Drones along Borders: Border Security UAVs in the United States and the European Union

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Abstract: Border control authorities, vigilantes, and criminal organizations use drones to track movement across the US-Mexican border. EU member states' military drones patrol the Mediterranean Sea for migrants alongside drones operated by humanitarian organizations. This paper examines the complex security landscape that is unfolding as states deploy military drones for border security and non-state actors with sharply diverging motives develop their own drone surveillance capacities. We argue that border security drones have contrary political, policy, and ethical implications. First, the encroachment of military technologies into non-military security operations may have adverse security repercussions, but drones may also save migrants' lives as they make dangerous journeys through deserts and across rough seas. Second, drone surveillance erodes privacy but also creates new accountability mechanisms. Finally, drones may obviate some visible signs of security, such as fences, while also introducing an invisible security apparatus that extends beyond state boundaries. These contradictory effects help to explain the complex policy formation processes underlying drone border security programs in the United States and Europe as well as the challenge of reaching clear answers about whether drone security is desirable.

Introduction

Unmanned Aerial Vehicles (UAVs) are increasingly being used for border security as well as search and rescue of migrants and refugees. Drones initially developed for the US military patrol the US borders with Mexico and Canada, watching for drug smugglers and unauthorized border crossers in much the same way that they patrol the skies above Pakistan, Yemen, and Somalia. European military drones have searched for migrants in the Mediterranean and Frontex,[1] the European Border and Coast Guard agency, plans to use drones in the future. US and EU member states' increasing reliance on drones in non-military roles has established a continuum between international conflict and domestic settings, which raises questions about the political and ethical significance of border security drones. Moreover, various nongovernmental organizations (NGOs) have launched their own drones for conflicting reasons, adding further complexity to drone operations and border security that has been overlooked in recent research on these subjects.

This complexity can be illuminated through reflection upon the following hypothetical example: A surveillance drone flies along a country's boundary. The meaning of this flight and the political implications it may have depend on who is flying the drone and what is done with the information collected. If that drone is being flown by that country's border control authorities and the imagery collected is used to direct officers to intercept illegal border crossers, it means one thing; if the drone is being flown by an NGO to find people in distress and rescue

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[1] Frontex is the acronym for the European Agency for the Management of Operational Cooperation at the External Borders of the Member States of the European Union

them, it means something quite different. But not all NGOs have the same agenda. An NGO with an anti-immigration agenda may use a drone to capture images of people crossing borders and post them on the internet to demonstrate that borders are "out of control" and pressure policymakers to implement more restrictive immigration policies. If the border surveillance drone is being flown by a different kind of NGO, i.e., a transnational criminal organization, the camera may be aimed not at illegal border crossers but at the border guards. While a drone flying along a border can have a variety of political implications, most analysis of border security drones has focused on those operated by state border control authorities (see, e.g., Milivojevic 2015; Marin 2016; Jumbert 2016).

We argue that drones raise contrary political, policy and ethical issues when deployed along borders. We agree with critics in thinking that government deployment of border security drones marks a significant change that comes with serious risks (Milivojevic 2015; Marin 2016; Jumbert 2016). However, we aim to show that drones produce an assortment of inextricable costs and benefits that should lead to a more mixed assessment of this policy shift. If drones transform border security, they will not do so in a uniform way, as they raise profound normative contradictions that may be impossible to disaggregate or avoid. This is especially true considering the broad range of motives that inform the NGOs operating drones. Government and civil society actors in the migration and border security domain seem to support or oppose drones by privileging certain potential advantages or disadvantages of drone use over others and adopting differing ethical stances depending on their policy goals. The best way forward is to map out these effects of employing drones in this new role with the goal of generating a serious discussion about whether they are justified and how the adverse consequences may be managed.

We make these arguments by reviewing various perspectives on border security drones generated by differing theoretical approaches, describing the proliferation of an increasing variety of drones and their use, exploring NGO use of drones and related NGO policy positions and then analyzing three problems that highlight the costs and benefits of drones along borders. First, the encroachment of military technologies, like drones, into non-military security operations can raise the risks of violence to border crossers and the escalation of violence between border guards and criminal organizations. Nevertheless, drones may also improve security by reducing the risks associated with border crossing through search and rescue operations that save migrants' lives as they make dangerous journeys through deserts and across rough seas. Second, drone surveillance renders the world more visible, eroding privacy and raising concerns over increases in government power. Yet surveillance also introduces new accountability mechanisms for law enforcement officers, administrators, and contractors. It is even possible to imagine NGOs providing third-party monitoring capacities. Finally, drones upend the symbolic politics of border control. While many politicians promote highly visible border security actions, such as building fences, because such symbolic political actions yield voters' support, drones can reduce the visible signs of security, while also introducing an invisible security apparatus. In our conclusion, we consider some ways in which the adverse consequences of drone use, which cannot be completely overcome, might at least be mitigated by new regulations.

Perspectives on drones and border security

The international relations scholarship on drones has primarily focused on the use of armed drones in wars and counterterrorism operations (Singer 2009; Kaag and Kreps 2014), rather than on the use of unarmed drones in other areas of concern to foreign policy makers and international

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relations scholars, such as disaster and humanitarian response, peacekeeping and nuclear safety. Inasmuch as the issues of international migration, asylum and refugees are increasingly appearing in scholarly works of international relations, the use of drones along international borders is also salient, but has received little scholarly attention. Most academic works addressing non-military drones do so within larger arguments about the securitization of migration, border militarization and humanitarian drones (Sandvik and Lohne 2014; Emery 2016; Custers 2016; Sandvik and Jumbert 2016), and surveillance and privacy (Završnik, 2015), with only a few chapters in some of these volumes that specifically deal with the use of drones for border security (Milivojevic 2015; Marin 2016; Jumbert 2016).

Migration is central to the concept of "societal security" that Barry Buzan, Ole Waever and other members of what became known as the Copenhagen School developed as they broadened the range of legitimate security analysis beyond such traditional topics as military capabilities, diplomacy and political events, to topics such as ethnicity, national identity and migration (Waever et. al. 1993). As Buzan put it, "The threat of migration is fundamentally a question of how relative numbers interact with the absorptive and adaptive capacities of society…The fear of being swamped by foreigners…is easy to mobilize on the political agenda as a security issue" (Buzan 1983, 88). Heisler and Layton-Henry's contribution to *Identity, Migration and the New Security Agenda in Europe* elaborated on Buzan's point, "Immigration can present threats to security in the receiving countries, albeit generally not directly of a military kind. The capacity of social, economic, political and administrative institutions to integrate large numbers of immigrants, and the resistance of some immigrant communities to assimilation, affects the stability of society and therefore the ability of receiving states' governments to govern" (Heisler and Layton-Henry 1993, 161). Buzan and his colleagues highlighted the political usage of the

linkage between international migration and security in the discourse of policymakers, who increasingly depicted migration as a security issue. The expanding academic literature on this "securitization of migration" is implicitly, if not explicitly, critical of those policymakers who made migration a security issue (Doty 1999, Huysmans 2000, Ceyhan and Tsoukala 2002, d'Appollonia 2012). Leonard (2010, 244) and Marin (2016) argue that the increasing use of drones by border authorities provides another example of how migration is being securitized, namely through unprecedented applications of military technologies.

