RPAS and the Ethical Landscape of Contemporary Conflict

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This article considers the ethical implications of uninhabited systems against the backdrop of rapid technological development and the changing character of conflict. The author argues that contemporary conflict is complex and contextually sensitive, and that ethical debate is lagging behind the development and proliferation of uninhabited combat systems. Consequently without timely debate, development risks detracting from humanity in warfare and may exacerbate inter-societal divisions.

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Introduction

... science gathers knowledge faster than society gathers wisdom.[2]

The employment of uninhabited systems in combat is an emotive subject and is becoming increasingly so as uninhabited system proliferation accelerates. Uninhabited systems are attractive to the military and politicians alike as they offer persistent capabilities, can be relatively cheap, go where combatants cannot go and reduce combatants' exposure to risk. Consequently, for many years uninhabited systems have been acclaimed for their suitability for the '3Ds tasks: dull, dangerous and dirty.'[3] The crux of this debate is in the nature and use of uninhabited systems when combatants face the ethical paradox of killing.

To inform the debate, it is necessary to consider two questions of ethics: to what extent can the battle-space be automated, and what are the implications of further removing personnel from the battle-space? The current degree of disconnection, reduced personal risk and the potential reduction in the burden on the individual for taking another human's life does alter the current ethical landscape; however, it does not fundamentally change it. The advent of full autonomy would precipitate fundamental change, but this paradigm shift is yet to emerge due to the technological challenges of assuring discrimination and proportionality, the inability to maintain accountability and the incapacity of computers to differentiate when one *should not* act although legally one *could* act. Nevertheless the implications of uninhabited systems modifying target and individual behaviours, and positively or negatively modifying civilian or enemy ethical perceptions of the friendly forces, already vary in degrees dependent on perspective. Furthermore, use of uninhabited systems by some countries in the ethically controversial context of targeted killing may catalyse fundamental change.

When considering these questions, four themes emerge. First, that the ethical landscape and the character of conflict are ever-changing, due to the pace of technological development and consequential reactions. Second, the perceived degree of change is dependent on perspective due to differing societal norms. Third, law satisfactorily answers the majority of questions in modern or post-modern military force-on-force applications, where the options are 'can or cannot'. In complex hybrid conflicts, legal 'can or cannot' guidance is insufficient, ethically based socio-political situational understanding is required to decide when combatants 'should or should not' act. Finally, ethical decisions pertaining to '3Ds tasks' are relatively straightforward; the crucial decisions are those for tasks that are distant or deadly. To show this, first the scene will be set by taking a snapshot of the development of uninhabited systems against the character of contemporary conflict and the existing ethical landscape. Then the ethical questions pertaining to the use of uninhabited systems and the changing cultural importance of the warrior will be considered. Finally this article will explore potential political and ethical implications of uninhabited systems.

Modern Uninhabited Systems and the Contemporary Ethical Landscape

Uninhabited systems have been given various terms during their history, but consensual nomenclature remains elusive. The US had broadly used the terms unmanned systems or unmanned combat systems, highlighting the multi-component nature of the capability, yet journalists often refer collectively to such as robots or drones. The Royal Air Force (RAF) has adopted the terms Remotely Piloted Aircraft (RPA) and Remotely Piloted Air Systems (RPAS), reassociating such with their human controllers.[4] This is not semantics; nomenclature identifies both a type of system and its nature of use. Ethical and legal consideration of passive uninhabited systems, such as the reduction of personal risk associated with bomb disposal robots, has deemed such systems as relatively uncontroversial.[5] It is those considerations associated with distant operations, particularly if controversially penetrating another country's sovereignty, and the application of deadly force which remain most ethically challenging. Consequently, while the '3Ds tasks' adequately describe passive uninhabited systems, to encompass offensive uninhabited systems this is better articulated as the '5Ds tasks': adding distant and deadly. The nature of the task is further dependant on the system's degree of autonomy, from a fully autonomous system, which can satisfactorily make the decisions demanded of a human, to one that has some autonomous functionality, but which requires considerable human input or guidance.[6] It is too simplistic to consider all uninhabited systems as broadly similar and the same is true for the ethical landscape of conflict.

