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The night of the 14th of November 1940 saw the setting of a new benchmark of destruction, even by the standards of the Second World War up until that point. The Luftwaffe’s severe policy of area bombing, aggravated by innovations such as the use of pathfinder aircraft and exploding incendiaries, set the city of Coventry ablaze. The British would later experiment similarly on German cities with devastating effect, the memory of which still scars the conscience of my country. Innovations in warfare – mechanical, chemical, nuclear – have not gone well. They draw us into a vicious spiral of arms race, mistrust, and retaliation with their ever more effective ways of killing life and destroying the earth.

Lethal Autonomous Weapons Systems present the same risks. This is why we must take action urgently, while the starting gun for this arms race is only just being sounded. It is all the more important because these weapons are such a unique menace in their own right. They are a futile and sinister attempt to sanitize war with the removal of direct human involvement and responsibility that stands – problematically and, at times, shamefully – over decisions of life and death. They contravene fundamental principles of international law. They simply make killing easier.

I pray for the day when human beings do indeed loosen their stranglehold on the dignity and sanctity of life, trusting not in an algorithm but in God, the source of all life. In that spirit, I commend this helpful guide for your careful study, that it may arouse your motivation to turn these new swords into ploughshares and to oppose this evil with true Christian conviction – for this is one decision of life and death which is still very much in our hands.

The Right Reverend Dr Christopher Cocksworth
Bishop of Coventry
PurposE of this booklet

This guide has been drafted to raise awareness in churches of the growing threat posed by some nation-states that are attempting to use artificial intelligence to develop weapons able to operate autonomously and without meaningful human control. If the further development of such technology is not prohibited immediately, we risk introducing into the world a situation where decisions about taking a life are delegated to a set of algorithms.

The guide introduces the concept of killer robots and the risks involved and explains why Christians should advocate against such weapons. It outlines the advocacy activities already being undertaken and suggests actions that churches can take.

“And [he] said to the judges, “Consider what you are doing, for you judge not on behalf of human beings but on the LORD’s behalf; he is with you in giving judgment.” (2 Chron. 19:6)

Many valuable contributions have enriched this publication. I would like to acknowledge with appreciation the input of:

Dr Emily Welty, Director of Peace and Justice Studies, Dyson College of Arts and Sciences, Pace University, New York City, and Vice Moderator of the World Council of Churches Commission on International Affairs
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Dr Vasile-Octavian Mihoc, WCC
Joe Carter, editor for The Gospel Coalition
1. INTRODUCTION

What Are Killer Robots?

Killer robots are also known as lethal autonomous weapons systems (LAWS)\(^1\). These are weapons that would, *without meaningful human control*, select and attack targets. They would make decisions about taking lives, whilst lacking the critical human characteristics of wisdom, judgement, responsibility, empathy, moral conscience, and compassion necessary to make such a complex choice.

**Do they already exist?** Armed drones do exist and are in use, but these still have a human operator controlling the weapons system – usually from a distance – who is responsible for selecting and identifying targets as well as pulling the trigger.

**Are killer robots currently being developed?** Systems do exist – and are under further development – that could be adapted to remove meaningful human control from the selecting and attacking of targets. Some examples of these include

a) a stationary robot in operation along the border between North and South Korea that is armed with a machine gun and a grenade launcher, and can detect human beings using infrared sensors and pattern recognition software, with the possibility of firing at them;\(^2\)

and

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\(^1\) It is increasingly common for the word “Lethal” to be omitted from this description. Campaigners emphasize that the autonomous nature of the weapons should be the focus of concern rather than the outcome of their deployment (where the harm caused might not lead to death)

\(^2\) Stop Killer Robots website, [https://www.stopkillerrobots.org.](https://www.stopkillerrobots.org) The SGR-A1, developed jointly by Samsung Techwin (now Hanwha Land Systems) and Korea University.
b) a 40-metre long, 135-ton, self-navigating warship under development in the United States of America that is designed to hunt for enemy submarines and can operate without contact with a human operator for two to three months at a time. It is currently unarmed, but US representatives have said that the goal is to arm the warships within a few years.3

Other examples can be drawn from technologies developed in France, the United Kingdom, Israel, Russia, and China that would not need very much adaptation to become fully autonomous.

