



Shining a spotlight
on military drones

Israel's drone wars: An update

'PRECISE' STRIKES: FRACTURED BODIES, FRACTURED LIVES



Front Cover image: Israel's Heron TP drone at Tel Nof Air Force base, February 2010. Credit: UPI/Debbie Hill.

Note: The term 'drone' is used interchangeably with 'Unmanned Aerial Vehicle (UAV)'

Drone Wars UK is a small British NGO established in 2010 to undertake research and advocacy around the use of armed drones. We believe that the growing use of remotely-controlled, armed unmanned systems is encouraging and enabling a lowering of the threshold for the use of lethal force as well as eroding well established human rights norms. While some argue that the technology itself is neutral, we believe that drones are a danger to global peace and security. We have seen over the past decade that once these systems are in the armoury, the temptation to use them becomes great, even beyond the constraints of international law. As more countries develop or acquire this technology, the danger to global peace and security grows.

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“Over the past decade, the operational use of drones here has increased and there is a clear connection to global demand. People hear about it, and they want this wonderful technology too. The Lebanon war, Operation Cast Lead, targeted killings...whenever drone use is publicised it increases demand. Cast Lead is a good example because the widespread use of drones was all documented and reported. But it happened in the past too, only with less publicity.”

(Danny Birchmann, Israel Aerospace Industries) ¹

“My kids think of war and destruction when they hear drones. They cry and lose their ability to concentrate. I find it hard to make them sleep. It takes me a long time. The drones cause many psychological problems for the children, which results in bedwetting, nail biting, and sudden screaming. The moment my child hears the sound of the drone, he runs and sits in my lap, I find no words to calm him other than hugging him.”

(Deena Waled, Gaza) ²

¹ 'Israel's Drone Dealers', People and Power: Al Jazeera

² 'Sleepless in Gaza: Israeli Drone War in the Gaza Strip', Rosa Luxemburg Stiftung Regional Office Palestine.

1 INTRODUCTION

The use of unmanned aerial vehicles (UAVs), commonly known as drones, is increasing rapidly worldwide. Having played a pioneering role in their development and use, Israel has generated substantial revenue from exports of UAVs, becoming the largest exporter of military drones globally.³

In 2014, Drone Wars UK published 'Israel and the Drone Wars: Examining Israel's production, use and proliferation of UAV's'. The report looked beyond the veil of secrecy that surrounds Israel's development and deployment of armed drones to explore their use and impact, particularly in Gaza. In the five years since, Israel has continued to use drones to attack targets in Gaza and elsewhere, and to export the technology widely.

As Drone Wars' 2014 report detailed, Israel has been manufacturing and using unmanned military technology since the 1970s.⁴ Yet Israel's use of drones to launch attacks continues to be shrouded in secrecy and denial.⁵ This despite clear evidence, including leaked video footage, that Israel has used drones for reconnaissance and monitoring, and to launch attacks since the eruption of the second intifada in 2000.⁶ According to Ha'aretz, drones now account for 70% of the Israeli Air Force's (IAF) flight hours.⁷

While advocates present drones in humanitarian terms as effectively minimising civilian casualties in so-called 'virtuous wars',⁸ serious concerns have been raised by human rights organisations, UN Special Rapporteurs, survivors of

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- 3 George Arnett, 'The numbers behind the worldwide trade in drones', *The Guardian*, 16 Mar 2016, <https://www.theguardian.com/news/datablog/2015/mar/16/numbers-behind-worldwide-trade-in-drones-uk-israel>, last accessed 07 Mar 2019
Mary Dobbins and Chris Cole, 'Israel and the Drone Wars', Drone Wars UK, 10 Jan 2014, <https://dronewarsuk.files.wordpress.com/2014/01/israel-and-the-drone-wars.pdf>, last accessed 06 Mar 2019.
- 4 'Israel and the Drone Wars', Drone Wars UK.
- 5 Cora Currier and Henrik Moltke, 'Spies in the Sky: Israeli Drone Fleet Hacked by British and American Intelligence', *The Intercept*, 29 Jan 2016, <https://theintercept.com/2016/01/28/israeli-drone-feeds-hacked-by-british-and-american-intelligence/>, last accessed 06 Mar 2019.
Gili Cohen, 'Israeli Army Refuses to Disclose Its Protocols for Operating Drones', *Ha'aretz*, 19 Oct 2016, <https://www.haaretz.com/israel-news/.premium-israeli-army-refuses-to-disclose-drone-operating-protocols-1.5449147>, last accessed 06 Mar 2019.
- 6 Cora Currier and Henrik Moltke, 'Anarchist Snapshots: Hacked images from Israel's Drone Fleet', *The Intercept*, 29 Jan 2016, <https://theintercept.com/2016/01/28/hacked-images-from-israels-drone-fleet/>, last accessed 06 Mar 2019.
Israel and the Drone Wars', Drone Wars UK.
- 7 Ha'aretz editorial, 'Israel's Conspiracy of Silence Over its Use of Drones', *Ha'aretz*, 25 Oct 2016, <https://www.haaretz.com/opinion/.premium-israel-s-conspiracy-of-silence-over-its-use-of-drones-1.5452815>, last accessed 06 Mar 2019.
- 8 James Der Derian, 'Virtuous War: Mapping the Military-industrial-media-entertainment Network', 2009, 2nd edn. New York: Routledge.

drone attacks, and national parliaments.⁹ The lived experience of drone warfare in Palestine highlights the cost to life and human rights of remote-controlled weaponry, indicating that discourses of precision and risk-reduction do little to convey the terror and threat of omnipresent overhead drones.¹⁰

Meanwhile, Israel continues to benefit from the lucrative export of drone technology. With unmanned military systems now becoming commonplace globally – and the number of countries operating drones with combat capabilities increasing fourfold between 2013 and 2018 – Israel's drone exports are likely to remain profitable.¹¹ A salesman for the state-owned Israel Aerospace Industries (IAI) declared in relation to the company's drone exports, "These are very good times for us. Sales are on the rise every year."¹²

With drone warfare increasingly accepted and celebrated in Israel and beyond as a new 'humanitarian' form of war, Israel's production and use of weaponised drones continues to grow.¹³ Meanwhile the trauma and destruction beneath the drones in Gaza, largely unseen by the Israeli public, also increases.¹⁴

This briefing, which brings our earlier report up to date, discusses Israel's growing drone fleet and the claims by its advocates, followed by an examination of the experiences of those who live beneath the drones. We conclude with a discussion of Israel's drone use outside of occupied Palestine, and an update on exports of the technology.

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- 9 Ann Rogers, 'Investigating the Relationship Between Drone Warfare and Civilian Casualties in Gaza', *Journal of Strategic Security* 7: 4 (2014): 94-107, <https://scholarcommons.usf.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1406&context=jss>, last accessed 06 Mar 2019
- Derek Gregory, 'From a View to a Kill: Drones and Late Modern War', *Theory Culture Society*, (2011) 28: 188, <http://www.qub.ac.uk/Research/GRI/mitchell-institute/FileStore/Fileupload,756503,en.pdf>, last accessed 06 Mar 2019
- 10 Atef Abu Saif, 'Sleepless in Gaza: Israeli Drone War in the Gaza Strip', Rosa Luxemburg Stiftung Regional Office Palestine, Feb 2014, <http://www.rosa-luxemburg.com/wp-content/uploads/2014/02/Sleepless-in-Gaza-by-Atef-Abu-Saif-RLS-Palestine.pdf>, last accessed 7 Mar 2019
- 11 Jo Frew, 'Drone Wars: The Next Generation', *Drone Wars UK*, May 2018, <https://dronewarsuk.files.wordpress.com/2018/05/dw-nextgeneration-web.pdf>, last accessed 06 Mar 2019.
- 12 Al Jazeera, 'Israel's Drone Dealers', *People and Power: Al Jazeera*, 01 May 2014, <https://www.aljazeera.com/programmes/peopleandpower/2014/04/201442911431250545.html>, Last accessed 06 Mar 2019.
- 13 Derek Gregory, 'War and Peace', *Transactions of the Institute of British Geographers* (2010) 35: 154 – 86, <https://geographicalimagination.files.wordpress.com/2012/07/gregory-war-and-peace.pdf>, last accessed 07 Mar 2019.
- 'The numbers behind the worldwide trade in drones', *The Guardian*.
- 14 Therezia Cooper and Tom Anderson, 'Gaza: Life beneath the Drones', *Corporate Watch*, Feb 2015, <https://corporateoccupation.org/wp-content/uploads/sites/34/2015/02/life-beneath-the-drones-small-NEW.pdf>, last accessed 07 Mar 2019.

“A RAPIDLY-GROWING DIVISION”

Israel's drones and their operators

“You are joining a rapidly-growing division which is becoming an integral part of Israel’s national security ... RPAVs [Remotely Piloted Aerial Vehicles] perform reconnaissance and support missions - day and night. You are about to become a part of this activity.”

Maj. Gen. Amikam Norkin, Commander of the IAF at the 2017 graduation ceremony of the 30th RPAV Operator Course at Palmahim Airforce Base (AFB).¹⁵

In June 2018, the Commander of Palmahim Air Force Base, Brig. Gen. Nimrod Shifroni, addressed the largest ever cohort of graduates of its drone operator course, observing that “the field of RPAVs [remotely piloted aerial vehicles, or drones] is growing at a rapid pace. We integrate more and more aircraft with every passing year, which then perform more and more missions.”¹⁶

Despite this, much of Israel’s drone programme remains shrouded in official secrecy, with the government refusing to admit the use of drones to launch attacks, despite many leaked images demonstrating the contrary.¹⁷ Instead, ambiguous statements are issued, asserting, for example, that “the RPAV Division’s missions include aerial photography and surveillance *among others*” (emphasis added).¹⁸ In this context of silence, Israeli news commentators have suggested that military censorship has closed down public debate on the use of drones as a technology of killing.¹⁹

The November 2012 ‘Operation Pillar of Defence’ assault on Gaza marked an early turning point in Israel’s use of drones, with no ‘boots of the ground’ for the first time during a major military offensive.²⁰ Drones were also used extensively in Operation Protective Edge, the 2014 Israeli military action in Gaza, which killed over 2100 Palestinians, 66 Israeli soldiers, and seven civilians in Israel.²¹ Of the Palestinians killed, by Israel’s own admission, 53% were civilian, while the UN estimates the figure to be closer to 70%.²²

15 Hadas Levav, ‘Our Future Operators’, Israeli Air Force, 26 Dec 2017, <http://iaf.org.il/4467-49833-en/IAF.aspx> last accessed 07 Mar 2019

16 Carmel Stern, ‘New RPAV Operators’, Israeli Air Force, 21 Jun 2018, <http://iaf.co.il/4474-50248-en/IAF.aspx?fuck>, last accessed 07 Mar 2019

17 ‘Anarchist Snapshots: Hacked images from Israel’s Drone Fleet’, The Intercept. ‘Spies in the Sky: Israeli Drone Fleet Hacked by British and American Intelligence’, The Intercept.

18 ‘New RPAV Operators’, Israeli Air Force.

19 ‘Israeli Army Refuses to Disclose Its Protocols for Operating Drones’, Ha’aretz.

20 Gabriele Barbati, ‘Drones, Warriors Or Robots? Israel Debates Tomorrow’s Conflicts’, International Business Times, 07 May 2013, <https://www.ibtimes.com/drones-warriors-or-robots-israel-debates-tomorrows-conflicts-1326949>, last accessed 07 Mar 2019.

