BORDERING FROM ABOVE: AIRCRAFT, ENFORCEMENT, AND TERRITORIAL

ANXIETY AT THE US-MEXICO BORDER

by

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THESIS ABSTRACT

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 The invention of powered flight altered both mobility across territorial borders and states' ability to govern or enforce those borders. This thesis examines the incorporation of three types of aircraft—airplanes, helicopters, and drones—into the US apparatus of enforcement at its border with Mexico, through qualitative analysis of newspaper archives, pilot histories, and interviews with humanitarian aid activists. A close study of the roles and functions of aircraft within the broader system of border enforcement illuminates the technologically-provoked anxiety that motivates border intensification, the close but complex links between public representations and bordering practices, and the importance of larger political-economic circumstances in determining the means of enforcement.

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TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER I

INTRODUCTION

In March of 2021, as a new surge of migrants from Central America reached the

border between Mexico and the United States, Republican legislators did what US

officials of all parties have reliably done for 40 years: they traveled to the border, with

reporters following, and took turns flying above it in helicopters.

House Representative Dan Crenshaw of Texas led the charge on March 6th,

tweeting videos of himself soaring over stretches of border wall in a Texas Department of

Public Safety helicopter (Lee 2021). Other Texas lawmakers soon followed. "Reps. Jodey

Arrington and Brian Babin will lead more than a dozen Texas House lawmakers," Fox

News reported on March 17th (Shaw 2021). Their "land, sea and air trip" also included "a

helicopter tour of the land border." Nearly a month later, the frenzy of aerial tours had not

fully abated: House Representative Kevin Hern of Oklahoma released new footage from

his own helicopter ride above the border on April 11th (Forbes Breaking News 2021).

On one level, lawmakers riding in helicopters appears to be little more than simple

political theater. "There's photo ops in boats and photo ops in helicopters," one resident

of McAllen, Texas told KENS-5 News. "But as we have seen in the last four years and

probably even before that, it has not solved what they want to say is a crisis" (Bolton

2021). In this view, the helicopters are little more than elaborate, expensive props for

political grandstanding.

But flying above the border has a more complicated history all its own. The line

on the ground has, for over a century, been enforced from the sky. Patrolling the border

by aircraft has grown from an *ad hoc* and unsanctioned reaction to a novel, disruptive

technology into a well-established component of an ever-expanding bordering regime. Whether they realized it or not, the legislators clambering aboard helicopters to peer down at the border this year were participating in a long tradition of technologically-enabled governance from above that connects the 'cowboy' traditions and regional identity of the early Border Patrol, the global reach of the US military, and the corporate contractors who profit from the illiberal politics of enforcement at home and abroad.

In this thesis I examine the enrollment of powered aircraft—planes, helicopters, and drones—into the US border enforcement apparatus along the international boundary with Mexico, and their historical and contemporary functions within that context. This thesis addresses three primary research questions: First, how have the functions of aircraft in US-Mexico border enforcement evolved with time and technological succession? Second, how have public representations of the US-Mexico border influenced the incorporation of aircraft into bordering, and how have those aircraft, in turn, contributed to public representations of the border? And, third, in what ways does the use of aircraft in bordering reflect the larger political-economic circumstances shaping the evolution of the US border enforcement apparatus? None of these questions have been satisfactorily addressed by prior research. Although there have been some efforts to document the uses of aircraft along the border today and the history of their adoption, these have generally been narrow in scope: focused on a single category of aircraft, lacking important context, or both. Building on the work of Butler (2001), Williams (2007), and Simonsen (2018), who argue that technological change in general and powered flight in particular have deeply influenced how national territory is envisioned and effectuated, I draw from historical newspaper archives, the unofficial

internal histories of Border Patrol aviators, and interviews with humanitarian aid workers in the US borderlands to offer a broader perspective on how aircraft can help us understand the making and re-making of the US border regime. Aircraft are a paradigmatic example of how technological developments that threaten the perceived integrity of political space are reclaimed by the state and repurposed for the reproduction of that space, providing a new premise and new legitimacy for the exercise of state capacities and circulation of corporate capital that might otherwise be idled.

To be sure, the US-Mexico border or the larger US bordering regime cannot be *completely* understood by concentrating on aircraft. The origins, evolution, and consequences of our border system are too complex to grasp through a single lens: as de León aptly puts it, "The system in place has too many moving parts traveling at sometimes blinding speed" (2015, p. 9). Still, there is value to critically examining the ways in which technological mobility in the vertical dimension has influenced the development of that system. Technology, Andreas writes, has often been seen as the 'silver bullet' for the tensions that inhere in contemporary borders, which are expected to facilitate the frictionless movement of legally sanctioned capital and authorized persons while remaining impervious to illicit economic flows and unauthorized individuals (2009, p. 80; see also Sparke 2006, p. 154). Scrutinizing the technological solutions to border 'problems' provides greater insight into how those 'problems' are produced and reproduced through political action, media representation, and infrastructural buildup. Put another way, studying the means of border enforcement can shed light on the ostensible motives behind it. "[T]he appearance of a new technology can trigger or reinforce a motive by making the desired end possible or acceptably inexpensive," Headrick argues.

"Conversely, a motive can occasion a search for appropriate means" (1981, p. 10). And while technological change may be seen as a solution, it can also be interpreted as a new threat, thus providing both the impetus and the means for escalating enforcement. Given the wide-reaching consequences of escalating enforcement for the US-Mexico border region (Andreas 2009), it is important to study the means by which enforcement is enacted—including aircraft.

To the best of my knowledge there has been no previous effort to critically survey the role of aircraft in US enforcement at the border with Mexico. Some recent academic work has concentrated on drones (e.g. Koslowski & Schulzke 2016, Shaw 2016, Chaar López 2018), but as Chandler points out, these studies tend to treat drones in isolation, without significant consideration of the greater context of aerial surveillance and enforcement (2020, p. 3). Activists in the border region have helped document the uses of helicopters in contemporary enforcement (No More Deaths/Coalicion de Derechos Humanos 2016), and some former Border Patrol pilots have attempted to write the history of aviation in their agency (Parker 1983, Broyles & Haynes 2010, Broyles et al. 2020). One of my major goals for this project was to synthesize and supplement these accounts and provide a more holistic perspective than is offered by any one of them alone.

On a broader theoretical level, this work addresses the spatiality, materiality, and visibility of power at the edges of state space. Aircraft are one version of the technological translations required to transform political ideals into socio-spatial divisions. Each one of these translations—what Painter refers to as "networked socio-technical practices" (2010, p. 1116)—is a potentially productive site for deepening our understanding of the ways in which the political goal of control over space is realized.

The control of space and of human movement through it are enduring ambitions with consequences too broad to adequately survey here. To quote Netz, "Properties, prisons, borders: it is through the prevention of motion that space enters history" (2004, xi). Territory itself is a 'political technology' (Elden 2010b) built on the back of numerous other technologies, from the extraordinarily complex to the very simple. All are consequential. "The things we call 'technologies' are ways of building order in our world," Winner writes. "The issues that divide or unite people in society are settled not only in the institutions and practices of politics proper, but also, and less obviously, in tangible arrangements of steel and concrete, wires and semiconductors, nuts and bolts" (1986, pp. 28-29). At the physical margins of the state, these 'tangible arrangements' are often the primary basis for assertions of sovereign power.

And on a pragmatic level, this research matters because what happens along the US-Mexico border rarel—if ever—remains confined there. The US border enforcement regime has been a model for border apparatuses around the world, and the US is frequently an active partner in the proliferation of hardened borders (Miller 2019). Understanding how aerial enforcement has evolved in the US context provides a basis for comparative study across border regimes and border spaces. Moreover, the Department of Homeland Security is increasingly active in the 'interior' of the US: providing security at the Super Bowl (Miller 2014), beating and abducting Black Lives Matter protesters in Portland during the summer of 2020 (Kanno-Youngs 2020, Levinson et al. 2020), conducting secretive aerial surveillance operations over other cities and protests (Stanley & Morrow 2020), and more. Even more recently, a Customs and Border Protection helicopter flew low over an anti-pipeline protest in Minnesota, a deliberate and well-

documented tactic (see Ch. IV) to harass protesters with rotor wash and debris (Brown & Richards 2021). Considering the domestic and global 'mission creep' of the US border enforcement apparatus, it is worth revisiting the political justifications and material conditions that allowed that apparatus to take root in its original site.

In Chapter II, I begin with a review of key geographic understandings of borders, territory, and US border enforcement. Following that, I detail my major sources for this research (and the constraints created by the COVID-19 pandemic), along with the interpretive frameworks and tools employed to make sense of those sources. Together these form the background of the project. Chapters III, IV, and V correspond to the three main types of aircraft employed historically and currently by border enforcement agencies: fixed-wing aircraft (airplanes), rotary-wing aircraft (helicopters), and remotely piloted aerial vehicles (drones).[1] The order of these sections follows the order in which these technologies were adopted for border enforcement. Each chapter addresses at least two of my three primary research questions. In Chapter III, I analyze how the US responded to the challenge that powered flight posed to its territorial authority, and how 'aerial anxiety' helped to justify the eventual adoption of airplanes as part of an increasingly complex technological assemblage for border enforcement. In Chapter IV, I focus on the reconfiguration of surplus state capacities that enabled the adoption of helicopters, arguing that those helicopters have been used to reinforce public representations that legitimize the violence of 'illiberal governance' in the borderlands. In Chapter V, I discuss the historical role of the borderlands in the development of drones, skeptically reassess the material efficacy of drone surveillance today, and emphasize the

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1   On the exclusion of blimps from this list and this thesis, see p. 43.

border-industrial complex's growing role in sustaining the escalation of enforcement. I

conclude by reviewing the major themes and continuities that emerged from these

chapters, acknowledging the limitations of this project, and sketching out some potential

directions for future research. I stress the importance of the underlying political-

geographical vision of the world that drives bordering: the tools of enforcement have

changed substantially, but the ideological determinants of their deployment have been

little altered since the first biplanes took flight above the border in San Diego and El Paso

in 1911.

CHAPTER II

BACKGROUND

<u>Literature Review</u>

Academic literature on aerial border enforcement is quite limited. But much of the necessary context for understanding this specific topic can be gleaned from the sprawling literature on borders, territory, and enforcement more generally. This review is in no way a comprehensive survey of the full range of border studies. Kolossov and Scott note that "the field is much too broad and variegated for any single or totalizing attempt at documentation" (2013, p. 2), and this review is limited to English-language literature that often has a regionally selective focus on North America and Europe (Kuus 2020, p. 1189). Nonetheless, there are certain intellectual trends and specific contributions that are particularly relevant to this project and merit discussion here.

Unfinished borders

One of the more substantial shifts in border studies of the past century was the move from regarding borders as static entities to understanding them as processes. Although the boundaries of all kinds of phenomena have always interested geographers, border studies as a distinct field of inquiry owes its origins to the emergence of the modern sovereign state system, which divided the world's surface into discrete, non-overlapping political-territorial units (Jones 2009, p. 181; see also Murphy 1996). Early 20th-century work in the field of political geography largely accepted this premise of spatial fixity and emphasized the importance of eliminating ambiguity from borders. This impulse complemented the larger political project of delimitation and demarcation (Jones 2009, p. 181; Kolossov 2005, p. 608). Until approximately the mid-20th century

geographers tended to treat borders as static or given entities, and concentrated their efforts on describing and categorizing idealized border 'types' (defined by characteristics like morphology, position, or age). Other research focused on the functions and impacts of these presumed-static borders at varying scales (Kolossov 2005, pp. 611-612). But in the latter half of the 20th century, the premise of fixity gradually began to yield under critical interrogation. A more complex understanding of borders emerged, in which borders came to be recognized as "never finished or fixed, even if they appear to be" (Jones 2009, p. 180). This approach focuses attention upon ongoing processes of 'bordering'—a term that reminds us, as Kolossov and Scott write, that "borders are not only semi-permanent institutions but are also *non-finalizable* processes" (2013, p. 3, emphasis mine). My work is rooted in this conception of 'bordering' as a prolonged and unfinished process. For years after its inception the US-Mexico border remained unmarked along much of its length, in part because its exact location upon the physical landscape was unclear (St John 2011, Ch. 1; see also Cantú, 2018, pp. 47-49). Even the segments defined by supposedly objective physical landmarks have proven surprisingly mobile and recalcitrant (Mueller 1975). Human and non-human actors alike regularly disregard the border's spatial authority to cross from one side to the other. What material force the border possesses is sustained by continual effort, but border enforcement as a task contains in itself no true end—only the promise of continued action. Yet this non-finalizable process is continually and vigorously pursued by state (and to a lesser degree, non-state[2]) actors. My particular concern in this work is with the relationship between that ongoing process of bordering and technological change.

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2   On the phenomenon of 'civilian' or 'volunteer' border patrolling in the United States, see Doty 2007.

Partly in reaction to popular notions of a 'borderless' or deterritorialized world, border studies flourished in the last decades of the 20th century (Jones 2009, p. 182). That flourishing has in some cases led to a diminished focused on the traditionally understood political borders that were once the anchor of the discipline. While many authors continue to study these political divisions of space, others have sought to broaden the concept of border or boundary studies far beyond that initial premise (e.g. Jones 2009; Mezzadra & Neilsen 2013). Expanding the notion of what constitutes a border has in turn prompted questions like "Where is the border in border studies?" (Johnson et al. 2011, p. 61)—a question not easily answered even by the authors who pose it.[3] In comparison with these more radical approaches to borders, boundaries, and the study thereof, my approach here skews toward the traditional, focusing on a single political division between two states. Though I recognize the value of alternative understandings of borders, I believe the persistent political relevance of state borders in particular makes them important objects of continued study. State borders are reinforced by incredible ideological and institutional inertia. This does not negate their status as processes in motion, as explained above, but we must be aware that "not all processes are equally fluid or changeable," as Murphy puts it, "because institutional arrangements promoting fixity develop in their wake" (2012, p. 167). These institutional arrangements may be tangible, intangible, or somewhere in between: a border wall, the US Border Patrol, everyday language of state-based identification, newspaper coverage of one 'border crisis' after another, a map on a classroom wall. All of these "mundane arrangements" normalize and naturalize the existence of political borders (Mitchell 1991, p. 94). The

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3   Hernandez argues that the flourishing of 'border studies' (and the popularity of border metaphors) has also led to the emergence of a "borderlands academic complex": "politically safe and institutionally supported" work which elides the actual violence of the US-Mexico border (2018, p. 156).

territorial arrangements of the modern state system have largely "achieved an objectified and reified status" (Murphy 2012, p. 167), and the ideological principles of that system continue to be extraordinarily influential among policy-makers and other state actors (Murphy 2013; see also Kuus 2020). It is for this reason that I choose to scrutinize a state border in particular for this work.

Borders and territory

Thinking about borders also requires thinking about territory. As Paasi writes, "[B]orders can be theorized reasonably only as part of the wider production and reproduction of territoriality/territory, state power, and agency" (in Johnson et al. 2011, p. 62). But scholars writing about territory do not always address their work to those researching borders, and vice versa, and the respective literatures sometimes advance more in parallel than in cooperation. Investigations into the meaning, making, and manifestations of territory have followed a broadly similar trajectory as research on borders, moving from a relatively static view in which state territory was treated as preexisting and comprising society (critiqued most prominently by Agnew, 1994), to a process-oriented view in which the production of territory at all scales is understood as unfinished and non-finalizable. Painter, for instance, writes, "Territory is not the timeless and solid geographical foundation of state power it sometimes seems, but a porous, provisional, labour-intensive and ultimately perishable and non-material product of networked socio-technical practices" (2010, p. 1116). Borders are by no means the only locations at which state territoriality is reasserted and reproduced. Still, they are exemplary locations for the deployment of the "considerable inputs of labour, expertise, and other resources" (Painter 2010, p. 1105) necessary to effectuate territory. This

11

process-based understanding of territory influences my decision to frame border enforcement as the reproduction of territorial extents and limits, a key component of territory more broadly.

The ways in which we conceptualize those extents and limits—along with borders themselves—are influenced by intellectual changes and corresponding technological developments. In multiple works, Elden (2010a, 2010b, 2013, etc) argues that legal conventions (particularly treaties) and techniques of calculation and geometry were critical prerequisites for establishing what we now generally recognize as the finite, bounded, and well-mapped version of territory. He contends that 'territory' is a historically and geographically specific politico-spatial ideal, characterized by an abstract, calculative understanding of space made possible by advancements in mathematics and measurement, and reified in legal documents referencing these allegedly 'absolute' indicators of location. In this regard his work builds on Lefebvre (1991 [1974]), adding nuance to the general idea of abstract space that Lefebvre introduced to geography (see also Brenner & Elden 2009). Although Antonsich has criticized Elden's work for potentially overstating the magnitude of difference between this modern conception of territory and older conceptions of politically bounded space (2010, p. 423), Elden's core insights are still significant. Crucially, Elden demonstrates that a concept of political space based on new legal conventions and scientific techniques developed largely in parallel with the growth of nationalism as a political impetus, making calculative and geometric notions of territory particularly important for the emergence of the modern sovereign state system and its expansive claims upon space.

"For mountainous regions, for deserts or tundra, or particularly for the abstract

divisions of unknown places in the colonized world, such techniques were crucial," Elden

writes (2010a, p. 809). Though he does not specifically link this assertion to the US-

Mexico border, the connection between cartographic calculation and coloniality is an

essential one for understanding that border, because its creation was undeniably a

continuance of the entwined processes of settler colonialism and "continental

imperialism" (Karuka 2019) that defined the European conquest of the North American

continent. The territorial definition of Mexico and the US was and is a product of what

Hernandez calls the "long-historical matrix of power" and "continuum of violence"

(2018, pp. 21, 24) that began centuries before either country existed as a political entity.

There is a clear link between territory and coloniality. "Colonial occupation," Mbembé

writes, "was a matter of seizing, delimiting, and asserting control over a physical

geographical area—of *writing on the ground* a new set of social and spatial relations"

(2003, p. 25, emphasis mine). The impulse of territorialization, of "circumscribing places

with territorial lines" (Karuka 2019, p. 32) preceded the modern US-Mexico border by

centuries. Consider, as one example, the Spanish attempt to regularize and solidify the

northern frontier of New Spain in the late 1760s and early 1770s by planning a cordon of

evenly spaced forts along an arc from the Gulf of Mexico to the Pacific which largely

prefigured (in its position) the eventual border (Weber 2009, p. 160; see also Daniel 1968,

Faulk 1968). The boundary between the two states could not have been ultimately created

without the rejection and suppression of preexisting Indigenous modes of territoriality,

particularly those which prioritized mobility over settlement (Barr 2011). From a long-

historical perspective, both the border and the states that propagated it are recent

intrusions—again, supporting Elden's claim that our concept of bordered territory is by

no means a universal or transhistorical way of organizing the world.

In addition to critically interrogating the origins and premises of 'territory,' over the past two decades scholars have begun to challenge the planar logic implicit in most cartographic representation. Put more simply, we have remembered that the world is not flat. Braun (2000) provided an important early intervention in this regard, analyzing how the mapping of subsurface geology—depth—became an important foundation for the legitimacy of the Canadian state. But the more influential work on territory's vertical dimension has largely emerged from studies of conflict in the Middle East. Weizman, writing about the spatial divisions of Israel and Palestine (2002, 2004), and Graham, writing about the US subjugation and occupation of the city of Baghdad in Iraq (2004, 2011), have been among the strongest voices arguing that control of what appears in the flattened perspective of a map as two-dimensional space actually entails enormous contestation of height and depth. This idea of "vertical geopolitics" (Graham 2004) has been echoed and expanded upon by many others (e.g. Adey 2010, Elden 2013, Massé 2018, Campbell 2019), and productively incorporated into broader discussions of state territoriality as a volumetric phenomenon (Billé 2020). Some recent work has, following somewhat in the spirit of Braun's inquiry, plumbed the state's attempts to control and make knowable subterranean space, "a territory that is conceptually and physically difficult to monitor" (Sorrensen 2014, p. 331). This work on depth should not be neglected: there are parallels between the state's extension of authority downward and its attempts to govern height (Billé 2020, p. 2). However, this thesis is primarily concerned with the link between military and/or police presence in the air (Neocleous 2013) and bordering. Both control *of* the air and control *from* the air have been key goals of aerial

border enforcement, as I will discuss in greater detail in Ch. III.

