and the principle of proportionality, serve as crucial benchmarks for the ethical assessment of military actions, including the use of AWS. Secondly, the question of human dignity in the context of AWS presents a complex and ambiguous dimension. The anthropomorphisation of robots and its associated ethical implications pose a challenge, which leads thirdly to a discussion about moral responsibility in connection with AWS, with questions regarding agency and the responsibility gap at the forefront. In conclusion, three key points for a theological-ethical examination can be identified that stimulate further discussion and research. One of them concerns the question about the pessimistic human image. As a result, it turned out that Arkin's fundamental pessimism regarding the human condition, especially from a reformational and evangelical perspective, is undeniable. Another concern is the question about the highest good. The question of the highest good led to the purely theologically grounded concept of the 'preferable good'. After a theological-ethical analysis, the importance of protecting life was deemed preferable over human dignity. As long as Arkin's thesis is not scientifically refuted, a ban on AWS is premature. The discussion on moral responsibility concerning the use of AWS presents a nuanced perspective, reflecting ambiguity regarding who holds accountability for their actions. Assigning responsibility becomes increasingly complex in the context of technologically advanced warfare. The theological perspective emphasises the inherent responsibility of humans as stewards of creation, suggesting that moral accountability ultimately rests with human decision-makers rather than autonomous systems.

As technological advancements continue to shape the landscape of warfare, it is imperative to address these ethical dilemmas to ensure responsible decision-making and adherence to humanitarian principles. Further research and interdisciplinary collaboration are necessary to develop comprehensive guidelines that uphold theological-ethical standards in the context of AWS.

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## Ethical considerations

An application for full ethical approval was made to the Research Committee and Research Ethics Committee and ethics consent was received on 22 April 2024. The ethics approval number is T012/24.

## Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

## Authors' contributions

W.E. collaborated closely with V.K., supervisor, to rework the study into an article.

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## Data availability

The authors confirm that the data supporting the findings of this study are available within the article.

## Disclaimer

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