



A US Predator drone in Kandahar, Afghanistan.

MILITARY TECHNOLOGY

# Death by remote control

Ann Finkbeiner examines a study that probes how drones have ‘remixed’ warfare.

A drone is a good way to kill someone. A pilotless aeroplane watches from above, targets and shoots with precision, and disappears into the sky. The killer is never in danger. Drones can fly at 160–300 kilometres per hour at altitudes of up to 15,000 metres, hover over a target for hours, ‘see’ people and objects (clearly enough to read a car number plate from 3 kilometres up), and detect mobile-phone signals. At one-tenth to one-hundredth of the price of fighter planes, drones are practically disposable.

Little surprise, then, that by 2012, one-third of the US Air Force’s aircraft were drones, and half of the pilots in the Air Force were being trained to fly them. The US military has used drones for fighting in Afghanistan, Iraq, Yemen, Somalia, Libya, Pakistan and the Philippines. This has “remixed” warfare, anthropologist Hugh Gusterson argues in *Drone*, an overview of the implications and ethics. If war is a duel in which both sides are vulnerable, then drone warfare may not even be war.

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It is so asymmetrical that it resembles hunting, he writes — a “new form of state violence”, harder to define and control with national and international laws. As such, he argues, “the drone is an inherently colonialist technology that makes it easier for the United States to engage in casualty-free and therefore debate-free intervention”.

Drone operation is bizarre. US pilots sit in grubby trailers in front of computers somewhere in the depths of the Nevada desert; Gusterson calls them “stick monkeys”. The screens show live videos of roads, compounds, people — views also seen by intelligence analysts, commanders and military lawyers, all of whom inform the decision to fire. Then a ‘sensor operator’ aims a laser at the person or vehicle targeted, the drone pilot triggers a missile that follows the laser,



**Drone: Remote Control Warfare**  
HUGH GUSTERSON  
MIT Press: 2016.

and 15–30 seconds later, they watch the infrared flash, the flames and the incineration of the enemy.

Some might imagine that this precision makes drones more humane compared to, say, the bloodbath of the Second World War’s Battle of the Bulge. But it does not prevent civilians from being killed: if someone wanders within screen view at the last second, or a targeted soldier passes his phone to a relative, it can happen. Those who live under circling drones — interviewed by foreign correspondents or aid workers — report chronic terrorization. And according to a study by the US Department of Defense, Gusterson recounts, half of the US pilots, despite being on the other side of the planet, have “high levels of operational stress” and can experience post-traumatic stress disorder. Targeted killing ultimately means only that fewer civilians die. Nobody knows how many: estimates depend entirely on who does the estimating.

The standard rules of warfare no longer apply. The Geneva Conventions and their protocols — established from 1949 to 2005

VERONIQUE DE VIGUERIE/GETTY

to protect civilians, among others — define battlefields and combatants. But insurgent wars have no clear battlefields and no full-time, uniformed fighters. Combatants are the people listed as targets for drone strikes. The list, Gusterson writes, is “maintained by U.S. military and intelligence agencies”, and includes people not known to be terrorists but possessing that profile. A person is added after analysts balance their importance against the number of civilians likely also to be killed. Gusterson wonders about the line between legal targeted killing and illegal assassination.

Although 76 countries use drones, Gusterson mentions only the United Kingdom, Israel, Iran and the United States, focusing on the last. He writes that he doesn't intend this book as an argument for or against drones and that he wants only a debate on regulating their use, yet he is clearly against them.