The nature of war does not change, but the character of conflict does, and that change demands the closest attention.[7] Indeed the character of conflict is a subjective combination of political, military, societal and cultural elements.[8] The characteristic essence of contemporary or hybrid warfare has been argued to be the simultaneity and barbarity of force-on-force fighting, counterinsurgencies and counter-terrorism.[9] Similarly, while ethics may be differentiated from morals as general truths and objective principles, these are neither so objective nor so general to be universal. The ethical landscape of contemporary conflict is analogous therefore to the visual effects of low sun over varying terrain. Ethically similar concepts with differing histories may emerge from an array of differing perspectives as light on gently rolling ground: full of subtlety with few hard contrasts. However, an ethical division between societies may appear as a starkly silhouetted ridge-line from one perspective yet is so well-lit from another than it is indistinguishable from the background. The addition of global extremist ideologies such as *Takfiri*[10] has also served to split established societies' ethical norms, further complicating the ethical landscape. Macroethical rifts also scar the contemporary landscape due to the resurgence of 'Just War theory'[11] and increasing casualty aversion in post-modern societies, a trend not mirrored in pre-modern society. Moreover the irony of post-modern warfare has been fuelled by Western powers' overwhelming technological advantage. Pre-modern enemies have used this approach to dehumanise post-modern forces and thus maintain a sense of local moral superiority.[12] Consequently contemporary combatants are required to make decisions based on more than law and military pragmatism: on fine ethical judgements based on sound personal morals and a remarkable degree of contextual understanding. The ethical landscape contains dilemmas where combatants may

elect to take greater risk of sustaining friendly combatant casualties due to the consequentially disadvantageous effect on the objective population. There are occasions when combatants *could kill* but *should not* kill. The ethical landscape of contemporary conflict is complex: it is subtle and stark, based on ancient theory yet evolving daily, consequently it is remarkably sensitive to temporal and societal perspective. A slight change in the nature of an action on the system, such as those intrinsic to the advent of uninhabited systems, can therefore produce an array of likely outcomes, some of which may be profound and none of which are more significant than when deciding whether or not to kill.

The Ethical Considerations of Killing using Uninhabited Systems

The crux of the military ethical paradox is the decision to kill in order to save life. The advent and actions of uninhabited systems does not fundamentally change the ethical landscape, at least not yet. They do however shape the landscape and in a rather uneven way. Some argue that the logical drive to reduce risk to friendly forces will result in 'more and better robots' and ultimately to a utopian 'fully autonomous engagement without human intervention.'[13] In one sense, uninhabited systems are an ethically logical progression and akin to the stand-off advantage of the longbow compared to thrown projectiles. Others however recommend caution because 'Humans understand one another in a way that systems cannot and we don't fully understand how.'[14]

For more than a century the nature and employment of certain weapons has been discussed by ethicists and such discussions have informed policy. Uninhabited systems are not fundamentally unethical *per se*, but they do deserve examination as they share some attributes with previously censured weapons such as crossbows and land mines, moreover their nature of employment could affect their ethical standing. For example, uninhabited systems differ to mines in many respects, but also share similarities, and with mines and cluster-munitions have been described as so 'cruel as to be beyond the pale of human intolerance.'[15] However, only fully autonomous uninhabited systems could kill without human decisions from point of deployment to time of killing. The foremost advantages of all but fully autonomous uninhabited systems are temporal and that they are systems, not weapons. The decision to kill is taken by a combatant far closer to the time of killing and with vastly superior discrimination than is possible for a land mine distributor. Therefore, the combatant is capable of a greater degree of responsibility for the actions of the uninhabited system than may be the case for a land mine distributor. Of course this assumes that to decide to kill can be reasonable.