Would killer robots be legal under international law? As killer robots would operate without meaningful human control, they would face particular difficulties in complying with two fundamental rules of international humanitarian law: a) distinction and b) proportionality.

a) Warring parties must be able to distinguish between civilians and soldiers, and between civilian objects (such as homes or schools) and military targets. Killer robots would have difficulty in doing so.

b) The laws of war also require the warring parties to weigh the proportionality of an attack. Will the expected harm to civilians and civilian objects be excessive in relation to the expected military advantage? Would a “reasonable military commander” have decided it was lawful to launch the attack? In cases like these and many more, killer robots could not replace human judgement.

Fully autonomous weapons would also violate three foundational elements of human rights law: the right to life, the principle of human dignity, and the requirement of accountability. Human rights law – which is based on

3 Ibid. The Sea Hunter, made by the Defense Advanced Research Projects Agency (DARPA) of the US Department of Defense.
principles of Christian ethics — applies during times of peace as well as armed conflict. It is important to note this because it is likely that fully autonomous weapons would be used beyond the battlefield in law enforcement situations.

Killing is only lawful under international human rights law when it is necessary to protect human life, constitutes a last resort, and is applied in a manner proportionate to the threat. Killer robots would not have the human qualities, notably empathy and judgment, necessary to make such determinations. Delegating life-and-death decisions to machines that cannot appreciate the value of human life would undermine human dignity.

The taking of a human life requires a clear justification, and if this is not present, then there must be individual accountability; however, it is unclear who could be held accountable if a fully autonomous weapon had carried out an attack. Would it be the manufacturer if the unit malfunctioned? The military commander, the operator, or the programmer in the event of an attack that led to an unlawful death? Accountability also includes restitution for the victim or their family, which may include punishment of the offender. A weapon – unable to experience or assess guilt, regret, or remorse, or to suffer or understand the consequences of its action – cannot be punished either.

**Who would be the targets of killer robots?** The current argument used to justify the use of armed drones is that they can limit casualties for the deploying force and civilian casualties because they will be more precise. Yet, experience has shown that this is far from the case; there have been hundreds of civilian casualties in drone strikes. If weapons without meaningful human control are deployed on the battlefield or in a policing situation, programmed to target and engage people on the basis of software and sensors, there is a high risk of mistaken identity or unlawful engagement. In addition, there is the threat of cyberattacks on the software of these robots and the resulting consequences of such attacks.

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In addition to these concerns, there is also the risk of bias being programmed into these software and sensors. Bias in terms of gender, race, sexual orientation, and other factors may be programmed into machines, including autonomous weapons, by accident or by design. Where technologies have been developed in the USA, facial recognition software struggles to recognize people who are not white, and voice recognition struggles to respond to women’s voices or non-North American accents. There are examples of racial bias being built into machines carrying out risk assessments of possible future criminal acts, which are then used to determine sentencing.5

Imagine these kinds of biases in a weapon system designed to select targets and react without any meaningful human control, without any human judgment, to counteract that bias.

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The Christian and Artificial Intelligence

We have witnessed an unprecedented rate of growth in artificial intelligence in recent years, affecting all areas of our lives. There are a number of definitions of artificial intelligence (AI), most referring to the use of computer science and algorithms to create intelligence in machines.

AI has succeeded in reducing the need for humans to carry out repetitive and intensively laborious tasks, and efficiency in such tasks has increased. Unlike humans, machines do not get tired or need to take breaks, do not get distracted, and – for clearly defined tasks with clearly defined variables – will normally deliver consistent results.

Yet, the speed and extent of this growth raise concerns about the possible consequences for the future of our world. As author James Barrat states, for Christians it raises questions about the compatibility between the pursuit of AI and our belief in and dependence on God. He warns that “our reflection on the consequences of AI is far behind our technological capabilities, so we are very much stepping into the unknown.”1

At the heart of the Judeo-Christian belief system is the covenant relationship with God, humanity, and all of God’s creation.