Similarly, governments' use of drones along borders has been depicted as a manifestation of border militarization, which involves the transference of military values and hardware into domestic life, particularly law enforcement (Wilson 2015; Milivojevic 2015; Jumbert 2016). The US Department of Homeland Security's Bureau of Customs and Border Protection (CBP) and its Border Patrol subunit, are heavily influenced by the military. Roughly a third of CBP staff previously served in the military, the CBP has long used equipment originally designed for the military and the National Guard has on occasion been called up to support Border Patrol operations. Dunn (2013, 1236) argues that border security is closely modeled on low-intensity conflict doctrines and that many of the weapons and tactics developed for those operations are imported into the CBP. European border protection has arguably also become more militarized in response to the proliferation of threats from non-state actors and increasing numbers of immigrants (Anderson 2014). This is evidenced by cooperation between border guards and state military forces, even to the extent that armed forces have become directly involved in policing (Bertin and Fontanari 2011).

Milivojevic goes even further by noting that drones could potentially be more threatening in border security contexts than in military conflicts due to the differing degrees of scrutiny. "The

human cost, clearly visible in the drone strikes debate is carefully hidden in border policing narratives or replaced with the notion of combating transnational crime and/or 'rescuing' migrants in distress" (Milivojevic 2015, 94). Milivojevic's assessment coincides with Marin's argument that humanitarian drone missions legitimize the expansion of EU and EU member state surveillance capabilities (Marin 2016) as well as Sandvik and Lohne's contention that drones not only show a process of technological borrowing but also "the transfer of social, cultural and political practices" (Sandvik and Lohne 2014,150). Emery (2016) warns that drones may undermine humanitarian objectives by legitimizing the drone industry's military ventures, creating the wrong impression about how programs are operating, and introducing the possibility that domestic security drones could be armed.

In contrast, Meier (2015) depicted drones more positively in an examination of the impact of the information revolution on humanitarian aid and intervention, much as Chow (2012), who praised drones for mitigating many of the hazards associated with humanitarian missions and making it easier to provide assistance. Meier went on to found UAViators, a humanitarian UAV network with over 2,500 members that promotes "the safe, coordinated and effective use of UAVs for data collection and cargo delivery in a wide range of humanitarian and development settings."[2]

These contrasting academic depictions of non-military drones largely reflect practitioners' opinions represented in a survey of humanitarian aid workers produced by The Swiss Foundation for Mine Action (FSD), which found that 60 percent of 194 respondents considered drones to have the potential for a positive impact in disaster response operations, while 22 percent viewed drone use following natural disasters negatively. With respect to the use of drones in conflict

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[2] See: http://uaviators.org

zones, 40 percent stated that drones should never be used by humanitarian organizations, while 41 percent said they would consider using drones even during armed conflicts (FSD n.d.). The disjuncture between the critique of militarization and advocacy for drones as humanitarian tools raises questions about which perspective is right and which offers stronger insights when it comes to judging drones in border security.

Policymakers, government agencies and policy analysts have paid far more attention than academics to drones' deployment along borders (e.g., Haddal and Gertler 2010; Fleming et al. 2015; GAO 2017), but much of that analysis is harnessed to arguments either advocating more border drone use (e.g. by members of the Unmanned Systems Caucus of the U.S. House of Representatives) or, pointing to questions of cost effectiveness[3] and/or privacy and civil liberties (Hayes and Vermeulen 2012; Stepanovich 2012). This debate is sure to become even more important and vitriolic as the US Republican Party led by Donald Trump, the National Front in France, and the Law and Justice Party in Poland, along with other nationalist parties elsewhere in Europe have made border security and immigration central to their campaigns and policy agendas.

The Changing Face of Drone Operations

The US military and Central Intelligence Agency (CIA) have used UAVs extensively throughout the War on Terror, expanding their roles from unarmed reconnaissance missions in the 1990s to targeted killings during the wars in Afghanistan and Iraq (Singer 2009). The

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[3] "U.S. Customs and Border Protection's Unmanned Aircraft System Program Does Not Achieve Intended Results or Recognize All Costs of Operations," Office of the Inspector General, Department of Homeland Security, OIG-15-17. December 24, 2014; Tom Barry, "Drones Over the Homeland: How Politics, Money and Lack of Oversight Have Sparked Drone Proliferation, and What We Can Do," Center for International Policy, April 23, 2013 at: https://www.ciponline.org/research/html/drones-over-the-homeland

military's increasing use of drones is understandable because drones make it possible to wage wars with lower risks of sustaining casualties; they can conduct surveillance or track targets for long periods (over 20 hours) without landing, and operate in areas where ground forces and manned aircraft would be unable to do so. These features also make them attractive as border security tools. First, drones can reduce the risks that border guards face from armed smugglers and environmental hazards. Second, drones can watch for border crossers longer than piloted vehicles. Third, drones can operate in areas where it might be difficult to use other border protection techniques, particularly in maritime contexts.

The use of drones for border surveillance began with the counter drug-smuggling Operation Alliance, when U.S. Marines piloted UAVs along the US-Mexican border in Texas for three weeks in February 1990. Although the purpose was drug interdiction, the UAVs were also credited for apprehending more than 300 unauthorized border crossers (Zamichow 1990). During this operation, the US Border Patrol considered expanding UAV operations to intercept drugs elsewhere along the border, but then opted against it.

It was not until the 9/11 attacks that US legislators and certain NGOs called for using UAVs to intercept border crossers. In Senate and House hearings held shortly after the establishment of the Department of Homeland Security (DHS) in March 2003, several members of Congress called for using UAVs along the border but the DHS was slow to respond. After an NGO, American Border Patrol,[4] received extensive media coverage of a successful April 25, 2003 test

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[4] American Border Patrol is a 501 c (3) non-profit corporation that describes itself as "the only non-governmental organization (NGO) that monitors the border on a regular basis - mostly by air" operating "from a ranch right on the Mexican border in Southeastern Arizona in the heart of a major smuggling corridor. ABP is a watchdog. We watch what the government is doing and we report to you directly." http://americanborderpatrol.com/About.html

of its border surveillance drone[5] Secretary of Homeland Security, Tom Ridge testified in a May 20, 2003 Congressional hearing, saying, "It is our goal to have a pilot up by the end of the year using a UAV along some of our land borders."[6] Accordingly, the DHS tested the General Atomics MQ-9 Reaper (which is usually called the Predator B when it is used for border security) from October 29 to November 12, 2003.