The decision to kill is a paradox of human survival. Moreover, the will to kill underpins the most fundamental characteristic of war: that killing can be *just*. Hence combatants are not normally considered as murderers. Unless a nation is engaged in a Clausewitzian 'total war', there will be rules: killing will be controlled, such as limiting killing to last resort self-defence. Furthermore, many contemporary conflicts are not legally 'wars' but conflicts. Even wars of national survival do not absolve the leadership of moral obligations, as the state is part of an international system that interprets the state's actions. In contemporary conflicts, however,

where positively influencing the objective population is crucial, the decision to kill is particularly complex. It is therefore advantageous to gain broad consensus on the ethical justification for killing. Nevertheless, the irony of killing is inescapable; deciding to kill may be considered therefore in 'degrees of awfulness'.[16] Furthermore that 'degree' is affected by the risk that the combatant is facing.

Combatants accept risks in conflict that otherwise they would deem unacceptable. This is reflected by the conceptually and geographically representative cliché of a combatant 'going to war'. Notwithstanding the advantages of technological development, the acceptance of risk, including the risk to one's life, is critical as the decision to kill is an emotional contest.[17] When combined with the humanity of the cosmopolitan stoic, while it may be more ethical to remove the combatant from conflict and risk of being killed, removal of the combatant may make killing less ethical. Furthermore, the impact of personal risk on the ethics of defending against aggression is significant as 'Aggression is a singular and undifferentiated crime because, in all its forms, it challenges rights that are worth dying for.'[18] If aggression was opposed without risk of dying, this could be perceived as aggression being less of a crime and that the human price to counter aggression was one that might be unacceptable. In either case, if a combatant was *completely* removed from risk of death when deciding whether to kill was *just*, it would fundamentally change the ethical landscape of conflict.

Many have highlighted that such remote combatants do not physically 'go to war' and that being psychologically detached from the horrors of war, risks altering the character of war itself.[19] Evidence from the Vietnam War identified reductions in the psychological consequences for US Air Force pilots, operating thousands of feet above the jungle floor, when compared with their ground-based US Army colleagues. This 'morality of altitude' was attributed to the pilot's disconnection from the destruction his decisions caused.[20] The development of long-range RPAS control accentuates the concept by significantly increasing stand-off. Furthermore, removing the pilot from the aircraft reduces his exposure to risk. Consequently, this concept could be more contemporaneously expressed as the morality of disconnection. Disconnection threatens to change the ethical landscape, but only if one perceives that the quality of the decision to kill, the degree of personal risk taken by the combatant or the responsibility for his actions has fallen below a reasonably acceptable threshold. Indeed some have questioned whether dislocation risks the combatant's psychological well-being, as he realises he is unable to intervene when driven by cosmopolitan stoicism.[21] Others have questioned the potential psychological effect on dislocated decision-makers, who decide to kill a human target in another country while seated at a control station near their home.[22] If the degree of disconnection affects the ethical landscape, it is reasonable to suggest that the degree of autonomy would also affect it, so this too demands consideration.

While uninhabited systems can be relatively cheap when compared to manned systems, ironically the personnel budget required to operate uninhabited systems can be considerable.

A greater degree of autonomy could let one decision-making combatant supervise several systems concurrently, thus reducing the personnel burden while retaining control and responsibility. Moreover due to the processing power of modern computers, assuming it receives the necessary inputs, such computers could decide on the apposite option more quickly than a human could.[23] Such concepts are reliant on 'human supervisory control.'[24] Initially, human supervisory control would appear to offer something to many: reduced cost, quicker decisions and adequate control. Further analysis however proves paradoxical, highlighting the risk of ethical unacceptability. It is deemed legally acceptable that an RPAS operator can decide to commit an autonomous weapon system once he considers that it is capable of discriminating satisfactorily by limiting its options to those which are legal.[25] Yet as autonomy enables a reduction in human involvement, human machine interface issues multiply, which could degrade individual responsibility. Indeed although autonomy can offload many of the tasks from the combatant, allowing him to devote more attention to decisions, by the very nature of his detachment from those tasks, he is at greater risk of dislocation and insufficient understanding leading to inadequate decision-making. While human supervisory control offers personnel reductions and computer-aided decision-making, ironically human decision-making quality and reduced accountability risk undermining the ethical nature of the decision to kill. So what if the degree of autonomy is increased further?