21 BBC, ‘Gaza crisis: Toll of operations in Gaza’, BBC, 1st Sep 2014, <https://www.bbc.co.uk/news/world-middle-east-28439404>, last accessed 07 Mar 2014.

‘Investigating the Relationship Between Drone Warfare and Civilian Casualties in Gaza’, Journal of Strategic Security.

22 ‘Gaza crisis: Toll of operations in Gaza’, BBC.

In this context, Israel's drone manufacturers expect a rosy future for themselves. Claiming that "we are moving into the robotic era", Giora Katz, vice president of a leading Israeli military manufacturing company, Rafael Advanced Defense Systems, predicts that by 2025 a full one-third of all Israeli military hardware will be unmanned.²³ Meanwhile, IAI Chairman Harel Locker believes that "unmanned aircraft will replace [manned aircraft] 10, 15 years from now, there is no need for [pilots...]. Everything, sea vessels, submarines – everything will be unmanned."²⁴

Israel's drone fleet currently includes long-endurance aircraft such as Elbit Systems Hermes 450, upsized and updated to the Hermes 900 "Kochav" (Star), and IAI's Heron-1 "Shoval" (trail), and Heron TP "Eitan" (Steadfast).²⁵ The Hermes 900 is boasted to be an all-weather drone with a wingspan of 15m, capable of carrying payload up to 300kg. IAI's giant Heron TP has a wing span of 26m and a payload of over 1000kg; it can remain airborne for close to 40 hours and cover a distance of up to 7,500km.²⁶

These drones have been used in Gaza. The Hermes 900 and Eitan were both used during Operation Protective Edge, during which 37% of fatalities were attributed to drone attacks, according to an estimate by the Gaza-based Al Mezan Center for Human Rights.²⁷

In a new development, small commercial drones have been used to drop suffocating clouds of tear gas on Palestinian protesters in Gaza and the West Bank.²⁸ Israeli defence company ISPRA, which specialises in "non-lethal devices for riot control, crowd management, anti-terror equipment and police gear", has developed a small consumer drone into the 'Cyclone Riot Control Drone System', which carries nine aluminium gas cartridges designed to burn up on release.²⁹ Two newer models have also recently been reported. One releases gas with an aerosol mechanism; another is a helicopter-style drone which carries rubber-bursting grenades with metal tops that disperse indiscriminately as they fall, releasing their payload of gas.³⁰

23 Medea Benjamin, 'Drone Warfare Killing by Remote Control', 2013, New York: Verso.

24 Jill Aitoro, 'IAI chief talks international security, makes a bold prediction for unmanned tech', Defense News, 13 Aug 2018, <https://www.defensenews.com/top-100/2018/08/09/iai-chief-talks-international-security-makes-a-bold-prediction-for-unmanned-tech/>, last accessed 07 Mar 2019.

25 Arie Egozi, 'Israel to acquire more Hermes 900s', Flight Global, 20 Dec 2016, <https://www.flightglobal.com/news/articles/israel-to-acquire-more-hermes-900s-432591/> last accessed 07 Mar 2019. Corporate Watch, 'Elbit Systems: Company Profile', Corporate Watch, 06 Feb 2019, <https://corporatewatch.org/elbit-systems-company-profile-2/>, last accessed 07 Mar 2019.

26 Anna Ahronheim, 'Israel Air Force Upgrading its Long Range Strategic Eitan Drone', Jerusalem Post, 28 Sep 2017, <https://www.jpost.com/Israel-News/Israel-Air-Force-upgrading-its-long-range-strategic-Eitan-drone-506222> last accessed 07 Mar 2019.

IAI, 'Heron TP, IAI, 2002' http://www.iai.co.il/2013/18900-37204-en/BusinessAreas_UnmannedAirSystems_HeronFamily.aspx last accessed 07 Mar 2019

27 'Gaza: Life beneath the Drones', Corporate Watch.

Anna Ahronheim, 'Watch: Air Force Declares Full Operational Capability of Upgraded Drone', The Jerusalem Post, 23 Aug 2017, <https://www.jpost.com/Israel-News/WATCH-Air-Force-declares-full-operational-capability-of-upgraded-drone-503182>, last accessed 07 Mar 2019.

Charlotte Silver, 'Why has Israel censored reporting on drones?' The Electronic Intifada, 18 Apr 2016, <https://electronicintifada.net/blogs/charlotte-silver/why-has-israel-censored-reporting-drones>, last accessed 17 Apr 2019.

28 Daniel Hilton, 'Drones over Gaza: How Israel tested its latest technology on protesters', Middle East Eye, 16 May 2018, <https://www.middleeasteye.net/news/drones-over-gaza-how-israel-tested-its-latest-technology-protesters>, last accessed 08 Mar 2019.

29 Faine Greenwood and Ossama A. Zaqqout, 'Drones Don't Wear Uniforms. They Should'. Foreign Policy, 22 May 2018, <https://foreignpolicy.com/2018/05/22/drones-dont-wear-uniforms-they-should/>, last accessed 08 Mar 2019.

30 'Drones over Gaza: How Israel tested its latest technology on protesters', Middle East Eye

Since 'The Great March of Return', a sustained period of Palestinian protest which began in March 2018, a sharp increase in reports show clear evidence that Israeli forces have been using commercial drones for military purposes. Five types of commercial drone have reportedly been used by Israeli forces to stifle protest.³¹ Video footage shows drones, said by the Border Police Deputy Commissioner Yaakov Shabtai to "neutralise any danger to the troops", dropping gas on a communal tent of Palestinian women and children, 500 metres from the border where there was no evident provocation.³² There are also reports of clearly marked journalists being targeted, and "panic ensu[ing]" among protesters as "people [ran] in all directions unsure of where to go as the drones hovered above our heads waiting to drop tear gas". Up to 980 Palestinians were allegedly wounded by tear gas in one day of protest against the military occupation.³³ Other reports suggest that further models are being experimented with, while reservists and senior officers who are drone hobbyists are being deployed as operators.³⁴

Such military use of commercial drones is problematic under both international humanitarian law and international human rights law. By failing to mark its drones as Israeli, and as military aircraft, Israel violates the principle of distinction, which ensures that both combatants and civilians can distinguish military from civilian vehicles, and that the deploying nation of military aircraft is clearly displayed.³⁵ In addition, the 1993 Chemical Weapons Convention forbids the use of tear gas in warfare in most circumstances.

With a drone fleet ranging from small commercial drones to enormous aerial drones, and operators from hobbyists to highly trained specialists, Israeli military action in occupied Palestine is increasingly remote-controlled. Despite the official secrecy surrounding the lethal use of drones, "an increasing numbers of missions are going from the manned flight to the unmanned world", according to an IAF Commander cited in the Jerusalem Post.³⁶

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- 31 Judah Ari Gross, 'Despite concerns, senior IDF technology officer says anti-kite drones a success', The Times of Israel, 8 Jun 2018, <https://www.timesofisrael.com/disputing-news-report-colonel-dec-iares-idfs-anti-kite-drones-a-success/>, last accessed 08 Mar 2018.
- 32 Nick Waters, 'First ISIS, then Iraq, now Israel: IDF Use of Commercial Drones', Belling Cat, 19 June 2018, <https://www.bellingcat.com/news/mena/2018/06/18/first-isis-iraq-now-israel-idf-use-commercial-drones/>, last accessed 08 Mar 2018.
- 33 'Drones over Gaza: How Israel tested its latest technology on protesters', Middle East Eye
- 34 'Drones over Gaza: How Israel tested its latest technology on protesters', Middle East Eye
- 35 Judah Ari Gross, 'Despite concerns, senior IDF technology officer says anti-kite drones a success', The Times of Israel, 8 Jun 2018, <https://www.timesofisrael.com/disputing-news-report-colonel-declares-idfs-anti-kite-drones-a-success/>, last accessed 08 Mar 2018.
- 36 Nick Waters, 'First ISIS, then Iraq, now Israel: IDF Use of Commercial Drones', Belling Cat, 19 June 2018, <https://www.bellingcat.com/news/mena/2018/06/18/first-isis-iraq-now-israel-idf-use-commercial-drones/>, last accessed 08 Mar 2018.
- 37 'Drones Don't Wear Uniforms. They Should'. Foreign Policy.
- 38 Yaakov Lappin, 'IAF Drone Center Growing Above and Beyond', The Jerusalem Post, 24 Dec 2014, <https://www.jpost.com/Israel-News/IAF-drone-training-center-growing-above-and-beyond-385575>, last accessed 08 Mar 2019.

“ACCESS, PERSISTENCE, ACCURACY.”

The humanitarian claims made for drone technology

Drones are routinely presented in sales pitches and PR campaigns as technological manifestations of military ‘access-persistence-accuracy’, that is, able to assist in the identification, surveillance and obliteration of perceived threats through the use of “precision munitions combined with advanced intelligence” (Lt. Col. Peter Lerner, spokesman for the Israel Defense Forces, IDF).³⁷ Specifically, drones are celebrated for being “cheaper to run”, carrying “no risk to the lives of operators”, and providing a constant airborne presence achieved through the shift rotation of their remote operators.³⁸ Drones are also frequently preferred for use in areas considered too dangerous for manned missions. According to Lt.-Col. S. of the Israeli Air Force (IAF), “you can’t always send fighter jets to places the Eitan can go”.³⁹

Israel, in line with other states with drone fleets, has argued that the technology offers more precision than manned missions, minimising the risk to civilians. However, the government has shunned accountability by keeping drone use from the public eye. A sustained public relations offensive aims to convince observers that this remote-controlled warfare satisfies the legal conditions of proportionality, distinction, and necessity with regard to risk to civilian life. Without explicitly naming the use of drones in attack missions, the Israeli Foreign Ministry stresses that it uses “the most sophisticated weapons available today in order to pinpoint and target only legitimate military objectives and minimise collateral damage to civilians.”⁴⁰

37 Isabel Kershner, ‘Israel Orders Airstrike Against Gaza Militant’, The New York Times, 9 Feb 2014, <https://www.nytimes.com/2014/02/10/world/middleeast/2-are-wounded-in-israeli-airstrike-in-gaza.html> last accessed 12 Mar 2019.

‘Extraordinary Measures’, The Intercept.

38 ‘IAF Drone Center Growing Above and Beyond’, The Jerusalem Post. Investigating the Relationship Between Drone Warfare and Civilian Casualties in Gaza’, Journal of Strategic Security.

39 Israel Air Force Upgrading its Long Range Strategic Eitan Drone’, Jerusalem Post.

40 Ann Rogers, ‘If Israel has better drones than anyone, why are so many innocent people dying?’, New Statesman, 14 Aug 2014, <https://www.newstatesman.com/politics/2014/08/if-israel-has-better-drones-anyone-why-are-so-many-innocent-people-dying>, last accessed 12 Mar 2019. ‘Anarchist Snapshots: Hacked images from Israel’s Drone Fleet’, The Intercept.

