


TOWARDS AN ARMED DRONE CODE OF ETHICS

**Eight Model Principles
of Responsible Use**



A close-up photograph of a person wearing military camouflage clothing operating a drone control panel. The person's hands are visible, with one hand resting on a joystick and the other on a button. The control panel is light blue and features several buttons and a joystick. The background is blurred, showing the person's torso and arms.

This Policy Brief
addresses the growing
need for principled
restraint in the use of
armed and uninhabited
aircraft (drones).

Around the world, more governments are acquiring and using armed drones for military and other purposes, but ethical uncertainty persists about what it means to use these aircraft 'responsibly'. Going beyond the requirements of existing international law, an Armed Drone Code of Ethics could be an effective governance resource for reducing the risk of various injustices that potentially arise from violent drone use.

Section 1: Context

Technologies for enabling drone-based violence are advancing and spreading rapidly. There is also a real possibility that more operational functions within drone systems could in future be performed by artificial intelligence (AI).

Armed drones are reusable and recoverable aircraft that carry at least one weapon, do not carry a human operator, and incorporate onboard sensor and communication technologies¹. Examples include missile-armed Predator and Reaper drones, which have been used extensively by the US government to strike targets in distant foreign territories. The world is now experiencing a 'second drone age' characterised by increased proliferation with more governments acquiring various forms of these aircraft. The use of large drones is shifting from counterterrorism towards warfighting, whilst small drones might soon become weaponised for policing purposes.

According to UK-based organisation Drone Wars, 19 states have conducted airstrikes using an armed drone, 6 states possess armed drone development programmes, and 29 states have imported armed drones². Such proliferation increases the urgency of principled restraint in the future use of armed drones by states and by the individual drone operators they employ. However, the rationale for restraint requires clarification because moral uncertainty about drone use has persisted for the last two decades. This uncertainty is partly attributable to the technological novelty of deploying uninhabited aircraft equipped with video-cameras and weapons. Armed drones are not generally regarded as inherently bad. Rather, ethical concern about these aircraft tends to focus on how some states sometimes choose to use them.

International efforts to achieve restraint in the state use of drones began in late 2016 when 53 countries signed a declaration recognising the potential for "misuse". The declaration included an agreement to "continue discussions" on how drones are "used responsibly"³, but there has since been little progress on specifying the meaning of 'responsible use'. Meanwhile, many non-government organisations have criticised the 2016 initiative for its potential to set standards that are "too low", and they fear it could fail to address "the full range of risks and harm associated with the use of drones"⁴.

Such criticism resonates with some analysts' suggestion that armed drones require special treatment: governance that extends beyond the application of existing rules of international and domestic law⁵. Complying with these legal rules would be the minimum standard of responsible use, yet legality and morality are not the same thing. There are some ethical concerns about armed drones that cannot be addressed fully by law-based governance alone. A potentially effective supplement to the law, which could address those concerns informally, is a code of ethics for further guiding the behaviour of drone users.



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Section 2: Research Findings



Through the innovative application of multiple moral theories, **the DRONETHICS project** (hosted by the University of Southampton) aims to provide a comprehensive framework for addressing ethical concerns about current and potential forms of drone-based violence. The project's **research findings** show that armed drones have the potential to illuminate or exacerbate broader moral problems including:



Unjust decisions to resort to violence in international affairs



The use of indiscriminate and/or disproportionate methods of warfare



Excessive use of force in the enforcement of domestic criminal law



Extrajudicial punishment of criminal wrongdoing



Incurring of moral injury from the experience of killing another person

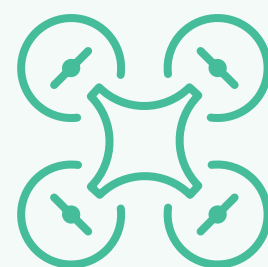


Inadequate human control over the operation of weapon systems.

Section 3: Rationale for a Code of Ethics

As a mechanism for highlighting and responding to numerous ethical concerns, an Armed Drone Code of Ethics (a model of which is provided below) would be an example of ‘soft law’ governance.

Given the urgency of the problem of drone misuse, the advantage of such governance is that it is quicker and easier to achieve than formal law-making. Codes of ethics are inherently aspirational and not legally binding, but they have other characteristics that can enable principled restraint in matters of moral importance⁶. Codes can be effective globally rather than merely internationally, because they can be designed and voluntarily adhered to by non-government groups and individuals as well as by states. And, although a code of ethics does not replace or change the law, it can inform and encourage the creation or amendment of law.