8 Then God said to Noah and to his sons with him,
9 ‘As for me, I am establishing my covenant with you
and your descendants after you, 10 and with every
living creature that is with you, the birds, the domestic
animals, and every animal of the earth with you, as
many as came out of the ark.’ (Gen. 9:8-10)

This covenantal relationship with God and God’s people in the Hebrew Bible
is carried forward in the New Testament, which interpreted God’s covenant
with Israel through the teachings of Christ.

Jesus sums up the covenantal relationship by saying that we are to love
God with all our heart, mind, and soul, and to love others as ourselves.
If love is at the centre of our faith, love should be at the heart of all
decision-making for us who have put our faith in God. How, then, can we
ever consider delegating the precious gift we have been given – to make
decisions about our lives and the lives of others – to a machine? However
intelligent technology becomes in the future, it could never receive, accept,
or act upon the uniquely God-given gift of love.

When we make the wrong decisions, we can turn to God for forgiveness.

“1 Happy are those whose transgression is forgiven,
whose sin is covered. 2 Happy are those to whom the
Lord imputes no iniquity and in whose spirit there is no
deceit.” (Ps. 32:1–2)

As AI develops, it will observe and learn human behaviour, and make
calculations about what it believes to be criminal or unwanted acts. In
the future, it could become a tool to assist with pre-emptive or responsive
legal decisions; however, without a core of love, to what extent could its
decisions about guilt, innocence, punishment, or clemency be balanced
with the necessary components of forgiveness, empathy, and understanding.
with regards to the perpetrator and the circumstances of their act?²

The Biblical Imperative

The ancient prophets who spoke out for justice and peace encouraged humanity to move to a better solution for differences and territorial disputes. Isaiah instructed us as follows:

“³ Many peoples shall come and say, ‘Come, let us go up to the mountain of the Lord, to the house of the God of Jacob; that he may teach us his ways and that we may walk in his paths.’ For out of Zion shall go forth instruction, and the word of the Lord from Jerusalem.

⁴ He shall judge between the nations and shall arbitrate for many peoples; they shall beat their swords into ploughshares, and their spears into pruning hooks; nation shall not lift up sword against nation, neither shall they learn war anymore.” (Is. 2:3–4)

Church historians point to the pacifism of early believers and their belief that military service was a form of idolatry. Any taking of life was highly regulated. Tertullian³ wrote: “The divine banner and the human banner do not go together, nor the standard of Christ and the standard of the devil. Only without the sword can the Christian wage war: for the Lord has abolished the sword.”

This changed rapidly in the time of Constantine. The Council of Arles⁴ in 314 CE said that to forbid “the state the right to go to war was to condemn

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it to extinction,” and shortly after, Christian philosophers began to formulate the doctrine that is now known as just war.⁵

For centuries, many Christians believed that it was right to use violence and war to spread their faith, through the forced conversion or execution of those who refused or opposed them. The notion of a holy war was part of their religion.

In modern times, Christians are divided on issues of war and the use of force. Some Christians are pacifists, advocating for peaceful solutions to conflicts and seeking to limit the further development of weapons technologies. They are guided by the words of the prophet Isaiah in seeking to turn swords to ploughshares (2:4).⁶ Others consider that a strong military is needed to counter actual or perceived threats to their security and that war is sometimes inevitable.

The Most Reverend and Right Honourable Stephen Cottrell, Archbishop of York, speaking on the occasion of the entry into force of the Treaty on the Prohibition of Nuclear Weapons,⁷ said:

From a Christian point of view … weapons of war is a contested area. Many Christians are pacifists, but a greater number of Christians do hold the position that there are certain circumstances when, as a last resort, it can be appropriate to use force and to bear arms. I

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think what unites Christians is an ethical approach to the use of force which is usually spoken about as the just war theory, which really says that we should only use force as a last resort in ways that are proportionate and when there is a … high expectation that you will achieve the ends that you want, which obviously is the cause of peace and stability. … Therefore, weapons of mass destruction, which can never be proportionate, can never be used.