In March 2014, an IDF drone operator told CBN News that "probably the most important thing that the UAVs help during combat is to distinguish terrorists from civilians".⁴¹ Overlooking the empathic degradation of the emotionally detached, video-game nature of drone warfare, IAF commanders have lauded drones for enabling them to make the "right decisions during missions".⁴² Meanwhile, "complex sensors and better optics" are said to be a "breakthrough in our ability to investigate", supposedly helping the IAF "to prevent harm to non-combatants [through] the ability to see down to a resolution that can tell us if the person on the ground is man, woman, terrorist or journalist" (Col. E., commander of the IAF's UAV, Intelligence, and Electronic Warfare Branch).⁴³ Despite ample evidence to the contrary, some of which is discussed in the next section, Israel has been praised for avoiding civilian casualties by using drones in military campaigns.⁴⁴

Emphasising these attributes, advocates of drone technology present it in humanitarian terms, as an innovation which can eliminate a perceived threat while saving innocent lives. With this ethical framing, Israel has publicly undertaken targeted killing campaigns since the second intifada, with drones the weapon of choice.⁴⁵ Having "invented the targeted assassination thesis", says Colonel Daniel Reisner, the former head of the International Law Department of the IDF, "we had to push it," and this has coincided with a push to depict drones as "extremely precise".⁴⁶

However, such claims do little to account for the widespread civilian deaths, injury and psychological trauma caused by Israel's use of drones. We now turn to the experience of those living beneath them.⁴⁷

41 CBN News, 'Israeli Military Using Drones to Save Lives', CBN News, 9 Aug 2014, <http://www1.cbn.com/cbnnews/insideisrael/2014/March/IDF-Uses-Drones-to-Save-Lives> last accessed 12 Mar 2014

42 'IAF Drone Center Growing Above and Beyond', The Jerusalem Post. Marigold Warner, 'Manufacturing the drones Above Gaza', British Journal of Photography, 17 Jul 2018, <https://www.bjp-online.com/2018/07/gaza-drones/> last accessed 12 Mar 2019.

43 Yaakov Lappin, 'IAF: Hermes 900 drone 'disrupts any enemy'', Jerusalem Post, 21 Apr 2015, <https://www.jpost.com/Arab-Israeli-Conflict/IAF-Hermes-900-drone-disrupts-any-enemy-398749>, last accessed 12 Mar 2019.

44 Reuters, 'Dempsey: Israel Went to 'Extraordinary Length' to Avoid Civilian Casualties in Gaza', Ha'aretz, 7 Nov 014, <https://www.haaretz.com/dempsey-israel-tried-to-avoid-casualties-in-gaza-1.5325671> last accessed 12 Mar 2019.

45 Amos Barshad, 'Extraordinary Measures', The Intercept, 7 Oct 2018, <https://theintercept.com/2018/10/07/israel-palestine-us-drone-strikes/>, last accessed 12 Mar 2019. Ronen Bergman, 'How Israel Won a War but Paid a High Moral Price', Foreign Policy, 3 Feb 2018, <https://foreignpolicy.com/2018/02/03/how-israel-won-the-war-against-suicide-bombers-but-lost-its-moral-compass-ronen-bergman/>, last accessed 12 Mar 2019.

46 'Investigating the Relationship Between Drone Warfare and Civilian Casualties in Gaza', Journal of Strategic Security.

'Israel Air Force Upgrading its Long Range Strategic Eitan Drone', Jerusalem Post. 'Extraordinary Measures', The Intercept.

47 'If Israel has better drones than anyone, why are so many innocent people dying?', New Statesman.

“IN A MATTER OF SECONDS, THEY WERE CUT TO PIECES.”

Life and death beneath the drones in Gaza

Neither physical nor psychological escape from the realities of occupation are an option for the 1.8 million people living beneath Israel's drones in the tiny and besieged Gaza Strip. Although Israel withdrew settlers and troops from Gaza in 2005, it completely controls the Strip's borders, land, airspace and sea through a blockade and related restrictions. The UN Secretary-General has declared that Israel's conduct in Gaza directly contravenes international humanitarian law, “target[ing] and impos[ing] hardship on the civilian population, effectively penalising them for acts they have not committed.”⁴⁸ This control is enforced not only by Israeli soldiers constantly stationed at the border, and warships a few kilometres from the shore, but also by the perennial presence of remotely controlled drones in the skies.⁴⁹

Referring to the total domination of the skies by Israel's drones, Esam Younis, a resident of Gaza, observes that “the Israelis went out from the doors [in 2005], but they returned from the windows. Through their usage of drones, they have become present in the bedrooms of the people in Gaza.”⁵⁰ Israel now hovers permanently over the enclave, to deadly and devastating effect.

As stated in our 2014 report, Israel's official stance of secrecy and denial belies the ample evidence of drone attacks in Gaza from Palestinian and international sources since 2004.⁵¹ With Operation Pillar of Defence, the 2012 assault on Gaza, marking a turning point in Israeli high-tech remote warfare, Israel continued to rely on drones for unmanned killing in Operation Protective Edge in 2014, as detailed in our earlier report.⁵² This report focuses on drone use in Gaza in the five years since, demonstrating the clear and extensive harm it has caused to Palestinians, despite Israel's claims for the humanitarian credentials of the technology.

While Hagai El-Ad, the director of the Israeli human rights group B'Tselem, states that Israel's use of armed drones is something of an open secret, details of their

48 OCHA, 'Gaza Strip', UN Office for the Coordination of Humanitarian Affairs, 13 Feb 2019, <https://www.ochaopt.org/location/gaza-strip> last accessed 13 Mar 2019.

49 'Gaza: Life beneath the Drones', Corporate Watch.

50 'Sleepless in Gaza: Israeli Drone War in the Gaza Strip', Rosa Luxemburg Stiftung Regional Office Palestine.

51 'Israel and the Drone Wars', Drone Wars UK.

52 'Drones, Warriors Or Robots? Israel Debates Tomorrow's Conflicts', International Business Times. Investigating the Relationship Between Drone Warfare and Civilian Casualties in Gaza', Journal of Strategic Security.

use remain classified, as do official casualty estimates.⁵³ Independent estimates are difficult to obtain and are, in any case, provisional, partly because the source of an attack – by drone or other means – is difficult to discern from the ground.

Nonetheless, those monitoring from the ground in Gaza believe that the proportion of attacks carried out by drones is increasing.⁵⁴ According to the Al Mezan Center for Human Rights, drones were estimated to account for 37% of Palestinian fatalities during Operation Protective Edge; of the approximately 2,100 Palestinians killed during the offensive, 70% had allegedly not taken part in the fighting, including 519 minors.⁵⁵ A 2019 Lancet study of 254 patients with traumatic amputations in Gaza found that drone attacks were the most common cause of their injury, and that these injuries tended to be more severe than those caused by explosive weapons from other sources (e.g. tanks).⁵⁶ The study concluded:

“Our finding of a high prevalence of drone-related amputations compared with amputations caused by other explosive weapons challenges the claim that armed drones minimise so-called collateral damage. On the contrary, we found that attacks by armed drones were associated with extensive traumatic injuries among Palestinians in Gaza, and that the injuries were of significantly higher severity, and added substantially to an already overstretched local health-care system than the injuries caused by other explosive weapons.”

Human rights workers and journalists have amassed countless stories and evidence of drone strikes killing civilians, including those engaged in unambiguously civilian activities at the time.⁵⁷ A Defence for Children International report tells of the al-Reefi family who were attacked in 2014 by an Israeli drone while picking sweetcorn on their land. The attack killed seven of the family, including five children. Tareq al-Reefi, a surviving family member said:

“My brother Naser and I started picking our sweetcorn cobs. My brother Mohammad was taking them from us to the vehicle, while the six children were standing by the fig tree. At this moment, I heard a whistling sound similar to that of a missile.”

Tareq reports that the missile landed approximately two metres from the children, killing five of the six, including Mohammed who was hospitalised for four years before succumbing to his injuries in 2018, aged 13.⁵⁸ Similar reports span the years. A 2009 Guardian report tells of a family of six who were killed drinking tea together when a drone attack hit the courtyard of their house.⁵⁹ A surviving member of the family, Mounir, records the aftermath of the deadly strike:

53 B’Tselem, ‘Whitewash Protocol: The So-Called Investigation of Operation Protective Edge’, B’Tselem, Sep 2016, https://www.btselem.org/publications/summaries/201609_whitewash_protocol, last accessed 13 Mar 2019.

Robert Mackey, ‘Secret Israeli Report Reveals Armed Drone Killed Four Boys Playing on Gaza Beach in 2014’, The Intercept, 11 Aug 2018, <https://theintercept.com/2018/08/11/israel-palestine-drone-strike-operation-protective-edge/>, last accessed 13 Mar 2019.

54 ‘Gaza: Life beneath the Drones’, Corporate Watch.

55 David Blair, ‘Israeli drone commander: ‘The life and death decisions I took in Gaza’’, The Telegraph, 19 Nov 2014, <https://www.telegraph.co.uk/news/worldnews/middleeast/israel/11234240/Israeli-drone-commander-The-life-and-death-decisions-I-took-in-Gaza.html>, last accessed 13 Mar 2019.

‘Gaza: Life beneath the Drones’, Corporate Watch

56 Henne Heslein-Lossius et al., ‘Traumatic amputations caused by drone attacks in the local population in Gaza: a retrospective cross-sectional study’, The Lancet, Jan 2019, [https://www.thelancet.com/journals/lanph/article/PIIS2542-5196\(18\)30265-1/fulltext](https://www.thelancet.com/journals/lanph/article/PIIS2542-5196(18)30265-1/fulltext), last accessed 13 Mar 2019.

57 ‘Sleepless in Gaza: Israeli Drone War in the Gaza Strip’, Rosa Luxemburg Stiftung Regional Office Palestine.

58 Defence for Children International, ‘Twin survivor of 2014 Israeli missile strike dies from injuries’, DCI Palestine, 06 Nov 2018, https://www.dci-palestine.org/twin_survivor_of_2014_israeli_missile_strike_dies_from_injuries, last accessed 17 Apr 2019.

59 Clancy Chassay, ‘Cut to pieces: the Palestinian family drinking tea in their courtyard’, The Guardian, 23 Mar 2009, <https://www.theguardian.com/world/2009/mar/23/gaza-war-crimes-drones> last accessed 13 Mar 2019.

"We found Mohammed lying there, cut in half. Ahmed was in three pieces; Wahid was totally burnt - his eyes were gone. Wahid's father was dead. Nour had been decapitated. We couldn't see her head anywhere. [...] You cannot imagine the scene: a family all sitting around together and then, in a matter of seconds, they were cut to pieces. Even the next day we found limbs and body parts on the roof, feet and hands."

More recently, while Israel mounted a public relations effort to showcase specific actions taken to minimise civilian harm during 'Operation Protective Edge' (such as dropping leaflets and making phone calls to warn of an impending bombing), hundreds of civilians are reported to have faced the same fatal end as Mounir's and Tareq's families.

4A "Advanced intelligence"? The killing of the Bakr boys

"There are far too many occasions when [the Spike] missile is used on those who are clearly non-combatants. Women and children, groups of women walking down the road, children playing football, a boy riding his bicycle down the road. He wasn't just struck...the missile did not just strike nearby, it stuck the bicycle itself. Incredible accuracy. Now, by any stretch of the imagination, that is not a legitimate target. It needs to be addressed. Why are these civilians being targeted? Is it a mistake? Is it a problem with intelligence gathering, is it a problem with the optics, or is there something more sinister behind this?"⁶⁰

Chris Cobb-Smith, former British artillery officer, weapons expert and military analyst.

Four of the more than 500 Palestinian children killed during Operation Protective Edge included four boys from the Bakr family, aged between nine and eleven years, who were killed by a drone attack while playing football on a Gaza beach.⁶¹ Based on intelligence that has since been questioned, an Israeli missile had destroyed a small shipping container near the same site, suspected as a Hamas arms cache, on the previous day.⁶² The next afternoon, in front of dozens of journalists residing in a nearby hotel, the four boys were killed, while another four were injured as they played on the beach close by.