Regarding the ethics of armed drones, the main policy challenges are to specify the meaning of ‘responsible use’ and to raise awareness of that meaning among drone-using states and individuals. For the purpose of addressing those challenges quickly, this Policy Brief provides a model Armed Drone Code of Ethics comprising 8 key principles. These address a wide range of moral concerns about why and how armed drones are used. The recommendation is for all users (or potential users) of armed drones to adopt this code, which can subsequently be adapted to local and specific contexts.

A model Armed Drone Code of Ethics

To promote the responsible use of aircraft that: are uninhabited, reusable and recoverable; carry at least one weapon; and incorporate sensor and communication technologies.

Principle 1 Binary Classification

An armed drone should only be used: (1) in armed conflict; or (2) for a law enforcement purpose.

Principle 2 Human Agency

The critical functions within an armed drone system should be under meaningful human control.

Principle 3 Operator Discretion

After the use of an armed drone against a specific target is authorised, an operator of that drone may reasonably refuse to participate in the use of the drone's weapon.

Principle 4 Urgent Other-Defence

An armed drone should only be used to protect a person or persons facing an immediate threat of death or serious injury.

Principle 5 High Transparency

To the greatest extent possible, and while preserving operational security, there should be public disclosure of: (1) where, why, and how armed drones are used; and (2) the effects generated by such use.

Principle 6 Combined Arms (applicable to armed conflict only)

An armed drone should only be deployed in combination with ground-based military personnel, inhabited maritime vessels, and/or inhabited aircraft.

Principle 7 Equal Assessor (applicable to law enforcement only)

An armed drone should only be used if its operator is as capable of assessing a threat to public safety as an armed and on-the-scene police officer would be.

Principle 8 Graduated Response (applicable to law enforcement only)

A lethal weapon mounted on a drone should only be used in response to a serious threat if non-violent and non-lethal response measures have been or would be ineffective.



Recommendations

- Military and police commanders involved in the use or acquisition of drones should distribute and actively promote discussion of the model Armed Drone Code of Ethics among relevant personnel.
- Individual drone operators working within military or police organisations should encourage and discuss with colleagues the idea of voluntarily adhering to an Armed Drone Code of Ethics.
- All states that possess or plan to acquire armed drones should incorporate the model Armed Drone Code of Ethics (or an amended version of it) into a national policy on responsible use.

Commentaries on the Eight Principles

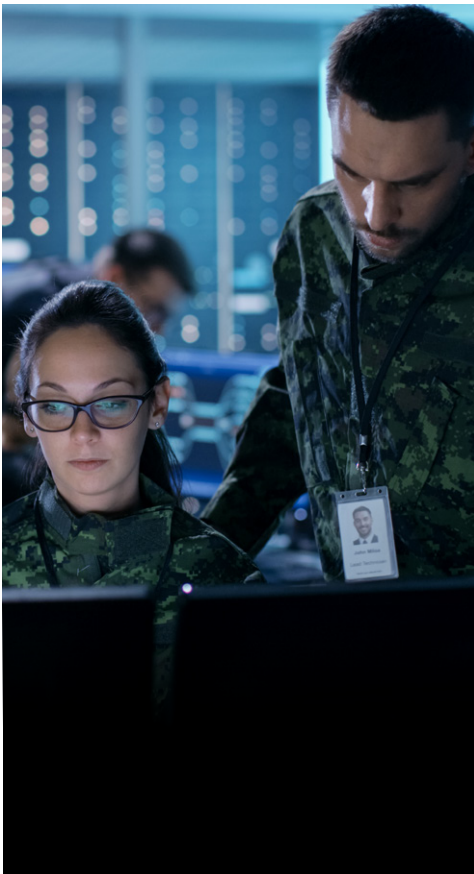


1. BINARY CLASSIFICATION

An armed drone should only be used: (1) in armed conflict; or (2) for a law enforcement purpose.

Principle 1 addresses the concern that a state's use of an armed drone might escape the application of existing rules of international law. To hold any potential for lawfulness, state use of force must occur either for a law enforcement purpose (subject to tight restrictions imposed by human rights law) or in armed conflict (subject to the more permissive laws of war). Sometimes, drone strikes against individuals have occurred outside a drone-using state's territory and in circumstances that cannot plausibly be characterised as armed conflict. This has generated doubt about what type of international law, if any, is available to guide forceful action and remedy any wrongdoing.