The biblical arguments in favour of just war can in no circumstances be extended to allow us to surrender the decision over life and death to a machine. Humans have been created by God with the necessary capabilities to make decisions based on moral and ethical considerations, and to be accountable for the consequences of their actions when boundaries are crossed. The same can never be said of weapons operated by artificial intelligence.

**Possible Threats to Adherents of Particular Faiths**

The threat posed by killer robots is a threat to the whole of humanity. Following the commandment that God has given us to love our neighbour as ourselves (Gal. 5:14), we should be stirred to act to protect all people from such a global threat. But might killer robots pose a specific threat to those who follow a particular faith or faiths?

Many Muslims, Christians, Jews, Hindus, Sikhs, Buddhists, and adherents of other faiths live in parts of the world where it would be unusual for them to be attacked and killed with a deadly weapon on account of their faith identity. Many others are not so fortunate and face extreme persecution because of their faith or religious identity.

AI can learn from human patterns of behaviour, and it is not hard to envisage the scenario in which a machine, or another form of technology, could identify someone of a certain faith by specific patterns of behaviour – for example, regular attendance at a place of worship, a youth group, or other
fellowship gatherings that meet repeatedly in the same location. Other events might even be advertised online.

Certain modes of dress might lead AI to conclude that a person adheres to a particular faith, either because of their everyday attire, i.e., a Buddhist monk’s orange robes, a Christian minister or priest’s clerical collar, a Jewish man’s yarmulke, or a Muslim woman’s hijab, or their special dress for particular days of worship, i.e., white clothes or “Sunday best,” Jewish tefillin, or Sikh spiritual attire. Particular dates are of significance for different faiths and might influence the behaviour and location of adherents at those times.

If a weapon equipped with such technology fell into the hands of religious extremists, any particular faith group could become a specific target.
3. GLOBAL INITIATIVES

What Are Current Activities to Address the Threat?

In April 2013, in response to growing concerns about developments in artificial intelligence and its potential application to lethal weapons, a coalition of non-governmental organizations formed the Campaign to Stop Killer Robots.

In May 2013, Professor Christof Heyns, the UN Special Rapporteur on extrajudicial, summary, or arbitrary executions at the time, presented his annual report to the UN Human Rights Council, focusing on the threats posed by the possible development of lethal autonomous robotics (LARs) and called for states to establish national moratoria on aspects of these and for the establishment of a high-level panel to articulate a policy on the issue for the international community. In November of that year, 35 nations expressed their views on autonomous weapons for the first time, at the Meetings of the High Contracting Parties to the Convention on Certain Conventional Weapons in Geneva. In 2014, states parties\(^1\) to this convention agreed to begin work on this emerging technology, and these meetings have continued to this day.\(^2\)

Progress towards agreement on an international pre-emptive ban on weapons that could operate without meaningful human control has been held back by certain states, notably the USA, Russia, China, UK, France, and South Korea. These states are in what has been described as a “cold tech

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\(^1\) “States parties” refers to countries whose governments have ratified a specific treaty.

\(^2\) This booklet was first published in November 2021.
war” – a race to develop and possess the most technologically advanced weapons in the world.

Since 2015, more than 4500 AI and robotics researchers, and 26,000 other endorsers have signed an open letter calling for a pre-emptive ban on autonomous weapons.³

Campaigns of this nature have succeeded in the past in urging states to adopt international bans on land mines and cluster, chemical, and biological weapons. In 1995, a protocol⁴ was adopted that prohibits the use of blinding weapons as a means or method of warfare as well as their transfer to any state or non-state actor. It was a historic moment because it prohibited the production and proliferation of a weapon whose use had appeared to be imminent.

**The Involvement of the World Council of Churches**

The World Council of Churches (WCC) has for decades advocated for peace and against the most destructive and indiscriminate methods of warfare, particularly nuclear weapons. It has worked with churches around the world to impress upon their governments the immorality of such weapons and the need for their total prohibition and elimination.