An Israeli police report, referenced in *The Intercept*, details that drone operators from the Palmachim Air Force Base intentionally pursued the boys, allegedly mistaking them for militants. The report reveals that a Hermes 450 drone captured footage of eight figures near the jetty, on which a second drone was ordered to fire, killing one boy. Having sought clarification on how far to pursue the boys and receiving no response, a second missile was launched by the drone operators without authorisation, killing three of the fleeing survivors. Suhad Bishara, a lawyer representing the families of the victims, observed that the incident poses "many questions concerning human judgment, ethics, and compliance with international humanitarian law" with regard to the deployment of drones.⁶³

When the Bakr family sought justice through the courts, Israeli authorities refused to allow their lawyers to watch drone video footage recorded during the attack, from which the drone operators claimed that they "couldn't tell they were children".⁶⁴ The investigation was closed without any charges filed. In

⁶⁰ 'Israel's Drone Dealers', *People and Power*: Al Jazeera

⁶¹ Nagham Mohanna and Jack Moore, 'Family of children Israel killed on Gaza beach reopen search for justice', *The National*, 20 Aug 2018, <https://www.thenational.ae/world/mena/family-of-children-israel-killed-on-gaza-beach-reopen-search-for-justice-1.761925>, last accessed 14 Mar 2019.

⁶² 'Secret Israeli Report Reveals Armed Drone Killed Four Boys Playing on Gaza Beach in 2014', *The Intercept*.

⁶³ 'Secret Israeli Report Reveals Armed Drone Killed Four Boys Playing on Gaza Beach in 2014', *The Intercept*.

⁶⁴ 'Elbit Systems: Company Profile', *Corporate Watch*.

contrast to the grand claims of drone advocates for the technology's precision and advanced optics, Israel's chief military prosecutor concluded that "it would not have been possible for the operational entities involved to have identified these figures, via aerial surveillance, as children."⁶⁵ If this is so, then this brings into question the quality of the video-feed from the 'high-resolution' cameras fitted to Elbit's drones.⁶⁶ Alternatively, if the optics and precision of drones are as advanced as stated by their manufacturers, the operators were simply indifferent to the distinction between children and adults.⁶⁷

After studying drone footage of suspected Islamic State (IS) militants in Iraq, Eyal Weizman, an Israeli architect who has investigated drone use, stated that the identification of a figure as a child or the confirmation of a weapon is feasible only by studying shadows. At Israel's latitude this is possible only if video is "taken either very early or very late in the day", unlike the attack on the Bakr boys, which took place in the mid-afternoon.⁶⁸ Indeed, two days before that incident, Israel's military PR unit had released operational footage in which drone operators could be heard halting strikes because figures had been identified in live feeds as children.⁶⁹ Arguing that much of the footage "harvested by drones [is] far more ambiguous", Weizman observes that the high-resolution images selectively released by military commanders to justify attacks to the public "could skew our understanding of how much can be seen by drones and how clear what we see is".⁷⁰

Since drones are fitted with precision-guided missiles, cameras that enable an operator to follow a missile from launch to impact, and the technological capacity to redirect a missile immediately, Chris Cobb-Smith, a senior military analyst, asks "why we are experiencing so many civilians being killed? There should be no excuse for these numbers."⁷¹ As Human Rights Watch has suggested, "the technological capabilities of drones and drone-launched missiles make the violations even more egregious."⁷²

The sociologist Zygmunt Bauman wrote that marked inequalities in power produce "a selective affinity between social inequality and the likelihood of becoming a casualty".⁷³ This is viscerally demonstrated in Israel and Palestine, through which the risk to Israeli drone operators is minimised, while the technology that they command renders Palestinian civilians disposable. Yehudi Shaul of the Israeli organisation, Breaking the Silence, suggests that Israeli policy is predicated on a hierarchy of human life that does indeed treat Palestinians as expendable:

*"The zero-risk doctrine basically argues that there is four levels of value of life. At the top Israeli civilians, then come Israeli soldiers, then come Palestinian civilians and then Palestinian militants and terrorists. So, we as an army have to do everything possible to bring risk to our troops to zero, even if it will cost massive damage to the other side, which is exactly the opposite of what International humanitarian law is about - protecting civilians during time of conflict."*⁷⁴

65 'Secret Israeli Report Reveals Armed Drone Killed Four Boys Playing on Gaza Beach in 2014', The Intercept.

66 'IAF: Hermes 900 drone 'disrupts any enemy'', Jerusalem Post.

67 Investigating the Relationship Between Drone Warfare and Civilian Casualties in Gaza', Journal of Strategic Security.

68 Robert Mackay, 'What Italian Drone Pilots See as They Scan Iraq for Militants', New York Times, 11 Dec 2015, <https://www.nytimes.com/2015/12/12/world/middleeast/what-italian-drone-pilots-see-as-they-scan-iraq-for-militants.html> last accessed 14 Mar 2019.

69 Israeli Defence Forces, 'IDF Aircraft Calls Off Strikes to Protect Gazan Civilians' IDF, 14 Jul 2014, <https://youtu.be/PuL-OA84p54> last accessed 14 Mar 2019.

70 'What Italian Drone Pilots See as They Scan Iraq for Militants', New York Times.

71 'Cut to pieces: the Palestinian family drinking tea in their courtyard', The Guardian.

72 'Precisely Wrong: Gaza Civilians Killed by Israeli Drone-Launched Missiles', HRW.

73 Zygmunt Bauman, 'Collateral Damage: Social Inequalities in a Global Age'. Cambridge: Polity Press, 2011.

74 'Israeli soldiers cast doubt on legality of Gaza military tactics', The Guardian

The killing of the Bakr boys is one of many fatal instances that highlight either, or both, the humanitarian weaknesses of drone technology, or a reckless disregard for Palestinian life.

4B "CATASTROPHIC EFFECT ON THE HUMAN BODY"

Drone munitions in Palestine

Despite the reputed accuracy of Israeli drone munitions, their wide blast radius carries a high risk of casualties in the vicinity of the intended target. The research organisation, Forensic Architecture, has indicated that the missiles used are commonly the Israeli-produced Spike,⁷⁵ which can be modified to carry a fragmentation sleeve of thousands of 3mm tungsten cubes, said to affect an area of approximately 20 metres diameter. While apparently reducing the risk of 'collateral damage' caused by stray shrapnel, anyone caught inside the Spike's blast radius is in fatal trouble. The cubes puncture metal and cinder block, and "cause tissue to be torn from flesh", literally shredding anyone within range, according to Erik Fosse, a Norwegian doctor working in Gaza.⁷⁶ When fitted with a fragmentation sleeve, the cubes contained are "employed to purely enhance the destructive effect of the missile... produc[ing] a catastrophic effect on the human body", says Chris Cobb-Smith.⁷⁷

A documentary made by the Israeli filmmaker, Yotam Feldman, illustrates the devastation that such missiles can wreak. It details an attack in Khan Younis on an olive grove during Operation Pillar of Defence, which killed its 79-year old owner and his 14-year old granddaughter. The horror is described by his surviving son and grandson:

"We were picking olives [...] and I told [my grandfather] let's go pick olives another day. There's a drone in the sky. I saw it. It will fire at us. The drone was roaming around us and my heart started to beat faster [...] After I left, the drone fired on this area. He said 'Allahu Akbar', and it hit his head. Only the chin remained from his head. [...] then I saw my sister give her last breaths. "I saw the rocket coming down here. And then I saw my father had been killed. His head got cut off. When I saw that I got dizzy."

The documentary shows holes in the nearby wall, which also carried stains of the blood of the attack's victims. Such holes, says Cobb-Smith, are caused by the steel cubes in the fragmentation sleeve of the missiles, adding that "there is a great concern here of the moral use of this technology".⁷⁸

4C "ROOF-KNOCKING"

The lethality of the non-lethal warning strike

The Israeli army has widely publicised its efforts to 'reduce collateral damage', including leaflet dropping and phone calls "informing people that they had minutes to collect their belongings and vacate a building before it was bombed".⁷⁹ The IDF has used such warning protocols for many years, but they fall short of its obligations under international law. Israeli human rights lawyer Michael Sfard states:

75 'Precisely Wrong: Gaza Civilians Killed by Israeli Drone-Launched Missiles', HRW.

76 Noah Shachtman, 'Report: Israeli drones killed 29 civilians in Gaza war', Wired, 30 Jun 2009, <https://www.wired.com/2009/06/report-israeli-drones-killed-29-civilians-in-gaza-war/>, last accessed 14 Mar 2019. 'Precisely Wrong: Gaza Civilians Killed by Israeli Drone-Launched Missiles', HRW.

77 'Israel's Drone Dealers', People and Power: Al Jazeera

78 'Israel's Drone Dealers', People and Power: Al Jazeera.

79 Eyal Weizman, 'Gaza attacks: Lethal warnings', Al Jazeera, 14 Jul 2014, <https://www.aljazeera.com/indepth/opinion/2014/07/gaza-attacks-lethal-warnings-2014713162312604305.html>, last accessed 20 Mar 2019

"It seems from the testimonies [by Israeli soldiers following Operation Protective Edge] that the IDF took a position or stance that precautionary measures can replace the principle of distinction, when in fact international law is very clear that precautionary measures is an obligation that comes in addition to the obligation to always make a distinction between civilians and combatants"⁸⁰

Finding that they can't always get through with phone calls, the Israeli army uses so-called 'roof-knock' strikes, described on their website as among the "precautionary measures... undertaken in order to minimize potential civilian harm."⁸¹ In a roof-knock, a low- or non-explosive missile, usually from a drone, is fired at the roof of a building that is to be destroyed shortly after. The tactic is widely condemned because the warning itself is a form of attack. Eyal Weizman of Forensic Architecture states that:

"Israeli military lawyers argue that if residents are warned, and do not evacuate, then they can be considered legitimate collateral damage [...] This is a gross misuse of international law. It is illegal to fire at civilians, even if the intention is to warn them. It is ridiculous to ask them to understand, in the commotion and chaos of war, that being shot at is a warning – and it is outrageous to claim that this is undertaken to save their lives."⁸²

A roof-knock can be deadly.⁸³ One such 'warning' killed Amir al-Nimra and Luai Kahil, two teenage boys, in Gaza City in 2018, as part of an attack hailed by Israeli Prime Minister Benjamin Netanyahu as striking " Hamas with the hardest blow since Operation Protective Edge". Mohammed al-Jamal, a friend of Luai and Amir, recalls playing football, taking selfies and eating falafel with his friends before "agreeing to see them the next day". "I never expected I would be seeing them at the morgue," he said.⁸⁴ After Mohammed had left, Amir and Luai climbed to the top of a building in al-Katiba square, to take some selfies over Gaza City. With the selfie taken - the last image of the boys alive - the two teenagers were killed by the first of four 'warning missiles' launched from drones, according to an investigation by B'Tselem and Forensic Architecture.⁸⁵

Reconstructing the killing through field research, testimonies, and social media, the investigation shows that Amir and Luai were on the empty roof of the building when they were killed in plain sight and broad daylight; as exposed to aerial surveillance as they could be.⁸⁶ Yet the investigation revealed that while footage from the other three strikes fired were released by IDF on Twitter, footage from the first, fatal, 'warning' strike was replaced with footage from

80 Peter Beaumont, 'Israeli soldiers cast doubt on legality of Gaza military tactics', The Guardian, 4 May 2015, <https://www.theguardian.com/world/2015/may/04/israeli-soldiers-cast-doubt-on-legality-of-gaza-military-operation> last accessed 20 Mar 2019