A fully autonomous armed system is the extremity of the autonomous spectrum, yet it is not so futuristic when considering the current proliferation of robotic systems in industrial and military '5Ds tasks' or the seductiveness of technology to make war more humane. The critical element is not the mechanics of robotic systems, rather the implications of the development of artificial intelligence: a sentient system deciding to kill. Just because an autonomous system decides it *could* kill does not mean it *should* kill. While autonomous attack may be appropriate in some circumstances, numerous environments will remain where qualitative human judgement is essential. Indeed responsibility for a fully autonomous system's decision to kill may not be reasonably attributable. Ultimately, removal of the combatant's moral burden could dehumanise war. Academic opinion is split on whether any autonomous armed systems can make conceptually ethical decisions. There are compelling reasons for autonomous decision-making. Purely logical decisions could be more ethical than human decisions, as they are not emotionally value-laden. Moreover, due to the logic process, autonomous systems are constrained to follow orders; deviation into brutalisation or atrocity is unlikely, if appropriately programmed.[26] Conversely, a human's ability to think metaphorically and use analogies provides moral character; no robot can do this.[27] Furthermore, qualitative reasoning is intrinsically subjective and underpinned by feelings. Systems are not yet capable of feelings; sentience remains an aspiration. Indeed sentience may never be achieved, as it may prove impossible to produce a man-made version of the human mind.[28] Central to the ethical decision to kill are the abilities to discriminate and to act proportionally; tasks that draw heavily on subjective human assessment. For example, many argue that systems cannot discriminate sufficiently between civilians and combatants as although they can confirm 'not friendly', they cannot confirm anything else.[29] To act ethically, an autonomous system would require more

than iterative decision-making, it would need to feel guilt for wrong-doing and compassion to refuse an order. Guilt is theoretically achievable but compassion is elusive.[30] An autonomous system could not be used with the same ethical basis as a human decision-maker in the majority of contemporary conflict environments, as it would not be able to autonomously determine when it *could* but *should not* kill. Consequently unless artificial intelligence is trusted to automatically discriminate, act proportionally, deal with ambiguity, and react to guilt *and* compassion, it would require human authorisation to achieve an adequately ethical decision, both in practical terms and to ensure accountability. Finally, it could be argued that many people could be responsible for the actions of an autonomous system: the commander, support staff or the programmer. 'If the nature of the weapon or other means of war fighting, is such that it is *typically* impossible to identify or hold individuals responsible for the casualties that it causes then it … will not be ethical to employ this means of war.'[31] The acceptable degree of autonomy still has many questions unanswered and owing to the effect of cultural perspective, *the* answer may never exist.

Perceptions and Reactions to Uninhabited Systems

It is important to realise that no global ethical baseline exists. Consequential perceptions and the effects of cultural perspectives could affect the complete array of uninhabited systems. When considering the effect of other perspectives, such as that of the Muslim world, it is important to understand the differences, and that such are rarely diametrically opposed or even distinct. For example, 'there is not one canon of [Islamic] theological and juridical texts' and ideological concepts differ in time, place and interpretation.[32] Moreover there may never have been an Islamic parallel to the published Christian Just War literature.[33] Differentiation between the Muslim world and the *Western* rather than *Christian* world highlights that furthermore, cultural norms may be viewed through two societal lenses: one religious and the other secular. Many of these consequential incompatibilities are minor, and indeed there are many commonalities between post-modern secular Just War theory and pre-modern Islamic juristic tradition. Nevertheless differences are notably stark when considering the role of the human in war: the warrior ethos and the role of honour. Some argue that such cultural norms are increasingly divergent due to 'the insidious rise of post-modernism, ending the West's distinctive honour culture.'[34] In post-modern Western society, the description of a combatant as a warrior is uncommon. Industrial war has helped dull popular post-modern concepts, replacing self-esteem with 'respect', ideological belief with utilitarianism, and distancing concepts of bravery and honour. The proliferation of uninhabited systems risks catalysing the Western dilution of warrior ethos, and exacerbates the widening gap between post-modern and pre-modern societies. Warriors remain central to conflict; conflict without warriors illuminates the ethical landscape in the starkest contrast. Moreover, depending on whether the observer is friendly, an enemy or part of a population, their perspective of the uninhibited system could be similarly contrasted.