US Customs and Border Protection (CBP), another DHS division, began employing Predator B drones along the US-Mexican and US-Canadian border in 2004. As of 2016, the program has nine operational drones, two of which are stationed along the US-Canadian border. CBP drones are used to patrol the border, conduct surveillance for investigations, conduct disaster damage assessments, and respond to officer safety scenarios (DHS 2013). Beginning in March 2013, CBP implemented an automated "change detection" strategy whereby drones take video of a stretch of the border then repeat 24 hours later. These videos are sent for automated "processing, exploitation, and dissemination" by the Office of Intelligence and Investigative Liaison, whose analysts detect any changes in the imagery that may indicate a border crossing, risk of future incursion or of no illegal border crossing activity, which, in turn, helps Border Patrol sector managers determine where to deploy agents.[7] A December 2014 DHS Inspector General's report, however, criticized the CBP drone program for poor planning and mismanagement, which limited actual flight time of the entire nine drone fleet to 5,110 hours in 2013 at an

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[5] Including CNN, MSMBC and Reuters. Also see Austin Bunn, "Homegrown Homeland Defense," *New York Times*, June 1, 2003. Video clips and a list of media coverage can be found at: http://americanborderpatrol.com/ADMINISTRATION/History.html

[6] How is America Safer? A Progress Report on the Department of Homeland Security, Hearing before the Select Committee on Homeland Security House of Representatives, May 20 and 22, 2003, 108-6, pp. 83-84.

[7] Testimony of Border Patrol Chief Michael J. Fisher at "Securing the Border: Understanding Threats and Strategies for the Northern Border," U.S. Senate Committee on Homeland Security and Governmental Affairs, April 22, 2015.

estimated cost of $12,255 per hour in fiscal year 2013. The Inspector General concluded that the UAV program was not very cost-effective in assisting Border Patrol agents to apprehend illegal border crossers and recommended investing additional resources in alternatives (DHS 2014). CBP's ultimate goal is to have the capacity to respond to any event along the border with drone surveillance in three hours or less.[8] CBP is far from achieving this capability along the 2,000 mile border with Mexico, let alone adding the roughly 5,500 mile border with Canada, given that the entire CBP drone fleet operates for only about 5,000 hours per year.

European states have been slower to employ military drones, have used them on a more limited basis, and have only recently begun developing them domestically. The UK, which leads the EU in drone usage, relies primarily on American and Israeli machines. Italy operates six Predator and six Reaper drones, which are all unarmed, and depends on American assistance for training pilots (Kington 2014). France operates several types of unmanned military reconnaissance vehicles, and has done so since the mid-1990s, but it has only recently made plans to introduce armed drones. Germany lags further behind, as it is still engaged in parliamentary debates over whether drones are permissible. Several EU member states plan to produce their own long-range UAVs by 2020 (Rettman 2013), but for now this leaves production dominated by American and Israeli firms.

EU member states have a much lower capacity to employ drones than the United States, which helps explain their slower adoption of drones for border security. Military reconnaissance drones have been deployed a few times to help rescue migrants (Guerrini 2015), but Frontex announced plans in 2014 to purchase 'optionally-piloted aircraft' that can be controlled by an

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[8] Department of Homeland Security, 'U.S. Customs and Border Protection's Unmanned Aircraft System Program Does Not Achieve Intended Results or Recognize All Costs of Operations,' OIG-15-17, 2014

onboard pilot or controlled remotely (State Watch 2014). Moreover, in October 2016 the

European Union upgraded Frontex to become the European Border and Coast Guard Agency that

will work together with the European Fisheries Control Agency and the European Maritime

Safety Agency and enable these agencies to "launch joint surveillance operations, for instance by

jointly operating Remotely Piloted Aircraft Systems (drones) in the Mediterranean Sea"

(European Commission 2015). While the European Commission began the process of issuing

tenders for contracts, as of May 2017, no EU or EU member state border security drones have

been deployed.

   Public support for the use of drones for border security is not clear-cut. US public

support for drones in domestic contexts is heavily dependent on how they are employed. In a

2013 poll of a national sample of Americans, 83% support the idea of using drones to help with

search and rescue missions and 62% support using drones to control unauthorized immigration

across the nation's borders, but only 21% support using drones to issue speeding tickets (Murray

2013). Although there is no available European data about public support for border security

drones specifically, polls have shown that Europeans are generally skeptical about military

drones.[9] Representatives within the European Parliament, as well as those in national

governments, have raised concerns over expanding surveillance powers and the lack of

accountability over border security (Franceschi-Bicchierai 2012).

   Academic and policy analysis has largely focused on the repurposing of military

reconnaissance drones, like the Predator, to border surveillance but the rapid proliferation of

hobbyist and commercial drones, particularly those used by photographers for producing aerial

videos of real estate, sporting events and weddings, has transformed the scope and nature of

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[9] Pew Research Center, 'Global Indicators Database,' 2014
http://www.pewglobal.org/database/indicator/52/survey/15/

border surveillance. Whereas the Predator's deployment along US borders and Frontex plans to deploy similar military drones have provided evidence for arguments about the militarization of borders, the rapid exponential growth in the number of small commercial drones that have been produced is precipitating the commercialization of border surveillance in formal, informal, and illicit economies. The French company Parrot initiated the consumer drone market at the 2010 Consumer Electronics Show in Las Vegas with the introduction of the AR Drone, a video camera equipped quadcopter that can be controlled by a smartphone. Defining personal consumer drones as internet-connected, camera-equipped UAVs that weigh less than 2 kilograms and can typically fly for up to one hour and 500 meters high, Gartner Research (2017) estimated that two million were sold worldwide in 2016 and projects 2.8 million will be sold in 2017.

Commercial drones, which are usually larger, carry higher payloads, have longer flight times and are designed for specific purposes such as mapping and industrial inspection, have been deployed by companies and utilities in the agriculture, oil and gas, power generation and transportation sectors. In 2013, Amazon unveiled a vision for a drone delivery system and began development in the UK, where the first package was delivered in December 2016.   Amazon chose to develop and test the system in the UK because EU member states, like the UK, France, Germany and Spain, were quick to begin approving commercial operators. France aggressively opened its airspace to commercial drones, with more than 1,200 commercial operators by May 2015 (West 2015). In contrast, it took until August 2016 for the US Federal Aviation Administration (FAA) to issue a rule for operating drones in domestic airspace. In a matter of months, however, more than 620,000 hobbyist drones and 44,000 commercial drones were

registered with the FAA in 2016.[10] CBP is exploring possible acquisition of such smaller

commercial off-the-shelf drones but has yet to do so (GAO 2017).

Non-State Actors in the Debate over Border Security Drones

NGOs registered with individual states, international non-governmental organizations

(INGOs) operating in several states, and NGOs from the "dark side," such as transnational

criminal organizations and terrorist organizations whose activities span borders, are acquiring

cheap personal consumer and commercial drones. Though their motives vary considerably,

NGOs are playing an increasing role in the growing use of drones for border surveillance. It is

particularly important to note that in their policy advocacy, NGOs tend to selectively call

attention to the costs or benefits associated with drones in ways that are apt to make the

implications of drone surveillance appear much clearer than they really are. Relatively few

organizations seem to recognize that drones may produce a diverse assortment of positive and

negative consequences.[11]

As discussed above, the publicity surrounding the UAV flown by the NGO American Border

Patrol in April 2003 prompted the US government to deploy drones along the border. Founded

by Glenn Spencer, a 65 year old retiree with a background in systems engineering and operations

research, American Border Patrol is a 501c(3) non-profit corporation that monitors the border,

initially with webcams to show live video of illegal border crossings on the internet and then

with its UAV, a hobbyist remote-controlled model airplane carrying a video camera. After the

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[10] FAA Aerospace Forecast Fiscal Years 2017-2037. Washington, DC: Federal Aviation
Administration, 2017. pp. 31-32.
[11] The American Civil Liberties Union (ACLU) is a noteworthy exception to this, as it
recognizes some of the many costs and benefits associated with using drones in international
conflicts and in domestic security roles.