81 Israeli Defense Forces, 'Decisions Regarding Exceptional Incidents that Occurred during Operation', IDF, 6 Dec 2014, <https://www.idf.il/en/minisites/military-advocate-generals-corps/releases-idf-military-advocate-general/decisions-regarding-exceptional-incidents-that-occurred-during-operation-protective-edge/> last accessed 20 Mar 2014

82 Robert Mackey, 'Israel Tampered With Video of Strike That Killed Two Palestinian Boys, Investigators Say', The Intercept, 19 Dec 2018, <https://theintercept.com/2018/12/19/israel-airstrike-gaza-two-boys/>, last accessed 20 Mar 2019

83 Investigating the Relationship Between Drone Warfare and Civilian Casualties in Gaza', Journal of Strategic Security.

84 Ghazal Othman, 'Together until the end: The last hours of two Gaza teens', Middle East Eye, 20 Jul 2018, <https://www.middleeasteye.net/news/together-until-end-last-hours-two-gaza-teens> last accessed 20 Mar 2019

Middle East Eye, 'Non-lethal' Israeli weaponry killed two teens in Gaza in July: Report', MEE, 18 Dec 2018, <https://www.middleeasteye.net/news/non-lethal-israeli-weaponry-killed-two-teens-gaza-july-report>, last accessed 20 Mar 2019

85 Israel Tampered With Video of Strike That Killed Two Palestinian Boys, Investigators Say', The Intercept

86 Israel Tampered With Video of Strike That Killed Two Palestinian Boys, Investigators Say', The Intercept

third strike in an apparent cover-up.⁸⁷ The tampering suggests concealment of video evidence showing that the children were visible to the drone pilots on the building roof.

The investigation also revealed that an Israeli military spokesperson misled the New York Times by claiming that the building was destroyed over an hour after the first roof-knock strike. Security camera footage shows that a high-intensity missile was fired less than 17 minutes after the strike that killed the boys.⁸⁸

As a warning signal, the roof-knock tactic is also highly ambiguous. IDF's released footage shows that first responders are seen on the roof attempting to evacuate the teens after the first strike. Says Weizman;

*"it was likely they did not understand that this [first strike] was a warning, as they wouldn't run onto the roof of a building about to be demolished. [...] In a city like Gaza, subject to so many attacks, of so many different types, it is unreasonable to expect civilians to become munitions experts, and to understand that a small missile is a message rather than the normal attempt to kill and destroy."*⁸⁹

The visible figures on the roof in the released video strongly indicate that the two boys were visible in the unreleased footage.

The witnesses who recovered Amir and Luai's bodies say they noticed a fragmentation pattern on the roof "consistent with the explosion of a munition loaded with shrapnel – specifically designed as a lethal weapon", according to the investigation.⁹⁰ Since the projectile appears to have been "armed with lethal fragments", B'Tselem claims that: "Such a strike should be considered a military attack and, as such, subject to all restrictions set out in international humanitarian law."⁹¹

In light of this new evidence, it appears that either the drone technology was inadequate to the humanitarian claims made for it, or its operators and commanders were indifferent to the lives of Palestinian civilians. Amit Gilutz, a B'Tselem spokesperson, states that, because the vital footage was omitted, "we don't know if the boys were visible to the military before the first strike [...] If so, they should have aborted. If not, that raises grave concerns as to the military's surveillance capabilities".⁹²

The case of Luai and Amir reveals the lethal risks of the roof-knock, its probable illegality, the humanitarian failings of airborne surveillance technology and low-intensity drone munitions, and an apparent cover-up, including a direct lie to the press. This case alone, in which two teenagers were pointlessly killed, shows that the humanitarian claims made for drone technology are untenable.

87 Israel Tampered With Video of Strike That Killed Two Palestinian Boys, Investigators Say, The Intercept

88 Israel Tampered With Video of Strike That Killed Two Palestinian Boys, Investigators Say, The Intercept

89 Israel Tampered With Video of Strike That Killed Two Palestinian Boys, Investigators Say, The Intercept

90 Israel Tampered With Video of Strike That Killed Two Palestinian Boys, Investigators Say, The Intercept

91 'Non-lethal' Israeli weaponry killed two teens in Gaza in July: Report, Middle East Eye

92 'Non-lethal' Israeli weaponry killed two teens in Gaza in July: Report, Middle East Eye

4D “MY KIDS CRY AND LOSE THEIR ABILITY TO CONCENTRATE”

Daily life beneath the drones

“What can we do? [...] When we hear an Apache or an F16 we know that it will only be there for a while and we can go into our houses for safety. Drones are in the air 24 hours a day so the people don’t hide from them. We can’t hide 24 hours a day.”⁹³

Yamin Al Madhoun, Al Mezan Center for Human Rights

“This morning as I brushed my teeth, I could hear the familiar buzzing of a drone circling above our building. I ignored the sound. Drones circle overhead all the time; you never know whether it’s just for surveillance or an impending missile launch. The uncertainty makes you feel helpless. What can anyone do?”⁹⁴

A Gazan human rights fieldworker for Amnesty International

Since their first deployment in 2000, Israel’s armed drones have reportedly killed hundreds of Palestinians and injured thousands more.⁹⁵ As is evident in the above quotations, however, these alarming numbers themselves do little to reveal Palestinians’ palpable sense of helplessness under the incessant, apparently omnipotent, buzz of drones in their skies. Drones, now a salient feature in Israel’s prolonged control of the Palestinian population, have a daily psychological and social impact in Gaza, where 44% of the population are aged under 15 years.⁹⁶ It is rarely clear to the population on the ground whether their purpose on any given day is to watch or to attack, leaving Gazans in a constant state of fear and uncertainty.⁹⁷

A report by Corporate Watch tells of a Palestinian family who go inside their house every time they hear a drone after their daughter was killed arbitrarily in 2009. Mid-way through a different interview a 10 year-old boy returns early from school to tell his father that a drone buzzing overhead made it hard for the children to concentrate at school.⁹⁸ Cultural life and leisure is also disrupted. Rida of the Al Mezan Centre for Human Rights explains that, while a fading TV signal caused by an approaching drone “might not sound like much, in a place like Gaza, with its closed borders and 12 hour power cuts, it is a final reminder that even the tiniest bit of escapism is at the mercy of the occupation forces”.⁹⁹

While a drone on surveillance duty is not directly deadly, those it records on camera are all too aware that they and the structures nearby are being assessed as potential targets for later destruction. According to a senior commander of the IAF’s First UAV Squadron:

“We gather a lot of information which eventually gives us the ability to detect targets that need to be attacked. This is why the minute Operation Protective Edge began, the air force already had a large ‘bank’ of targets.”¹⁰⁰

93 ‘Gaza: Life beneath the Drones’, Corporate Watch.

94 Amnesty International, ‘Nowhere in Gaza is safe’: a snapshot of life under the bombs’, Amnesty International, 29 Jul 2014, <https://www.amnesty.org.uk/blogs/global-voices/nowhere-gaza-safe-snapshot-life-under-bombs> last accessed 20 Mar 2019.

95 Investigating the Relationship Between Drone Warfare and Civilian Casualties in Gaza’, Journal of Strategic Security.

96 ‘The World Factbook: Gaza’, CIA, 14 Feb 2019, <https://www.cia.gov/library/publications/the-world-factbook/geos/gz.html> last accessed 13 Mar 2019.

97 ‘Sleepless in Gaza: Israeli Drone War in the Gaza Strip’, Rosa Luxemburg Stiftung Regional Office Palestine.

98 ‘Gaza: Life beneath the Drones’, Corporate Watch.

99 ‘Gaza: Life beneath the Drones’, Corporate Watch.

100 Investigating the Relationship Between Drone Warfare and Civilian Casualties in Gaza’, Journal of Strategic Security.

This 'bank' of targets translated into 4,762 strikes between 8 July and 5 August 2014, which rendered much of Gaza targetable and reduced 44% of the Strip to a no-go zone.¹⁰¹ Following an initial assault, drones ominously remain present in the sky to "assess the damage inflicted on our enemy".¹⁰² (Lt. S IAF).

While remotely-controlled surveillance continues, so does the trauma. Dr. Ahmad Abu Tawaheen from the Gaza Mental Health Centre reports that a third of patients receiving treatment suffer from stress-related disorders associated with the presence of drones. Deena Waled, a mother of two in Gaza relates:

*"My kids think of war and destruction when they hear drones. They cry and lose their ability to concentrate. I find it hard to make them sleep. It takes me a long time. The drones cause many psychological problems for the children, which results in bedwetting, nail biting, and sudden screaming. The moment my child hears the sound of the drone, he runs and sits in my lap, I find no words to calm him other than hugging him."*¹⁰³

The omnipresent drones do not only trigger traumatic memories of warfare, they also precipitate a sense among those living beneath them that they are not in control of their own lives, denying the Gazan population any peace, even during 'ceasefires'. Nour Balosha, a resident of Gaza, says that "we live in a military camp. The drone transforms Gaza into a field of war".¹⁰⁴ Abu Tawaheen notes that when the cause of psychiatric trauma is uncontrolled, unavoidable and unpredictable, such as the presence of drones hovering overhead, its impact is more severe.

The ever-present drones are a mechanism of control and fear, amplifying a vertical politics of power through which Israel, above, is the watcher, judge, jury and executioner of the Palestinian population below. Subject to constant and unnerving surveillance, the Palestinian population are reminded constantly of their position as a colonised people, subject to the whims and weapons of the occupying power. Affecting psychological, educational, social and cultural life in Gaza, Israel's drones are a key feature in the strategy of collective punishment in what is ostensibly a war of attrition; an attempt to wear down the Palestinian population through a protracted and gradual war of degradation and domination.

101 Investigating the Relationship Between Drone Warfare and Civilian Casualties in Gaza', Journal of Strategic Security.

102 'Israel Air Force Upgrading its Long Range Strategic Eitan Drone', Jerusalem Post

103 'Sleepless in Gaza: Israeli Drone War in the Gaza Strip', Rosa Luxemburg Stiftung Regional Office Palestine.

104 'Sleepless in Gaza: Israeli Drone War in the Gaza Strip', Rosa Luxemburg Stiftung Regional Office Palestine.

“THE FIRST TIME WE ATTACKED LIVE IRANIAN TARGETS”

Israel's use of drones abroad

Israel's drones loiter not only in the skies above Palestine, but also in the airspace of other states. Israel's first ever operational use of a UAV was taking aerial photographs over Egypt in the early 1970s.¹⁰⁵ Below is a brief collection of reports of Israeli drone operations outside Israel.