Uninhabited systems are frequently accepted as welcome additions to friendly forces due to their ability to conduct the '3Ds tasks.' From the author's own combat experience of air-land

operations though, the greatest value provided by an aircraft, manned or uninhabited, in a tense ground situation is not the mere presence of the aircraft, but the substantial verbal reassurance the aircrew provide. As standoff increases, so does the risk of disconnection detracting from effective verbal reassurance. Moreover due to perceptions of uneven risk exposure, the psychological bond between the uninhabited system, the remote operator and those in the battle is weakened. Conversely when remote stand-off is minimised, the bond between operator, fellow combatant and the uninhabited system can be strong. Indeed during 2003 in Iraq, this led US soldiers to mourn the loss of their 'PackBot' uninhabited system, which they had chosen to name 'Scooby-Doo'.[35]

From the enemy's perspective however, new technology can appear shocking and terrible; an uninhabited system killing an enemy in a comparably ethical manner may be more dispiriting for the dead enemy's colleagues than if killed by a human adversary.[36] Furthermore, the technological capability of uninhabited systems may not be understood by enemies, which can provide significant intelligence advantages for minimal human risk, as the enemy unwittingly fails to protect valuable information.[37] The unusual becomes usual however; uninhabited systems appear less shocking with time and unknown capabilities become understood. Moreover from the Islamic ideological perspective, uninhabited systems have been frequently perceived as dishonourable.[38] Uninhabited systems militate against stoicism; they create fear in enemies *and* reveal fear amongst friendly populations.[39] Any perceptions of dehumanised war risks offering those enemies, who are not truly ideologically guided, a justification for inhumane brutality and atavistic violence.[40] Paradoxically, a technological invention designed to be more humane may incite a less humane enemy response.

The perception of uninhabited systems within an objective population is likely to be different to, yet not necessarily opposed to, that of the friendly forces' homeland population. For democracies, the home population's support and sympathetic international opinion are essential for persistent campaigns. Yet it is the effective positive influence of the objective population to follow their nascent or redeveloping government that proffers success in such campaigns. The proliferation of uninhabited systems partially obscures the human face of conflict from these audiences, which could be perceived to change the ethical landscape. The home population can quickly acknowledge the humane advantages of uninhabited systems for the '3Ds tasks', as this translates to fewer dead and wounded countrymen. Popular support for all of the '5Ds tasks' is more problematic. Indeed, the language of such activity has become pejorative with increasing reference to 'drones' when pertaining to RPAS strikes, but terms such as 'UAV' frequently being used for '3Ds tasks'.

To win the contest of narratives in contemporary conflict therefore it is important to understand the likely reaction to uninhabited systems across an objective population. The use of uninhabited systems may be highly desirable when considering the enemy, yet by the population it may be considered ethically advantageous and disadvantageous; simultaneously minimising the external effect on the population's routine, yet potentially detrimentally altering