Adherence to the Binary Classification principle would involve a commitment by states to preserve legal clarity by restricting their use of armed drones to conflict zones and to the domestic sphere (for law enforcement purposes).



2. HUMAN AGENCY

The critical functions within an armed drone system should be under meaningful human control.

Principle 2 addresses the concern that the use of an armed drone might generate an unjust outcome for which nobody could fairly be held responsible. This is a possibility if the critical functions (selecting and engaging targets) of a drone system were to be performed by an AI technology that was not under adequate control by a human. AI is inherently incapable of making moral decisions and bearing moral responsibility, and it cannot replicate a human's abilities to be virtuous and to exercise judgment based on lived experience. The degree of human control over the operation of an armed drone needs to be meaningful enough, under the circumstances, to preserve the possibility of responsible use.

Adherence to the Human Agency principle would involve ensuring that a human: (1) can exercise some control over a drone system's critical functions; (2) is indispensable (as a matter of system design) to the technical operation of those functions; (3) can interact with the system's AI elements in a timely fashion; (4) does not place excessive trust in AI; and (5) is able to attract the fair attribution of blame for any wrongdoing.



3. OPERATOR DISCRETION

After the use of an armed drone against a specific target is authorised, an operator of that drone may reasonably refuse to participate in the use of the drone's weapon.

Principle 3 addresses the concern that an individual drone operator might be morally injured by their experience of killing. A distinguishing feature of an armed drone is that it enables a person not only to be killed from afar but also to be closely observed. This remotely-controlled and camera-equipped weapon system has an unprecedented capacity to reveal the humanity of a distant human target. Such revelation can undermine a drone operator's moral willingness to kill another person. At the same time, a drone operator might find themselves under immense pressure to proceed with killing if, for example, an unfolding mission is being watched in real-time by colleagues and commanders via networked video screens.

Adherence to the Operator Discretion principle, within a military or law enforcement organisation, would involve empowering drone operators to safeguard their own moral wellbeing. Refusals to kill would be formally allowed when an individual operator reasonably believes that a particular killing would be morally wrong.



4. URGENT OTHER-DEFENCE

An armed drone should only be used to protect a person or persons facing an immediate threat of death or serious injury.

Principle 4, when applied to circumstances of armed conflict, reinforces the preference of many military drone operators for protective modes of drone warfare. A moral distinction can be drawn between (a) using armed drones to provide timely support to combat personnel or civilians who are under attack and (b) using them to attack individual enemies who are located far from ongoing fighting. Drone operators in some states tend to prefer and feel pride in the first kind of drone warfare, because it is more easily justified by reference to the immediate life-saving intention behind it. The second kind of drone warfare can sometimes seem harder to justify, because a person who is not harming or about to harm anybody else is harder to characterise as a threat.

Adherence to the Urgent Other-Defence principle during drone warfare would involve rejecting a broad concept of 'imminence' and avoiding the use of armed drones against individuals who are assessed as potentially posing a threat at an unspecified future time. When applied to circumstances of law enforcement, adherence to this principle would rule out the use of a drone to punish (execute) a person who is suspected or convicted of committing a crime.



5. HIGH TRANSPARENCY

To the greatest extent possible, and while preserving operational security, there should be public disclosure of: (1) where, why, and how armed drones are used; and (2) the effects generated by such use.

Principle 5 addresses the concern that the occurrence, purpose and manner of a state's use of armed drones might escape sufficient scrutiny. Government transparency is generally important to inform public confidence in the rectitude of weapon use, and to facilitate the prevention, investigation and remedying of unjustified uses. A commitment to transparency is especially important when it comes to armed drones because they have a high capacity to be used secretly. To the extent that armed drones thus afford 'plausible deniability', there is a risk that states will use them for improper reasons, in unjust ways, and with impunity.

Adherence to the High Transparency principle would involve refraining from assigning armed drones to intelligence agencies (which are notoriously non-transparent about their activities). Also, there would need to be public disclosure of general information about the legal and policy frameworks that guide where, why and how a state's armed drones are used. Only operation-specific information would be withheld, in order to preserve a drone's immediate capacity to be used effectively.