Lebanon

Elbit Hermes 450 drones were used intensively throughout the second Lebanon war in 2006.¹⁰⁶ Two Israeli surveillance drones crashed there in 2015. An armed Elbit Hermes 450 drone crashed in mysterious circumstances in 2014, and another drone crashed in 2018 in Southern Lebanon.¹⁰⁷ In 2014 and 2018, Israel removed or destroyed the drone before data could be removed from it. After firing from a second UAV to destroy the wreckage in 2018, Israel released a statement that the drone, reportedly armed with four Israeli-made Mikholit missiles, belonged to them.¹⁰⁸

Egypt

Reports indicate that Israeli drones have conducted intensive reconnaissance and targeting in the Sinai Peninsula, including aerial surveillance over towns and villages, and extrajudicial executions in 2012, 2014, 2017, and 2018.¹⁰⁹ While Israel has claimed that the IAF does not operate over Egypt, reports suggest that while once enemies, Egypt and Israel are now secret allies in a war against IS in the Sinai Peninsula.¹¹⁰ Israeli drones, helicopters and jets are believed to have engaged in a covert air campaign in Egypt, conducting over one hundred

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- 105 Gili Cohen, 'Rise of the Drones Triggers Quiet Revolution in Israeli Air Force', Ha'aretz, 25 Oct 2016 <https://www.haaretz.com/israel-news/.premium-rise-of-the-drones-triggers-quiet-revolution-in-israeli-air-force-1.5452878> last accessed 22 Mar 2019
- 106 'Sleepless in Gaza: Israeli Drone War in the Gaza Strip', Rosa Luxemburg Stiftung Regional Office Palestine.
- 107 'Elbit Systems: Company Profile', Corporate Watch.
Mohammed Zaatari, 'Israeli drone mysteriously crashes near Lebanon', The Daily Star, 18 Feb 2014, <http://www.dailystar.com.lb/News/Lebanon-News/2014/Feb-18/247733-israeli-drone-mysteriously-crashes-near-lebanon.ashx#axzz2thz8wk6n> last accessed 26 Mar 2019
Reuters, 'Lebanon says Israeli drone crashes at Tripoli port', 11 Jul 2015, <https://www.reuters.com/article/us-lebanon-israel/lebanon-says-israeli-drone-crashes-at-tripoli-port-idUSKCN0PL07H20150711> last accessed 17 Apr 2019.
- 108 Jack Khoury, Yaniv Kubovich and Noa Shpigel, 'Israeli Drone 'Armed With 4 Missiles' Crashes in Southern Lebanon', Ha'aretz, 31 Mar 2018, <https://www.haaretz.com/middle-east-news/israeli-drone-crashes-in-southern-lebanon-1.5962549>, last accessed 26 Mar 2019
- 109 'Elbit Systems: Company Profile', Corporate Watch.
Haitam Ghoniem, 'Development of Security Scene in Sinai - Dec.', Egyptian Institute for Studies, 15 Jan 2019, <https://en.eipss-eg.org/development-of-security-scene-in-sinai-dec/> last accessed 26 Mar 2019
Judah Ari Gross, 'Drone strike in southern Sinai said to kill one person', Times of Israel, 10 Apr 2017, <http://www.timesofisrael.com/drone-strike-in-southern-sinai-said-to-kill-one-person/> last accessed 26 Mar 2019
Roi Kass, 'Israeli UAV kills three Sinai terrorists', Ynet News, 25 Jul 2014, <http://linkis.com/ow.ly/jc4bE> last accessed 26 Mar 2019
- 110 'Israeli UAV kills three Sinai terrorists', Ynet News.

airstrikes with the approval of President Abdel Fattah el-Sisi.¹¹¹ Observations of Israeli drones indicate that in December 2018 alone, Israel targeted houses in and around Bila'a village, west of Rafah, conducted reconnaissance activity over numerous villages, and carried out aerial bombardments against targets in Shabana, al-Moqataa and Lefitat.¹¹² In August 2018, anonymous sources in the Egyptian army told Ha'aretz that Israeli drones had carried out an attack killing five people in Rafah, and in 2015 Elad Ahronson, an executive at Elbit, referred to the Sinai Peninsula in an interview about Elbit's products with industry press.¹¹³

Syria

Israel has carried out numerous airstrikes and surveillance missions inside war-torn Syria since 2013, targeting Syrian forces, as well as Iranian militias and Hezbollah.¹¹⁴ In 2017, an Elbit-manufactured Skylark mini-drone was shot down by pro-Assad forces in Syria over Quneitra, and earlier that year, an Israeli drone strike killed a pro-Assad militia commander in Southern Syria.¹¹⁵ In 2015, UN peacekeepers stationed in the Golan Heights along the contested Syrian-Israeli border observed Israeli drones before and after several senior Hezbollah figures were killed, violating the 1974 ceasefire agreement between Syria and Israel.¹¹⁶

After all passengers travelling in a vehicle were killed in 2015, Israeli forces stated that they had "targeted part of the terror cell responsible for [earlier] rocket fire" but provided no further information; Sana, a Syrian news agency, claims that a drone strike hit a civilian vehicle near a marketplace in Al Koum.¹¹⁷ In 2018, Israel killed fourteen people at an alleged Iranian drone base inside Syria; a senior Israeli official reportedly claimed that this was "the first time we attacked live Iranian targets – both facilities and people".¹¹⁸ Shortly before this attack, an Iranian drone flown from inside Syria, reported to be loaded with explosives, was shot down by Israel on suspicion that Iran "had hoped to carry out [an attack] in Israeli territory".¹¹⁹

Iran

An Elbit Hermes 450 drone was reportedly shot down close to a uranium enrichment facility in Iran in 2014, with the Iranian Revolutionary Guard claiming that the drone was trying to penetrate the nuclear area in Natanz. The Israeli military said it "did not comment on foreign reports".¹²⁰

111 David D. Kirkpatrick, 'Secret Alliance: Israel Carries Out Airstrikes in Egypt, With Cairo's O.K.', The New York Times, 3 Feb 2018, <https://www.nytimes.com/2018/02/03/world/middleeast/israel-airstrikes-sinai-egypt.html?action=click&module=Top%2520Stories&pgtype=Homepage> last accessed 26 Mar 2019.

112 'Development of Security Scene in Sinai - Dec.', Egyptian Institute for Studies.

113 'Elbit Systems: Company Profile', Corporate Watch.

114 France 24, 'Israeli raids inside Syria since 2013', France 24, 26 Dec 2018, <https://www.france24.com/en/20181226-israeli-raids-inside-syria-2013?ref=tw>, last accessed 26 Mar 2019

115 'Elbit Systems: Company Profile', Corporate Watch.

116 Louis Charbonneau, 'U.N. saw drones over Syria before Israel strike in breach of truce', Yahoo News, 19 Jan 2015, <https://www.yahoo.com/news/u-n-saw-drones-over-syria-israel-strike-182604247.html?ref=gs>, last accessed 26 Mar 2019.

117 New York Times, 'Israel carries out Second Round of Airstrikes in Syria', NY Times, 22 Aug 2015, <https://www.nytimes.com/2015/08/22/world/middleeast/israel-syria-airstrikes.html> last accessed 26 Mar 2019

118 Ha'aretz, 'Israel Admits to Striking Syria: 'It Was the First Time We Attacked Live Iranian Targets'', 16 Apr 2018, <https://www.haaretz.com/middle-east-news/syria/israel-admits-to-syria-strike-in-first-we-hit-live-iranian-targets-1.6007914>, last accessed 26 Mar 2019

119 BBC, 'Iranian drone was sent to Israel 'to attack'', 14 Apr 2018, <https://www.bbc.co.uk/news/world-middle-east-43762193> last accessed 26 Mar 2019

120 Al Jazeera, 'Iran says it shot down Israeli drone', 24 Aug 2014, <https://www.aljazeera.com/news/middleeast/2014/08/iran-israeli-drone-2014824132116380133.html> last accessed 26 Mar 2019

Iraq

In 2014, an Israeli Hermes drone was reported to have been shot down close to Iraq's Baghdad Airport. The Israeli military refused to confirm or deny the story.¹²¹

Sudan

In 2015 the Sudanese army claimed to have intercepted an Israeli drone carrying two missiles, hours after it was reported that a weapons facility near Omdurman had come under missile attack.¹²² In 2012 Sudan accused Israel of carrying out an attack on an arms factory in Khartoum, and it has been reported that Israeli airstrikes have targeted a number weapons convoys suspected of supplying militants in Gaza. Israel has yet to respond to these reports.¹²³

Azerbaijan

In 2017, the State Attorney of Israel investigated the drone manufacturer Aeronautics Ltd. for the alleged bombing of Armenian forces while conducting a demonstration of the Orbiter 1k drone for Azerbaijan.¹²⁴ A gag order was imposed on the details of the investigation before the suspension of a license for the \$20 million deal was lifted.¹²⁵

The examples cited above are only a fraction of the sightings, crashes or intercepts of Israeli drones by neighbouring states. Although shrouded in official secrecy, there is no doubt that Israeli drones operate routinely in the airspace of many states in the Middle East and North Africa, and have conducted, sometimes lethal, airstrikes.

121 'Elbit Systems: Company Profile', Corporate Watch.

122 Jack Khoury, 'Sudan Army Says It Toppled Israeli Drone That Infiltrated Its Air Space', Ha'aretz, 06 May 2015, <https://www.haaretz.com/sudan-army-says-it-toppled-israeli-drone-1.5358963> last accessed 26 Mar 2019

123 'Sudan Army Says It Toppled Israeli Drone That Infiltrated Its Air Space', Ha'aretz.

124 Kavitha Surana, 'Israel Freezes Export of Suicide Drone to Azerbaijan After Allegation of Abuse', Foreign Policy, 30 Aug 2017, <https://foreignpolicy.com/2017/08/30/israel-freezes-export-of-suicide-drone-to-azerbaijan-after-allegation-of-abuse-azerbaijan-armenia/> last accessed 26 Mar 2019

125 i24News, 'Israel drone firm faces charge in said bombing of Armenian forces for Azerbaijan', 29 Aug 2018, <https://www.i24news.tv/en/news/israel/diplomacy-defense/182956-180829-israel-drone-firm-faces-charge-in-said-bombing-of-armenian-forces-for-azerbaijan> last accessed 26 Mar 2019

“PEOPLE HEAR ABOUT IT, AND THEY WANT THIS WONDERFUL TECHNOLOGY.”

Israel's drone exports

With drones making up 10% of all military exports from Israel, it is now the largest exporter of the technology globally, accounting for 60% of drone exports since 1985.¹²⁶ The International Business consultancy Frost and Sullivan reported in 2014 that Israel's sales of unmanned military systems amounted to approximately \$4.6 billion between 2005 and 2012, reaching \$525 million in 2016 alone.¹²⁷ The consultancy forecast that exports will grow by a further 5-10% by 2020 as worldwide demand increases.¹²⁸ Israel's customers include Finland, Georgia, Greece, France, Germany, Russia, Switzerland, and the UK in Europe, as well as the EU border management agency Frontex, along with many states in Latin America, the Middle East, Africa and Asia. Israeli-made drones have been used by six NATO armed forces in Afghanistan, and were even purchased by the United Nations stabilisation mission in Mali, MINUSMA.¹²⁹

Although still mired in secrecy, more information about Israel's exports has come to light since the previous Drone Wars report in 2014. In 2015, for example, the Israeli government openly discussed the proposed sale of armed drones to India.¹³⁰ Although the sale fell through, negotiations have continued; recently Israel and India have discussed a possible sale of 15 Harop attack drones, said by AI to be combine the “capabilities of a UAV and a lethal missile”.¹³¹

Sparking much debate, Germany began the process of leasing several Heron TP drones in 2015. Citing the aircraft's attack capabilities, the German Defence

¹²⁶ The numbers behind the worldwide trade in drones', The Guardian.