It is important to distinguish between the concept of vertical geopolitics or volumetric territoriality and the phrase "the vertical border," which some observers have used to describe the ways in which the US relies on authorities in Mexico and other Central American states to assist in the deterrence of migration (e.g. CSRPC 2016, Varela Huerta 2018, Cuffe 2021).[4] This usage makes sense only within a conventional cartographic perspective where north is 'up' and south is 'down.' Although evocative and potentially useful to readers who have internalized that particular geographic understanding of the world, this usage privileges a flattened conception of political space and obscures the separate issues and tensions produced by states' exploitation of volumetric verticality—that is, height and depth—along territorial borders. "Airspace," writes Weizman, "is a discrete dimension absent from political maps. But it is a space of utmost importance […] allowing a vantage point on the terrain under it, denying that position to others" (2002, n.p.). As will be discussed in greater detail in Chapter III, the control of airspace has essentially always been entwined with ambitions to control the movement of populations across territory (Neocleous 2013, Killingray 1984, Satia 2014, Williams 2007)—suggesting that these two forms of the "vertical border" are not entirely unrelated. But the growing use of "vertical border" to describe multilateral counter-immigration regimes in adjacent countries is, in my opinion, a misnomer and an unintentional obfuscation of the more literal politics of verticality.

One final aspect of territory deserves mention here: the non-human (or more-than-human) environment. Although Usher (2019) argues that theorists of territory have

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4   The term has also been used in the European context: see Soriano-Miras, 2017.

largely abandoned or disregarded this factor, the same cannot be said of border

researchers, who have explored the ways in which the environment has been claimed as a

silent agent of the state for border enforcement in the North American southwest (notably

de León 2015) as well as how the unruly terrain of the borderlands resists state

governance (Sundberg 2011; Boyce 2016). The US-Mexico border crosses highly varied

environments: some sectors abut dense urban areas like El Paso/Ciudad Juarez or San

Ysidro/Tijuana; other sectors traverse arid and effectively unpopulated deserts. Where the

waters of the Rio Grande mark the boundary, border-crossers may risk drowning; in the

Sonoran Desert, heat exhaustion or heatstroke are the most obvious dangers—but winter

can also bring snow and freezing temperatures. The actual boundary line is inconsistently

marked and fortified, "unevenly inscribed in the landscape" (Jones & Johnson 2016, p.

188). In many areas, but particularly in rugged terrain the position of US-built barriers

does not actually correspond to the precise legal location of the border (Ryman et al.

2017, Kapoor & Brocious 2020). While this thesis primarily concentrates on human

agency in the borderlands, it would be a mistake to disregard the non-human or more-

than-human forms of agency that influence border politics.

Unfortunately, many of these critical perspectives on territory and borders have

not spread outside geography as widely as geographers might hope. For instance, Fall

(2010) provides one disappointing example, critiquing an article by economists (Alesina

et al. 2006) that received widespread popular media attention for lauding a supposed

correlation between geometrically straight borders, ethnic homogeneity, and economic

success. The "reification, naturalization, and fetishization" of neatly demarcated,

geometrically uncomplicated political-territorial borders thrives on such naive work (Fall

2010, p. 146). And academics are hardly the worst offenders in that regard. As previously mentioned, Murphy (2013) shows that the normative power of the tripartite nation-state ideal (Agnew 1994), including a simplistic, zero-sum conception of territorial integrity, remains a significant driver of state policy-making and (in some cases) interstate conflict. Jones and Johnson (2016) echo this assertion and apply it even more specifically to borders. They describe ongoing global border militarization as "part of a broader trend by sovereign states, their agents, and their intermediaries that re-articulates sovereign authority at borders and within state territories" (p. 195). Scholarly insights into the nature of territory have—so far—had little appreciable impact on the way it is effectuated and reproduced at state borders. This should not preclude us from continuing to scrutinize borders and territory; it simply means we should not be surprised to find that the larger discourse around state space remains fixated on the static and ahistorical version of borders and territory that geographers have mostly forsworn.

The US-Mexico border context

I turn now from the broad topics of borders and territory to US-Mexico border studies more specifically. Though I have already highlighted some of the relevant work in this particular field, I want to provide a more substantial overview of the notable contributions that have influenced this thesis. As with borders and territory generally, the scholarship on the US-Mexico border is far too broad to easily summarize. The US-Mexico border region was in fact a foundational site for the larger field of border studies: the Association of Borderland Scholars was founded in 1976 to connect researchers studying that region, and this professional integration spurred the growth of comparative border studies in other locations and the eventual founding of the Journal of Borderlands

Studies (Stoddard 1986). To narrow my focus, I concentrate here primarily on major works by scholars who have studied border *enforcement* in the US-Mexico context.[5]

Precedents for the modern US border enforcement regime date back at least to the 19th century, immediately following the confirmation of a new border in 1853.[6] In contrast to the predominantly exclusionary tendency of today's regime, 19th century border enforcement was largely intended to prevent specific, racially defined groups of people from *leaving* the US. In 1850s Texas, the Texas Rangers were mobilized to pursue fugitive and free Black Americans attempting to reach Mexico, where slavery had already been legally abolished (Audain 2014, Baumgartner 2020, Swanson 2020; see also Kelley 2004, Lack 1985). Texans even employed the Rangers to illegally extradite fugitives from Mexico back to the United States. During the 1870s and 1880s, in the areas that would become Arizona and New Mexico, the US military pursued Native Americans who had adapted to the border by using it as a tool of strategic retreat (Smith 1976, Thrapp 1967; see also White 1991). The governments of the US and Mexico negotiated early bilateral enforcement agreements that allowed for the free passage of troops into and out of each other's territory when in pursuit of Native Americans (e.g. Davis 1882). Although these actions have not generally been framed as forms of border enforcement, I contend that they are key precedents. Unfortunately, the constraints of this project preclude further discussion of the historical geography of early border enforcement—though it is an important topic.

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5   Although border enforcement often takes the form of immigration enforcement, it is important to remember that not all border enforcement is focused on immigration, and not all immigration enforcement occurs at borders. See p. 34 for more on this distinction.

6   While the majority of the contemporary border was established by the Treaty of Guadalupe Hidalgo in 1848, a significant section was amended by the Gadsden Purchase in 1853. Additional but relatively minor modifications continued into the 20th century.

St John (2011) provides an excellent overview of the earliest period of what is more generally recognized as border enforcement. Her work begins with the creation and definition of the border following the conclusion of the US invasion of Mexico, and extends to the beginning of formal US federal regulation in the early 20th century. In addition to providing valuable insight into the prolonged process of marking the border on the ground, St John emphasizes the early influence of war abroad on the US approach to domestic border policing, a subject which I address (from a different perspective) in Ch. IV. Her historical survey provides essential context on the origins of the system in place today.

Similarly, Lytle-Hernandez (2010) chronicles the formation and evolution of the US Border Patrol in the early 20th century. Her work is an effective complement to St John's, and though less directly oriented toward geographical questions, vital for comprehending the growth of the border enforcement apparatus. She narrates the agency's history with critical attention to race, citizenship, and notions of belonging. Lytle-Hernandez acknowledges that border enforcement predates and exceeds the establishment of the official Border Patrol. Despite this, she takes essentially a single-agency focus, which somewhat limits the scope of her work. As I have found in studying the adoption of aircraft, the task of patrolling the border was not always undertaken by the Border Patrol. (I discuss this further in the next section of this chapter).

Whereas both of the preceding studies emphasize the first half of the 20th century, Dunn (1996) focuses on the period between 1976 and 1992. His work is among the most widely cited on the subject of border enforcement because he details the fiscal and material expansion of the US enforcement apparatus, framing that growth as a domestic

application of the counterinsurgency doctrine that dominated US foreign policy in the same era. In this work, he uses the framework of 'militarization,' and frequently cites helicopters as one concrete example of that tendency (e.g. pp. 38, 43, 58, 66, etc). (He does not, however, provide a detailed explanation of how those helicopters were employed.) Dunn's book is primarily based upon institutional sources, like congressional records of appropriations and debates. Consequently, it offers substantial insight into the bureaucratic and ideological dimensions of escalating enforcement, though somewhat less insight into the enactment of that escalation in place and its consequences for individuals and communities in the borderlands. Despite its acknowledged limitations, this book remains a touchstone in the field of US border enforcement studies.

The framework of 'militarization' has been criticized for implicitly maintaining an intellectually unsupportable distinction between military and police actions. Neocleous (2013), using air power as a lens, argues that the spatial and ideological divide between those categories has always been blurrier than we would now care to admit. Jones and Johnson similarly argue that state borders are paradigmatic sites for the collapsing of the distinction between foreign and domestic policy or war and policing (2016, pp. 189-192; see also Heyman & Campbell 2012). 'Border militarization' is a misleading term, because military actions have often been intended to create, maintain, or redraw borders, and borders and borderlands have often served as testing grounds for some of the very technologies that are later construed as evidence of 'militarization,' such as drones (Chaar López 2018). In Ch. IV of this thesis I reconsider 'militarization' and suggest that we can more productively understand the phenomenon as a reallocation of idled state capacities —a notion I borrow from Gilmore's examination of prisons as a geographical solution to

a political problem (2007), and which I connect to Corva's expansive idea of "illiberal governance" (2008).

Dunn himself abandoned 'militarization' as a defining lens for his second book on the border (2009), in which he scrutinizes the origins of one of the most defining shifts in US border enforcement: the implementation of "prevention through deterrence," the strategy of hardening urban crossing areas to deflect migrants into remote and largely unpopulated areas (primarily southern Arizona and southern Texas; see Slack et al. 2016) where reaching safety can requires days of trekking across hot and unforgiving terrain. This policy demands analysis through a geographic lens, because its most consequential effect was to relocate the primary corridors of northward migration, in what has been described as 'squeezing a balloon' (Madsen 2007) or a 'funnel effect' (Rubio-Goldsmith et al. 2006), and can generally be seen as a spatial displacement of a political problem. Studying this policy requires attention to both its spatial impacts and its particular geographic origins: Dunn emphasizes the local context that spawned Operation Blockade in El Paso in 1993 (swiftly rechristened Operation Hold-the-Line for public relations purposes). Although that operation became the prototype for the new border-wide strategy (formalized initially in Meissner 1994), it was itself a product of *local* disputes about the visibility and intrusiveness of apprehension efforts.

This is a crucial reminder that although we may speak of '*the* border,' it is in some ways illogical to regard it as a unified thing. The US-Mexico border divides six Mexican states (Baja California, Sonora, Chihuahua, Coahuila, Nuevo Leon, and Tamaulipas) from four US states (California, Arizona, New Mexico, and Texas) as well as the Tohono O'Odham Indian Reservation. Though ostensibly governed by a unified federal policy,

border enforcement varies significantly along the length of the line because of these political and geographical variations—some regions are intensely policed and subject to escalating violence, while others experience comparatively benign modes of enforcement (Slack et al. 2016). Land ownership adds another wrinkle: much of the border in Arizona crosses federally owned land, for instance, whereas in Texas private properties abut the borderline. And, as just mentioned, a 70-mile stretch of border crosses the Tohono O'odham Indian Reservation, where the Tohono O'odham Nation possesses legal sovereignty.[7] Dunn (2009) focuses on just one of these local political contexts; Nevins (2010) and Hernandez (2018) are among the many scholars who have explored others. With the case of Operation Blockade, the transformation of a local initiative into federal policy marked the beginning of the most intense escalation of legal enforcement in the border's history.

The effects of escalating enforcement since the mid 1990s have been documented by many authors, including in popular nonfiction (e.g. Urrea 2004). On the academic side, Nevins (2010) shows how discourses of crime and illegality were mobilized to legitimate the new enforcement strategy of the 1990s. He connects the dramatic transformations in the day-to-day operations of the Border Patrol to the deeper history of the border as a marker of personal and collective identity, consistent with Lytle-Hernandez's work (2010). Andreas (2009) considers the economic impacts of increased border enforcement, demonstrating that continued border hardening has reinforced, rather than curtailed, flows of illicit drugs and unauthorized migrants across the border. His work certainly reinforces the contention that border enforcement is a non-finalizable

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7   Haney (2016) argues that this sovereignty extends upward to include airspace. That subject has been
     further analyzed by Knight (2019). However, I have not yet encountered any scholarship on the
     intersection between indigenous airspace sovereignty and US border aviation.

process, because his analysis concludes that escalation inevitably reproduces its own justifications. It feeds accumulation by exploitation, and sustains rather than suppresses the illicit economies that owe their origins to the border itself. Heyman (2010) examines the impact of enforcement on the construction and consciousness of class relations, concluding that the geography and practices of state enforcement also sustain major social inequalities.[8]

But the most vivid account of the concrete, personal impacts of "prevention through deterrence comes from de León, who argues persuasively that the US enforcement strategy is a deliberate attempt to enroll the natural environment into the project of border enforcement as a lethal weapon against migrants (2015). The policy of "prevention through deterrence" outsources violence to the deserts of the southwest, de León contends, allowing enforcement agencies to force migrants into danger while posing as humanitarian guardians. This is the most significant theoretical contribution of his book and it builds upon the notion of 'necropolitics' first introduced by Mbembe (2003) as an expansion of Foucault's 'biopolitics.' De León's analysis of this institutional violence is crucial to understanding the specific border regime of the US, and is also applicable to other scenarios where dangerous environmental conditions are used as scapegoats for deliberate policy decisions—especially the European Union's enforcement and deterrence efforts in the Mediterranean Sea (Lo Presti 2019). As Cantú writes, paraphrasing de León, "Violence does not grow organically in our deserts or at our borders. It has arrived there through policy" (2018, p. 258).

Prevention through deterrence is premised on the deliberate enrollment of

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8   Vitale, though only considering the border briefly, argues the same point: "US border enforcement has been primarily about the production of whiteness and economic inequality," he writes (2017, p. 139).

geography as a weapon *and* the simultaneous denial of institutional agency in the resulting outcomes for individuals. From this stance, the natural environment is framed as uncontrollable. But, as Mendoza (2018) describes, attempts to bring portions of that environment under greater control have *also* provided cover for exclusionary intentions. "[A]rguments for environmental control have consistently worked to the detriment of human migrants, hardened racial divisions, and reinforced social hierarchies," she writes (p. 119). An "immigrant versus nature narrative"—separate from the one that underpins the policy of prevention through deterrence—has often been parlayed into anti-immigrant rhetoric on the premise of environmental protection (p. 122). In some areas, like Organ Pipe Cactus National Monument, federal land managers work actively in cooperation with CBP: "[T]he Border Patrol can describe the [National] Park Service as a willing partner in its drug interdiction and immigration control efforts, and the Park Service can describe the Border Patrol as an ally in conservation" (Warren 2017, p. 866). As both Mendoza and Warren note, the alliance between border enforcement agencies and land conservation advocates is not without historical precedent: the mid-20th century US environmental movement traded in fears of overpopulation and mass human movement, providing environmentalist justifications for immigration restrictions (Mendoza 2018, p. 122, Warren 2017, p. 866). The continuing influence of the "immigrant versus nature" logic is evident in the April 2021 lawsuit filed by Arizona Attorney General Mark Brnovich against the federal government, in which he argued that President Joe Biden could not *stop* constructing a border wall without first accounting for the environmental impacts that would be caused by increased migration (Brnovich 2021). Migrants are thus simultaneously blamed for becoming victims of the unmanageable environment, if they

die while crossing, and for degrading the managed environment, if they arrive safely.

Analysis through the lens of more-than-human geographies has helped demonstrate "how nonhuman actors […] are *constitutive* of boundary making" (Sundberg 2011, emphasis in original), and how the state has tapped the landscape to help implement enforcement. Yet as Sundberg acknowledges and Boyce (2016) reminds us, just as often as the state has *attempted* to turn geography to its own purposes, the more-than-human elements of the borderlands have resisted control. "[M]any of the environmental conditions intended to present an obstacle to unauthorized crossing generated considerable difficulties for the United States' own operations and personnel," Boyce writes (p. 249). Part of the failure of the technologically advanced 'SBInet' developed and deployed by Boeing in the 2000s "was a reading of national territory as two-dimensional (2D) and easily susceptible to visual penetration" (p. 252). This failure to comprehend the reality of borderlands environments was one of the major factors leading to the project's demise in early 2011. Other attempts to technologically command the borderscape have been similarly unsuccessful (Chaar López 2018, pp. 120-121). However, these failures often provide the impetus for new rounds of capital investment, technological development, and securitization (Boyce 2016, p. 258)—another demonstration of the non-finalizable quality of border enforcement. Boyce briefly discusses how unmanned aerial vehicles have been viewed as one solution to this problem of inhospitable terrain (pp. 255-256); in this thesis I will demonstrate that the ambition to defy uncooperative geography and command terrain from above extends much farther back in the history of US border enforcement.

Tools of geographic research and inquiry have proven particularly important in

documenting the consequences of escalating enforcement and a weaponized environment. The best-known effort is the recovered remains map maintained by the humanitarian organization Humane Borders and the Pima County Medical Examiner's Office, officially titled the Arizona OpenGIS Initiative for Deceased Migrants. The map continues to be updated with points marking the location of every known recovered migrant body or set of remains in the state since 1981. The accompanying database allows for sorting of cases by date of recovery, estimated date of death, and cause of death, among other attributes. GIS has enabled documentation and communication of the effects of border policy in ways not previously possible. At the same time, the proliferation of GPS technology allowed humanitarian aid organizations to more effectively provision known crossing routes with water drops, food, and other emergency supplies. (As B.—a longtime humanitarian aid activist from the Tucson, AZ area, and one of my interviewees for this project—explained to me, locating migrant trails on the basis of landmarks and visual observations was limiting: "Because there was no consistency, the efficiency and the effectiveness just wasn't there. […] Once you actually had a waypoint and a GPS, to know, 'OK, I'm standing in the exact same spot this person was last week or a month ago' […] it just changed things dramatically" [Personal communication, October 29, 2020].) Geographers have also begun using more sophisticated techniques to analyze the movement of migrants and the impacts of enforcement. Chambers et al. (2019) use a combination of terrain data (slope and exposure), surveillance tower locations, and agent-based modeling to estimate the increased caloric expenditures required for migrants to avoid camera or sensor detection in highly-trafficked crossing zones. They argue that CBP's persistent surveillance of less-arduous routes amplifies the lethal effects of

26

prevention through deterrence, driving migrants onto the most physiologically taxing routes through already-dangerous areas. Although such modeling is not infallible, it offers a new way to scrutinize the geography of enforcement.

Of course, we must remain aware that the tools geographers use for critical analyses of bordering are also available to the agencies of enforcement. The US Department of Homeland Security maintains its own Geospatial Management Office and Geospatial Information Infrastructure. CBP regularly makes use of GPS, GIS, and other geospatial tools to support its work ("Enhancing Situational Awareness…," 2015). Thus, while tools of geography have proven to be effective in analyzing and politically challenging the escalation of border enforcement, they are also integral components of that very escalation. Palmer and Rundstrom argue that "historically consistent structural patterns of policy and behavior within a given institution" are frequently the most significant determinants of how novel geospatial tools are put to use (2013, p. 1154). "Rather than revolutionizing institutions and setting them on new trajectories into uncharted territory, technological change can often occur in a manner remarkably consistent with institutional history," they observe (ibid). Although this conclusion may seem obvious, it is a necessary reminder. While geographers may use these technologies for more incisive critiques of bordering institutions, those institutions are using many of the same technologies to target and intensify their enforcement activities.

Intensification has been one of the most important trends in border enforcement for decades. The other trend that deserves attention is expansion. The US-Mexico border, Andreas observes, is "both more blurred and more sharply demarcated than ever before" (2009, p. 141). At the same time that the border has been physically reinforced on the

27

ground, it has become only one component in an increasingly extensive bordering regime

that connects both adjacent and discontinuous territories around the world (Miller 2019).