In November 2019, the Executive Committee of the WCC adopted a minute⁵ on lethal autonomous weapons systems, affirming the “grave concern of the ecumenical movement for the ethical, moral, and legal implications of the development and deployment” of such weapons and calling upon “WCC member churches, particularly in countries that are developing such weapons systems, to advocate with their governments to cease such

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development and to support an international ban on lethal autonomous weapons systems.” The WCC joined the Campaign to Stop Killer Robots at that time.\(^6\)

In January 2021, WCC joined representatives of other faiths to issue an interfaith statement on the issue.\(^7\) The joint statement, titled “A Plea for Preserving Our Shared Humanity,” expresses concern over the insidious development of weapons systems that lack meaningful human control, urges that the human person must never be reduced to a set of numbers, and calls for an urgent and firm rejection of the development of fully autonomous weapons.

Around the world, churches are joining the call to raise awareness about the risks posed by killer robots and are urging their governments to take steps to ensure that such technology is not developed.

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4. ACTION

What Can Churches Do?

Be Part of Isaiah 2:4, Turn Swords into Ploughshares

Imagine if the peace prophets had been able to ban all weapon production in the first place. The time is now to ensure that generations to follow are not threatened by autonomous weapons, which have the capacity to profile, hunt, and kill specific individuals and groups.

- Learn more about the potential threats posed by killer robots and inform others in your congregation or local faith community.¹ Learn about the financial implications and costs of developing such technology – how could that money be better spent? Let us reimagine arms industries, how their highly qualified scientists could turn these energies and intellect towards providing quality and accessible healthcare, building affordable smart homes for everyone, or enabling environmentally friendly urban farms.

- Hold Bible study discussions to explore the following questions in depth:

  o “So God created humankind in his image, in the image of God he created them; male and female he created them.” (Gen. 1:27)

    When AI is developed to emulate human decision-making and carry out human tasks, how will it be possible to acknowledge and protect the image of God in ourselves and in others? Do we risk creating AI in the image of God?

  o Jesus said to his first disciples: “The one who believes in me … in fact will do greater works than these …” (John 14:12), and

¹ An array of resources is available at https://www.stopkillerrobots.org.
“I have come that they may have life, and have it abundantly.” (John 10:10b)

How can technology be a positive instrument for improving the quality of life for all people and especially for those who are poor or sick?

“...We know that we are God’s children, and that the whole world lies under the power of the evil one.” (1 Jn. 5:19)

Whilst there are many ways in which AI has improved our lives, to what extent do we risk it becoming a tool “of the evil one”?

- Young people are usually the most aware of and comfortable with new technologies as they are developed. Children and youth in churches and church communities should be encouraged to become influencers for good in the design of AI. Invite them to discussions or hold workshops where they can share their technological knowledge with older participants and engage them in discussions based on the Bible study questions above.

- When they speak with one voice, churches can be a powerful force for good and can influence their governments to act. Write to your government and ask them to publicly declare their strong opposition to killer robots and to urge other governments to do likewise. If your government has already called for a ban, consider writing to them to thank them.

- If you have further questions or suggestions, please contact CCIA@wcc-coe.org

“...And a harvest of righteousness is sown in peace for those who make peace.” (James 3:18)

“And the peace of God, which surpasses all understanding, will guard your hearts and your minds in Christ Jesus.” (Phil. 4:7)
The executive committee of the World Council of Churches, meeting in Bossey, Switzerland, on 20-26 November 2019, affirmed the grave concern of the ecumenical movement for the ethical, moral and legal implications of the development and deployment of fully autonomous weapons systems with the capacity to identify, select and execute attacks on individual targets without real-time control, decision-making and responsibility by human decision-makers. It declared that such weapons systems would be fundamentally objectionable and unconscionable, and calls for a pre-emptive ban on the further development and deployment of such weapons. The executive committee calls upon WCC member churches, particularly in countries that are developing such weapons systems, to advocate with their governments to cease such development and to support an international ban on autonomous weapons systems.