

The surprise attack on the Saudi Abqaiq and Khurais oil facilities in September has drawn attention to the increasing role of Unmanned Aerial Vehicles (UAVs), commonly known as drones, in conflict. Innovations in military technologies require a new strategic discourse, but in the realm of unmanned warfare there remains a number of crucial unanswered questions, both about the impact of UAVs on political and military decision making, and the ethical and legal implications of their usage.

An array of questions has emerged with the increased use of UAVs in recent years about their impact on political and military decision making, not all of which have been answered. How does unmanned aerial warfare change the calculus of decision makers in deciding whether to resort to military power or diplomacy? Are drones a restraining factor or an inducement to use military power? There is also a list of ethical and legal concerns: When and how is it permissible to use these weapons in line with international law? And who is accountable for the consequences of using drones, especially when non-combatants are hurt?^[1]

Drones develop into weapon of choice in modern conflict

UAVs in their modern incarnation as versatile weapons used in a wide range of military missions date back to the end of the 1990s but have mainly been employed in the post 9/11 era, initially against Al Qaeda in Afghanistan and Pakistan.^[2]

Sometimes confused with fully autonomous weapons or “robot killers,” drones are different in one crucial respect: they are piloted by humans, who operate the aircraft via satellite links from a distance, sometimes thousands of miles away.

Developed during the Cold War, mainly in the US for surveillance purposes due to their obvious advantage of avoiding the capture of pilots in case of being shot down by the enemy, drones have gradually become a weapon of choice because of their affordability, flexibility of use and disposability.

At present more than 30 countries are employing UAVs or developing such a capability.^[3] The US is still the leading developer and manufacturer, although countries such as China, India and Israel are developing and selling their own military-purpose drones around the world.

Surveillance and combat capabilities accelerating

If in their early days drones were used mainly for gathering intelligence, they are now much more versatile and, in many cases, considered straightforward replacements for conventional fighter jets. Today's military or combat drones can carry radars, sonars and surveillance units, as well as guided bombs and air-to-ground missiles.

UAVs range from the very tiny – such as the one-inch-by-four-inch Norwegian Black Hornet, used by soldiers fighting in urban areas to look over walls and around corners – to the very large, including the US Predator and Reaper, which has a wingspan of 66 ft, is 36 ft long and 12.5 ft high.^[4]

One advantage of drones is that, unlike manned jet fighters, they can stay airborne for much longer, as long as 120 hours. Another is their versatility: stealth UAVs, for example, have low radar, visual and thermal signatures and the ability to carry highly sophisticated and lethal munitions, which makes them useful in a range of missions. One concern arising from the introduction of this type of drone is their potential use in targeted assassinations by – for example – a politician, acting on the assumption that there would be little risk of exposing the identity of their country or losing pilots.^[5]

Another category of UAV carries “loitering munitions.” As the term suggests, these have the ability to hover around potential targets and attack them once they are located. The combination of remaining airborne for long periods and being hard to detect while carrying enough ammunition to inflict severe damage without their sender necessarily being identified, coupled with the ability to act faster in real time and abort a mission instantly if necessary, impacts how decision makers will choose to use them – whether they are state or non-state actors.^[6] It is most likely that this type of Iranian-made drone was behind the attack on the Aramco oil installations in Saudi Arabia.

However, drones are not invincible; as with any other technology there is always the potential for an electronic “antidote” to disrupt their operation. While the emergence of more sophisticated UAVs in terms of ammunition, detection and airborne duration should be expected, air-defence systems will develop in parallel, with the ability to at least contain the threat emanating from combat drones.

Lessons to learn from UAVs before advent of fully autonomous weapons

As the development drone technology continues, and at an even faster pace, decisions of where and how to use it will continue to be a source of grave concern.

[The attack on the Saudi oil installations](#) illustrates both the destructive power of drones and the difficulties actors face in responding to them. While there were no casualties out of the strikes, in the immediate aftermath 5% of oil production was cut, and with that came the inevitable increase in oil prices, an event which reverberated around the world.

On the other hand, the lack of any solid evidence of who was behind the raid meant that an immediate retaliation and further escalation was avoided, something that a more conventional attack would not have allowed.

While this may be considered by some a positive outcome for this particular event, the illusion that using unmanned weapons with precision and the (near) ability to plausibly deny their use is a dangerous one. It may lead to increasingly trigger happy actors, who order the deployment of drones while ignoring international, war and humanitarian law and, at times, the likely retaliatory actions by those who are attacked.

New technologies require new thinking about how to use them, and innovations in military technologies require a new strategic discourse. Drones are not some sort of video game; not only are they changing the rules of war, they stand to be precursors of fully autonomous weapons in the future.

Yossi Mekelberg is a professor of international relations and the faculty lead on outreach projects at Regent's University, London, and a senior consulting research fellow with Chatham House's MENA programme. His interests include politics of the Middle East, Israeli politics, the Middle East peace process, International relations theory and US foreign policy towards the region. Yossi is a consultant at Castlereagh Associates.

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