The simultaneous intensification and expansion of border enforcement may appear

almost paradoxical. Ehrkamp summarizes this incongruity well: "[B]orders are

meaningful and fixed (and frequently deadly) when migrants attempt to traverse them

[…], but the same borders are infinitely malleable when states create new, transnational

spaces of enforcement aimed at curtailing migrants' ability to reach their anticipated

destinations" (2020, p. 1207). As previously mentioned, some observers have used the

misnomer "vertical border" to describe the phenomenon of powerful states like the US

enlisting neighboring countries to act as the 'front lines' of border enforcement. Both

intensification and expansion reflect the fundamental incompleteness and unachievability

of the border. Border hardening in place and the creation of new, transnational legal

geographies of deterrence might be interpreted as evidence of the waning power of state

territoriality (Brown 2010). But I contend that they more reflect what Murphy (2013)

terms the "continuing allure" of territory—the enduring normative appeal of bounded

political spaces, which motivates state actors to defend an imagined territorial sanctity

even when the costs of doing so begin to appear irrational and unjustifiable.

Borders and technologies of powered flight

The literature on the connection between aircraft and bordering is not nearly as

extensive as the broader field I have been surveying thus far. Butler (2001) coined the

term "technogeopolitics" to describe his investigation of international competition for

control of commercial air trade routes in the early 20th century. He argues that despite the

general lack of attention given to technology's role in geopolitics, technological change

significantly influences the course and conduct of international affairs and must be seen as a relevant factor in competition for territory, resources, and legitimacy. Aircraft are, to Butler, just one particularly salient example. Williams (2007) builds on Butler's foundation to consider "*vertical* technogeopolitics" (p. 509, emphasis mine) and explores the uses of military air power to create and secure the borders of Iraq through successive Western interventions. Williams notes that these interventions often deny Iraq its own, independent, aerial sovereignty, and Satia (2014) further connects the contemporary use of air power there to the longer history of colonialism in Iraq, arguing that a British perception of the country's terrain as vast and inscrutable underwrote the ideological and pragmatic legitimacy of 'governing from the air' in then-colonial territory. In this regard her work connects closely with that of Killingray (1984), who identified early a link between technologies of powered flight and colonial governance. Those ideas have been productively expanded by Neocleous (2013), who (as previously mentioned) contends that colonial uses of air power reveal the falsity of the police-military distinction. Neocleous' work, however, is not as closely attentive to bordering specifically. In contrast, Simonsen (2018) returns more closely to the model set by Butler (2001) and focuses on questions of territory and territoriality 'at home.' Her study examines how the incorrigible mobility of aircraft in the early 20th century affected perceptions of territory and borders in Great Britain, and particularly how the nation's self-image as a guarded island was troubled by the sudden appearance of planes that had little regard for either borders or the state's naval power.

It is worth noting that the studies I have mentioned so far have largely focused either on the very early period of aviation when the technology was a novelty or on recent

'foreign' conflicts like the US wars in Iraq and Afghanistan. The domestic significance of aircraft and aerial policing (Neocleous' argument notwithstanding) appear to have received less attention from geographers, and 'air power' still generally carries the military connotation of bombing, strafing, or other attacks against ground targets, rather than encompassing the psychological and political power offered by surveillance from above. The uses of aircraft to secure borders outside of war zones have not drawn considerable academic scrutiny.

Some researchers outside of academia have helped to fill in the picture. Most notably, Part I of *The Disappeared Report* (2016), a collaborative project by the organizations No More Deaths/No Mas Muertes and La Coalicion de Derechos Humanos to record Border Patrol abuses, describes the helicopter intimidation tactic known as 'chase and scatter.' This tactic and its context will be discussed at greater length in Chapter IV. For now, I mention it only to note that this report did not appear in an academic journal. The sincere effort of numerous dedicated border scholars not withstanding, the material realities of border enforcement are not always well-represented in academic literature.

Drones have drawn more scholarly attention in recent years. But the shadow of the US military's lethal drone strike operations looms large over existing scholarship, and literature concentrating primarily on the military uses of drones abroad (e.g. Adey et al. 2011, Dunn 2013, Gregory 2011a, Gregory 2011b, Shaw 2016, Wall & Monahan 2011) is not of great help in understanding the functions of unarmed surveillance drones operating within a state's own territory. Some insights are applicable only in modified form—for instance, Gregory's concept of the geographically-distributed "kill chain" (2011b, p. 196)

is not directly transferable to CBP's unarmed drones, but the general concept of a "dispersed and distributed apparatus" (ibid) operating behind and through any single drone is useful. Much of what has been written about drones in border enforcement (e.g. Jones & Johnson 2016, Marin 2016, Shokh 2016, Pedrozo 2017, Koslowski & Schulzke 2018) tends to treat them as a wholly novel technology without considering longer histories of border aviation. The most thorough account to date is Chaar López's dissertation, which considers drones as both "technologies of rule" and "media infrastructures" (2018, p. 6)—but not as the product of a century-long process of technogeopolitical evolution. Chandler writes that drones are often presented to the public "as a novelty, distinct from the numerous iterations that presage contemporary unmanned aircraft" (2020, p. 3). Although Chaar López's work does not completely replicate that pattern, it and most of the other extant literature on drones in bordering would benefit from deeper connection to literature on other uses of aircraft for surveillance, coercion, and control. In this thesis, I hope to help establish some of the deeper context for the use of drones along the border, in order to clarify what is truly novel about their use and what is a continuation of earlier aerial bordering practices.

The goal of distinguishing continuity from change extends across my research questions. As I argued above, analysis of the role of aircraft in bordering has not effectively connected the different technological platforms that have served as the basis for aerial enforcement. Nor have such analyses effectively incorporated first-hand recollections that offer granular insight into the most recent impacts of aerial enforcement practices. Although aircraft have occasionally been treated as *prima facie* evidence of a changing bordering regime (e.g. Dunn 1996, mentioned above), there remains more that

we can learn through critical reflection on their material and ideological significance. By attending to what has and has not changed in aerial bordering practices, we can cut through some of the 'noise' that surrounds border enforcement policy today and refocus on the political-geographical motivations that have driven technological succession.

While the techniques, practices, and technologies developed for use in domestic bordering are exported around the world (Miller 2019), the border with Mexico retains its hold on the US political imagination (Massey 2016). It has been mythologized and fetishized since it was established (Grandin 2019, Dunn 2009), and it remains a paradigmatic site for studying state attempts to control individual mobility through space. That goal, for over a century, has motivated attempts to enforce the border from the air using technologies of powered flight.

Methods

This thesis was planned, researched, and written during the COVID-19 pandemic while I was residing in Eugene, Oregon. The pandemic complicated the task of writing about the border. During the spring of 2020 the University of Oregon suspended all university-sponsored travel without a clear timeline for resumption. In addition to this official temporary prohibition, the personal and public health risks of traveling between Oregon and border communities made in-person fieldwork during the summer of 2020 inadvisable. Thus, some of the methods traditionally employed by geographers in this field, such as participant observation and face-to-face interviewing, were not feasible within the constrained timeline of master's-level research.

As previously mentioned, this thesis addresses three primary research questions: First, how have the functions of aircraft in US-Mexico border enforcement evolved with

time and technological succession? Second, how have public representations of the US-Mexico border influenced the incorporation of aircraft into bordering, and how have those aircraft, in turn, contributed to public representations of the border? And, third, in what ways does the use of aircraft in bordering reflect and reveal the larger political-economic circumstances shaping the evolution of the US border enforcement apparatus? These questions are linked by my interest in the interplay between the material and discursive production (and reproduction) of territorial division.

My thesis focuses on the general task of 'border enforcement' rather than on the Border Patrol because that task—which I define as attempting to control the movement of persons and things across the boundary between the US and Mexico through the exercise of legal and/or coercive force—has never been the exclusive task of that agency. The Border Patrol is certainly the most well-known, but through the border's history it has been enforced variously by the US Army, federal customs inspectors (or "river guards," along the Rio Grande), and the Mounted Chinese Inspectors who patrolled on horseback looking for Chinese immigrants crossing from Mexico following the passage of the Chinese Exclusion Act (Lytle-Hernandez, 2010). Additionally, the Border Patrol itself has at different times been under the charge of the Bureau of Immigration, the Immigration and Naturalization Service, the Department of Labor, the Department of Justice, and the Department of Homeland Security (U.S. Customs and Border Protection, "Timeline"). The first deployment of aircraft to the border preceded the establishment of a designated Border Patrol (see Ch. III), and since that time flight operations along the land border have been variously conducted by the Army Border Air Patrol, the Customs Patrol Service, the Coast Guard (then an arm of the Department of the Treasury), the Border

Patrol, the National Guard, and the Air and Marine Operations branch (formerly Office of Air and Marine) of Customs and Border Protection. This is to say nothing of the private corporations that now fulfill an increasing proportion of border enforcement activities (Miller 2014, 2019; see also Rumford, pp. 67-68 in Johnson et al. 2011). Emphasizing the shared purpose of these various actors and agencies helps to cut through this institutional convolution and see continuities that extend beyond the 'official' period when Border Patrol pilots flew Border Patrol planes.

I also use 'border enforcement' rather than 'immigration enforcement' because, although there is obviously substantial overlap between the two, not *all* efforts to give the border material force in the world have been directed at or premised upon immigration. Generally, I conceptualize border enforcement as the governance of mobility, which includes the mobility of non-human things.[9] Significant resources have historically been devoted to preventing unauthorized goods or materials from moving across the border. Alcohol and drugs are two of the most obvious examples, and as this thesis will demonstrate, both served as justifications for the enrollment of technologies of powered flight into the border enforcement apparatus of the US. Controlling the movement of animals, plants, and diseases have also been motives for the creation of border enforcement infrastructure (Mendoza 2018), but these were not, so far as I have found, significant drivers of aerial enforcement specifically.

In this research I employed three remotely accessible sources of primarily qualitative data: historical newspaper archives, the internal histories of Border Patrol pilots, and a limited number of interviews with active members of borderlands

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9   Immigration enforcement also involves the governance of mobility, but farther away from the border more often takes the form of the policing of status, involving different mechanisms and practices.

humanitarian aid groups. Other minor supplementary sources include miscellaneous US federal government documents, historical monographs (Hinkle 1967, 1970) documents and photographs from the collection of the National Border Patrol Museum (a nongovernmental organization) in El Paso, Texas, and personal communications with former members of the US Air Force 553rd Reconnaissance Wing. U.S. Customs and Border Protection officials did not respond to my inquiry, but my work was intentionally not dependent on their participation. Although all of these sources provided important insights into the role of aviation in border enforcement, there are also some significant disadvantages to this all-remote approach, which I will discuss later in this section.

My choice to focus on newspaper archives was informed by Anderson's account of the role of print-capitalism, and the newspaper in particular, in solidifying national imaginaries. Newspapers "provided the technical means for 're-presenting' the kind of imagined community that is the nation," Anderson writes (1991, p. 25). Their reach and presumed simultaneity help to convince individuals that the nation is a meaningful entity. We can logically extend this argument to the nation's territorial manifestation: the nation-state and its borders. Myers et al. make an explicit connection between the national political discourses of mass media and geographical understandings, noting that newspapers tend to reduce complicated geographical realities to what O'Tuathail and Agnew call "controllable geopolitical abstractions" (quoted in Myers et al. 1996, p. 23). Thus we encounter "near-identical commonsense geographic representations in the pages of ostensibly competing newspapers" (Dittmer 2010, p. 283). The US-Mexico border is one of those "commonsense geographic representations" or "geopolitical abstractions" which is normalized and thus reinforced by newspaper coverage treating it as given fact.

Dunn (2009, pp. 111, 121) and Andreas (2009, pp. 8-9) have previously noted the powerful connection between media representations and public understandings of the border and border enforcement, while Gilmore (2007, Ch. 3) has described more generally how political 'problems'—like the supposed problem of border enforcement—are constructed with the unwitting or intentional cooperation of the media.

"[I]n order to make critical use of newspapers as sources of information," Cloke et al. note, we must acknowledge that "language in the news is used to suggest ideas and beliefs as well as 'facts'" (2004, p. 71). I regard these articles as particular and partial representations of events and conditions which influence popular geographic understandings. At the same time, they can contain factual information that is of use in reconstructing the fragmented record of border enforcement operations. The reporting analyzed here is thus valuable both for the information it intended to convey and for what it reveals about the narratives offered by border enforcement authorities or agencies.

The two largest databases of newspaper articles I used were the historical archive of the *Los Angeles Times* (1886-1922; 1923-1995) and the historical archive of *The New York Times* (1857-1922; 1923-present). Both are particularly amenable to efficient research because they include scans of individual articles searchable by key words or phrases. In addition, they contain most original illustrations and photographs, some of which proved to be particularly helpful (e.g. Henry 1919, Arnold 1938). Although neither newspaper was published by a community immediately adjacent to the border, and thus likely do not capture the day-to-day minutiae of borderlands life, as newspapers with national circulation they can help us understand how the border was represented to and potentially perceived by the nation at large (see Schudson 1990, pp. 428-431).

I also searched two databases that group transcriptions of articles from numerous sources: Gale OneFile News and LexisNexis University. These transcriptions do not include the original accompanying images, which makes them less rich in interpretive possibility. They also do not extend as far back in time—just to the 1980s. However, they include reporting from papers based closer to the border, as well as wire reports, US Congress press releases, and CBP press releases. All together, these archives provided some local perspective as well as examples of how events at the border are reframed for audiences far from it.

I queried all of these databases using combination keyword searches (e.g. "border patrol" AND "plane/helicopter/drone"). Many results were not relevant to this project. News coverage of World War II combat operations in Europe often included the individual words 'border,' 'patrol,' and 'plane,' for instance. Reviewing thousands of potential matches, I ultimately selected approximately 350 articles for closer analysis. These ranged in length from single-paragraph reports to lengthy multi-page features, and in date from 1911 to 2019. Some directly addressed the use of aircraft on the border; in others the topic appeared only incidentally. These archives proved to be particularly useful for understanding the origins of aerial enforcement in the pre-World War II period, which are not extensively documented on CBP's website or in the internal histories produced by Border Patrol pilots (to be discussed below).

I used the qualitative data analysis software MAXQDA 2020 to sort, code, and annotate these articles. 'Coding,' in the analysis of qualitative data, refers not to computer programming (a more popular usage) but to "a procedure for organizing the text [...] and discovering patterns within that organizational structure" (Auerbach & Silverstein 2003,

p. 31). Coding is based on the 'grounded theory' tradition in sociology, and the process involves identifying repeating ideas in a set of texts or other materials which can then be thematically grouped to support more abstract theoretical assertions (Watson & Till 2010, p. 128; see also Herbert 2010, p. 73). The use of a program like MAXQDA is, as Dittmer (2010) notes, not strictly necessary, but allows for rapid collation of thematically related excerpts from across hundreds of individual documents.

This approach could productively be extended to additional archives, given more time and fewer restrictions on travel. Newspaper archives that are less comprehensively digitized but more spatially proximate to the border might well offer additional insights or complications to the materials surveyed here.

My second major source for this research was a recent self-published internal history of Border Patrol aviation, *Flying for the Border Patrol: 1940-2005* (Broyles et al. 2020). This is the most substantial record of aerial border enforcement in the US to date and was, coincidentally, self-published by the author/editors the same year I began working on my research. (I only learned of the book midway through my research.) I characterize it as an internal history because five of the six editors and virtually all of the interviewees whose oral histories comprise the bulk of the work are former agents of the Border Patrol.[10] The final editor (Broyles) is an Arizona-based writer, journalist, and researcher who conducted many of the interviews for the book. This work spans more than 700 pages in two volumes, and provides rich detail about the Border Patrol's aerial enforcement activities through the recollections of pilots, mechanics, agents, and administrators. It is a follow-up to two previous works in the same vein: *Prop Cops*

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10 Although this usage of 'internal history' varies slightly from that elaborated by Nanay (2017), I believe it is applicable in this context.

(Parker 1983) and *Desert Duty* (Broyles & Haynes, 2010).[11] (The editors describe it as "a companion book.") All three emphasize the perspectives of institutional insiders and provide little context—social, political, economic, or otherwise—for the stories of the interviewees. Although some brief historical background is included, it is hardly more than perfunctory. The focus is almost entirely on the individual experiences of pilots with minimal reflection on the larger systems at work.

That does not mean that the book is entirely apolitical. For the most part, the interviewees rarely discuss border policy. When it is mentioned, it is generally alluded to only as something that altered their day-to-day routine, e.g. in the form of budget cuts. But that may be an editorial choice: the interviews were "recorded, transcribed, and then edited" (Broyles et al. 2020, p. 707), and the extent of that editing is unknown. At most we can attempt to infer the editors' attitudes. I will note here a handful of passages across *Flying for the Border Patrol* and its 'companion' works that seem relevant to that end.

Parker's *Prop Cops*, the original model for the more recent work, ends with an abrupt turn into the author's political opinions. Claiming that a supposed "loss of control" at the border (a narrative thoroughly critiqued by Andreas [2009]) is the fault of "foreign governments," "minority groups," and "misguided 'humanitarians'" with "bleeding heart theories," Parker implies that unauthorized migrants are responsible for unemployment in the United States and warns that they might also be undercover Soviet revolutionaries (1983, "Afterthoughts" & "As of 1983"). *Desert Duty* moves away from Parker's unsupportable assertions, noting that US immigration laws "have at times been nonexistent, at other times defied logic, and at other times been outright racist or

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11 Hinkle's monographs (1967, 1970) might also plausibly be included in this category.

unenforceable" (Broyles & Haynes 2010, p. 4), but also argues that agents could "effectively control the border […] if America's lawmakers and voters sustain the support to let them" (p. 10), a sentiment which echoes the 'loss of control' narrative clearly present in Parker. *Flying for the Border Patrol* does not reprint Parker's sensationalist anti-immigrant screed, but it does conclude with a poem in which one of the book's primary authors "ponder[s] the stupidity of the evolutionists […] who don't believe that our God was the creator of the universe" and then describes Ciudad Juarez as a slum distinguished by "the absence of God" (p. 701). In highlighting these excerpts I do not intend to discredit the compilers of these books, who have put significant effort into documenting agents' activities and produced a substantial record of an under-acknowledged component of border enforcement. But I believe these passages demonstrate that these books are selective records compiled by individuals who personally identify with border enforcement as a politically and morally righteous task, and it is important to keep that context in mind when studying them.

Unlike the newspaper archives, most of the initial analysis of these volumes was done not with MAXQDA but with Post-it notes and a pencil. The volumes lack an index, and so after reading and manually annotating the book I created my own basic thematic index to allow for easier cross-referencing between related anecdotes that often appear many chapters apart. This index somewhat resembles the code set used for analysis of the newspaper archives, but the themes included reflect the specific contents of the book—again, following the general principle of beginning with simple repeated ideas or topics and building toward progressively more abstract connections.

The editors' decision to concentrate on the period when Border Patrol pilots flew

Border Patrol planes means that the pre-World War II period is largely neglected and the post-2005 period is examined only in unfavorable comparison. The editors seem to harbor a lingering resentment for the absorption of Border Patrol aviation into Customs and Border Protection's Office of Air and Marine—the transition is one of the most persistent topics throughout their work, and almost exclusively presented as a mistake (e.g. pp. 106, 256, 304, 350, etc). The volumes are thus not very useful for contextualizing the uses of aircraft along the border after 2005.

My third major source for this work was a set of interviews with 10 people regularly engaged in the direct provision of humanitarian aid—water, food, and other emergency supplies—in the US borderlands. These interviews were intended to help me better understand the roles and functions of aircraft in the borderlands over the last 5 to 10 years, and in particular, those functions that may not be captured by official sources or documentation. I asked the people I interviewed about their observations, recollections, and perceptions of the aircraft used in border enforcement today, but our conversations frequently ranged into broader discussions of bordering. These individuals have spent extensive time near the border while participating in activities like water drops, volunteer search and rescue, or recovery of remains. Through that work they have had many chances to witness border enforcement operations, including the use of aircraft. All of my interviewees have been engaged in such work since at least 2013, and some have done it for decades. They are members of multiple organized humanitarian aid groups, many of which trace their origins to the Sanctuary Movement of the 1980s (see Caminero-Santangelo 2009; Perla & Coutin 2012; see also Warren 2015, p. 187). Some work essentially full-time providing humanitarian aid or other migration-related assistance;

others are retired and volunteer regularly. Of the 10 interviewees, 6 work primarily in southern Arizona, 2 work primarily in southern California, 1 works primarily in Texas, and 1 had experience in all three of those states. Despite multiple inquiries, I was unable to identify any groups or individuals performing comparable work in New Mexico. The geographic distribution of my interviewees partly reflects the proliferation of humanitarian aid efforts in Arizona as a response to the spatial displacement of migration since the 1990s (see pp. 21-23 above). Although some of my interviewees are semi-public figures or sometimes speak to media outlets as representatives of their respective groups, not all are. I have chosen to maintain the anonymity of all interviewees to emphasize their observations and reflections rather than their organizational positions.