FAA forced the organization to discontinue its UAV flights in 2005, it began flying manned aircraft. Glenn Spencer's primary objective was to use relatively inexpensive technology to show how people were crossing the border despite the Border Patrol's efforts as well as to demonstrate how the border could be monitored more cost-effectively than the systems that CBP was deploying, such as the ill-fated Secure Border Initiative network (SBI*net*), also known as the "virtual fence." The 80-year old Spencer now uses a Parrot Bebop2 consumer drone on his Arizona ranch on the border to spot illegal border crossers and then calls the local Border Patrol station to report his sightings (Taylor 2017).

The anti-war organization Codepink represents a diametrically opposed position, as it is concerned that border surveillance infringes on privacy rights. It frames the issue in terms of wasteful government spending and the expansion of the military-industrial complex into domestic life, creating a bleak view of the future of drone-based border security. Medea Benjamin (2012), one of Codepink's leaders, has expressed outrage at the possibility of police and border security drones being armed with non-lethal weapons in the future.

A similar pattern of selective engagement with drones is evident in Europe. Migrant Offshore Aid Station uses two UAVs to rescue migrants, advocates expanding the use of drones in the Mediterranean and claims to have saved over 2,800 people during 60 days of operations in 2014 with the help of its UAVs (Schiebel 2015). These NGO efforts to rescue migrants show how drones can be used for humanitarian purposes, however, private drone forces raise many uncomfortable ethical questions. Like Codepink, Statewatch and the Heinrich Böll Foundation are among the European NGOs opposing surveillance drones, and EUROSUR more broadly.[12]

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[12] See Statewatch reports, for example, Ben Hayes, Chris Jones and Eric Töpfer, 'Eurodrones Inc.' February 2014 at: http://statewatch.org/observatories_files/drones/eu/eurodrones.htm as well as the preface written by Barbara Unmüßig, President of the Heinrich-Böll-Stiftung and Ska

They, as well as other anti-drone NGOs[13] have expressed concerns that drones will lead to intrusive aerial surveillance that will, especially when taken alongside the collection of biometrics and other personal data, threaten privacy and data protection (Hayes 2012, 9).

NGOs of a different variety, drug cartels, are also using drones for surveillance along the US-Mexican border. Rodrigo Nieto-Gomes, a professor at the Naval Post-Graduate School and expert on criminal organizations' technology research and development efforts, points out that cartels use drones "to try to identify positions of Border Patrol Agents and, therefore, inform smugglers of their positions to allow for the trafficking of drugs through the desert."[14] Cartels have long employed "an army of civilian lookouts who might receive $100 a month just to keep their eyes open and make a phone call if they notice an uptick in border inspections (Keefe 2012)." Known as "falcons," these lookouts position themselves in buildings with views of ports of entry or on hilltops with views across the border into the US. Given that the Mexican government enacted laws in 2015 to promote commercial drone use[15] and the price of small drones that can take and transmit video has rapidly dropped below the cost of employing lookouts, the lookouts "are in the process of being replaced with a fleet of drones that fly along the U.S.-Mexico border, giving comprehensive real-time intelligence to smugglers on the

Keller, Member of the European Parliament, to Ben Hayes and Mathias Vermeulen, 'Borderline: The EU's New Border Surveillance Initiatives.' Heinrich Böll Foundation, June 2012 posted at: https://www.boell.de/en/content/borderline-eus-new-border-surveillance-initiatives

[13] See e.g. Article 36 http://www.article36.org/; The International Committee for Robot Arms Control http://icrac.net/

[14] Quoted by Kimberly Adams in "Intimate images in the digital age," Marketplace Tech, January 24, 2017 at: https://www.marketplace.org/shows/marketplace-tech/012417-mtech

[15] Regula La SCT El Uso De Aeronaves No Tripulades (Drones) Secretaria de Comunicaciones y Transportes. Comunicado 190. 29/04/2015 in Carlos R. Soltero, "An Introduction to Mexican Drone Regulations" February 4, 2016. at: http://www.mcginnislaw.com/images/uploads/news/Introduction_to_Mexican_Drone_Regulations__Exhibit.pdf

location and movement of border patrol and other law enforcement officers and vulnerabilities in

our border security infrastructure" (Balido 2012).[16]

Those on both sides of the debate over government use of UAVs for border security raise

important points, but they generally fail to engage with the contrary viewpoint or consider the

larger implications about what it means for NGOs whether humanitarian, vigilante or criminal in

nature to play such a prominent role in border security. Emphasizing costs or benefits without

comparing these against each other gives the misleading impression that drones are either a

panacea or an unprecedented threat. Costs and benefits, however, cannot be neatly separated.

There is no perfect solution in deploying these machines or eliminating them. On the contrary,

the best way forward is to carefully assess the various consequences of relying on drones, take a

more realistic view of the imperfect outcomes that are bound to follow from any course of

action, and formulate ideas about how the adverse consequences of drone proliferation might be

managed.

Transforming Physical Security

If the deployment of military drones along borders causes guards to adopt the more

aggressive tactics of international armed conflict rather than domestic law enforcement, they

may contribute to greater use of force and escalate hostilities with smugglers. Moreover, drones

could increase the hazards of crossing if they are armed by states to carry out nonlethal attacks

(Milivojevic 2015), or used aggressively by drug cartels and paramilitary groups. Drones also

bring substantial benefits in terms of migrant protection by locating those who are at risk of

being attacked or falling victim to environmental hazards. NGOs have already demonstrated

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[16] For an example of video of the US-Mexican border taken by a hobbyist in Tijuana, see "USA -
Mexico Border Wall Drone Video (San Diego - Tijuana) Using Litchi App" at:
https://www.youtube.com/watch?v=729dt8NEBKg

their capacities for facilitating rescue efforts. Whether deploying drones along the border increases violence and harm or reduces deaths and injuries depends on who uses drones and how they are implemented. Policymakers have considerable control over how border security agencies use them, and adopting wise public policies may maximize the benefits of drones for public safety along borders, however, use by non-state actors, particularly criminal organizations, is less likely to be constrained by state authorities, with all of the security and political ramifications this brings.