6. COMBINED ARMS

An armed drone should only be deployed in combination with ground-based military personnel, inhabited maritime vessels, and/or inhabited aircraft.

Principle 6 addresses the concern that states with armed drones might resort to violence too often. Large, long-range drones can be deployed in foreign territories as an alternative to deploying military personnel and thereby exposing them to physical risk. This capability generates a moral risk that, when a state can use armed drones exclusively, it will be less reluctant to act violently and more tempted toward unjustified (aggressive) actions. A state is more likely to regard warfare as an activity of last resort when it preserves some potential for some of its military personnel to be physically harmed.

Adherence to the Combined Arms principle would involve always integrating the use of armed drones in warfare with the use of other (non-remotely controlled) combat assets within a national or allied military organisation.



7. EQUAL ASSESSOR

An armed drone should only be used if its operator is as capable of assessing a threat to public safety as an armed and on-the-scene police officer would be.

Principle 7 addresses the concern that replacing armed police officers with armed and camera-equipped drones might reduce the ability of police to assess threats accurately and to implement appropriate responses. Any such reduction in assessment capacity would increase the risk of unjust harm arising from ill-informed police decisions to respond violently to perceived threats. When it comes to police engagement with members of the policed population, personal proximity can often be highly important when judging what kind of response is necessary and proportionate under the circumstances. The dangerousness of a situation might not be obvious if, for example, a (potentially) violent person's posture and demeanour cannot be observed up close.

Adherence to the Equal Assessor principle would involve restricting the police use of an armed drone to those rare situations where it is physically impossible to place a police officer on the scene of a violent crime as it unfolds.



8. GRADUATED RESPONSE

A lethal weapon mounted on a drone should only be used in response to a serious threat if non-violent and non-lethal response measures have been or would be ineffective.

Principle 8 addresses the concern that police officers controlling armed drones might resort too quickly to lethal force. In the practice of policing, there is a strong ethical presumption against killing, so non-violence or non-lethal force are preferred when attempting to neutralise threats to public safety. If an armed drone were deployed on its own in a threatening situation, the range of options for responding proportionately would be reduced, bringing an increased risk of excessive use of force. The option of verbally persuading a dangerous suspect to surrender to an immediate arrest would be unavailable, and a police officer using an armed drone would also be unable to apply standard non-lethal response techniques like pushing and handcuffing.

Adherence to the Graduated Response principle would involve deploying an armed drone only as part of an operational plan that envisages the initiation of threat-neutralisation efforts by police officers deployed to the scene.

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About the study

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Further reading

Christian Enemark, *Moralities of Drone Violence*, Edinburgh: Edinburgh University Press, 2023: <https://edinburghuniversitypress.com/book-moralities-of-drone-violence.html> (Open Access)

Notes

¹ This definition of ‘armed drone’ excludes non-aerial (land-based or maritime) vehicles and non-recoverable aerial devices (for example, loitering munitions or ‘kamikaze drones’) that crash themselves onto a target.

² ‘Who Has Armed Drones?’, *Drone Wars*, March 2023, <<https://dronewars.net/who-has-armed-drones/>>.

³ ‘Joint Declaration for the Export and Subsequent Use of Armed or Strike-Enabled Unmanned Aerial Vehicles (UAVs)’, US Department of State, 28 October 2016, <<https://2009-2017.state.gov/r/pa/prs/ps/2016/10/262811.htm>>.

⁴ Elizabeth Minor, ‘Joint Civil Society Statement on US-led Drone Export Initiative’, Article 36, 12 September 2017, <<http://www.article36.org/updates/joint-statement-standards-sep-17>>.

⁵ See: Janina Dill, ‘The Informal Regulation of Drones and the Formal Legal Regulation of War’, *Ethics and International Affairs* 29 (1) (2015): 51-58, at 52; Eric Brumfield, ‘Armed Drones for Law Enforcement: Why It Might Be Time to Re-Examine the Current Use of Force Standard’, *McGeorge Law Review* 46 (3) (2014): 543-72, at 545.

⁶ See: Brian Rappert, ‘Codes of Conduct and Biological Weapons: An In-Process Assessment’, *Biosecurity and Bioterrorism*, 5 (2) (2007): 145-54, at 146.

Photography

This document contains stock photography and is used for illustrative purposes only, any person depicted is a model.

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