Because of the constraints created by the COVID-19 pandemic I conducted all of these interviews over Zoom or telephone. Each lasted approximately one hour. In one case I spoke to two interviewees on a single call; in all other cases I interviewed only one person at a time. For all but two interviews, I recorded the audio from the conversation and later manually transcribed it in MAXQDA. Once I had transcripts of the interviews I followed essentially the same coding process described above for the newspaper archives, though with a different code set. For the two interviews that were not recorded, I took notes in a word processor during the interview, captured as many direct quotations as I could, and coded that mixed notes-transcription document alongside the other interviews.

There are some significant disadvantages to conducting interviews remotely. For one, the context of an individual's surroundings is mostly lost. At most, I was able to see a portion of someone's office in pixelated form. Additionally, the opportunities for networking and connection that are present when doing fieldwork in person—attending

gatherings, talking to people in hallways or outside an event, or otherwise taking advantage of proximity to establish new contacts—are not possible when my only contact with an interviewee is a Zoom call. Networking by email and phone from multiple states away without in-person opportunities to build trust and rapport is challenging. I am grateful to the interviewees who shared their experiences with me regardless.

Additional sources for this project included US federal government documents pertaining to CBP operations, particularly that agency's drone program; a handful of texts and photographs from the collection of the National Border Patrol Museum in El Paso, Texas, including a lecture and instructional notes, pilot recruitment notices, and some descriptions of qualification and training standards; all three volumes of *The Disappeared Report* (No More Deaths/Coalicion de Derechos Humanos, 2016-2021), which documents governmental abuses in the borderlands; current reporting on the border (and on the Department of Homeland Security, when relevant) from a variety of journalistic sources; and email communications with former members of the US Air Force 553rd Reconnaissance Wing, whose collective memory and record-keeping were key to disproving a rumor about the origins of pilotless flight on the border (see Ch. V).

Many potential perspectives and sources are not represented in this project. Most importantly, this is not an observational or ethnographic account of how migrants themselves have experienced the aerial surveillance and enforcement regime of the US-Mexico border. Although potentially valuable, such a study would require significantly more complex and cautious negotiations of access and safeguards to privacy, given the vulnerable position of unauthorized migrants in the US today. Particularly under conditions of remote research, I was not equipped to undertake that project. Nor does this

thesis include the perspective of current Air and Marine Operations pilots. An in-depth study of pilot training and culture could provide significant insight into how high-level policy is translated to action. But that would require either collaboration with (and, therefore, supervision by) Customs and Border Protection officials or the deliberate circumvention of their information restrictions. Again, I was not equipped for that task.

Omissions notwithstanding, this research provides a more comprehensive view of the role of aircraft at the southwestern land border than has previously been available, and situates that role in broader context. My work combines a critical perspective on borders and bordering with careful attention to the material composition of the border enforcement apparatus.

The three main chapters of this thesis that follow each concentrate on one type of powered aircraft: airplanes (fixed-wing aircraft), helicopters (rotary-wing aircraft), and drones (remotely piloted or 'unmanned' aircraft). These three types are presented in the chronological order of their adoption for border enforcement. All three types remain in use today, although helicopters have almost entirely superseded planes in operations along the land border.

Some readers may ask: What about blimps? Hinkle writes that in 1920, the Army Border Air Patrol (see Ch. III) attempted to deploy a lighter-than-air twin-engine airship in El Paso, but "it made no patrol flights" (1970, p. 44). Lighter-than-air craft were already near-obsolete at that time, Hinkle notes, adding, "The only reminder of those flying gas bags is the Goodyear blimp that is still used today for advertising" (ibid). The *Los Angeles Times* did in fact report that the US Customs Service once conducted a week-long test of the Goodyear Blimp's surveillance capabilities over Texas' Gulf Coast

(Houston 1986). However, I have encountered no other records of mobile blimps being used for border enforcement, nor any evidence that this initial trial led to further tests.

Tethered blimps carrying radar, cameras, and other surveillance equipment—officially known as aerostats—have been employed along the border since the 1980s. This thesis does not consider aerostats in depth. Although aerostats look like aircraft, in practice they function as grounded infrastructure. CBP's largest aerostats, known as the Tethered Aerostat Radar System, "spend their service lives hovering over a fixed location" (Long 2014). Smaller, 'tactical' aerostats are relocatable but must be trucked into place (ibid).[12] Because they are tethered to a static mooring point or a wheeled delivery vehicle, aerostats do not provide the mobility advantages of planes, helicopters, or drones across rugged terrain. Aerostats provide a vertical advantage to observers, but they function more like a taller version of the steel watchtowers of the 1930s (Rak 1938, title page & p. 59) than aircraft. Therefore, I have chosen to exclude them from this research.

In the next chapter, I turn to the advent of aerial enforcement. At a time when powered flight was a technological novelty, airplanes threatened the territorial sanctity of the state. Yet airplanes also promised to extend the state's reach and its effective authority over territory. Both of these seemingly contradictory qualities were at the heart of early public arguments that the US needed planes to patrol its southwestern border.

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12 According to a February 2021 statement by US Rep. Henry Cuellar, CBP will discontinue its use of the smaller 'tactical' aerostats because of excessive operating costs (Reagan 2021). But in another example of institutional convolution, the system may continue operating through a private contractor.

CHAPTER III

AIRPLANES

The first powered aircraft used for enforcement along the US-Mexico border were fixed-wing airplanes. Officially, Border Patrol flight operations began in 1941. But the first attempts at aerial enforcement began at least thirty years earlier. This developmental period in border aviation has not been comprehensively documented. Broyles et al. (2020) skim past the pre-1940 era, and Parker writes that prior to 1941 any use of aircraft for patrolling the border was only "occasional and unofficial" (1938, Ch. 1), a characterization that I will show is not wholly accurate. In this chapter, I begin by surveying the earliest attempts to incorporate aircraft into border enforcement prior to World War II in order to address my first research question (see p. 2) about the evolving functions of aircraft. By synthesizing previously unconnected sources I demonstrate that aerial enforcement was a persistent goal for decades before its enactment. Drawing on historical newspaper articles, I explain how aircraft were perceived as both threatening and reinforcing the existing geography of the state. Using internal histories of Border Patrol aviation, I then analyze how the strongly regional identity of the agency influenced its acquisition of specific types of airplanes in the post-war era. Together, these sections address my second research question, about the degree to which aircraft functions were influenced by public representation, and to a lesser extent my third research question, about the relationship between aircraft usage and broader political-economic circumstances. Finally, to contextualize the current use of airplanes, I draw on my interview data to briefly discuss the diminished role of fixed-wing aircraft in the technological arsenal of border enforcement today.

<u>First flights and the promise of authority</u>

The first time US federal aircraft arrived at the border with Mexico, the Border Patrol did not yet exist. It was 1911, and revolution in Mexico threatened to spill over the still-permeable boundary line. In response to the turmoil the US government increased its military presence at the border (St John 2011, p. 123). Among the reinforcements deployed that year were biplanes. Powered flight had only been achieved in 1903; sustained and controlled flight followed in 1905. The time between these milestones and the attempts to repurpose airplanes for border enforcement is noticeably brief.

"For the first time in history," the *Los Angeles Times* reported, "aeroplanes are to be used in policing an international boundary line" ("Aeroplanes to Patrol Border," 1911). The planes were manufactured by the Wright brothers and Glenn H. Curtiss, early luminaries of American aviation. The aircraft would ostensibly serve as surveillance units, the paper explained, "to scout far over the border into Mexico and report every condition of the country"—not a task that most would consider part of border enforcement today, but also not unprecedented in the history of US attempts at fixing and governing its southern territorial edge. Like the US Army expeditions that had pursued the Chiricahua Apache into Mexican territory 25 years prior (see Ch. II, p. 18), the planes were supposed to help control mobility across the border by crossing it themselves. But, as the *New York Times* reported, their deployment would also serve as a more general test, "to determine the military value of these machines" ("Wireless Guards Border," 1911). As that phrasing suggests, airplanes had not yet definitively proven themselves useful for any kind of military operations, defensive border enforcement included. In fact, it was only later that same year, during the Italo-Turkish War over what is now Libya, that

bombing and firing from airplanes were first attempted (Killingray 1984, p. 429).

Whether or not the rudimentary Wright and Curtiss biplanes could provide a real

advantage in guarding an international border was, therefore, an open question at the time

of their deployment. Unfortunately, I found no record of their accomplishments (or lack

thereof) during that first deployment to El Paso and San Diego. A 1913 LAT report on an

aviation meet in Owensmouth, CA[13] suggests that the worth of biplanes remained

uncertain two years later: the paper stated that the use of airplanes for border enforcement

would again be tested at that event ("Is Aviation Any Real Benefit…" 1913).

Military deployments of airplanes to secure the border during the Mexican

Revolution continued for roughly a decade after that first attempt. In 1916, the Army

Signal Corps First Aero Squadron accompanied General Pershing's "punitive expedition"

in retribution for Pancho Villa's cross-border raid on Columbus, New Mexico. It was not

a triumphant mission. The squadron's commander, Captain Foulois, wrote, "In nearly

every case, the aeroplanes were abandoned or destroyed and the pilots, after experiencing

all possible suffering due to lack of food and water, would finally work their way on foot,

through alkali deserts and mountains, to friendly troops, usually arriving thoroughly

exhausted as a result of these hardships" (Glines 1991). Despite these repeated failures,

Foulois remained proud of the squadron's "scouting over country in which cavalry and

infantry could not operate" (ibid). Nor did the underwhelming results of the 1916

deployment deter military authorities from mustering aircraft once again in June 1919,

when the *Villistas* attacked Ciudad Juarez. "This was the inception of the first United

States Army Border Air Patrol of the United States-Mexico international border," writes

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13   Now the Canoga Park neighborhood of Los Angeles

Hinkle, who was one of the patrol's pilots (1970, p. 6). The 1919 deployment was not

much more successful than that of 1916. As Hinkle (1967, 1970) describes at length, the

DeHaviland DH4 two-seater planes were still mechanically unsophisticated and

dangerous to the pilots and observers.[14] His two monographs are largely dedicated to

describing the crashes, forced landings, and rescues of aircrews. At least some of the

time, pilots flew into Mexico mistakenly, not realizing they had crossed the border they

were supposed to enforce (Hinkle 1967, p. 20). The Border Air Patrol also claimed

authority to enter Mexico under the same 1882 bilateral agreement that had enabled

pursuit of Native Americans across the border (idem, p. 26). But there was little practical

reason for the Air Patrol's presence: "The major threat had been dispelled by the time

aerial patrol began" (Maurer 1987, p. 101). In consequence, training exercises mostly

replaced actual patrols well before the operation was disbanded in the summer of 1921

(Maurer 1987, p. 103; Hinkle 1970, pp. 36-43).

While the Army Border Air Patrol was in part a response to violence in the

borderlands and a state perception of a vulnerable, permeable border, it is important to

note that it was also a product of the abrupt demobilization of the US military following

the conclusion of World War I. The ranks of the US Army Air Service "dropped from

190,000 […] at the time of the Armistice to 81,000 at the end of January 1919, and

27,000 […] at the end of June 1919," when the Border Air Patrol began, Maurer notes

(1987, p. 5). I will discuss the connection between military demobilization and the

intensification of border enforcement at much greater length in Ch. IV. For the moment,

suffice it to say that in this period it would have been illogical to speak of the Army

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14   According to Hinkle, pilots called the DH4 the 'flaming coffin' (1970, p. 7).

Border Air Patrol as evidence of the 'militarization' of border enforcement: enforcing the border was a task primarily undertaken by the military, in the absence of an independent state agency dedicated to that purpose. The ideological boundaries between military defense and civil policing have always been blurry at borders, and the name 'Army Border Air Patrol' is itself evidence of that blurring.

It is also important to consider the broader international context of military aviation at the time. After World War I, the development of military capabilities for aircraft occurred primarily under the auspices of colonialism (Neocleous 2013). Airplanes, Killingray writes, "offered highly mobile, fast instruments of warning and retribution which were generally invulnerable to lightly armed opponents" (1984, p. 431). For British colonial occupations in Africa and the Middle East, air power thus appeared to be an economical substitute for costly and politically unpopular commitments of ground troops. Satia (2014) argues that aircraft also meshed neatly with preexisting British notions about these areas. For instance, Iraq, she argues, appeared in the British imagination as "apparently featureless, horizonless, protean and mirage-ridden desert" (p. 224). British intelligence officials operating there in the 1910s believed aerial surveillance would "offer vision beyond the mirages" and "extract truth from an essentially deceptive land" (p. 227-228). In other words, the supposed mutual suitability of aerial governance and colonial occupation was not simply a question of cost but of the attitudes toward peoples and landscapes held by the colonizing powers. "By the 1920s," Neocleous writes, "every major power that sought to secure its colonies found aeroplanes to be indispensable" (2013, p. 580).

The time in which aircraft were first deployed to the US-Mexico border was a

period in which Anglo-American colonization of the borderlands was less complete and the violence of settlement more overt. Although the history of colonial claims to territory in the region is layered and complex (Adelman & Aron 1999; Barr 2011), the Treaty of Guadalupe Hidalgo inaugurated a new geographic expansion of American settlement after 1848. That expansion was opposed by the preexisting inhabitants of the area. "*Mexicanos* did not quietly submit to Anglo domination," Dunn writes, "but rather contested the official definition of the border […] resisting Anglo control of the border region for some 70 years" (1996, p. 11).[15] In response, "periodically intense, militarized efforts to pacify the region" occurred regularly until 1920 (ibid). This period of 'pacification' was also a period of massive land dispossession for Mexican citizens caught on the northern side of the new border and for the indigenous peoples of the region (Dunn 1996, p. 7; Lytle-Hernandez 2010, p. 22). In this regard, the parallels between the US-Mexico borderlands and the other colonial spaces where air power and aerial policing were emerging should be evident. The borderlands were largely remote, poorly mapped (see Hinkle 1967, p. 11), and ineffectively controlled. It is thus logical to view the initial development of border aviation in the US alongside the evolution of aerial enforcement in other colonial spaces on other continents. To the administrators of colonized spaces, airplanes appeared to hold significant—if unrealized—potential for maintaining a greater degree of effective governance over large swathes of mostly unsettled territory and preventing unauthorized mobility across newly-established borders. Though the effectiveness of aerial patrols was limited by the crude equipment available at the time, their usefulness as tools of enforcement in the geographic and

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15 This should not be taken to imply that all such resistance has ended.

administrative peripheries of the state was becoming increasingly clear.

<u>Aerial anxiety and early enrollment</u>

At the same time, aircraft threatened to destabilize territorial order. Butler argues that control of transportation and communication systems was historically essential to state authority over political and economic space—that is, to their effective sovereignty (2001, p. 639). But the invention of powered flight in the early 20th century challenged states' ability to regulate mobility, transportation, and communication. Because airplanes and lighter-than-air aircraft like dirigibles could pass uninhibited over both natural and human-made impediments to other forms of travel, they appeared to be a "geography-defying" technology (Butler 2001, p. 639). This is not to say that aircraft were wholly liberated from geography. They remained dependent on a network of airstrips, fueling stations, and other "static, hard and rigid things […] grounded infrastructure" that enabled their exceptional mobility (Adey et al. 2014, p. 7). Once aloft, though, airplanes could disregard existing territorial borders with ease. This prompted new diplomatic engagement and competition as states attempted to assert their authority over international flights (Butler 2001). "Incursions into the aerial environment," Chaar López writes, "opened up a new plane of enforcement for politics" (2018, p. 44). The energy and attention devoted to rule-making for air travel in the early 20th century reflect its disruptive potential.

Simonsen (2018) provides an excellent example of how aerial mobility conflicted with Britain's territorial order at home in the earliest years of successful powered flight. Airplanes, Simonsen writes, "posed the question of how to configure a national territory in the sky," particularly for a nation accustomed to seeing itself as an island secured by

naval might (2018, p. 594). The topology of flight, defined by "the mobility and momentum of powered aircraft," was a radical departure from "nationalized cartography" rooted in "a flat discourse of sovereign territory" (pp. 604, 607). The state lacked the capacity to prevent aircraft from transgressing borders in the 1910s, and officials on the ground could do no more than "wait for the pilot to choose a place to descend and […] point out the borders in retrospect" (p. 612). These aerial transgressions were a substantial challenge to the state's authority, and they motivated Britain's participation in the diplomatic exchanges described by Butler (2001).

In the US, a fear of similar aerial transgressions emerged alongside enthusiasm for planes as a tool of border enforcement. The phenomenon is captured well in a 1919 LAT article and accompanying illustration that appeared a few months before the mobilization of the Army Border Air Patrol. "At the present time our 1500 miles is patrolled by a large number of automobiles, more or less efficacious against the ordinary methods of smuggling, but as helpless as a lot of cripples against the swift and high-flying airplane," the author asserted (Henry 1919). The article enumerates the alleged threats created by the "rapidly-increasing use of the airplane" and "hegira of aviators to Mexico" after World War I: the smuggling of opium, jewelry, and Chinese laborers; and the possibility of bombing raids on border cities. The illustration (under the provocative but cumbersome title "What Air Bandits on the Mexican Border are Doing and May Do if these Projected Aerial Patrol Plans Fail") is even more imaginative, adding railroad sabotage, the destruction of mines, and cattle rustling to the myriad menaces of unchecked flight. In an inset, a biplane flies above the smoldering rubble of an American city. The author uses these frightening predictions to argue for the enrollment of aircraft

into the federal border enforcement apparatus: "The only method by which such aerial outrages on law and order can be efficiently guarded against," he wrote, "is the establishment of an aerial patrol from San Diego to the Gulf of Mexico by modern battleplanes equipped with machine guns" (Henry 1919). Planes appear here as an asset to the state but also, and more prominently, a danger to it.

I characterize this phenomenon as aerial anxiety—a specific, technologically-provoked variant of what Krishna (1994) terms 'cartographic anxiety.' "This preoccupation with national space and with borders," Krishna explains, "reveals an obsession to approximate a historical original that never existed": the nation-state in its idealized form, "a pure, unambiguous community called the homeland" (1994, p. 517). Krishna's analysis, developed in the post-colonial context of India but equally relevant for grasping the US "border obsession" (Massey 2016), names the political anxiety that arises when the difficulty of maintaining abstract, rigid boundaries inevitably reveals itself. Aerial intrusions across the southwestern land border were, on a practical level, depicted as a threat to safety or the national economy, as seen in Henry 1919 and as will be further shown below. But the symbolic significance of these intrusions outstripped their practical consequences. Even though the impacts of such intrusions remained largely unquantified and unverifiable, aerial anxiety persisted in a slow but steady stream of newspaper reports in the years between World War I and II.

Most of these reports focused less on the sensational fears of bombing and more on the realistic worry of cross-border smuggling.[16] Smuggling, as Andreas explains, has

16 There was one incident in which a US border city was bombed by an airplane, but it occurred in 1929, a decade after the LAT's illustration appeared, and it was done not by Mexican bandits but by a drunk american pilot, hurling "suitcases full of dynamite" at Mexican federal troops on behalf of Mexican rebels fighting for control of Naco, Sonora (Ellis 2019). Two of the homemade bombs landed on the Arizona side of the border, damaging a car and a store. An onlooker's account appears in Rak, 1938,

been "an integral dimension of cross-border economic exchange since the nineteenth century" (2009, p. 29). Smuggling was routine and mundane, but could also be framed as a threat to the nation's territorial integrity, particularly when carried out by still-novel airplanes. In late 1919, the LAT reported that government officials had a "firm conviction" that "systematic smuggling by means of powerful airplanes" was happening, or if it wasn't, would certainly be happening soon ("Use Airplanes for Smuggling"). The present and the future often blur in these reports: while admitting that "there is no way of knowing" whether airplane smuggling was *actually* a widespread problem, the paper's correspondent insisted that "it is only a question of time." Like Henry (1919), this report stressed the idea of launching a government "airplane patrol service" or "an army of airplanes"—apparently unaware that an aerial patrol was in fact already operating. Yet there was a note of skepticism: "Even with the operation of such a service it is considered questionable whether smuggling by airplane could be guarded against except to a limited degree," the reporter acknowledged.