The process of illegally crossing the US border has been transformed by the rise of human smuggling and the entry of drug cartels into that business over the past two decades, which have made illegal crossings much more dangerous. Human smuggling is a function of increasing border controls. In the early 1990s, it was relatively easy to illegally cross the US-Mexico border south of San Diego by rushing across in large numbers and mixing into the local population or near Texas' border cities by wading across a shallow section of the Rio Grande, perhaps paying a small fee to a smuggler with an inner tube to help keep one's clothes and possessions dry. Border controls tightened in the mid-1990s by concentrating staff and building fences in urban areas, diverting border crossers to more difficult and longer routes through deserts where they needed the help of smugglers to lead them on several days of hiking in high temperatures, often without enough food and water. Increasing deployment of US Border Patrol agents, fencing, and border-control technologies, especially post-9/11, increased demand for smugglers' services as well as their prices (Roberts et al. 2010, 5).

During the 1990s, human smugglers were mostly small-time operators who avoided the risks and penalties of drug smuggling, but increasing fees attracted violent Mexican drug cartels to the business in the 2000s, who now monopolize passage across the border. The cartels

particularly target Central Americans traveling through Mexico to the US, who have been

robbed, raped, held for ransom, forced to work as drug mules and killed. The International

Organization for Migration (IOM) estimates that the number of migrant deaths that occurred in

Mexico between 2007 and 2012 ranges from 47,000 to 70,000 (IOM 2014) and the U.S. Border

Patrol reports a total of 6,570 migrant deaths on the US side of the border from 1998 to 2015.[17]

Crossing the Mediterranean similarly forces migrants to overcome hazards created by the

environment and smugglers. IOM has reported two estimates of the total number of people who

have died attempting to enter Europe across the Mediterranean from 1993 to 2012 that are both

between 14,000 and 15,000. These numbers have increased dramatically in the past few years

with an estimated 3,770 dead or missing in the Mediterranean or Aegean Seas in 2015 (IOM

2015).

Border security authorities as well as certain NGOs contribute to the risks facing migrants.

As border security authorities respond with ever-greater use of force against increasingly armed

and violent smugglers along the US-Mexico border, there have been shootings in which agents

wounded or killed unarmed people (Associated Press 2015). Militia groups who go beyond

reporting drug smugglers and illegal border crossers to the Border Patrol but intercept and

attempt to detain them without government sanction also contribute to increasing violence along

the border (McKinleyand and Wollan, 2009). Bertin and Fontanari (2011) argue that the military

ships and helicopters that are temporarily deployed to protect Europe are sometimes unwilling or

unable to assist migrants crossing the Mediterranean, and that they may seriously endanger the

migrants by redirecting their boats without providing assistance. Using military forces in

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[17] "Southwest Border Deaths By Fiscal Year," US Border Patrol at:
https://www.cbp.gov/sites/default/files/documents/BP%20Southwest%20Border%20Sector%20
Deaths%20FY1998%20-%20FY2015.pdf

policing roles for which they are not trained raises risks of disproportionate uses of force or of attacks against unarmed migrants who are mistaken for the criminal gangs involved in smuggling.

Inaction is also dangerous, as evidenced by the collective action problems that arise when multiple countries are involved in providing border security while also committed to protecting asylum seekers who have well-founded fears of persecution in their home countries. The first EU member state to which asylum seekers arrive is, according to the EU's Dublin Regulation, obliged to accept their application for asylum, and other EU member states may return asylum seekers to the first EU country of arrival. This has led Southern European countries to bear the burdens of the large numbers of asylum seekers and to call for fellow EU member states to accept more.

Border guards also face significant risks from smugglers. Since 2006, there have been 7,542 assaults against Border Patrol Agents (Morgan 2016). Four Agents have been shot and killed while on duty and one was run over and killed by a smuggler driving a Hummer.[18] The risk of future attack is fairly high, as the Mexican government has been unable to effectively police its side of the border and drug cartels continue to mount paramilitary operations to protect their trade. As this risk grows, so too does the prospect of border guards who are concerned for their own safety mistakenly attacking innocent migrants.

Drones introduce their own potential threats to security. They may appear to be inherently threatening because of their widespread use in targeted killing operations. Shachtman (2005) expresses concern that drones provide a detached and dehumanizing perspective on migrants that could facilitate efforts to characterize them as threats and legitimize violence against them. Wall

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[18] See "In Memoriam to Those Who Died in the Line of Duty" at: https://www.cbp.gov/about/in-memoriam/memoriam-those-who-died-line-duty

and Monahan (2011, 243) argue that border patrol drones blur the boundaries between military combat and domestic policing in ways that could 'further the violent dehumanization and non-differentiation of people.' Some border security authorities have even considered arming drones with non-lethal weapons.[19]

Drones also implicate NGOs in border security by introducing the possibility of arms races with criminal organizations involved in smuggling. The use of weaponized drones by states sets an example for non-state actors, who may use these relatively cheap and effective weapons to even the odds in conflicts with state security forces (Singer 2009). For example, Mexican drug cartels have been using drones since at least 2012 when, according to a US Drug Enforcement Agency (DEA) official, an estimated 150 drones crossed the border into the US in 2012 (Gomora 2014). One can expect that number to increase as smugglers turn to low-cost consumer drones, as exemplified by the November 2015 seizure of three four kilo packages of marijuana that U.S. Border Patrol agents saw being carried by an OctoCopter style drone (CBP 2016). Given that such drones could just as easily have carried several kilos of C-4 explosives and a remotely controlled detonator, drug smugglers could potentially develop weaponized drones that could target border security infrastructure and personnel or police. US policymakers have long been concerned about drone attacks by non-state actors[20] and the increasing availability of consumer drones prompted a January 2015 briefing by intelligence and security officials to their counterparts in law enforcement that detailed cases of criminals smuggling drugs and other

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[19] For example, U.S. Customs and Border Protection suggested "Additional payload upgrades could include expendables or non-lethal weapons designed to immobilize TOIs (Targets of Interest)" in *Concept of Operations for CBP's Predator B Unmanned Aircraft System: Fiscal Year 2010 Report to Congress*, U.S. Customs and Border Protection, June 29, 2010.

[20] "Cruise Missile and UAV Threats to the United States," Hearing Before the International, Proliferation and Federal Services Subcommittee of the Senate Committee on Governmental Affairs, June 11, 2002.

contraband across the US border and into prisons. It also pointed out that "authorities in the US, Germany, Spain and Egypt have foiled at least six potential terrorist attacks with drones since 2011" (Nicas, 2015).

Despite the risks associated with militarization and escalating hostilities, surveillance drones are likely to improve the physical security of migrants and border patrol agents in many ways that weigh in favor of their use. By vastly improving surveillance capabilities and situational awareness, drones can assist in rescuing migrants making hazardous treks across deserts and rough seas. This is a critical advantage because environmental dangers claim thousands of lives annually, making them a more immediate threat to migrants' than militarization. Drones can conduct surveillance at projected costs that are lower than those associated with piloted aircraft, and they can cover larger areas than patrols based on the ground or in the sea. Without pilots onboard, they can stay aloft for up to 20 hours. This improved monitoring capacity could allow border patrol agents to detect migrants faster than they would otherwise and would help to ensure that fewer vulnerable migrants go unnoticed. With non-state actors already using drones, the chance of avoiding an arms race has already been lost. If states refrain from using drones now, they could leave migrants and security agents more vulnerable to harassment or even attacks by these non-state actors.