A reader trying to decide whether drones are a more humane form of weaponry, a hunting party, a neocolonial ploy or all three at once, will want to look closely at the author's sources. Anthropologists have traditionally gone into the field, meeting, observing and listening to their sources. Gusterson's sources are predominantly journalists, memoirists and authors who report

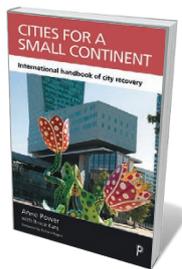


A drone operator in Nevada.

regularly on the field or are veterans of it. Some anthropologists do analyse a culture remotely, on the basis of others' experiences and impressions. As a journalist, I would rather do my own reporting and not hover drone-like over the field that others have defined. ■

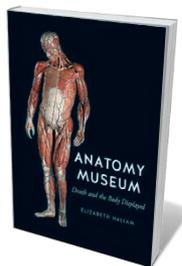
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## Books in brief



### **Cities for a Small Continent: International Handbook of City Recovery** *Anne Power* POLICY (2016)

Many of Europe's storied cities have seen more bust than boom for decades, writes urban-sustainability specialist Anne Power. Yet a number have risen reinvented, and in this brilliant analysis, Power shows how. She follows the march of seven “Phoenix cities” with strong industrial legacies, from Sheffield, UK, to Turin in Italy, as they weather upheavals and de-industrialize with the aid of major public investment. These conurbations should be seen, she argues, as the vanguard in the low-carbon transformation outlined by economist Nicholas Stern (M. Grubb *Nature* **520**, 614–615; 2015).



### **Anatomy Museum: Death and the Body Displayed**

*Elizabeth Hallam* REAKTION (2016)

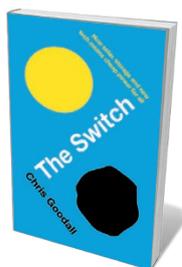
Pickled in formalin, stripped down to articulated skeletons or depicted in wax or plastic, human anatomical remains have educated generations of medics and fired the public imagination. Anthropologist Elizabeth Hallam uses the Anatomy Museum at the University of Aberdeen, UK, to anchor a history of such collections as “synoptic mazes” — labyrinthine summations of knowledge. Hallam charts their convoluted chronicles of acquisition, dissection and preservation, weaving in a narrative on the cultural display of death, from ancient ossuaries to plastinated bodies.



### **The Art of Flight**

*Fredrik Sjöberg* (Translated by Peter Graves) PARTICULAR (2016)

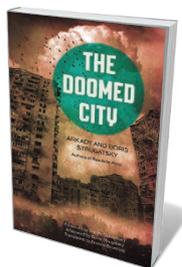
Entomologist Fredrik Sjöberg's best-selling memoir *The Fly Trap* (Particular, 2014) marked him as a maestro of the episodic. Here, he completes a trilogy with two books in one — “accidental journeys” by fellow Swedes whose omnivorous curiosity rivalled his own. *The Art of Flight* focuses on Gunnar Widforss, exalted in the United States for his haunting landscape paintings of national parks. *The Raisin King* tackles polymath Gustav Eisen, who studied earthworms, *Anopheles* mosquitoes and viticulture, brought avocados to California and sparked the founding of Sequoia National Park. A joy.



### **The Switch**

*Chris Goodall* PROFILE (2016)

The world is poised for the solar revolution, argues energy writer Chris Goodall in this nippy, number-crunched study of the science behind the “switch”. Noting that solar farms will have to cover 1% of Earth's surface by 2050 to meet global energy needs, he treads the road towards that goal. He examines readiness in industry and banking, research on new solar-collection materials such as perovskites, the state of back-up renewables and innovative batteries. With many governments and some utility companies primed for action, Goodall avers, the fossil century could be history within two decades.



### **The Doomed City**

*Arkady Strugatsky and Boris Strugatsky* (Translated by Andrew Bromfield) CHICAGO REVIEW PRESS (2016)

Doyens of Russian science fiction Arkady and Boris Strugatsky wrote this nihilistic ‘lost’ novel in the 1970s. In its English-language debut, we are dumped abruptly into the Experiment, a garbage-choked, baboon-infested city with an artificial sun and an eerily mismatched populace. Here, astronomer-turned-rubbish-collector Andrei begins a grim trek into the ideology of tyranny. A book that carries an Orwellian punch, and a crazed energy all its own. [Barbara Kiser](#)