A similar mix of skepticism and obstinate belief appears in a 1921 report, which cited "the *belief* on the part of prohibition enforcement officers along the lower border" that significant aerial smuggling was taking place. The practice, the reporter wrote, "is said to be evident" ("Bootlegging in Air Practiced"; emphasis added). The unnamed unnamed officers proposed the by-now familiar solution of "a fleet of scouting airplanes to be used for patrolling the border and for giving chase to any suspicious machine." Again, a slight note of pessimism tempers the fervor for flyers. The paper acknowledged that smugglers flying at night would be virtually undetectable.

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pp. 156-157.

According to Customs and Border Protection's official website, 1922 marked the beginning of aerial surveillance and enforcement along the border, using aircraft captured from smugglers ("Timeline"). Their account does not mention aircraft again until the entry for 1932. The period in between is perhaps the least documented in the existing, fragmentary histories of border aviation. But newspaper coverage from that time suggests that aerial smuggling and enforcement remained in the public consciousness. Continuing media attention on the alleged problem reinforced the idea of the border's permeability to illicit airborne cargo, and repeatedly suggested that more extensive use of airplanes could solve this weakness. Again, the dual nature of aircraft as potentially destabilizing *and* reinforcing borders persists. But before detailing the continued manifestations of this aerial anxiety, it is worth noting that there is little evidence that cross-border smuggling by airplane was genuinely rampant in this period. Former Border Patrol pilot Parker quotes a retired Chula Vista sector chief, who stated, "[D]uring those years [the late 1920s] there was a lot of air smuggling, and a lot of Border Patrol time was spent on it, but few cases of consequence were developed" (1983, "In the Olden Days"). The sector chief presents the few proven cases as evidence of a far-greater number (the ambiguous "a lot") of assumed crossings—a logic that, though not always inaccurate, is primarily deployed to justify ever-greater enforcement (Boyce 2016, p. 258). Parker himself is more straightforward on the practice's prevalence: "Smuggling of aliens by aircraft has not been established as 'common' in Service records," he writes (1983, Chapter VIII). Smuggling of liquor and other contraband may have been more common than the smuggling of persons, but I emphasize that all the reports of aerial smuggling cited both above and below should be read as the *construction*, not merely the documenting, of a

political-geographic problem.

The LAT reported in 1927 that southern California immigration enforcement officials were attempting to seize and commandeer a plane which had been used to fly Chinese immigrants into the country ("Sky Patrol to Guard Border"). Confiscated planes were apparently unsatisfactory, as just a month later the paper reported that federal officials were lobbying for greater numbers of patrol craft ("Border Plane Patrol Sought"). Again, dire projections accompanied the request: smuggling airplanes were supposedly "used extensively" and the government "powerless to combat them." Note the recurring themes of a vulnerable, permeable border and an allegedly ineffective state apparatus. "Smuggled Aliens Are Still a Vast Problem," an NYT headline declared in 1928, and the author of that article asserted that airplanes "engaged in the business of smuggling Chinese from Mexican points" into southern California were a major component of the problem.

That 1928 article also includes a statistic that, if even roughly accurate, suggests the still-fledgling state of border aviation. According to the NYT, agents of the Border Patrol covered 4.5 million miles on patrol in the preceding year. Only 250 of those miles —less than the one-way distance from Tucson to El Paso—were covered by airplane. By comparison, agents drove 3.8 million miles and rode 70,000 on horseback ("Smuggled Aliens Are Still…"). The era of aerial enforcement had not yet arrived.

Yet aerial enforcement remained a persistent topic of press coverage. The practice was still described as 'experimental' in 1929. "[O]fficials are convinced that flying not only could give practical service in prohibition enforcement," the NYT reported, "but that planes hovering over the coast and the national borders would be a deterrent to

57

smugglers" ("Flying Airplane Patrols Desired…" 1929). In a July 1932 feature article on the Border Patrol—brimming with Old West mythos, accounts of heroism, and descriptions of violent death—LAT author Bradford Fields stressed the importance of airplanes to the young agency. "Uncle Sam is preparing to engage in a battle to the death with that newest of public enemies, the aerial smuggler," Fields wrote. "It is declared that the border patrol is shortly to take to the air in a big way in a sky fleet of its very own." The publication date corresponds with the formation of an unofficial Customs Service air patrol, which, according to CBP's website, "enthusiastically patrolled the southern border" starting in 1932 ("Timeline"). This may be the 'sky fleet' to which Fields referred, conflating the Border Patrol and Customs Service because of their shared task of border enforcement. Fields claimed that patrol agents could "ride or fly anything on legs, wheels, or wings […] Ability to fly anything from a jenny to a bomber counts more and more each year." Yet, tellingly, he also notes that agents were "courageously combating [smuggling] on borrowed wings." This phrase alludes to the fact that the agency's flying operations continued to rely mostly on seized aircraft. It seems safe to say that Fields' enthusiasm for the idea of airborne patrol exceeded its actual implementation.

The statistics included in Fields' article certainly suggest no significant increase in aerial activity compared to that reported four years earlier by the NYT. Horse, boat, and airplane patrols reportedly totaled 51,513 miles in 1931 (Fields 1932). Considering that horse patrols alone reportedly exceeded that distance in 1927 ("Smuggled Aliens…" 1928), it is unlikely that the agency's planes contributed much to the 1931 total. Additional reporting by the LAT later in the same year that Fields' article was published provides a probably more realistic evaluation: "If plans of Federal authorities do not go

58

awry," a November article began, with perhaps a hint of skepticism, "the government airplane patrol soon will be increased by two high-powered machines seized Monday […] placing them at the service of the Federal border patrol and the prohibition service" ("Planes to Change Sides" 1932). According to CBP's records, over 30 planes were seized in similar fashion that year. But a 1934 newspaper article stated that the Customs Service possessed only "several old planes in service" ("Two Planes Sent…"), which suggests that the seized planes were either not deemed airworthy or that federal authorities lacked the facilities and personnel necessary to make productive use of them.

From the mid- to late 1930s, the Coast Guard—then part of the Treasury Department, like the Customs Service, while the Border Patrol was housed in the Department of Labor—took over responsibility for all air operations along the land border (Coast Guard Aviation Association; "Timeline). A 1938 spread of LAT photographs titled simply "Border Patrol"—again, reflecting the blurring of agency and institutional boundaries—purported to show the Coast Guard's air fleet in action. One image shows pilots loading a Thompson submachine gun, and another shows a Coast Guard Waco J2W-1 plane flying parallel to an alleged smuggler's plane. "As the smuggler plane is overhauled by the Coast Guard ship, the law breakers make a sharp, diving turn toward the international boundary line," the caption states. "But, with guns peering from the Coast Guard ship, the smuggler plane is forced to land" (Arnold 1938).

The maneuver matches a description given by the Coast Guard Aviation Association.[17] But "there is no record of any achievements" by the Coast Guard planes, Parker writes (1983, Ch. 1). "[N]o actual air interceptions resulted from this utilization of

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17 "At times the Coast Guard aircraft would spot aircraft coming across the border and force them to land for inspections […] If signaling did not get the desired response – showing the Thompson usually clarified the message." (Coast Guard Aviation Association)

Coast Guard equipment," Broyles et al. concur (2020, p. 9). The photograph in the LAT, though visually striking, raises practical questions: could a smuggler plane, a government plane, and the third plane necessary to carry the press photographer really have aligned so precisely without prior coordination? Though technically *possible*, the scenario is deeply implausible. According to Broyles et al., aerial intercepts were exceedingly rare because advance information was typically unavailable and patrol planes simply weren't fast enough catch up with other aircraft (2020, p. 63). More likely—almost undoubtedly—the scene was staged. If true, it certainly would not be the last time that border enforcement authorities arranged convenient displays to achieve favorable media representations.

Moreover, an article published a year prior suggested that the aerial smugglers supposedly pursued by the Coast Guard were already abandoning the game on their own. "Up-to-date smugglers for a time used airplanes," the NYT reported, "but after government men seized five of them they gave up this method" (Berger 1937). The costs were too high, and limited roads on the American side of the border meant that planes often landed in view of ranchers, who were apparently quick to alert federal authorities (Berger 1937). That assessment was apparently not shared by all the NYT's reporters, for in 1939 the paper declared, "The amount of bootleg goods delivered within the confines of our country by smuggling planes was enormous" ("Coast Guard Patrol"). I am inclined to believe Berger's detailed explanation of the practice's limits over the unsubstantiated reiteration of aerial anxiety.

Regardless of the veracity of the photograph of the Coast Guard plane "riding herd" on a smuggler's craft, the 1938 LAT photo spread captures an important moment in the evolution of aerial border enforcement. It encapsulates the dual potential of airplanes:

their ability to defy state-defined geography when piloted by smugglers across the border, and their capacity to reinforce that same geography when flown by federal agents on patrol. This is evidence of the slow and convoluted institutional adoption of aircraft for border enforcement, a process that advanced only sporadically from the 1910s to the end of the 1930s. And, crucially, it shows the functions that aircraft would fulfill in the decades to follow. The other photographs in the spread showed pilots observing "lone automobile parties along the border" for suspicious activity, flying at low altitude to get a closer view of "persons who may prove to be aliens," and assisting with search and rescue efforts (Arnold 1938). The publicizing of these additional functions marks an important shift in the media portrayal of aircraft at the border. Though aerial anxiety and the interception of aerial smugglers had been a dominant theme up to this point, newspaper coverage after the late 1930s primarily focused on how aircraft contributed to enforcement efforts against terrestrial travel. In the articles I surveyed from the 1940s forward, aerial anxiety appeared far less frequently. The fear of aerial intrusion did not disappear entirely—in large part, the responsibility for addressing that fear was simply transferred from one agency to another. And the phenomenon still recurs today, as I will show later in this thesis. But media coverage helped to confirm a new role for aircraft: not just as a necessary response to airborne threats to the nation's territorial sanctity, but also as essential components in a larger technological assemblage dedicated to halting the movement of migrants on the ground rather than smugglers in the air.

<u>Regional identity and the launch of Border Patrol aviation</u>

The 1940s were the beginning of the end of the awkward incubation period of border aviation. The Border patrol briefly experimented with autogiros—a largely

forgotten type of aircraft combining a helicopter-like rotor with the forward-mounted propeller of a plane—between 1941 and 1945. (These will be discussed in greater detail in Ch. IV, as they were effectively the early predecessors to helicopters.) The autogiros were the first aircraft operated under the *official* auspices of the Border Patrol—though not, it should be clear, the first aircraft ever used for border enforcement. Like the planes deployed in 1919, the autogiros were surplus military equipment (McKinney 2011). After World War II, additional surplus aircraft became available for border enforcement (Broyles et al. 2020, p. 13), continuing a pattern of technological surpluses transferring from one arm of the federal government to another. (I will also discuss this pattern more in the next chapter.) Though the fixed-wing, propeller-driven planes acquired from the Army were more reliable than the autogiros, none were considered ideal by agents of the time. "By 1950, Border Patrol had auditioned and employed eight different types of aircraft, some awful like the Autogiro and some satisfactory, like the [Stinson] L-5 [Sentinel]," Broyles et al. explain, "but the Patrol was still looking for a hard-working, trouble-free plane for everyday tasks" (2020, p. 55). In particular, because pilots were required to first train as patrol agents on the ground, they wanted an airplane that could facilitate tracking unauthorized crossers from the air.

Tracking, which the Border Patrol typically calls 'sign-cutting,' is at once a practical skill and a highly mythologized element in the cultural and regional identity of Border Patrol agents. Rak described sign-cutting as a "very essential art," and wrote that "no knowledge is surer of being useful" on patrol (1938, p. 23). The skill has often been touted as a link between eras, connecting the "country-bred Westerners" who formed the core of the early patrol (Rak 1938, p. 23) to its later officers, including those "reared in

urban instead of rural areas" ("Signcutting and Aerial Observation," n.d., p. 2). "Despite

the vast gains made in technology, one of the stocks in trade for border law officers

remains the ancient art of 'sign cutting,'" Broyles and Haynes claim (2010, p. 13).

Though not truly unique to the region, sign-cutting is often described as "an art of the Old

West," (Hillinger 1959b), part of "the Border Patrol's traditional image: the lonely agent

on horseback, his head crowned by the telltale Smokey the Bear hat, patiently tracking

through the rugged desert" (McDonnell 1986). It thus reinforces the 'cowboy' persona

embraced by many agents in the southwest—"cowboy in a good way, in the traditional

way," as they understand it (Urrea 2004, p. 17). The practice has acquired a romantic

mythos that often serves to brush away questions about the context in which it is used. As

Warren writes, "Journalists and others have all too often focused on the shallow semiotics

of bandits and lawmen" (2015, p. 202). Agents of the Border Patrol are eager to assist

with such romantic simplification: "Out of the tangled mess of immigration laws and

policy falls our simple job of cutting for sign," Border Patrol pilot Dennis Michelini

wrote in a 2002 essay for the NYT. Sometimes—though not often—the 'Old West'

rhetoric expands to acknowledge the presence of Native Americans, at least when that

inclusion can serve to further romanticize the border enforcement apparatus. "At a time

when all manner of high technology is arriving to help beef up security at the Mexican

border," the NYT reported during the rapid expansion of the Department of Homeland

Security, "there is a growing appreciation among the federal authorities for the American

Indian art of tracking, honed over generations by ancestors hunting animals" (Archibold

2007).[18] An instructional lecture for mid-century Border Patrol trainees, from the

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18 The Border Patrol operates a special unit of Tohono O'odham trackers called the Shadow Wolves. I
    have found little critical scholarship on this topic, and I agree with Miller's observation that in news
    coverage of the group, "it doesn't take the media long to fall into easy stereotypes" (2014, p. 110).

collection of the National Border Patrol Museum in El Paso, relies on cruder racial stereotypes and states that sign-cutting talent was "a part of the Red Man's natural equipment" ("Signcutting and Aerial Observation," n.d., p. 3).[19] While this lecture suggested that Border Patrol agents were unlikely to possess commensurate natural talent, other members of the agency have at times been prone to exaggerating the ability of its trackers, claiming, for instance, that "old hands" could "track an [alien] across a plate of glass and never lose him" (McDonnell 1986; brackets in original) or "track an ant across a lava bed" (Hillinger 1959b). Such claims clearly have an element of intentional exaggeration. But they suggest the importance of the practice in establishing agents' belonging within the organization's ranks. As the instructional lecture put it, "The officer without this skill hasn't reached his full stature" ("Signcutting and Aerial Observation," n.d., p. 5). It is an indirect reflection of the agency's "strong roots in the region" (Lytle-Hernandez 2010, p. 198), and simultaneously of its "role in frontier making […] the frontier politics of managing and containing the Other" (Chaar López 2018, pp. 101-102).

Contrary to assertions that sign-cutting is an ancient art, Lytle-Hernandez characterizes it as a "pseudo-science" entangled with "[r]acialized notions of citizenship and social belonging" (2010, p. 48). "According to Border Patrol tracking lore," she writes, "undocumented immigrants fit a specific profile that could be tracked north from the border by following the particular imprints that Mexicans made upon the land" (2010, p. 49). Certainly, agents have long claimed to be able to infer identity from imprints.

Critical analysis would be valuable, as there are troubling questions to explore about the border's impact on indigenous communities from its inception to the present and CBP's claims of harmonious cooperation with this select group of indigenous agents.

19 This lecture transcript is not dated. Based on some references to the agency's staffing numbers ("fewer than 1,000 officers" assigned to the border), I estimate it is most likely from the 1950s.

"Peculiarities of walking manner," reads the instructional lecture," divulge information, such as; sex, age, physical condition and many other facts about the person being tracked" ("Signcutting and Aerial Observation," n.d., p. 7). Urrea quotes a police officer from the Tohono O'odham reservation, who states, "Them trackers can probably tell you what color the guy's hair was, and that he had eighty-nine cents in his left pocket. Then they can tell you the last time he got laid" (2004, p. 28). Again, the boundaries between the plausible, implausible, and potentially laughable blur, but such boasts are just an exaggerated version of the claim to a type of comprehensive knowledge unavailable to laypersons. Sign-cutters, Urrea writes, "read the land like a text […] They are landscape grammarians, got the Ph.D. in reading dirt" (2004, p. 29). From an outsider's perspective, the practice seems to exist somewhere in the nebulous intersection of science, art, and pseudo-science. Close study of the landscape combined with experience *can* reveal traces not obvious to the casual observer, but such traces are frequently interpreted through the kind of racialized preconceptions noted by Lytle-Hernandez.

Regardless of its scientific veracity, at mid-century sign-cutting was a marker of identity for Border Patrol agents, connecting them to the history and culture—as they perceived it—of the geographic region in which the majority of them operated. And this attachment to regional identity had a significant influence on the types of aircraft that were initially deemed appropriate and acceptable for aerial border enforcement. As Headrick writes, "[A] motive can occasion a search for appropriate means" (1981, p. 10). Agents wanted a plane that would allow them to perform the task of sign-cutting from a more advantageous position, not a vehicle intended to pursue or intercept smuggler planes. Their attention was focused on the ground.

Apprehension - El Paso Sector - 1940s

Figure 1: A Border Patrol airplane in use in the 1940s. The two figures in dark hats and jackets are most likely Border Patrol agents. Courtesy of the National Border Patrol Museum, El Paso, Texas.

"In reality, the airplane is nothing more than a vehicle that permits putting a signcutter in the air and expanding the signcutting operation," the lecture for trainees explained. "[A]erial observation and signcutting are in a sense synonymous" ("Signcutting and Aerial Observation," n.d., p. 1). Seen from this perspective, aircraft were most useful where they could complement, rather than disrupt, the traditional Border Patrol activities practiced in the agency's first few decades. And the specific plane that best met agents' criteria was the Piper Super Cub (see Figure 2, p. 68). "It was thin, frail, and had a cramped cockpit," write Broyles et al., "but for over half a century it was the signature aircraft of the agency" (2020, p. 60). The main reason for the Super Cub's

favored status was that the aircraft handled well in the unusual flying conditions demanded for sign-cutting: slow (about 50 miles per hour) and low (routinely down to 50 feet above ground, and lower in exceptional circumstances). They were small, maneuverable, and minimalist (Siuru & Siuru 1990). Though pilots' exact routines varied from one sector or station to another, Broyles et al. write that sign-cutting was "daily faire [sic] for 'Cub pilots […] it uses techniques as old as Adam and Eve" (2020, p. 60). Again, note the invocation of an ancient past to legitimate the adoption of a modern technology. An airplane capable of sustained low-speed, low-altitude flight allowed Border Patrol agents to preserve their 'Old West' regional identity as expert trackers and simultaneously expand the area they could plausibly claim to surveil and comprehend.

Piper Super Cub - Livermore Sector - 1960s

Figure 2: A Piper Super Cub in flight. Courtesy of the National Border Patrol Museum, El Paso, Texas.

<u>Full institutional incorporation</u>

By 1953, every Border Patrol sector in the southwest possessed at least one airplane. This was the period in which aircraft were seen not as a technological novelty or a threat but as a core component of the border enforcement apparatus. Airplanes were no longer just geography-defying; they were also geography-*defining*. The same technological qualities that allowed airplanes to defy the geography of the state—their freedom from roads or harbors, and their ability to cross otherwise inaccessible terrain— made them excellent assets for enforcing the imposed geography of the state. Airplanes extended the state's reach into areas that had previously defied its effective control, and enabled the prosecution of individuals who transgressed the planar national boundary.