their view of foreign forces and local government. Uninhabited systems can reduce the footprint of occupying forces through substitution or because they supplement existing forces, but are controlled at range. Uninhabited systems could therefore provide reassurance for the objective population, assuming their activity was perceived as ethically acceptable. Indeed in the Federally Administered Tribal Areas of Pakistan (FATA), where RPAS strikes were initially overwhelmingly condemned by the objective population, their unpopularity diminished as they began to be perceived as a 'lesser evil' than the insurgents.[41] Conversely, uninhabited systems supplementing or substituting occupying forces could be perceived as diluting commitment to conflict resolution, because manpower-contributing nations demonstrate resolve by risking the lives of their own combatants.[42] Moreover, any enemy perception of cowardice through the use of uninhabited systems could easily spread to the objective population making conflicts harder to resolve, particularly if culturally akin to Pashtun belief that 'Courage is the coin of the realm.'[43] When combined with reduced physical presence stymieing genuine partnerships, occupying forces could be alienated from the objective population. Indeed contributing nations that minimise their manpower footprint are sometimes perceived as preferring safer, 'distant war'.[44] Yet there are fewer ethical challenges for the employment of uninhabited systems in geographically separate, contemporary military force-on-force short duration conflicts.[45] The most significant ethical challenges arise, however, when uninhabited systems are used where human interaction is vital, including counter-insurgencies and prolonged conflicts, where maintenance of moral ascendancy at home and in theatre is crucial.[46] In such campaigns, uninhabited systems may be successfully used in the short-term when targeting irreconcilables or forcing them from their desirable area of operations. A paradox exists however, as in the longer-term the destructive combination of uninhabited systems' highly technological nature and the ethical perceptions of their use can ferment 'accidental guerrilla syndrome' where more insurgents are bred from the objective population through the actions of coalition forces than are reconciled or killed.[47] Critically, the potential for perceived abandonment of combatant honour and warrior ethos or the popular perception of dehumanised war risks fundamentally changing the ethical landscape of conflict and brings with it significant implications.

Wider Implications of Uninhabited Systems

> ... instead of total war, we have the promise of easy war – easy in the sacrifices it demands of us, easy on our consciences, easy on our pocketbooks.[48]

The effects of uninhabited systems on the ethical landscape of counter-insurgency are not consistent for other forms of conflict or indeed activities that do not cross the legal threshold to be 'conflicts'. Uninhabited systems can successfully reduce the number of combatants exposed to risk in '5Ds tasks' and are therefore arguably sensible, humane tools for conflict resolution. Furthermore, advanced, closely-coupled sensors and weapon systems can reduce error margins, protecting civilians. Yet to risk fewer lives in conflict, governments may be attracted to choose uninhabited systems that are either perceived as being less ethically acceptable by other cultures, or are actually less ethically acceptable, because they indiscriminately

or disproportionately increase enemy and civilian casualties. Governments risk striving for 'humane warfare' but missing the irony or absurdity of the phrase and thus select practicality, mistakenly believing it brings ethical advantage.[49] Such quandaries are less evident in geographically distinct, force-on-force conflicts where uninhabited systems could significantly reduce combatant casualties on both sides by focussing on neutralising military equipment, consequently destroying the will to fight when facing an overwhelming force.[50] In prolonged campaigns, however, technologically leveraged dehumanised approaches are more likely to drive a wedge between post-modern and pre-modern societies, feeding perceptions of ethical inequality and producing disadvantageous influences of the enemy and objective population.[51] Such perceptions may be overcome if post-modern societies can successfully articulate uninhabited systems' ethical advantages in terms that are similarly acceptable to pre-modern societies. The RAF's adoption of the term '*Remotely Piloted* Aircraft'[52] to address the misconception that there is no human involvement in their operation is such an attempt. Notwithstanding the need to dispel misconceptions about uninhabited systems in order to realise their potential, inconsistent ethical perceptions will continue due to the audience's varied nature and inherent cultural inertia.

In March 2003, before Operation IRAQI FREEDOM, one prominent US academic suggested that notwithstanding the lack of proof that the realities of conflict had changed, the perception was evolving that the mass brutality of industrial twentieth century war was being replaced by 'easy war.' Indeed when considering the US's commitment to that contentious conflict, it was suggested that: 'Perhaps that's why Americans are so ready to go to war. There is no sense that we will have to bear any burden whatsoever in fighting it.'[53] Certainly Western governments pay close attention to their military's casualty rates, but whether there is a direct correlation between reduced losses and increased appetite for conflict is a point of contention. Some have argued the Hobbesian view that as risk is reduced, so is restraint.[54] Conversely others have recommended reasserting the net humanitarian advantages of uninhabited systems, rebutting any accusation of 'some abstract increased propensity for violence.'[55] If the proportionality and discriminatory capability of the uninhabited system is maintained, as autonomy increases and the combatant's exposure to risk reduces, the enticements for dehumanised conflict could intensify. Ironically, such enticements may gain ethical traction, if it is robustly argued that the ability for earlier intervention, leveraged by the lower-risk use of uninhabited systems rather than manned solutions, can reduce total casualties in the longer-term. Furthermore reduced casualty acceptance may detract from the likelihood of sustained conflict, which could be ethically advantageous or disadvantageous. If post-modern conflict is perceived to attract less personal or political risk, the forecast or actual number of friendly casualties that fundamentally changes the political will, for conflict commencement or continuation, could drastically reduce.