Drones help to protect border security agents in much the same way that they protect soldiers: by removing them from positions in which they can be attacked or harmed by environmental hazards. Surveillance drones along the US-Mexico border can identify potential threats facing agents on the ground, thereby making it possible to prepare them for a potential confrontation. Accurate intelligence also helps to protect migrants by preventing them from being misidentified as smugglers and mistakenly attacked. Drones therefore contribute to the

militarization of border security, while also offering a way of protecting migrants and security agents at a time when unauthorized border crossings are becoming more dangerous.

Surveillance and Accountability

Drone surveillance degrades privacy while also facilitating transparency. Drones bring unprecedented powers for not only monitoring illegal border crossers but also anyone living near their patrol routes. However, surveillance can have advantages if it is used to strengthening oversight of state security forces and NGOs. Drone surveillance therefore reveals a similar set of inextricable costs and benefits as those associated with physical security. The lesson is again that drones offer ways of improving certain aspects of border security while at the same time producing new risks that must be guarded against.

The use of drones in border security raises serious concerns about privacy. When drones fly over the US-Mexican border they are not only in a position to watch for illegal border crossings but can also covertly monitor American and Mexican citizens who have done nothing to warrant the attention. These people suffer a continual breach of fundamental privacy rights when they and their homes are monitored without cause (Milivojevic 2015; Jumbert 2016). NGOs likewise take on greater surveillance capacities through their use of drones, which both aggravates the invasion of privacy and introduces the possibility of improved third-party oversight over how the border is being guarded.

Threats to privacy could be drastically increased in the near future should more powerful cameras and sensors be mounted on drones. For example, the drones used by US CBP can carry ARGUS, the world's highest resolution (1.8 gigapixel) video surveillance system that can see objects only six inches wide and track every moving object within 36 square miles. Moreover,

CBP's drones' technical specifications[21] require that its signals interception and direction-finding technology work from 30MHz to 3GHz in the radio spectrum. This includes GSM and CDMA frequencies used by mobile phones as well as many two-way radios (McCullagh, 2013), having the potential to expand the range of surveillance beyond public spaces visible from above to conversations and text messages. Given the importance of communications interception in countering terrorism and organized crime, it seems likely that these capacities will be used in the future (Aldrich, 2009).

Privacy is also a concern in and around the Mediterranean and Aegean Seas. Hundreds of thousands of merchant ships travel through those seas each year, without doing anything to warrant surveillance, and common migrant routes run near populated coastal areas in Malta, Spain, Italy, France, and Greece. Drones may also patrol over Europe's large land borders, which extend over 6,000 kilometers. The use of drones beyond state borders reflects a broader trend in transnational intelligence collection, with states attempting to protect themselves through the extension of surveillance capacities (Aldrich, 2009).

Breaches of privacy rights could be excused on utilitarian grounds; the patrols may ultimately protect more people than those who suffer infringements on their privacy rights. One might also argue that privacy rights do not exist along borders. This defense of surveillance could have some credibility for the narrow tracts of land along the border, but would not excuse surveillance of adjacent areas that will also be observed or to areas that are subject to surveillance by agencies that borrow drones. The US CPB drones are routinely used by other agencies and are being loaned out with greater frequency, from 30 times in 2010 to 250 times in

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[21] "Performance Specification for the Customs and Border Protection Unmanned Aircraft System (UAS), Version 2.4, March 10, 2010 at: https://epic.org/privacy/drones/EPIC-2010-Performance-Specs-1.pdf

2012 (Sengupta 2013), suggesting that border security drones may also pose a serious threat to domestic privacy more generally.

The likelihood of surveillance infringing on privacy rights increases as more UAVs enter service, agencies form collaborative links that facilitate technology and information sharing, and NGOs conduct their own monitoring. Europe seems to be at less risk from the expansion in drone surveillance than the US, and may be protected from it by state boundaries that would inhibit the intrusion of one EU member state's drones in another member state. However, the introduction of drones in border regions does raise the risk of drones being redirected into domestic airspace. Because the control of a drone can be shifted from one facility to another, even when a UAV is in flight, drones could be fairly easily loaned to states on a temporary basis, much as they are loaned between American law enforcement agencies.

Drones' surveillance capacities aggravate the problem of border militarization. Gregory (2011) argues that the mediated vision drones provide privileges a "hunter-killer" perspective that makes it easier to launch attacks against people on the ground. Wall and Monahan (2011) support this with their contention that drones introduce "actuarial surveillance" that is premised on detecting enemies and calculating risks, but while lacking the kind of contextual knowledge that is essential for knowing who is being targeted or feeling responsibility for the effects of violence. Similarly, Jumbert (2016, 98) argues that drones are incapable of doing the delicate work of sorting through migrants who have a right to enter a country from those who do not because their position high above the ground divorces them from contextual information and forecloses the possibility of engaging with migrants directly. However, this argument overstates the problem, since border control officials would still be present to screen entrants and drones

would be restricted to patrolling routes across deserts and rough seas that are exclusively taken by illegal border crossers.

These concerns are foreseeable costs of relying on drones to provide border security, yet increased surveillance is not uniformly undesirable. Surveillance becomes objectionable when it creates asymmetric power relations. One entity may assert its control over another by subjecting it to surveillance, or even the threat of surveillance. Nevertheless, the power relations created by surveillance practices are not unidirectional, especially with such a diverse range of actors involved in monitoring the border. Along with the breach of privacy and overreach of government power, drones offer an increased capacity to monitor government agencies and civil society actors who may abuse their authority.

Commentators who support the use of drones in international conflicts have formulated plans for using drones to promote accountability within the militaries that use them by providing videos that would facilitate the independent examination of soldiers' conduct (Arkin 2009), and the same proposals can be extended into domestic contexts. Drones could monitor and reduce excessive use of force by border patrol agents, especially in incidents when lethal force is used against low-level threats. For example, in 2010 a CPB agent shot and killed a teenager for throwing rocks at him from the Mexican side of the border (Associated Press, 2015). Had drones been in position to monitor the incident, they could have provided valuable evidence when this case was taken to court. Ideally, drone pilots would be separated to some extent from other border patrol agents whose activities they would be monitoring to overcome the biases that interfere with internal norm enforcement. Mechanisms of reviewing videos would also need to be established in the interest of protecting migrants' welfare. If these procedures are not

established, then drones operated by NGOs would become especially valuable, as they could

provide a more neutral perspective on incidents without the risk of being covered up by the CPB.