The proliferation of aircraft within the Border Patrol took place during what Lytle-Hernandez calls "the chaotic decade" between 1944 and 1954 (2010, p. 169). During this period, US attempts at immigration control were essentially ineffective: "migrants continued to cross the U.S.-Mexico border without sanction and refused to accept the authority of the Border Patrol officers" (Lytle-Hernandez 2010, p. 143). This is important context for the general shift I observed in press coverage: away from the Prohibition-influenced tales of flying smugglers, and toward a greater emphasis on migrant laborers. During the 1950s, in border sectors with large areas of unsettled terrain, Border Patrol airplanes were primarily occupied with sign-cutting. Where the border ran close to agricultural land, pilots spent more time assisting ground agents with farm and ranch checks—watching from above as ground agents swept through agricultural fields looking for undocumented workers—which also required relatively low-altitude flying. These airplanes were almost never called upon to fulfill the aerial-intercept function that

had been proffered as their purpose in earlier decades.

But aerially-focused territorial anxiety did not vanish. The Border Patrol briefly experimented with portable radar units to detect incursions and guide interceptions in the 1950s. By the accounts of participating pilots, those experiments were abject failures. "The radar vans were huge cumbersome rigs and weighed tons," one pilot recalled. "In fifteen days of operation, the results were a great big ZERO" (Parker 1983, Ch. XVII). He described it as one of the few examples of Border Patrol flying that was not 'productive.' We can also view the experiment as evidence of the continuing influence of aerial anxiety.

Aerial anxiety and the desire for technological symmetry in the air are also evident in the founding of the Customs Aviation Program in 1969. At that time, the Border Patrol's focus was on immigration control, or mobility across the ground. Every Border Patrol sector had at least one airplane of its own, but "Customs owned only one single-engine aircraft" (McPhail 1998, p. 7). The first priority of the new Customs Aviation Program was, in the government's words, "border interdiction to counter the air drug smuggling threat along the Southwest border" (ibid). The creation of a program specifically focused on aerial interception demonstrates continuing state concern over the ability of airplanes to defy territorial controls.

The Customs Aviation Program is less well-documented than Border Patrol aviation of the same period. According to the brief history included in a General Accounting Office audit, the program expanded to 11 fixed-wing aircraft and 8 helicopters by 1972 (McPhail 1998, p. 7). In a 2013 interview for RotorcraftPro magazine, a former pilot in the program claimed that a major expansion was planned

around 1988: 350 new pilots and 70 new aircraft ("Meet a Rotorcraft Pro – Dean Springer"). This corresponds with the expansion described by Andreas, who writes that between 1986 to 1992, the Customs Service "tripled the size of its air fleet and increased its air program personnel sixfold" (2009, p. 52). Around the same time, though, the program's mission started to shift, "from border interdiction to supporting foreign counterdrug operations" (McPhail 1998, p. 5). And program funding, flights, personnel, and total aircraft all decreased between 1992 and 1997 (ibid, p. 10).

Although further information would be needed to fully contextualize the rise and gradual decline of Customs aviation, there is a clear temporal correlation between the program's initial expansion and the beginning of the US 'war on drugs.' The Customs Aviation Program began the same year as 'Operation Intercept,' a highly publicized escalation of vehicle searches at border crossings intended to pressure the Mexican government to take more action against drug production and transportation (Andreas 2009, p. 41). The program's resources grew in parallel with the federal government's expansion of its anti-drug campaigns. And, if it is true that by 1992 the US had "reduced air smuggling by an estimated 75 percent from 1982 levels" (Andreas 2009, p. 52), the program might have been a victim of its own success—that is, its decline post-1992 may reflect its diminishing relevance as traffickers abandoned light airplanes for other methods of cross-border transportation. It is also important to note that stopping aerial smuggling was primarily accomplished by expanding the US network of radar stations, which allowed authorities to track planes to their destination and catch them on the ground (ibid). Although the idea of stopping planes with other planes drove the Customs Aviation Program's growth temporarily, the reality of the situation was that it was the

"grounded infrastructure" (Adey et al. 2014, p. 7), not the federal airplanes, that seems to have had the greatest effect on smuggling practices.

Clearly, there was still some official concern about aerial transgressions of the border. But such intrusions no longer appeared regularly in the press as a foundational justification for aerial enforcement. Instead, media coverage emphasized aerial sign-cutting, and the increasingly complex technological assemblage deployed to catch migrants who had crossed the border the old-fashioned way. While Customs Service pilots attempted to "secure the volume" (Elden 2013), Border Patrol pilots after World War II established and maintained a focus on controlling the motion of migrants.

A 1950 LAT photo spread depicted Border Patrol pilot Ed Parker[20] flying low above four alleged "line-jumping Mexican nationals," who were shown walking toward a waiting Jeep ("Mexican 'Wetbacks' Crossing Border…").[21] In 1959, the LAT ran a series of articles on the Border Patrol's efforts (Hillinger 1959a, 1959b), which remained strongly focused on "policing unsanctioned Mexican immigrants" (Lytle-Hernandez 2010, p. 199). One of these articles focused closely on the use of airplanes. "Illegal Border Crossers Spotted by Air Patrol," the headline declared (Hillinger 1959b). Photographs showed a Piper Super Cub swooping low above a lone walker, alleged to be an "illegal entrant,"[22] starkly silhouetted against a dirt road. The report credulously stressed the pilot's ability to read sign from the air—"'It's like tracking an elephant in the snow with a nosebleed from where I sit,' Purdue related"—and reiterated the 'Old West'

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20 Quoted elsewhere in this thesis as the author of *Prop Cops*, 1983

21 The same photograph appears in Broyles et al. 2020, p. 24. The LAT credits it as a 'Times photo,' while Broyles et al. label it 'Courtesy of the US Border Patrol.' The provenance is unclear. I note this because it further suggests the closeness between the newspaper and the state agency.

22 This was the era in which immigration was aggressively reframed as a problem of criminality. See Lytle-Hernandez 2010, Ch. 9.

origin story of the practice (Hillinger 1959b). But the article also emphasized the wide variety of complementary technologies required to make the airplane's notional advantages useful in practice. Consider the following passage, narrated by the reporter as a passenger in the patrol plane:

> … at last we encountered the adventurer who matched his wits against the Border Patrol and lost. Purdue shouted in Spanish to the illegal immigrant below over the plane's specially equipped loud speaking system: 'Do not move from where you are! Immigration officers in a jeep are close at hand. They will be here in a few minutes.' Purdue alerted a ground crew over the Border Patrol radio network. The jeep arrived. The man was driven to Border Patrol sector headquarters on the knoll above nearby San Ysidro. (Hillinger 1959b, p. 2)

This brief passage aptly captures the range of technologies and actors that collectively constituted the border enforcement apparatus of the time: the airplane, the loudspeaker, the radio, and the Jeep; the pilot, the patrol agents on the ground, and the administrators at headquarters; and the reporter, documenting and publicizing the whole process.

There were some instances in which pilots skirted the complexities of this apparatus by landing and apprehending migrants themselves. One pilot whose story appears in Broyles et al. even recalled a time when he "put one [migrant] sitting on top of the other sitting in back of the Super Cub" (2020, p. 80). But such instances seem to have been comparatively rare. Joint air-ground operations coordinated via radio became the normal practice for pilots (see Figures 3 & 4, following pages). From above, pilots could set the ground agents in Jeeps or cars on a course to intersect migrants' direction of travel, or direct those agents straight toward migrants if road conditions allowed.

Radio Communications - Air to Ground - McAllen, Texas - Late1940s

Figure 3: Aircraft and ground vehicles coordinated by radio. Note the antenna protruding from rear of car. Courtesy of the National Border Patrol Museum, El Paso, Texas.

This pattern of operation would essentially hold until the 1980s, when helicopters became widely available to the Border Patrol (as will be discussed in Ch. IV). In the same decade, minimum-altitude restrictions for fixed-wing aircraft, introduced in 1989 in response to a series of pilot crashes, curtailed the effectiveness of sign-cutting operations in airplanes. Pilots were required to maintain a minimum altitude of 500 feet above ground except during take-off and landing (Broyles et al. 2020, pp. 74 & 354-355). The restriction did not apply to helicopters, thus incentivizing the use of rotary-wing over fixed-wing aircraft for low-altitude flights. The heyday of fixed-wing flight for border enforcement, including enforcement against individual immigrants on the ground and organized smugglers in the air, lasted roughly four decades, from about 1950 to 1990.

Brownsville - 1960
L/R - Dick Wagner and Unidentified

Figure 4: When radio communication was inadequate, pilots and ground agents might meet to confer on dirt roads or other improvised airstrips. Courtesy of the National Border Patrol Museum, El Paso, Texas.

<u>Fixed-wing aircraft at the border today</u>

The federal reorganization that created the Department of Homeland Security further reduced the use of small, lightweight planes at low speeds and low altitudes. In October 2005, Border Patrol Air Operations was absorbed into what was then called the Office of Air and Marine and is now called Air and Marine Operations. The Customs Aviation Program was also merged into the same office. AMO and the Border Patrol now work as hierarchically equal agencies within the broader structure of DHS. Although AMO still operates small Cessna C-206 and C-210 airplanes, their pilots no longer fly the

74

former 'signature aircraft' of border enforcement, the Piper Super Cub ("Air and Marine Operations Assets," 2021). "AMO aircraft are large, sophisticated, and fast, suitable for large scale insertions of agents, air pursuits of other aircraft, and surveillance from afar," writes Hays (in Broyles et al. 2020, p. 580). The last of the Super Cubs was given to the USDA in 2011 (idem, p. 582).

When I spoke to humanitarian aid volunteers who work in the borderlands today, none described seeing fixed-wing CBP aircraft with any regularity. Anecdotally, at least, their recollections align with the diminished role of light airplanes along the land border described above. R., a long-term volunteer who has spent most of his time in California and Texas recalled that, over a decade ago, "planes would fly over us to check out what we were doing […] This was in the first year. but it was once in a while. It wasn't all the time." Such sightings have become rarer now, he said: "I don't see those planes anymore. I really haven't seen any planes in years" (Personal communication, January 25, 2021). "You do see some fixed-wing," Arizona-based K. told me. "Not a lot" (Personal communication, November 22, 2020).

Another individual in Arizona reported seeing airplanes that *might* have been conducting border enforcement activities, but that she could not definitively identify:

> There was this smallish, not real small like the Cessna planes or anything like that, but one of the smaller, regular airplanes, flying right along the border wall […] I don't remember seeing any numbers or letters or markings, or definite markings. We were several miles from the wall. […] As soon as we got back into town, I was saying, 'Hey, this plane was flying along the wall' […] I don't remember anybody finding out why it would be there or what it was, where was it coming from. […] It wasn't a commercial airplane, and I don't know if it was a private airplane or a government airplane or what." (O., personal communication, October 22, 2020).

The approximate size described by O. could match some of the aircraft operated by

75

AMO, or possibly even a drone, but there is not enough concrete information in her description to draw a strong conclusion.

One other volunteer based in a more remote area of Arizona described a privately-owned plane that seemed to be operating like a surveillance aircraft. "My understanding it it's like an independent contractor," K. explained. "It's a fixed-wing plane, and he just does surveillance for Border Patrol. It seems like he goes out in the evening hours, close to dark, and will just fly these grids in different areas of the desert […] I don't know what kind of technology the plane's equipped with" (Personal communication, November 7, 2020). CBP did not respond to my inquiry asking if it ever contracts with private pilots to conduct aerial surveillance.

I include these unclear observations because they highlight the uncertainty inherent in researching aerial enforcement via individual recollections. As early as 1919, government pilots knew that unpredictable flight schedules and flight patterns would work to their advantage (Hinkle 1970, p. 11), and the extent of fixed-wing surveillance along the border today may be greater than my interviewees recognized. That caveat notwithstanding, it is fair to say that since the heyday of the Super Cub, fixed-wing aircraft have lost their position of primacy in the aerial apparatus of border enforcement.

<div align="center">Conclusion</div>

In this chapter, I have provided a more complete account of the early years of border aviation than was previously available. From historical newspaper archives it is evident that less than a decade after the achievement of powered flight, state authorities saw airplanes as potential tools of border enforcement. Prior to World War II, newspapers repeatedly emphasized the threat of aerial intrusions into state territory by foreign or

criminal airplanes, a phenomenon that I characterize as an aerially specific manifestation of cartographic anxiety. This dual perception of airplanes as both threats to and reinforcements for bounded state territory persisted in the post-war period when airplanes were fully incorporated into the institutional apparatus of border enforcement. That perceptual duality is reflected in the differing missions of Border Patrol Air Operations and the Customs Aviation Program. Institutional incorporation was also influenced by the Border Patrol's strong regional identity: the agency's attachment to a romanticized, 'cowboy' narrative of the 'Old West,' seen particularly in its emphasis on sign-cutting, significantly affected what type of airplane was considered useful for border enforcement. Finally, I showed that the advantages of airplanes for enforcing geographical order could only truly be realized when airplanes were embedded in a larger, technological assemblage, and suggested that the relative importance of fixed-wing aircraft within that assemblage has diminished in the present day.

One theme that emerges from exploring the enrollment of fixed-wing aircraft and that I have not yet explored in this thesis is the relationship between military demobilization and the militarization of border enforcement. The connection was evident in the story of the Army Border Air Patrol of 1919-1921, which was created partially to provide new purpose for the Army Air Service after the end of the first World War. I alluded to similar connections in my discussion of the Border Patrol's search for suitable aircraft in the 1940s and 1950s. In the following chapter, I will consider this theme in much greater detail as I contextualize the enrollment of helicopters into the border enforcement apparatus and shift my focus to the third of my research questions—how the use of aircraft in bordering reveals the larger political-economic circumstances

influencing the development of the US border enforcement apparatus. That question is pertinent to airplanes as well, but the process by which helicopters were introduced to enforcement provides a more compact and clear case study.

Another emerging theme is the border enforcement ride-along (or fly-along). Multiple times in this chapter I mentioned reporters riding in Border Patrol airplanes. In the following chapter, I discuss how helicopter tours of the border became a political and journalistic institution in their own right. The next chapter also draws more heavily on my interviews to characterize the current uses of helicopters, and demonstrate how they have become an emblem of the false humanitarianism adopted by border enforcement authorities who disclaim responsibility for the effects of border policies. Together, these sections address the second half of my second research question—how the aircraft used for bordering have themselves contributed to public representations of the border.

CHAPTER IV

HELICOPTERS

By the 1980s, helicopters began to supplant fixed-wing airplanes as the primary aircraft of enforcement in many border sectors. In this chapter, I first provide some context on the prominence of helicopters in the border region today, based on the accounts of my interviewees. As with Ch. III, this initial section of the chapter is primarily intended to address my first research question. Second, I draw on the internal history of Border Patrol aviation previously referenced in Ch. III to describe the initial and expanding uses of rotary-wing aircraft for enforcement along the US-Mexico border in the wake of the Vietnam War. That internal history lacks critical reflection on what it describes, and therefore I aim to connect the stories contained within it to a more incisive analysis. Building on the background materials described above and the work of Gilmore (2007), I suggest an alternative theoretical framework for understanding transfers of technology between the military and border authorities, exemplified by the refurbishment of surplus Army helicopters for border enforcement in the post-Vietnam period. This addresses my third research question, which was not a substantial focus of Ch. III. Finally, drawing on both media reports and the perspectives of my interviewees, I analyze how border enforcement authorities use helicopters to construct a public image that legitimizes the escalation of enforcement while downplaying their active role in its consequences. I conclude with a brief discussion of 'illiberal governance' (Corva 2008), which provides a unifying perspective on the multiple uses of helicopters in bordering and connects my questions of public representation and the political-economic determinants of bordering practices.

<u>Helicopters in the modern borderlands</u>

In Ch. III, I noted that the humanitarian aid workers I spoke to had few recollections of government-operated fixed-wing aircraft. By contrast, all of the individuals I spoke to reported seeing and hearing helicopters regularly when working close to the border, and could describe the uses of those helicopters with some familiarity.

"I've been buzzed by helicopters numerous times," B. told me. "To where they get so low, to where you can see the [pilot] sitting there […] So they get extremely low" (Personal communication, October 29, 2020). "I've had helicopters fly low over me. I could send you a picture of one of them doing that," K. offered (Personal communication, November 22, 2020). She shared multiple cell phone photos of the helicopters she had seen in person.[23] Both B. and K. spend most of their time in the zone south of Tucson, Arizona. Interviewees in California described helicopter activity that was initially obtrusive but gradually became less noticeable. "Before, they would do a lot more hovering around and hover and wait until someone would come up to us on foot," J. recalled. This prolonged observation became less common with time. "They know who we are, so they probably recognize us at this point," he surmised. Eventually, a helicopter's presence can become routine. "When it first started happening, it was a little upsetting," J. said. But now, "we take it fairly lightly." "We're used to it," A. confirmed (Personal communications, October 13, 2020).

But not all interviewees felt that these encounters faded into the background. K., asked if helicopters flying overhead ever felt routine or normal, simply answered, "No" (Personal communication, November 22, 2020). W. said that the experience gave him

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23 The photos show an Airbus LUH-72 'Lakota' helicopter, which is flown by the National Guard in support of CBP, rather than by CBP's own Air and Marine Operations branch. As described on p. 34, this kind of institutional convolution has been the historical norm in border enforcement.

greater insight into the experiences of migrants:

> It gives me just a little taste of how that thing functions as an instrument of fear and intimidation. Otherwise, you understand Border Patrol is limited by the landscape and how they can move through it, and if you're close to a road or far from a road and the assumptions you might have about your security at any one particular moment, and then the helicopter can just come out of nowhere, really fast. (Personal communication, November 7, 2020)

This observation closely parallels what Butler (2001) wrote about aircraft in the early 20th century: they give the impression of being geography-defying, unaffected by the rugged terrain of the borderlands and its obstacles to human mobility. Like W., G. stated that being unexpectedly 'buzzed' by a low-flying helicopter provided some insight into the experience of migrants:

> Those instances, when the helicopters come almost out of nowhere, and are right above you, so close that they're kicking up gravel and it feels kind of dangerous, those moments are really intense and are way scarier than other forms of surveillance for us […] When they've mistaken us for migrants, we've gotten a sense of what that's like. And it's terrifying. (Personal communication, September 7, 2021).

The abrupt arrival of a helicopter is likely to be most alarming or intimidating to first-time migrants who have never experienced it before. Volunteers who traverse the borderlands regularly year after year may gradually become more accustomed to aerial enforcement operations. Similarly, some guides, G. noted, have crossed "hundreds of times" and thus may become "more comfortable with the everyday violence and surveillance that exists," possibly including the experience of helicopter overflight. But, like W. and K., he suggested that the experience never truly becomes routine. "Even in my many years out there, and the couple dozen times I've been buzzed by a helicopter, it's still really scary and unpredictable," he said. "Even more so as someone who doesn't have the kind of citizen protection that I have" (Personal communication, September 7,

2021). Helicopters, he noted, rarely operate in isolation: their presence often heralds the arrival of agents on foot, or on ATVs, who may "ambush" migrants as they attempt to avoid the aircraft and its rotor wash. Whether because of the sheer physical presence of the aircraft, or the knowledge of what its presence portends, the helicopter retains the power to evoke significant fear in the borderlands.

Multiple interviewees suggested that the patterns they observed in their local area might not necessarily hold true in other sectors of the border. For instance, J., who primarily works near or just east of San Diego, believed that helicopters might be more common elsewhere:

> I think that there's more helicopter use probably in areas like far eastern California and then Arizona and New Mexico and Texas, just because there's a lot less towns along the border and a lot less infrastructure where Border Patrol can drive along. And the areas out in Arizona, there will be valleys out there like 40, 50 miles long, that you can't access in a vehicle—if you even can—for hours upon hours. (Personal communication, October 13, 2020)

The relationship between existing infrastructure (particularly roads) and the feasibility of border enforcement has also been noted by Boyce, who writes, "[I]n areas like Arizona's Altar Valley, where there are only two paved roads and roughly 900 square miles of difficult, mountainous terrain, agents were unable to physically access many areas—let alone identify or track unauthorized movement" (2016, p. 249). In such areas, the geography-defying capabilities of helicopters are of more obvious value to authorities who wish to maintain surveillance and control. The presumption of local geographic variation in helicopter deployment and tactics is certainly plausible.