Uninhabited systems are already being used to conduct distant and deadly missions that would otherwise be unacceptable due to casualty aversion. Israel and the US have frequently used RPASs for targeted killings as preventative self-defence: precision strikes on insurgents

and terrorists before they can act. Indeed the US has annually increased their use since 2007.[56] Targeted killings by RPASs have been shown to be an effective counter-terrorism tactic, particularly in areas where the terrorist would be otherwise unreachable by either law enforcement authorities or the military. Targeted killings using RPASs in the FATA have however generated significant international controversy with many questioning their legality, including the UN's Special Rapporteur on extra-judicial killings.[57] Others have argued that they are legal, within certain boundaries, as 'the international normative paradigm of hostilities does not prohibit, but imposes extensive restraints on the method of targeted killing.'[58] Indeed some have blamed terrorists and insurgents for the controversy, as it is they who hide amongst the protected civilian population 'acting in gross violation of the rights of others and of the rules of war.'[59] US authorities had previously denounced what it deemed were Israeli extra-judicial killings of Palestinians.[60] More recently however, US authorities have remained notably quiet regarding the use of RPASs for targeted killings, even though they have been asked to formalise a framework for targeted killings and thus quell the ethical disquiet. Indeed some academics have concluded that on balance the sustainability of targeted killings should be ensured through open justification and agreement of their legitimacy.[61] Although the UK does not utilise preventative self-defence or conduct targeted killings, RPASs similar to those used for targeted killings by others are used by the RAF for offensive tasks to support land forces. Unless the legal and ethical differences in national approaches are explained, the increasing use of RPASs for targeted killings, risks wrongly stigmatising all RPASs, and uninhabited systems more broadly, as unethical.

Conclusion

The advent of uninhabited systems has led to the widely accepted realisation of the great utility they offer, so their development and proliferation are likely to continue. The considerable ethical advantage of uninhabited systems for dull, dangerous and dirty tasks is broadly accepted. It is predominantly those tasks which are deadly or which are distant that are crucial to the debate and which are already generating more ethical controversy. Concurrently, the ethical landscape of conflict is also changing, creating new ethical dilemmas.

While uninhabited systems and computer-aided decision-making offer the potential for greater objectiveness, using distance to assuage undesirable human emotions such as rage, they also potentially repress admirable human emotions, notably compassion. Furthermore, increasingly disconnected decision-making risks losing contextual sensitivity, which is fundamental to fine judgement and thus ethically robust decisions to kill. If the ethical basis for future conflict is to remain extant, broad agreement of the acceptable level of autonomy for uninhabited systems that can kill must be sought.[62] A greater degree of autonomy maybe acceptable in geographically distinct force-on-force operations, where the crux of the decision to kill is legal: whether the combatant uninhabited system operator *could* or *could not* kill. Such straightforward legal decisions are insufficient for contemporary hybrid conflicts however, where an additional ethical basis is required to answer whether the combatant *should* or *should not* kill.

Just as war itself is judged at least twice, so are uninhabited systems. The advent of uninhabited systems affects the principles that formed the ethical landscape *and* the consequential effects on that landscape, actual or perceived. The principle of distant and deadly uninhabited systems has altered the ethical landscape, but it is the consequential nature of use that has catalysed fundamental change. The risk reduction advantages of uninhabited systems have been seized upon by some as proof of cowardice and with implications for more conflicts, even though uninhabited systems were developed predominantly as a more humane tool for certain tasks. Therefore to maximise the potential advantages of uninhabited systems in contemporary conflict, requires clear articulation of their nature, including their degree of human control. Moreover, achievement of thorough ethical understanding demands cross-cultural debate regarding uninhabited systems' principles and consequences. Ironically, without such debate the remarkable success of uninhabited systems to conduct '5Ds tasks' could also be their principal limitation.