Government surveillance of domestic areas and citizens also has some advantages when

NGOs conduct their own border operations. The American Civil Liberties Union (ACLU) and

the Anti-Defamation League (ADL) have been involved in monitoring vigilante border patrol

organizations in the US, with the goal of protecting border crossers. Their efforts could be

facilitated by collecting surveillance footage and making it publicly available when there are

grounds for thinking that migrants may have been abused. Of course, it will be essential for

effective regulations to be in place. Migrants in Europe have likewise been attacked by

government security forces and anti-immigration groups. Videos of these incidents have already

played a vital role in calling attention to this abuse (BBC 2016), but ground-based cameras have

a limited range and are vulnerable to seizure. Drone surveillance holds the promise of

introducing a far more comprehensive viewpoint without the same risks of interference.

Surveillance could help to protect border guards as well. Videos of attacks on border guards

could be used to track down those who escape capture. There have been instances in which

border guards have killed people who appeared to be threatening and have been unable to

provide clear evidence that force was warranted. Border guards may be vindicated when they

injure or kill attackers and have video evidence to prove that their use of force was justified.

Drones can also monitor the interdiction of migrant boats as they cross the Mediterranean

and Aegean Seas – a task that is particularly important because the many different countries and

private organizations involved in this work makes it critical to ensure that norms of fair treatment

are consistently followed. Moreover, using drone surveillance in this capacity could alleviate the

collective action problem created by European states selectively intercepting or avoiding

migrants to minimize costs to themselves. Drones would be able to provide fairly clear and unbiased information about when migrant boats are intercepted and whether any patrols appear to deliberately avoid them.

The Visibility of Border Security

State sovereignty is embodied along international borders, but its visibility varies depending on the means of border security employed and can be dramatically changed by drones. Most land borders between states are made visible by clear cuts of trees and other vegetation and by physical boundary markers patrolled by uniformed, armed officers. Some boundaries are "fortified" with fencing comprised of vehicle and pedestrian barriers that impede unauthorized crossings (Hassner and Wittenberg 2015). Militarized borders are guarded by armed soldiers with the mission of deterring conventional military incursions and marked by tank traps, barbed wire fences, perimeter security technologies and, in a few cases, mine fields. Variation in the visibility of borders ranges from the militarized border between North and South Korea on the one extreme to the other extreme of the US-Canadian border in farmed areas of the Great Plains where the border is only made visible by boundary monuments of several feet high placed a few miles apart. Between these two extremes are "fortified" borders with fencing set back behind the boundary monuments. By introducing machines associated with war, Predator B deployments militarize borders and, to the extent that images of drones flying along borders are made public, provide visible manifestations of border militarization. At the same time, however, drones can supersede the physical manifestations of border security like fencing and deployment of personnel and their vehicles. This is especially significant at a time when populist leaders like Donald Trump practice the symbolic politics of border control to win elections. The use of

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drones along borders is therefore a paradoxical process that may make borders seem more militarized while also rendering more visible physical structures practically obsolete.

Given that it is often important to politicians to demonstrate to voters that they are "doing something" to control immigration (Hollifield, Martin and Orrenius 2014), the degree to which border controls are "visible" is politically salient. Many politicians fixate on the people who illegally cross borders between official crossing points rather than those who enter legally but overstay their visas largely because actions to stop illegal border crossings, like building a fence, are highly visible and make for wonderful "symbolic politics (see, e.g. Sears, et. al. 1980)," which has long shaped border control policymaking.[22] Physical border fences are the quintessential visualization of border security and the roughly 700 miles of the US Southwest border along which pedestrian and vehicle barriers have been built have long provided the prime example of a fortified boundary. EU member states collectively, however, now have even more fencing along their borders than does the United States (see Economist 2016). Visual signs of security are likewise pervasive in the Mediterranean and Aegean Seas as military ships and helicopters, now coordinated by NATO, participate in the search for smugglers' boats. Although the patrols are removed from the everyday experience of most Europeans, they are continually shown on the news, thereby presenting an image of Europe's borders being secured by state military forces.

The appearance of borders is important because of the role borders play in demarcating groups and sustaining identities that are based on distinctions between insiders and outsiders. Morley and Robins (1995) argue that representations of Europe's borders help to construct a

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[22] See Peter Andreas, "The Escalation of U.S. Immigration Control in the Post-NAFTA Era," Political Science Quarterly, Vol. 113, No. 4 (Winter 1998-99), 591-615 and Peter Andreas, Border Games: Policing the U.S.-Mexico Divide (Ithaca NY: Cornell University Press, 2000).

collective European identity. Suliman (2016, 13) points out that borders are often assumed to "accentuate and delimit the inherent features of political territories and territorial polities." Doty (1996, 241) links migration control to British identity and points out that "while immigration control is not necessarily an essential element of a state's sovereignty, the issue of the states' ability to control their borders . . . frequently gets linked up with the issue of sovereignty." Identities and conceptions of state sovereignty are maintained with the help of physical barriers that separate Europe from the rest of the world and the security forces that protect those barriers (Andreas and Snyder 2000).

New technologies increase the border control capabilities of existing ranks of border guards but often in ways that can replace the need for physical inspections at ports of entry or physical barriers along borders. After September 11, 2001, the Bush administration endeavored to use more technology for screening passengers and cargo to create a "smart border,"[23] and "push borders out" beyond US territorial boundaries by requiring airlines submit passenger manifests and passenger name record data in advance of departure to the United States, thereby establishing what some US border security officials called "virtual borders (DHS 2003)." The 2006 Secure Fence Act not only mandated construction of physical infrastructure but also required "systematic surveillance" with a "virtual fence" comprised of "technology, such as unmanned aerial vehicles, ground-based sensors, satellites, radar coverage, and cameras."[24] That year a Boeing led team of contractors won the contract to build sensor and radar arrays mounted on 1,800 towers built along the entire Southwest border but only 53 miles of the virtual fence was built at the cost of over $1 billion before the project was cancelled.

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[23] The White House, "Fact Sheet: Border Security," January 25, 2002 (accessed January 27, 2005), http://georgewbush-whitehouse.archives.gov/news/releases/2002/01/20020125.html.

[24] Secure Fence Act of 2006. Sect. 2.

EU member states have been slower to deploy border control technologies than the US, but by 2008 the European Commission proposed a "Border Package," comprised of a Registered Traveller Programme to allow certain groups of frequent travelers from third countries to enter the EU using simplified border checks and an Entry/Exit System to record the time and place of entry and exit of third country nationals travelling to the EU. In 2008 the European Commission also initiated the European border surveillance system (EUROSUR) intended to help EU member states detect cross-border movements, provide a common technical framework for improved operational communication and cooperation as well as foster the use of cutting-edge technologies for border surveillance.[25] EUROSUR was approved by the European Council and European Parliament in 2013 and gradually became operational after December 2013. After years of inaction, the European Commission reintroduced proposals for these two programs in the "smart border package" of February 2013,[26] which were then piloted in 2015 and await legislative action. These "smart borders" and "virtual borders" rely more heavily on new technologies than on physical structures, such as fences. However, one of the most significant barriers to creating virtual borders is the continued necessity of having a physical infrastructure and staffing, particularly at official crossing points.