And W., who provides aid to migrants in the area near Ajo, Arizona, also noted the influence of military airspace on CBP flight operations. The state of Arizona contains 32 areas of militarily restricted airspace, so designated because they host "live-fire ranges,

dog fight arenas, UAS activity, tethered balloons, or other uses incompatible with GA [general aviation] flights" (Arizona Pilots Association 2020). The largest is the Barry M. Goldwater range, which covers approximately 1.7 million acres. The Air Force, Air National Guard, and Marine Corps all use this range for training, including strafing and bombing practice in some zones. On its western side, the range abuts the border for a linear distance of nearly 40 miles. On its eastern side, the range is separated from the border by Cabeza Prieta Wildlife Refuge, Organ Pipe Cactus National Monument, and the Tohono O'odham Reservation. Urrea notes that "the deadly area of the bombing range" is also a natural migration corridor, "hemmed in on either side by the ABC [Antelope, Baker, Copper] mountains and the Gilas" (2004, p. 213). W. believes the proximity of this militarized airspace was one reason that CBP's aerial presence in his general area was relatively less intense:

> Of course the Border Patrol does have more access to the bombing range than most people, certainly than we do, but I think they still are limited at certain times […] It does seem that the Border Patrol helicopter does not fly around there freely the way we see it flying in other places" (Personal communication, November 7, 2020)

Generally, interviewees in southern Arizona reported the most frequent and closest interactions with helicopters. Interviewees in the San Diego area reported less frequent interactions. One interviewee in south Texas, C., was familiar enough with helicopter operations in that region to note a distinct pattern of activity. "You can tell, if there's a helicopter about, that they're onto a group," he said, suggesting that CBP only mobilizes its helicopters when it detects or observes a relatively sizable group of migrants traveling together. But he also added, "I don't see it that often" (Personal communication, February 2, 2021). These anecdotal observations are not, on their own, sufficient to

generate a comprehensive map of the varying intensity of aerial enforcement activity. They suggest significant regional variations influenced by infrastructure and terrain. At the same time, they clearly demonstrate that helicopters are by far the most commonly observed type of government aircraft across the borderlands today.

Having established the prominence of helicopters at the border, I now turn to the process by which these aircraft were enrolled into the apparatus of border enforcement. As in the case of fixed-wing aircraft, full incorporation of this technology did not happen all at once. In fact, it began with a technological dead-end.

Autogiros: the false start

Technically, helicopters were not the first rotary-wing aircraft flown for border enforcement. In the early 1940s, the Border Patrol briefly experimented with autogiros, training three agents to fly the awkward and unreliable machines. Though largely forgotten now, autogiros[24] were an important predecessor to the helicopter, proving that airplanes were not the only possible form of powered, heavier-than-air flight (Leishman 2004). Forward propulsion was provided by a front-mounted propeller, while an unpowered top-mounted rotor provided the lift (see Figure 5, next page).[25]

Autogiros possess the ignominious distinction of being not only the first official aircraft of the Border Patrol but the first aircraft to result in a Border Patrol fatality. The agency's chief lobbied for the aircraft as early as 1934, and in 1940, the Patrol acquired three military-surplus Kellett autogiros. The "overwhelming maintenance requirements" meant that the autogiros typically only spent half as much time in the air as they did under repair (Broyles et al. 2020, pp. 9 & 11). Pilots reported that the autogiros were "not

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24 Also sometimes called 'gyroplanes'

25 In contrast, on a helicopter the top rotor is powered and provides both lift and propulsion.

well suited for the terrain or the climate" (McKinney 2011, p. 45). The experiment was interrupted by World War II—two out of the three agency pilots joined the Army Air Corps—and did not last long after the war's conclusion. Despite significant press coverage touting the prowess of these surveillance craft, they were ineffective in actual use. Finally, in 1945, a Border Patrol pilot crashed and died while flying an autogiro in Texas. "[T]he autogiro experiment expired with him," Broyles et al. write (2020, p. 11).
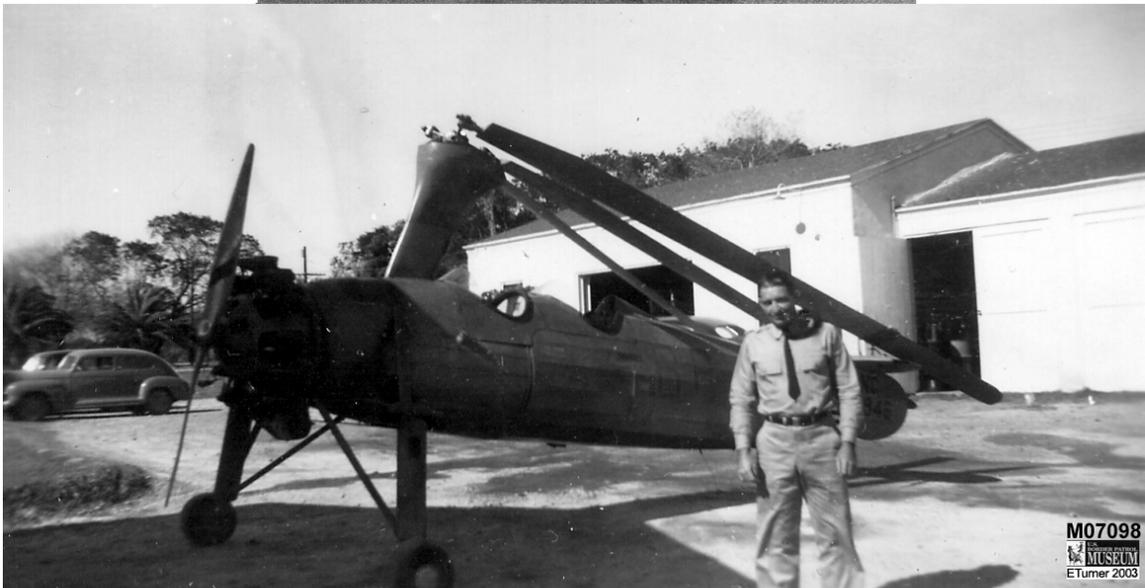
Kellett Autogiro - McAllen District - 1940s
Pilot Ned Henderson

Figure 5: Two views of an autogiro. The pilot, Ned Henderson, was killed in an autogiro crash in 1945. Courtesy of the National Border Patrol Museum, El Paso, Texas

Initial adoption in California

It would be almost three decades before rotary-wing aircraft were reintroduced to US border enforcement.[26] Although US Army commandos tested helicopters in Myanmar during World War II and all branches of the military employed helicopters to a limited degree in the Korean War, their combat effectiveness was not fully recognized until the Vietnam War. That conflict cemented the importance of helicopters in modern military operations. Consequentially, it also generated the surpluses of trained pilots, qualified mechanics, and available equipment that would eventually enable the Border Patrol to adopt this new form of flight.

According to government records, the Customs Aviation Program had eight helicopters in service for narcotics interdiction as early as 1972 (McPhail 1998, p. 7). Unfortunately, the history of that program is not as extensively documented as that of the Border Patrol, and I have not been able to find information on where or how those helicopters were deployed. In contrast, Border Patrol's incorporation of helicopters into air operations had a definite geographic point of origin: the Chula Vista sector,[27] in 1976.

Opinions evidently vary on whether the primary initiative came from the local sector administrators or from the INS commissioner, former Marine general Leonard Chapman. "It is likely that helicopters were being pushed from both ends of the command chain," Broyles et al. write, "although that wasn't always obvious to those on either end" (2020, p. 222). All involved agree that it was the Chula Vista sector in particular that inspired the adoption of the aircraft, "due to the level of illegal entry

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26 One newspaper report from 1947 claimed that "along the Rio Grande zone a helicopter snoops for border-jumpers" "Citizenship Pleas Hit 40-Year Low"), but this is uncorroborated and almost certainly a misunderstanding based on the earlier autogiro flights in Texas.

27 Now the San Diego Sector (UPI 1984).

activity in that urban setting and the historic level of nighttime illegal entries there"
(idem, p. 223). In contrast with the Border Patrol's cowboy self-image and institutional
emphasis on sign-cutting, most crossings at this time occurred in or just outside major
urban areas. The Chula Vista sector, which included the stretch of the border between the
cities of San Ysidro and Tijuana, was the highest-volume migrant corridor into the US.
Despite increases in infrastructure and personnel throughout the 1950s and 1960s, "the
scale of unauthorized immigration across the boundary in the San Diego area increased at
a far greater rate than did the capacity of U.S. authorities" (Nevins 2010, p. 65).

In 1976, the Border Patrol began using a Hughes 500C helicopter—the civilian
version of the OH-6 'Cayuse' Light Observation Helicopter developed for the Army—in
the Chula Vista sector for the first time (see Figure 6, next page). A Border Patrol
spokesman in San Ysidro told the NYT that his officers were hampered by the "wasteland
of steep-walled canyons" outside the sector's urban areas, and claimed the helicopter,
equipped with "a powerful searchlight capable of illuminating 300 square feet of the
canyons," would deter gangs who preyed on migrants as well as the migrants themselves
(Holles 1976). Another NYT reporter documented helicopter activities near San Ysidro in
1979: "Border Patrol helicopters, searchlights blazing and loudspeakers blaring the
warning 'go back' in Spanish, dip and wheel in the inky sky" (Crewdson). This is
consistent with the account given by Dunn, who states, "The deployment of helicopters to
intimidate would-be undocumented border crossers at night was from the outset a key
element of the Border Patrol's use of helicopters" (1996, p. 216).

Unlike airplanes, the introduction of helicopters in US border enforcement was
not publicly linked to fears of foreign aircraft entering US territory. That is not to say that

helicopters have *never* prompted such aerial anxiety—in 2010, for instance, Texas

governor Rick Perry demanded more federal funding for border security after a Mexican

military helicopter was observed flying over the border, and Representative Ted Poe

called for the deployment of the National Guard on the same premise (Taylor 2010;

States News Service 2010).[28] The territorial anxiety provoked by the realization that

airspace remains largely uncontrolled endures. But that anxiety was not a major public

justification for acquiring helicopters at the time of their initial enrollment into the

apparatus of enforcement.

Apprehension - Chula Vista Sector - 1976
One PI Identified - H. Williams

Figure 6: One of the Border Patrol's first helicopters, on the beach in Chula Vista Sector (now San Diego Sector) in its first year of operations. Courtesy of the National Border Patrol Museum, El Paso, Texas.

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28 Despite these political protestations, accounts of US helicopters entering Mexico without formal permission are at least as common. See, for instance, Rohter 1989, Inter Press Service 1993, and Marizco 2005.

Deliberately noisy, bright, and obtrusive, helicopters were at first an awkward addition to the Border Patrol's air operations, which (as described in Ch. III) had previously prioritized patient sign-cutting and observation in lightweight airplanes. One pilot recalled that in the late 1970s, "there was a split culture in Chula Vista Air Ops. There were the genteel daytime Cub pilots, and then there were the very strange, socially questionable night spooks" who flew helicopters (Broyles et al. 2020, p. 270). Helicopters did not lend themselves well to the stealth tactics practiced by some of the older pilots. "If you're flying [the Super Cub] in slow flight, you can fly low over the hills and you will fly up on groups of aliens or smugglers, you'll see them before they even hear you," one of those pilots explained. "In a helicopter, you hear that son of a bitch seven or eight miles away" (idem, p. 108). The pilot identity that had grown out of a mythologized strain of 'Old West' frontier-making would have to adapt to encompass this new platform.

Two internal factors accelerated the transition. One was simple financial incentive: "most of the daytime gentleman pilots succumbed to the lure of night differential pay and double pay on Sunday, and they got cross-trained into helicopters" (Broyles et al. 2020, p. 270). The other was a new altitude restriction on fixed-wing flight introduced in the late 1980s, which required the Border Patrol's airplane pilots to stay at least 500 feet above the ground when not taking off or landing. The restriction was a bureaucratic response to a series of crashes that killed one pilot and injured another. Some of the pilots interviewed by Broyles et al. argue that the plane was to blame in these crashes—both occurred in the Christen A-1 Husky, rather than the Piper Super Cub —and that pressure from the manufacturer of the plane in question influenced the

administrative response (pp. 70, 354-355). Regardless, the prohibition of low-altitude fixed-wing flight created a new, border-wide aircraft hierarchy almost overnight, favoring helicopters and the pilots who could fly them.

But there was a significant external factor driving the adoption of helicopters, too. As briefly mentioned above, this was the availability of military surplus or decommissioned equipment, and the simultaneous availability of military-trained pilots with experience flying helicopters for pursuit and intimidation.

<u>Demobilization and surplus</u>

In the endnotes to his analysis of 'border militarization,' Dunn notes the multiple connections between the Border Patrol's acquisition of helicopters and the recently-concluded US war in Vietnam. The Hughes 500C, in its military configuration, was "widely used by the United States in the Vietnam War. All three of the initial pilots had served in Vietnam as helicopter pilots. Former [Marine Corps] general turned INS commissioner Leonard Chapman encouraged the Border Patrol to begin using helicopters" (1996, p. 214). Broyles et al. note the same pattern: pilots trained to fly helicopters during the Vietnam War "returned to civilian life, including jobs with the Border Patrol" and "brought their enthusiasm for helicopters" with them (2020, p. 221). Former military pilots were key to the Border Patrol's early helicopter operations—one former pilot noted that "when the Vietnam era pilots started getting too old to fly […] the Patrol didn't have a big enough pilot pool to draw from" (idem, p. 280). Although I do not have exact statistics on the percentage of pilots who previously served in Vietnam, anecdotes suggest it was considerable. "The job market was full of pilots," one veteran recalled, "so I took the first job I could: Border Patrol agent […] All of the first Border

Patrol helicopter pilots were Vietnam veterans: U.S. Navy, U.S. Marine Corps, U.S. Army, with lots of combat decorations" (idem, pp. 663-664). It seems fair to say that the Border Patrol's helicopter program, at its inception, depended upon the expertise of ex-military pilots.

If some of those pilots took indirect routes from combat flying to border enforcement, the equipment they used had a more straightforward path. The first two helicopters used in the Chula Vista sector were commercial models, but the agency lacked the funding to purchase or lease additional new aircraft. Instead, it turned to the Army. As previously mentioned, the Hughes 500C was the commercial-market variant of the Army's OH-6, of which approximately 1400 were built for the Vietnam War. Although a majority of those were destroyed in combat, at least 500 were left over after the US withdrawal (Porter 2017). And the Army was willing to share. "The OH-6A was the airframe of choice simply because the patrol found a source for free airframes," a former chief pilot told Broyles et al. "The operative word is FREE" (2020, p. 225). The Department of Defense offered the Border Patrol two OH-6s "on loan at no initial acquisition cost" (ibid). Over the next three decades the patrol acquired at least 45 of the Army's surplus OH-6 helicopters, which comprised the majority of the Border Patrol rotorcraft fleet (Broyles et al. 2020, p. 228; Dunn 1996, p. 183). Acquisitions from the Army allowed the Border Patrol to expand from just two helicopters in 1976, to nine helicopters in five sectors by 1982, 22 deployed across all southwest border sectors by 1988, and 58 by 1992[29] (Dunn 1996, pp. 43, 150-151, 183). Some of the helicopters obtained from the Army in this period "had bullet holes still in them," and required

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29 The growth between 1988 and 1992 may be attributable in part to the prohibition on low-altitude fixed-wing flight, discussed above.

repainting to cover their military-standard olive drab with the Border Patrol's white and green livery (Broyles et al. 2020, pp. 227, 246). An Inter-Service Support Agreement between the El Paso Border Patrol sector and the Army's Fort Bliss allowed the patrol to depend on military mechanics for spare parts supply and maintenance in those initial years (idem, p. 227). If the Piper Super Cub was the signature airplane of the Border Patrol, the OH-6 was its signature helicopter, and the backbone of rotary-wing operations until the 1990s.[30]

As briefly mentioned in Ch. III, this was not the first time that military surpluses had bolstered aerial operations along the border. The Army Border Air Patrol, which operated briefly between 1919 and 1921, emerged partially as a way to give new purpose to some of the aviators and airplanes grounded abruptly at the conclusion of World War I (Maurer 1987). The autogiros tested in the early 1940s were also obtained from the Army (McKinney 2011).[31] Demobilization at the end of World War II provided a renewed supply of airplanes and qualified pilots (Broyles et al. 2020, pp. 13, 246-247). In this regard, the Border Patrol's acquisition of helicopters from the Army beginning in the late 1970s continued a pattern that had been established decades prior.

Nor were helicopters the only technology transferred from Vietnam to the border. The first physical border 'wall' (as opposed to just a fence) was constructed from leftover 'Marston Mats,' perforated steel planks used as helicopter landing mats during the war (Nevins 2010, p. 99; Dunn 1996, p. 66). The electronic sensors that formed the core of

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30 As one journalist wrote in 1996, "Twenty-five years ago, the Army helicopter was likely loaded with ammunition and wreaking havoc on the deltas of Southeast Asia. A generation later, the surplus OH-6A, which looks like a fishbowl on skids, has swapped machine guns for infrared cameras" (Schiller).

31 "Undoubtedly, the Army was pleased to write off their unsuccessful experiment," Broyles et al. write of that case (2020, p. 9).

the first 'virtual wall' system were developed, at least in part, at the Army's Electronic Proving Ground at Fort Huachuca in southern Arizona—itself a holdout from the Army's days of attempting to stop the cross-border movement of the Chiricahua Apache (Hartt 1965; Sell 1968). Those sensors were deployed across Vietnam and Laos along the 'McNamara Line,' an attempt to intercept all movement along the Ho Chi Minh Trail (Correll 2004). Their feasibility for remote detection proven, the sensors were repurposed for use along the southwest border beginning in 1970 (Dunn 1996, p. 214; Barkan 1972). But helicopters, as Dunn mentions, were one of the most prominent, obvious additions to border enforcement (1996, p. 98). Unlike sensors buried in the earth, or steel panels that the average observer would not likely recognize as military-surplus equipment, helicopters provided clear visible and audible evidence of the military's influence on border enforcement wherever they were deployed.

Dunn portrays helicopters as evidence of the migration of low-intensity conflict doctrine into border enforcement efforts (1996, p. 28). Although this is a valid conclusion to draw, I believe there is a more expansive way to frame the transfer of aircraft and pilots between the military and border enforcement, one which helps foreground the reciprocal connections between US militarism abroad and domestic border policing.

<u>Surplus state capacities and militarization</u>

It is useful to view the helicopters acquired from the US Army, the pilots experienced in flying them, and even the Army-trained aircraft mechanics as manifestations of what Gilmore (2007) calls 'surplus state capacity.' Gilmore uses this concept to help explain the emergence of the modern prison-industrial complex in California, and it is also helpful for understanding the growth of the border enforcement

apparatus at this juncture. State capacities, she writes, "are made up of laws and lawmakers, offices and other built environments, bureaucrats, budgets, rules and regulations, rank-and-file staff, the ability to tax or borrow, and direct access to mass communication and education" (2007, p. 78). State capacities, in short, include all those human and technological capacities that enable the state to carry out its functions. The concept is readily applicable to this particular context. From the example of offices and built environments, it is no significant stretch to include vehicles fabricated specifically for the war-making elements of the state, like the Army's OH-6 helicopter. And ex-military pilots (as well as mechanics) could fit Gilmore's category of 'rank-and-file staff.' All are examples of state capacities developed—through investment, the direction of material processes, and deliberate training—for a specific purpose: war in Vietnam.

The key insight from Gilmore's analysis, in this context, is that state capacities do not simply cease to exist when they are idled or rendered officially extraneous. "Technical capacity does not disappear even when certain practices lose legitimacy in the eyes of voters, or capitalists, or other key interests," she writes (2007, p. 113). But the collapse of a particular aspect or version of state legitimacy may create a gap between what the state can do *technically* and what the state can do *politically*, leaving already-existing technologies and forms of expertise without a politically palatable purpose. The US withdrawal from Vietnam, which for the military meant diminished geographical reach, a (temporarily) shrinking budget, and the cessation of major combat activities (Stewart 2005, pp. 369-377), created a condition of surplus state capacities. The equipment built for counterinsurgency warfare and the personnel trained in its use no longer had a politically justifiable *raison d'etre*. Border enforcement offered new space

94

and new legitimacy for the revitalization of these individual, collective, and material capacities: the helicopters, the Army mechanics, the larger constellation of defense-dependent manufacturers and suppliers, and the pilots trained to fly light helicopters at low altitudes. Redeploying these capacities in order to reinforce the state's territory thus amounted to a simultaneous ideological and spatial reconfiguration of state capacities for the exercise of coercive force.