Although the ongoing drive for autonomy is understood, the ethical implications of uninhabited systems are not. Uninhabited systems are already reshaping the ethical landscape and full autonomy would fundamentally change it. Contemporary ethical perceptions of the use and implications of uninhabited systems, such as targeted killing and dehumanised war respectively, are disparate and risk mistakenly being perceived as owing to uninhabited systems themselves, rather than more accurately owing to wider ethical issues in contemporary conflict. Although conflated, such perceptions also risk fundamentally changing the ethical landscape. Nevertheless alteration to the ethical landscape of conflict could be constructive as well as destructive. In all cases therefore, ethical debate must at least keep pace with the development of uninhabited systems and ideally should lead it; if not we are destined to prove Azimov's hypothesis that '... science gathers knowledge faster than society gathers wisdom.'[63]

Notes

[1] This article is adapted from the author's *Does the Advent of Uninhabited Systems Fundamentally Affect the Ethical landscape of Contemporary Conflict?* (Advanced Command and Staff Course 13 Defence Research Project, Joint Services Command and Staff College, 2010).
[2] Isaac Asimov and Jason Shulman, eds., *Isaac Asimov's Book of Science and Nature Quotations* (New York: Weidenfeld & Nicolson,1988), 281.
[3] Brian Burridge, "Post-Modern Warfighting with Unmanned Vehicle Systems: Esoteric Chimera or Essential Capability?" *RUSI Journal* 150, no. 5 (2005): 20.
[4] United Kingdom, Royal Air Force, *Adoption of new terminology for the RAF: Remotely Piloted Air Systems*, 4 News Brief (London: Ministry of Defence, 2010), 1.
[5] William Boothby, *Weapons and the Law of Armed Conflict* (Oxford: Oxford University Press, 2009), 81.
[6] Allison Mardell, "Unmanned Aerial Vehicles – the Legal Perspective," in Owen Barnes, ed., *Air Power: UAVs: The Wider Context*, (Royal Air Force Directorate of Defence Studies, 2009), 69.
[7] Carl Von Clausewitz, *On War*, eds. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), 220.

[8] Colin Gray, "Future Warfare: Or, the Triumph of History," *RUSI Journal* 150, no. 5 (2005), 19.
[9] Frank Hoffman, *Conflict in the 21st Century: The Rise of Hybrid Wars* (Virginia: Potomac Institute for Policy Studies, 2007), 7.
[10] *Takfiri* is an extremist ideology in which non-Muslims and non-*Takfiri* Muslims 'are infidels who must be killed.' See David Kilcullen, *The Accidental Guerrilla: Fighting Small Wars in the Midst of a Big One* (New York: Oxford University Press, 2009), xviii.
[11] Just War theory including the concepts of *Jus ad Bellum* and *Jus in Bello* are based on St Thomas Aquinas's twelfth century adaptation of Augustine of Hippo's earlier theory.
[12] *Science of Global Security & Armed Conflict*, "Human Effects of Combat Technology: The Drone Debates," 23 June 2009, **http://globalcrim.blogspot.com/2009/06/human-effects-of-combat-technology.html** (accessed 6 January 2010).
[13] Bernd Debusmann, "Killer Robots and a Revolution in Warfare," *Reuters*, 22 April 2009, **http://blogs.reuters.com/great-debate/tag/uav** (accessed 29 October 2009).
[14] Noel Sharkey, "Grounds for Discrimination: Autonomous Robot Weapons," RUSI Defence Systems 11, no. 2 (2008): 88.
[15] Lord Bingham in Robert Verkaik, "Top judge: 'use of drones intolerable'," *Independent*, 6 July 2009, **http://www.independent.co.uk/news/uk/home-news/top-judge-use-of-drones-intolerable-1732756.html** (accessed 25 November 2009).
[16] Richard Wasserstrom, "On the Morality of War: A Preliminary Inquiry" in Coady and Primoratz, *Military Ethics*, 19.
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