¹²⁷ Defense News, 'Israel's defense industry boosts UAV sales, eyes unmanned subs', 3 Feb 2014, <https://www.upi.com/Defense-News/2014/02/03/Israels-defense-industry-boosts-UAV-sales-eyes-unmanned-subs/71741391461544/>, last accessed 28 Mar 2019

Tova Cohen, 'Israel's Elbit speeds up race to fly military drones in civil airspace', Reuters, 12 Jul 2018 <https://uk.reuters.com/article/uk-aerospace-elbit-systems-drones/israels-elbit-speeds-up-race-to-fly-military-drones-in-civil-airspace-idUKKBN1K20J0> last accessed 28 Mar 2019

¹²⁸ Defense News, 'Israel's defense industry boosts UAV sales, eyes unmanned subs', 3 Feb 2014, <https://www.upi.com/Defense-News/2014/02/03/Israels-defense-industry-boosts-UAV-sales-eyes-unmanned-subs/71741391461544/>, last accessed 28 Mar 2019

Tova Cohen, 'Israel's Elbit speeds up race to fly military drones in civil airspace', Reuters, 12 Jul 2018 <https://uk.reuters.com/article/uk-aerospace-elbit-systems-drones/israels-elbit-speeds-up-race-to-fly-military-drones-in-civil-airspace-idUKKBN1K20J0> last accessed 28 Mar 2019

¹²⁹ 'Israel's Drone Dealers', People and Power: Al Jazeera

'Watch: Air Force Declares Full Operational Capability of Upgraded Drone', The Jerusalem Post

¹³⁰ The Jerusalem Post, 'India's Modi Reportedly Expedites Purchase of 10 Missile Armed Drones from Israel', 11 Sep 2015, <https://www.jpost.com/Israel-News/Indias-Modi-reportedly-expedites-purchase-of-10-missile-armed-drones-from-Israel-415959> last accessed 28 Mar 2019.

¹³¹ Anna Anronheim, 'India to buy 15 Harop suicide Drones from Israel' Jerusalem Post, 28 Jan 2019 <https://www.jpost.com/Israel-News/India-to-buy-15-Harop-suicide-drones-from-Israel-578947>, last accessed 18 Apr 2019

minister, Ursula von der Leyen, stated "this [drone] will be the standard in the future".¹³² Following delays due to public concern in Germany that the drones could be armed, and an American legal challenge discussed below, the IAI eventually signed a deal to lease combat-capable Heron drones in 2018, at a cost to Germany of \$1.05 billion.¹³³

In line with these lucrative contracts, the head of IAI, Shaul Shahar, declared that the company's future profits lie in the growing global market for unmanned vehicles with attack capabilities. Shahar predicted that militaries will be giving serious consideration to replacing manned platforms with combat drones, to employ a "50-50 mix of manned and unmanned fighters" in the next 15-20 years. To supply this demand, IAI will "be there for sure", says Shahar.¹³⁴

6A Competition, regulation, lawsuits and licences

Prompted by global competition in drone exports, particularly from the US, Israel has sought market advantage by beginning to ease restrictions it had imposed on companies exporting unmanned systems. A new, more relaxed export control regime is paving the way for companies such as Elbit systems and IAI to enlarge their sizeable client base and profits. In 2017 a defence industry source stated that "we [now] receive export licences to countries that were banned before, and for systems that we could never dream of exporting".¹³⁵

After Germany declined the purchase of Reaper drones from the US arms company General Atomics (GA), the aforementioned deal with Israel for the lease of Heron TPs sparked a legal challenge from GA, citing Germany's obligation of "fair and open competition".¹³⁶ The German courts rejected the American company's petition to cancel the Israeli deal,¹³⁷ which was ultimately completed in 2018. Israeli Prime Minister Netanyahu claimed this as "proof of what Israel's industry can produce for countries such as Germany".¹³⁸

Israel viewed with suspicion a push by the Obama administration for an international agreement on the proliferation and use of armed drones. Industry critics claimed that Obama's hidden goal was to rein in Israeli competitors.¹³⁹ Israel rejected the initiative without, according to Ha'aretz, explaining the reason to the Israeli public, thus stifling any debate.¹⁴⁰ One government official told Defense News, "[W]e don't talk about combat drones. From our perspective, the subject is classified."¹⁴¹

132 'Spies in the Sky: Israeli Drone Fleet Hacked by British and American Intelligence', The Intercept

133 'Secret Israeli Report Reveals Armed Drone Killed Four Boys Playing on Gaza Beach in 2014', The Intercept.

134 James Drew, 'AUSSI: IAI stresses big future for UCAV', Flight Global, 7 May 2015 s <https://www.flightglobal.com/news/articles/auvsi-iai-stresses-big-future-for-ucavs-412033/>, last accessed 28 Mar 2019

135 Arie Egozi, 'Israel eases UAV export restrictions', Flight Global, 01 Feb 2017 <https://www.flightglobal.com/news/articles/israel-eases-uav-export-restrictions-433737/> last accessed 28 Mar 2019

136 Reuters, 'General Atomics lawsuit to delay Heron drone program: Germany', 30 Aug 2016, <https://www.reuters.com/article/us-germany-drones/general-atomics-lawsuit-to-delay-heron-drone-program-germany-idUSKCN1152M0>, last accessed 28 Mar 2019

137 <https://www.haaretz.com/israel-news/german-lawmakers-block-israeli-drone-deal-after-discovering-they-re-armed-1.5490185>

138 Gili Cohen, 'German Lawmakers Block Israeli Drone Deal After Discovering They're Armed' Ha'aretz, 29 Jun 2017, <https://m.dw.com/en/german-army-can-lease-arms-capable-israeli-drones-lawmakers-say/a-44212763?xtref=https%253A%252F%252Fwww.google.co.uk%252F> last accessed 28 Mar 2019

139 Barbara Opall-Rome, 'Israel Wary of US Armed Drone Initiative', Defense News, 1 Sep 2016, <https://www.defensenews.com/air/2016/09/01/israel-wary-of-us-armed-drone-initiative/>, last accessed 28 Mar 2019

140 Israel's Conspiracy of Silence Over its Use of Drones', Ha'aretz

141 'Israel Wary of US Armed Drone Initiative', Defense News

6B "Combat-proven", "battle-hardened" technology

"Over the past decade, the operational use of drones here has increased and there is a clear connection to global demand. People hear about it, and they want this wonderful technology too. The Lebanon war, Operation Cast Lead, targeted killings... whenever drone use is publicised it increases demand. Cast Lead is a good example because the widespread use of drones was all documented and reported. But it happened in the past too, only with less publicity."

Danny Birchmann of IAI¹⁴²

The proven track record of Israel's drones is much cited as the basis of Israel's dominance in the global market. Speaking in the Yotam Feldman documentary investigating Israel's drones, a representative from Elbit Systems states:

"Foreign buyers are most interested in meeting the soldiers. Their first question is always whether the Israeli armed forces use [the drone]. It's our best promotion tool."¹⁴³

Elbit promotes Hermes drones as "combat-proven" and the "primary platform of the IDF in counter-terror operations".¹⁴⁴ The company's share price rose in July 2014 following extensive use of its technology during Israel's devastating assault on Gaza that year, Operation Protective Edge.¹⁴⁵ Israel's military occupation of Palestine is providing the Israeli drone industry with an unparalleled advantage in the rapidly expanding market, with Gaza in particular treated as a test laboratory.¹⁴⁶

Elbit's Skylark drone, for example, has been characterised as "a star [which] was born in the Gaza skies". Neve Gordon, professor of political science at Ben Gurion University, observes:

"You only have to read the brochures published by the arms industry in Israel. It's all in there. What they are selling is Israel's 'experience and expertise' gained from the occupation and its conflicts with its neighbours."¹⁴⁷

Benjamin Ben Eliezer, a former defence minister, agrees: "People like to buy things that have been tested. If Israel sells weapons, they have been tested, tried out."¹⁴⁸ Shlomo Bron, a former air force general, directly referenced the death and destruction wrought by Israel's occupation of Palestine as a profitable circumstance, declaring:

"It may be true that in practice the military uses the occupied territories as a laboratory, but that is just an unfortunate effect of our conflict with the Palestinians.... and we sell to other countries only because Israel itself is too small a market."¹⁴⁹

142 'Israel's Drone Dealers', People and Power: Al Jazeera

143 'Israel's Drone Dealers', People and Power: Al Jazeera

144 'Elbit Systems: Company Profile', Corporate Watch.

Michael Deas and Tom Anderson, 'Barclays boycotted over Israel arms trade', The Electronic Intifada, 21 Nov 2014 <https://electronicintifada.net/content/barclays-boycotted-over-israel-arms-trade-shares/14056> last accessed 28 Mar 2019

145 'Elbit Systems: Company Profile', Corporate Watch.

Michael Deas and Tom Anderson, 'Barclays boycotted over Israel arms trade', The Electronic Intifada, 21 Nov 2014 <https://electronicintifada.net/content/barclays-boycotted-over-israel-arms-trade-shares/14056> last accessed 28 Mar 2019

146 Yotam Feldman, 'The Lab', Al Jazeera, 08 May 2014 <https://www.aljazeera.com/programmes/witness/2014/05/lab-20145475423526313.html> last accessed 28 Mar 2019

147 Jonathan Cook, 'Israel's booming secretive arms trade', Al Jazeera, 16 Aug 2013, <https://www.aljazeera.com/indepth/features/2013/08/201381410565517125.html> last accessed 28 Mar 2019

148 Middle East Eye, 'How killing children in Gaza helps Israel's arms industry sell weapons', Stop the War coalition <http://www.stopwar.org.uk/index.php/media/poetry/935-dedicated-to-palestinian-youth-we-teach-life-sir> last accessed 28 Mar 2019

149 'Israel's booming secretive arms trade', Al Jazeera.

The international community colludes in Israel's drone wars in Palestine, legitimating its actions by purchasing the unmanned combat technology that has been tested and advertised through Israel's devastating campaigns in Gaza. Said Yoav Galant, the head of the Israeli army's southern command during Cast Lead operation:

"While certain countries in Europe or Asia condemned us for attacking civilians, they sent their officers here, and I briefed generals from 10 countries... There's a lot of hypocrisy: they condemn you politically, while they ask you what your trick is..."¹⁵⁰

The following shows a few illustrative examples of Israel's exports:

India

Having fuelled an arms race with Pakistan, India is now a major buyer of Israeli military systems, operating more than 60 IAI Herons acquired in several deals amounting to over \$1 billion.¹⁵¹ Israeli news sources reported in January 2019 that India "operates close to 180 Israeli-made UAVs, including 108 IAI-made Searchers and 68 unarmed Heron 1s for surveillance and intelligence gathering, as well as a fleet of IAI-produced Harpy drones, which carry a high-explosive warhead and self-destructs to eliminate targets such as radar stations."¹⁵²

UK

The UK is not only a customer of Israel, but also a developer and funder of Israeli drone technology through Elbit Systems' UK-based subsidiary, Thales.¹⁵³ The British army used Hermes 450 UAVs in Afghanistan and Iraq, and developed the Hermes 450 into the Watchkeeper drone.¹⁵⁴ British military personnel have undergone training in drone operation in Israel.¹⁵⁵ Military exports between Israel and the UK are two-way, with evidence that British weaponry, including drone technology, was used in Operation Protective Edge in 2014.¹⁵⁶

The British army deployed Israeli anti-drone technology to thwart the consumer drone activities that shut down Gatwick airport during the festive period in 2018.¹⁵⁷ Jane's revealed last summer that the UK had purchased the Israeli Drone Dome Counter-UAS system earlier that year.¹⁵⁸ The Israeli military press reported that the UK purchased six Drone Dome systems at a cost of around \$20m.¹⁵⁹ While the Drone Dome can include a high-powered laser to perform a 'hard kill', the UK did not purchase this element, relying instead on an electronic jammer to

150 'Sleepless in Gaza: Israeli Drone War in the Gaza Strip', Rosa Luxemburg Stiftung Regional Office Palestine

151 'Israel and the Drone Wars', Drone Wars UK

'Israel's defense industry boosts UAV sales, eyes unmanned subs', Defense News

152 'India to buy 15 Harop Suicide Drones from Israel', The Jerusalem Post.