Although drones cannot overcome the need for physical infrastructure, they may alleviate it more than other technologies, thereby making it possible for border security to become less visible. They may not only obviate some of the more traditional instruments of border security, such as fences and patrolling vehicles, but even some of the less visible security devices, such as motion sensors and video cameras, that were integral to virtual fence designs. Moreover, drones

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[25] Communication of 13 February 2008 from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Examining the creation of a European border surveillance system (EUROSUR) [COM(2008) 68 final.
[26] "'Smart borders': enhancing mobility and security," European Commission Press Release, Brussels, 28 February 2013 http://europa.eu/rapid/press-release_IP-13-162_en.htm

advance one of the central goals of the smart border and virtual border initiatives: extending

security beyond the border to monitor and even intercept people before they can attempt to cross

illegally. Drones make this easier than ever before by providing the means of extending border

security in ways that are largely invisible to those being watched as well as to domestic

constituencies.

The less visible manner that drones increase border security has political implications that

can go two ways. For example, Democratic Senators Barack Obama, Joe Biden and Hillary

Clinton (among others) could more easily vote in 2006 to increase border security with the

Secure Fence Act because most of the border fencing authorized would be virtual, comprised of

sensors, cameras and UAVs, and less likely to draw negative attention from the press and liberal

constituents than very visible steel fencing topped with barbed wire. The 2013 comprehensive

immigration reform bill that passed the US Senate placed even greater emphasis on UAVs as it

included billions of dollars for border security equipment funding primarily to "deploy additional

mobile, video, and agent-portable surveillance systems, … operate unarmed unmanned aerial

vehicles along the Southern border for 24 hours per day and for 7 days per week, …acquire new

rotorcraft and make upgrades to the existing helicopter fleet."[27] Had the 2013 comprehensive

immigration legislation been enacted, CBP may now be using a combination of UAVs, radar and

high-resolution video to detect illegal border crossers and deploying helicopter-borne Border

Patrol agents to catch them. The invisibility of the virtual fence is beside the point for Donald

Trump in that it is precisely imagery of a "big, fat, beautiful wall" that proved politically useful

in appealing to Republican primary voters. Although Presidential candidate Donald Trump once

expressed his desire to expand drone use to a small local newspaper (Weiner 2016), every

campaign speech included the chant "build the wall." Trump's preference for very visible walls

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[27] Border Security, Economic Opportunity, and Immigration Modernization Act, S. 744, Sect. 1106.

over virtual fences is reflected in his administration's first budget plan, which sought to redirect funding from across the Department of Homeland Security to begin building the wall (while not increasing funding for drones or surveillance technologies).[28] In contrast, legislation passed by Congress to fund the government until the end of the 2017 Fiscal Year had no funding for border wall construction but provided increased funding to DHS for "the purchase, maintenance, or operation of marine vessels, aircraft, and unmanned aerial systems."[29]

Although drone deployment may serve as an alternative to very visible fences and walls, the presence of drones along borders may make borderlands more visibly threatening places, especially when these spaces are represented on the news or in popular media. The literature on drones suggests that they are visually upsetting machines. They provide their pilots, as well as audiences who watch drone footage on news reports, with a strange perspective that is simultaneously detached and intensely focused. Some critics have even argued that this form of visibility may prime drone operators to carry out indiscriminate attacks (Enemark 2013, Gurcan 2013). However, as the number of small drones used by hobbyists for photography and videography skyrockets, drones may evoke less threatening imagery, especially if the border control authorities switch from using military surplus drones to smaller drones more similar in appearance to those found in the commercial market.

Drones may also attract attention in positive ways, increasing the visibility of borders to citizens and civil society actors who are concerned with migrants' security. The use of drones along the US-Mexico border and along Europe's borders has attracted a great deal of media attention and fueled debates over the most effective border security strategies. Moreover, media organizations have taken advantage of the European embrace of commercial drones to use

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[28] America First: A Budget Blueprint to Make America Great Again, pp. 23-4.
[29] Consolidated Appropriations Act of 2017, H.R. 244, p. 272.

drones to capture video showing large numbers of asylum seekers crossing borders (Hannah, 2015).

The dualities of visibility are evident from the contrasting ways civil society actors have used drones to call attention to border security issues. The American Border Patrol NGO started its drone program in an effort to more effectively prevent people from crossing the border illegally, while Migrant Offshore Aid Station has used drones to rescue migrants who could be killed as they attempt to cross the Mediterranean. Both organizations are interested in increasing the visibility of border security issues, as well as the visibility of drones themselves, yet they have done this in ways that mobilize drone technology for much different ends.

Conclusion

The disadvantages and advantages of drones cannot be easily disaggregated, as they are produced by many of the same technical characteristics. These are therefore best seen as overlapping consequences of using drones to secure borders, which must be treated collectively. Much like any other technology, drones can be used in many ways that can amplify human capabilities for good and evil. Drones demonstrate how military technologies are encroaching into non-military security operations. On the other hand, drones help save migrants' lives as they make dangerous journeys through deserts and across rough seas. Increasing surveillance capabilities made possible by drones erodes privacy and has the potential to increase government power over citizens and foreign nationals alike. At the same time, law enforcement officers, administrators and the contractors who work for them may also be surveilled using drones, increasing accountability to citizens. While some analysts have pointed to drone deployments as examples of border militarization and their deployments can be used politically to associate immigration with security, in the longer term, drones may reduce the visible signs of security

while time also building a new invisible border security apparatus. Moreover, given that the CBPs nine predator drones are the only border security drones currently deployed by US and EU member state government while millions of consumer drones are being sold, NGOs, whether of the vigilante, humanitarian or criminal sort, may already be taking more border security surveillance video than governments. This holds several lessons for the future policy decisions relating to the use of drones for border security.

First, polarized opinions about drones, particularly with respect to their military applications, has driven a rush to judgment as to whether drones should be used for border security. The imagery of government officials patrolling domestic airspace with weaponized drones may short-circuit consideration of surveillance drones being used for search and rescue and humanitarian missions. It behooves legislators to resist entreaties of military equipment manufacturers to purchase more drones for the sake of job creation and engage in vigorous open debates informed by unbiased research toward appropriate and robust regulatory frameworks.

Second, although the disadvantages associated with drones are embedded in the technology and cannot be sacrificed without losing drones' unique advantages, their use may be restrained with effective regulations. It is critical for these new technologies' uniqueness to be recognized and for them to be subject to special constraints that are aimed at preventing misuse. Policymakers have been slow to develop regulatory frameworks that can help to govern drone strikes internationally, but there is growing pressure to do so as these machines proliferate (Buchanan 2015). Any new regulations that are applied to military drones could provide a basis for developing effective regulations for border security drones. Third, it is critical to consider the interactions between state security forces and non-state actors when it comes to developing regulations for the use of drones in border security. As we have shown, states and non-state

actors exercise considerable influence on each other when it comes to developing new drones

and expanding the range of roles in which they are used. At times, states drive the advancement

of drone border security, with civil society actors resisting those efforts. And at other times, civil

society actors pressure states into employing drones by advocating for their use or even

demonstrating their efficacy. Regulations aimed at minimizing the risks associated with drones

must therefore be directed at establishing rules for states and non-state actors alike.

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