153 'Israel and the Drone Wars', Drone Wars UK

154 'Israel and the Drone Wars', Drone Wars UK

155 They Work For You, 'Unmanned Air Vehicles', 19 Nov 2014 <https://www.theyworkforyou.com/wrans/?id=2014-11-07.213867.h&s=training+on+the+unarmed+HERMES+450+Unmanned+Aircraft+System+has+been+conducted+by+Army+personnel+in+Israel+on+a+regular+basis#g213867.r0>, last accessed 28 Mar 2019

156 Cahal Milmo, 'Israel-Gaza conflict: Revealed - Britain's 'role' in arming Israel', The Independent, <https://www.independent.co.uk/news/world/middle-east/revealed-britain-s-role-in-arming-israel-9643902.html> last accessed 28 Mar 2019

Cahl Milmo, Britain still arming Israel despite fear weapons will be used against Gaza, The Independent, 2 Jul 2015 <https://www.independent.co.uk/news/uk/politics/britain-still-arming-israel-despite-fear-weapons-will-be-used-against-gaza-10357621.html> last accessed 28 Mar 2019

157 Anna Tobin, 'British Army Used Israeli Tech To End Gatwick Airport Xmas Drone Chaos', Forbes, 26 Dec 2018, <https://www.forbes.com/sites/annatobin/2018/12/26/british-army-used-israeli-tech-to-end-gatwick-airport-xmas-drone-chaos/#6d3007896e6e> last accessed 28 Mar 2019

158 Gareth Jennings, 'UK signs for Drone Dome C-UAS systems', Janes Weekly, 14 Aug 2019, <https://www.janes.com/article/82347/uk-signs-for-drone-dome-c-uas-system>, last accessed 19 Apr 2019

159 Simon Griver, "UK army deploys Rafael's Drone Dome at Gatwick airport", Globes, 21 Dec 2018, <https://en.globes.co.il/en/article-uk-army-deploys-rafaels-drone-dome-at-gatwick-airport-1001265876>, last accessed 18 Apr 2019

undertake a 'soft kill'.¹⁶⁰ While it appears that several counter-drone systems were tried at Gatwick during the episode, press reports in Israel credited the Israeli system as the decisive technology.¹⁶¹ This is no doubt likely to boost sales of Israeli counter-drone systems; the UK Defence Secretary at the time, for example, insisted that airports should purchase these themselves.¹⁶²

Germany

As stated earlier, Germany has recently leased several armed Heron TPs in a lucrative and contested deal with Israel, until a European drone is developed by 2025. This is in addition to two former contracts to lease unarmed Heron-1 models for reconnaissance and surveillance, including three drones to support the Bundeswehr mission in Mali, worth approximately \$100 million, and the lease of Heron-1s operated by Airbus in Afghanistan.¹⁶³ The latter lease was extended by the German military for one year in 2017, at a cost of approximately \$37.5 million.¹⁶⁴

Russia

Israel's IAI sold drones to both sides of the Russia-Georgia conflict in 2008, having previously sold 10 Searcher 2 and 30 BirdEye-450 drones to Russia.¹⁶⁵ Evidence also indicates that Russia used Israeli-made drones in Syria.¹⁶⁶ Israel halted further sales of UAVs to Russia at the request of Washington in 2017.¹⁶⁷

Azerbaijan

In December 2016, Azerbaijani President Aliyev stated that "so far the contracts between Azerbaijani and Israeli companies with respect to purchasing defence equipment have been close to \$5 billion".¹⁶⁸ Some of these contracts have included the sale of what are termed 'suicide drones', including IAI's Harop, Elbit's SkyStriker. More recently, exports have included the Orbiter 1K model from Aeronautics Ltd., after Israel lifted the aforementioned export ban following the company's demonstration of the drone against Armenian forces.¹⁶⁹

160 iHLS, 'Rafael's Drone Dome Defeated Gatwick Drone', UAS Vision, 2 Jan 2019, <https://www.uasvision.com/2019/01/02/rafaels-drone-dome-defeated-gatwick-drone/>, last accessed 19 Apr 2019

161 Eytan Haylon, 'Israeli Anti Drone Technology Brings an End to Gatwick Airport Chaos', Jerusalem Post, 21 Dec 2018, <https://www.jpost.com/International/Israeli-anti-drone-technology-brings-an-end-to-Gatwick-Airport-chaos-575054> last accessed 18 Apr 2019

162 Gwynn Tophan and Jessica Elgot, 'UK airports need to buy anti-drone technology, says defence secretary', The Guardian, 10 Jan 2019, <https://www.theguardian.com/world/2019/jan/10/uk-airports-must-buy-anti-drone-technology-says-defence-secretary> last accessed, 19 Apr 2019

163 Lars Hoffman, 'Germany to Lease Israeli 'Heron' Drone for Mali Operations', 22 Jul 2016, Defense News, <https://www.defensenews.com/air/2016/07/22/germany-to-lease-israeli-heron-drone-for-mali-operations/> last accessed 28 Mar 2019

164 Richard Tomkins, 'Germany extends Heron drone lease contract', UPI, 26 Jan 2017 <https://www.upi.com/Defense-News/2017/01/26/Germany-extends-Heron-drone-lease-contract/3301485448097/> last accessed 28 Mar 2019

165 Yaakov Katz, 'How Israel sold Russia Drones to stop Missiles from Reaching Iran', The Jerusalem Post, 3 Feb 2017 <https://www.jpost.com/Magazine/Books-Israel-and-the-saleof-advanced-drones-to-Russia-480326> last accessed 28 Mar 2019

Flight Global, 'Israel steps back from fresh UAV deals with Russia', 15 Apr 2016, <https://www.flightglobal.com/news/articles/israel-steps-back-from-fresh-uav-deals-with-russia-424269/> last accessed 28 Mar 2019

166 Yaakov Katz, 'How Israel sold Russia Drones to stop Missiles from Reaching Iran', The Jerusalem Post, 3 Feb 2017 <https://www.jpost.com/Magazine/Books-Israel-and-the-saleof-advanced-drones-to-Russia-480326> last accessed 28 Mar 2019

Flight Global, 'Israel steps back from fresh UAV deals with Russia', 15 Apr 2016, <https://www.flightglobal.com/news/articles/israel-steps-back-from-fresh-uav-deals-with-russia-424269/> last accessed 28 Mar 2019

167 Arie Egozi, 'Egozi: Israel Will Not Export Advanced UAVs to Russia', iHLS, 16 Aug 2016, <https://i-hls.com/archives/78069> last accessed 28 Mar 2019

168 Gili Cohen, 'Azerbaijan's President: We've Bought Almost \$5 Billion in Israeli Military Goods' Ha'aretz, 14 Dec 2016, <https://www.haaretz.com/israel-news/premium-azerbaijan-has-bought-5-billion-in-israeli-military-goods-1.5473569> last accessed 28 Mar 2019

169 MEMO, 'Israel defence company sells 'suicide drone' to Azerbaijan', Middle East Monitor, 11 Jan 2019 <https://www.middleeastmonitor.com/20190111-israel-defence-company-sells-suicide-drone-to-azerbaijan/> last accessed 28 Mar 2019

Judah Ari Gross, 'Licenses suspended for dronemaker accused of bombing Armenia for Azerbaijan', The Times of Israel, 27 Jan 2019, <https://www.timesofisrael.com/licenses-suspended-for-dronemaker-accused-of-bombing-armenia-for-azerbaijan/> last accessed 28 Mar 2019

EU

The EU's border management agency, Frontex, tested IAI's Heron drones for the identification of boats carrying migrants en route to Europe. Frontex' spokeswoman, Ewa Moncure, stated that EU "member states are interested in surveillance technology... so we are looking at what is out there. The fact that it has been used for other purposes cannot prevent us from looking at this technology."¹⁷⁰ In 2018, the EU awarded Elbit Systems a \$68 million contract to provide patrol services to the European Maritime Safety Agency (EMSA) through the lease and operation of a Hermes 900 Maritime Patrol system and its Ground Control Station. Elad Aharonson, General Manager of Elbit Systems (ISTAR Division), commented:

"Having been selected by the European Union authorities is yet another vote of confidence in the Hermes 900 by following additional contract awards for this UAS [unmanned aircraft system] in Europe, Asia Pacific, Latin America and Israel."¹⁷¹

These are just a few of Israeli drone exports in recent years, indicating the profits made by the Israeli drone industry.¹⁷²

170 Sleepless in Gaza: Israeli Drone War in the Gaza Strip', Rosa Luxemburg Stiftung Regional Office Palestine

171 Elbit Systems, 'Press Releases', 1 Nov 2018 <http://ir.elbitsystems.com/news-releases/news-release-details/elbit-systems-selected-provide-maritime-uas-european-union?ID=2374625&c=61849&p=irol-newsArticle> last accessed 28 Mar 2019

172 'Israel's booming secretive arms trade', Al Jazeera.

CONCLUSIONS

Building on Drone Wars' 2014 report, this update has shown that Israel's use of drones to kill and control is on the rise, as it continues to develop, deploy and export the technology to devastating yet lucrative effect.

According to Yehudi Shaul of the Israeli veterans group, Breaking the Silence:

"The high amount of civilian casualties in Operation Protective Edge - the huge amount of destruction we left behind in Gaza is by no way out of the blue. This is the direct result of new doctrines the IDF has developed - you basically cause [a] disproportionate, significant amount of damage, to infrastructure, civilian property and the area you fight [in], in order to create deterrence."¹⁷³

Drones are increasingly used by Israel as a key feature in this ongoing military project, conducting sporadic attacks to a devastating effect, as well as traumatising the Palestinian population through their persistent presence in 'ceasefires'.

This use of drones in the continued occupation of Palestine gives Israel an unparalleled advantage in the rapidly expanding market for unmanned military systems. Therefore, Israel's sustained deployment of drones in Palestine serves both as a strategy of control and degradation, and, simultaneously, as promotional tool for this technology to be spread further afield.

In line with other states, unmanned military technologies are therefore becoming integral to Israel's military arsenal, misleadingly touted as humanitarian weapons that contribute to the management of war as just, precise and "virtuous".¹⁷⁴ Meanwhile, civilian casualties in Palestine are increasingly attributed to drones, as are the trauma and anxiety arising from Israel's regime of colonial control.

The deaths that drones have caused in Palestine, as well as the severe injuries and psychological harm, clearly undermine the humanitarian credentials claimed for the technology by its advocates. Indeed, the cases of Luia and Amir, the Bakr boys, and the many other Palestinians killed, maimed and traumatised by Israel's drones tragically demonstrate the real cost of drone warfare.

¹⁷³ 'Israeli soldiers cast doubt on legality of Gaza military tactics', The Guardian

¹⁷⁴ 'Virtuous War: Mapping the Military-industrial-media-entertainment Network', 2009, 2nd edn. New York: Routledge.

ACRONYMS

AFB	Air force base
IAF	Israeli Air Force
IAI	Israel Aerospace Industries
IDF	Israel Defence Forces
IS	Islamic State
ISTAR	Intelligence gathering, surveillance, target acquisition, and reconnaissance
RPAV	Remotely piloted aerial vehicles
UAV	Unmanned aerial vehicles



Shining a spotlight
on military drones