I do not mean to suggest that the state simply lifted people and equipment from the battlefields of Vietnam and plunked them down in San Ysidro or El Paso—obviously, the relationship is not quite so simple as that. To quote Gilmore once again, "surplus state capacity is not an absolute thing, but rather a quality that can emerge over time" (2007, p. 113). It took time for the Army to decide that its supply of Light Observation Helicopters was unnecessarily large.[32] It took time for pilots to realize that the flight skills they had practiced as part of their military mission were transferable to another context. And it took time for Border Patrol officials to realize that those pilots and their skills could be assets to its novel program of helicopter operations. One of the first three helicopter pilots in the Chula Vista sector in 1976 noted that he hadn't flown an OH-6 since leaving Vietnam in 1968, and hadn't flown any aircraft at all since his departure from the Army Reserve in 1972 (Broyles et al. 2020, p. 252). Another recalled, "I did not even have a current airplane license" (idem, p. 248). But with time, the surplus state capacities emerging from the military's "post-Vietnam War doldrums" (Stewart 2005, p. 377) intersected with the "the rise of neo-restrictionism" in US border politics (Nevins 2010, p. 77), resulting in significant changes in the use of aircraft for bordering.

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32 One former Border Patrol pilot joked, "I don't know how many helicopters they had, but they must have scrounged around real hard to find the worst ones. At least, that's what we got." (Broyles et al. 2020, p. 246)

The 'neo-restrictionism' to which Nevins refers began in the 1970s. From that time onward, "federal government officials and national politicians, along with a compliant media, helped to construct the perception of a crisis and to stoke public fears" (Nevins 2010, p. 78). Andreas recognizes this phenomenon, too: "Public perception is powerfully shaped by the images of the border which politicians, law enforcement agencies, and the media project," he writes (2009, p. 9). Those actors reframed the permeability of the border as an intractable, permanent problem necessitating the same "continued proliferation of laws, courts, judges, bailiffs, law enforcement personnel, technologies of surveillance, helicopters, and other means of domestic warfare" seen in the parallel rise of the prison-industrial complex around the same time (Gilmore 2007, p. 122). The alleged permanency of the border's unruliness legitimized the increased congressional budget appropriations needed to staff and equip an ever-more-militaristic border enforcement agency, even in a time generally characterized by ideologically driven fiscal austerity at the federal level (Dunn 1996, p. 174; Andreas 2009, p. 89). The escalation of border enforcement in the wake of military demobilization can be viewed as an example of how surplus state capacities, rather than simply vanishing, are often redistributed within a new configuration of state authority.

Helicopters were and are a significant factor in the continuing production of the perception of crisis. But before I discuss the links between helicopters, media representations, and politicians in the remainder of this chapter, I want to reiterate my assertion that viewing the proliferation of helicopters in border enforcement as a reconfiguration of surplus state capacities is preferable to employing the more common and popular framework of 'border militarization.' There are two major reasons I advocate

thinking in terms of transferable state capacities rather than simply 'militarization.'

The first is that use of the term 'militarization' subtly suggests a non-militaristic past. Although it is evident that border enforcement today (on both sides of the border) includes tactics, equipment, and organizational structures acquired from or based upon the military, as well as outright cooperative civil-military efforts like Joint Task Force North (Heyman & Campbell 2012), it is a mistake to see today's militaristic apparatus of enforcement as a historical anomaly. Remember that, as was discussed in Ch. II, the US-Mexico border was established by military conquest and originally policed by the armies of those countries. The border remained a military concern for the US during World War I and the Mexican Revolution, and as was shown in Ch. III, military operations provided the first opportunities for the deployment of aircraft to the border. It is mostly true that, as Heyman and Campbell write, "the U.S. military had minimal involvement with border enforcement from 1920 to the 1980s" (2012, p. 84) and that border enforcement in those years was not as visible or deliberately militaristic as it is today. But this period of relative *de*militarization along the border—a period which, we should recall, also included the infamous mass deportations known as 'Operation Wetback,' commanded by the former US Army general Joseph Swing[33]—is not, in my view, representative of the border's longer history. When we speak of militarization as a modern phenomenon, something beginning in the 1970s, we obscure the deeper history of the border and its "continuum of violence" (Hernandez 2018, p. 24). A militaristic state presence at the US-Mexico border is congruent with the longer history of territorial division in that region, not a deviation from it.

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33 Swing also participated in Gen. Pershing's "Punitive Expedition" into Mexico in 1916 (US Citizenship and Immigration Services 2020)

The second reason is that, on a more theoretical level, the term 'militarization' also implies a one-way relationship in which border enforcement gradually takes on the characteristics of warfare but war does not resemble bordering. And although it is easy to reach that conclusion when observing the use of military tactics and hardware along the US-Mexico border, thinking in this way puts us at risk of ignoring the more complex reciprocity between those two categories of state action. The process of bordering and its underlying ideal of neatly territorialized national space have long influenced the conduct of war. Territorial borders, Williams and Roach write, are "intimately connected to ideas of military security and political stability" (2006, p. 4). States often go to war to defend their borders, or to expand them. And war can reinforce perceptions of the importance and meaningfulness of territorial boundaries. As Kaplan argues, "[T]he nationalisation of space is part of the discourses of mobility and freedom that become both generated and restricted in times of war. When national space is believed to be penetrated or dissolved, governments attempt to redress the situation" (2006, p. 399). In short, war and bordering are often intimately linked. We should also remember the role of the US borderlands as a developmental zone for some of the technologies of war that are construed as evidence of border militarization. I have already mentioned the Electronic Proving Ground at Fort Huachuca, just north of the border, which helped develop the acoustic and seismic sensors used in Vietnam to monitor the movement of ground troops and trucks. Those sensors were shortly repurposed for use along the border, the predecessor of contemporary 'smart wall' initiatives (for more, see p. 124). And I discuss in Ch. V how drone aircraft, often cited today as a clear example of border militarization, were tested and developed in the borderlands and along the Texas coastline (Chaar López 2018). In

98

addition to serving as testing grounds for military technological development, the borderlands have been treated as useful training grounds for military personnel. Participation in border enforcement, one military author argues, "provides challenging, realistic, and mission essential training for units and individuals" (Southcott 1996, p. 15). Joint Task Force North, the US Department of Defense's ongoing anti-drug and counter-terrorism mission in the US southwest, is officially justified as improving the combat readiness of the troops who participate ("About Us" 2021). Service in the borderlands environment is depicted as functionally analogous to other military activities. From the abstract to the concrete, these are all reminders that the term 'border militarization' masks —even if unintentionally—a persistent bidirectional relationship between the military and border enforcement.

Andreas has argued that one of the false narratives that dominates US discussions of border enforcement is the notion of a 'loss of control.' "That narrative, he writes, "overstates the degree to which the state has been able to control its borders in the past" (2009, p. 7). I regard 'border militarization' as another potentially misleading narrative, because uncritical use of that term overstates the degree to which the border was ever disentangled from military force or military activities. The phrase, as Heyman and Campbell note, has had "a very sloppy rhetorical career" (2012, p. 77, footnote 2). And although it is more linguistically cumbersome (or less politically expedient) to talk about the continual reconfiguration of state capacities, I believe this is ultimately a more useful intellectual framework to understand the transfers of technology, people, and expertise between different components of the state. Moreover, thinking beyond the binary border-military coupling is essential, because there are also similar transfers occurring between

the border-industrial complex and the carceral apparatus of the state—an equally relevant relationship if we are trying to comprehend US bordering today.

Helicopters are far from the only example of technological and ideological slippage between branches of the state, but they provide a particularly apt case study because of how directly they connect the shrinkage of one state agency to the expansion of another. While the US Army downsized, the US Border Patrol grew.

<u>Representational power</u>

Once added to the technological arsenal of border enforcement, helicopters frequently filled the same functions as the airplanes that preceded them. Although they opened up the possibility of greatly expanded night flying—thanks in no small part to a custom searchlight system fabricated by a Border Patrol mechanic, which allowed for unusually agile positioning of the craft's quadruple lights (Broyles et al. 2020, pp. 403-405)—and intimidation, helicopters were often still employed in the typical tasks of the fixed-wing era, including tracking and sign-cutting, coordinated apprehension efforts with ground agents, and farm or ranch checks. But helicopters were also pressed into service for a new task: providing tours to press and politicians.

It is not clear when precisely this practice began. As mentioned in Ch. III, the photographs of aerial patrol and alleged interception published by the LAT in 1938 could not have been taken unless the photographer was flying in another airplane alongside the government aircraft (see pp. 58-59). Reporters also joined Border Patrol pilots for ride-alongs (or fly-alongs) in 1950 ("Mexican 'Wetbacks' Crossing Border…"), 1959 (Hillinger), 1967 (Hillinger) and 1972 (Baskerville). However, I have found no documented cases of politicians doing the same prior to the introduction of helicopters.

Tours for elected representatives and appointed officials seem to have begun in 1977, the year after the Border Patrol acquired its first helicopters. According to a retrospective LAT column published four years later, INS commissioner Leonel Castillo "made his contribution to the immigration service's illegal entry statistics by manning the searchlight of a border patrol helicopter while it hovered over a group of Mexican nationals who were trying to sneak into the country from Tijuana" (del Olmo 1981).[34] The use of helicopters to provide border tours to public officials is thus nearly as old as the use of helicopters for enforcement, but has not yet been considered in academic analysis.

An unidentified congressman apparently followed Castillo's example in 1979. An LAT reporter described him as operating the vaunted searchlight with "a child's excitement" (Scheer). In 1983, Attorney General William French Smith became at least the third political figure to assume searchlight duty, "spending part of Thursday night operating spotlights from a swift Border Patrol helicopter" (Freed; see also Houseman 1983). Controlling the light seems to have been an experience offered only in the early days of the practice, but the tours themselves continued. In 1989, INS western region commissioner Harold Edzell flew for just 10 minutes in the inaugural voyage of a new Aerospatiale AS-350 helicopter before declaring it "fantastic!" (Barfield). Bob Martinez, then director of the Office of National Drug Control Policy, took a 30-minute helicopter ride over the San Diego sector in 1991 in order to, in his words, "get a feel for the flavor of the problem out here" (McDonnell).

There are fewer reports of such tours from the early 1990s to the early 2000s. After this apparent lull, however, helicopter tours took off again. Senator Harry Reid flew

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34 del Olmo was ahead of his time in bluntly identifying the trope of the "obligatory first-hand look," noting that "it always makes for colorful articles and dramatic TV footage," but also "makes illegal immigration seem like little more than an international game of cops and robbers" (1981).

over the San Diego sector in 2006 (Berestein), and Speaker of the House J. Dennis Hastert flew a congressional delegation to the Border Patrol's remote Camp Grip in Arizona the same year (Hurt).[35] In 2008, Representative Mary Fallin, CBP Commissioner W. Ralph Basham, Attorney General Michael Mukasey, and Senator Jon Kyl all took tours (States News Service; Gilbert; Mukasey; Reynolds). Fallin claimed she "was present when officers apprehended illegal aliens trying to penetrate the fence" (Office of Rep. Mary Fallin 2008); similar claims would feature in more and more of the post-flight press conferences or press releases going forward. Representative Ted Poe, for instance, claimed that from his helicopter he could see something he decided was "obviously a smuggling operation getting ready to take place on the Mexican side of the river […] a drug cartel apparently, in my opinion, was loading up duffel bags" (Office of Rep. Ted Poe 2009). Senator John Barasso declared, "I saw an unsecure [sic] border," after flying with the Texas National Guard that same year (Office of Sen. John Barrasso 2009).

Helicopter tours continued apace throughout the 2010s. During that time, passengers on flights over the border have included the chief counsel of ICE (Smith 2010), the secretary of the Department of the Interior and multiple secretaries of the Department of Homeland Security[36] (Daly 2010; Spagat 2013; U.S. Dept. of Homeland Security 2017), the governors of Arizona, Louisiana and Texas (Silva 2013; Deslatte 2014; Targeted News Service 2017), the Speaker of the House of Representatives (Ryan 2017), and senators and representatives from numerous states (see, e.g., Legal Monitor 2013; US Fed News 2017). And, of course, the practice continues through the present: as

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35 In an unusual reversal of the regular pattern, Hastert reportedly allowed Border Patrol agents to use one of *his* delegation's helicopters for a marijuana seizure mission during his visit (Hurt 2006).

36 This includes one acting DHS secretary, Chad Wolf, whose appointment was later ruled unlawful (Ingram 2020).

described in Ch. I, March 2021 saw a flurry of helicopter tours by federal and state-level legislators (see p. 1). This list is almost certainly incomplete.

Although one might be able to find temporal correlations between some of the tours cited above and electoral cycles, legislative debates, or other moments of political opportunity, what interests me most about these aerial tours is not the timing nor the precise identities of the individual passengers. Rather, what stands out is the gradually expanding role of helicopters as tools for sustaining a specific vision of the border that legitimates the continuing escalation of enforcement activities. Helicopters, while actively serving as instruments of enforcement in the larger matrix of complementary technologies that comprise the border enforcement apparatus, also function as tools of communication. They agents of border enforcement to show the border *as they see it* to officials and representatives—and, simultaneously, to avoid any potential contact with migrants on the ground that might complicate that vision. Back in 1979, when the LAT noted that an unidentified congressman worked the spotlight on a Border Patrol helicopter during an aerial tour, it also reported that his "child's excitement" dissipated when the figures in the beam proved to be "fathers, mothers, children, mechanics, farm hands, Catholics—huddled masses, as the Statue of Liberty says" (Scheer 1979). The counter-institutional humanizing potential of such encounters can be more easily avoided when observers are kept high(er) in the air. Helicopter tours provide a facade of intimacy, allowing representatives and officials to claim they've seen the border firsthand while simultaneously distancing them from the broader scope of enforcement efforts or the tangible consequences of enforcement policy.

Both Nevins (2010, p. 78) and Andreas (2009, p. 9) have argued that public

perceptions of the border can be significantly influenced by politicians, government officials, law enforcement agencies, and, of course, the media. Pre-arranged helicopter tours are a striking example of how that process operates. The practice provides predictably dramatic visuals, as well as convenient press conferences in which political figures can tout their newly acquired aerial bona fides and enforcement administrators can piggyback on an eager media audience. It is, as del Olmo observed in 1981, "quick and easy publicity." But it is not simply publicity for politicians themselves. These heavily choreographed tours also reinforce public perception of the border as a problem unto itself, generally concentrating attention on the question of intensified enforcement rather than on the legitimacy or sensibility of the US bordering regime writ large. In this regard, helicopters provide a type of value to enforcement authorities beyond their actual capability to traverse rugged terrain, increase apprehensions, or otherwise contribute directly to the control of motion across the border line. And clearly, the Border Patrol has concluded that the communicative power of helicopters exceeds that of trucks, ATVs, or other possible vehicles in which visiting political figures might be guided into position to observe the ongoing maintenance of territorial division.[37]

In addition to facilitating the alignment of politicians, press, and media to reinforce a particular public perception of the border, helicopters also feature prominently in Customs and Border Protection's contemporary representation of itself. Specifically, helicopters are cited as life-saving tools and thus used as evidence that CBP is a humane, caring agency, conveniently eliding the agency's role—and helicopters' specific contribution—in *creating* the lethal scenarios from within which migrants ultimately

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37 Perhaps that is attributable to the 'geography-defying' nature of aircraft: they allow visiting officials to get from base to border and back as rapidly as possible, unencumbered by terrain in between.

104

require rescue. Humanitarian justifications for airplane patrols were not common in the newspaper articles I located in my research. One LAT article on the Coast Guard aerial patrols of the late 1930s did highlight planes' potential use for providing aid to stranded travelers or isolated communities (Arnold 1938). Aside from that, press coverage stressed the enforcement capabilities of aircraft. But since helicopters were introduced to the Border Patrol, the agency's spokespeople and press releases have consistently framed the aircraft as search-and-rescue assets.

Such framing was evident from the first major expansion of the Border Patrol's helicopter fleet. Although pilots of the era attest that the initial decision to acquire helicopters in 1976 was driven by internal agency perception that the Chula Vista sector was "completely unmanageable" and "being overrun" by migrants (Broyles et al. 2020, pp. 250 & 252), administrators framed the acquisition of eight more helicopters in 1980 as motivated by humanitarian concerns. Acting INS commissioner David Crosland stated that the OH-6 helicopters transferred from the Department of Defense would "be used for rescue operations in remote desert and mountain areas as well as for general surveillance programs" (Associated Press 1980). The same rationale was offered when the Border Patrol acquired its first AS-350 in 1988, and when the Border Patrol received a UH-1 "Huey" a decade later (Barfield 1989; Sanchez 1998). The Huey, a Border Patrol spokesman stated, would be used to bring agents in the specialized Search, Trauma, and Rescue unit—known as BORSTAR—into "remote parts of eastern San Diego county." Tellingly, he added that the helicopter would *not* "be used regularly to airlift injured people" (Sanchez 1998). Delivering agents was a priority; transporting migrants, apparently, was not.

That said, Border Patrol and CBP helicopters have been used at least *semi*-regularly to transport exhausted, ill, or injured border crossers to hospitals. One of the reasons we know this is that the agency reliably issues press releases or statements to reporters that highlight occasions when its aircraft have been used for search and rescue missions. "[T]he Border Patrol often touts its search-and-rescue operations as evidence of the agency's humanitarian priorities," Cantú asserts (2018, p. 260), and indeed, in the course of my research I found dozens of press releases and news reports from 1999 onward that specifically mentioned the use of a Border Patrol or CBP helicopter for search and rescue.[38] That count is certainly incomplete—I am confident that a more painstaking trawl of all border enforcement press releases from that period would generate even more examples. Still, I believe it is substantial enough to demonstrate that border enforcement authorities consistently emphasize the search and rescue capabilities of their aircraft in order to deliberately construct associations between helicopters and humanitarian aid, and thereby shape the public perception of their operations. "These aircraft have been real life savers out in the ranchlands," one CBP official in McAllen, Texas told a local newspaper. "They are literally saving lives every day" (Hernandez 2015). This is the image that the agency wants to project. But despite agency assertions, there is also substantial evidence demonstrating that helicopters are not used solely for beneficent purposes, and are in fact employed to enhance the violence—and the lethality—of US border enforcement policy in the southwest.

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38 These include, chronologically: Associated Press 1999; Gross 2000a, 2000b, 2000c; Union-Tribune 2000, Associated Press 2000a, 2000b; Marquis 2001; Nieves 2002; Associated Press 2002; Marizco 2003a, 2003b; Turf 2003; Rico 2004; U.S. Customs and Border Protection 2005, 2007; Associated Press 2009; U.S. Customs and Border Protection 2009, 2010, 2011a, 2011b; Sherman 2013; Carroll 2015; Galvan 2015; Hernandez 2015; U.S. Customs and Border Protection 2017.

<u>Contesting official representations</u>

The overarching strategy of US border enforcement since the 1990s is known as 'prevention through deterrence,' and entails the weaponizing of the landscape against migrants (see Ch. II, pp. 21-25). In 2016, the activist groups No More Deaths/No Mas Muertes and La Coalición de Derechos Humanos published the first volume of *The Disappeared Report*, which seeks to explain "the disappearance of tens of thousands of migrants and refugees in the expansive wilderness north of the US-Mexico border" (NMD/CDDH 2016a, p. 3). This report, based on a survey of migrants and analysis of calls to the Missing Migrant Crisis Line (NMD/CCDH 2016b, p. 5), makes deliberate mention of the role of helicopters.

"Border Patrol agents chase border crossers through the remote terrain and utilize the landscape as a weapon to slow down, injure, and apprehend them," the report states (NMD/CCDH 2016b, p. 3). These pursuits also cause groups to fragment, which in turn "causes individuals to become disoriented, lost, and empty-handed: many border crossers perish during the prolonged exposure to the elements that results" (idem, p. 7). Although these 'chase and scatter' operations[39] can occur whether the pursuing agents are on foot, driving, or flying, the report contends that aircraft are particularly effective at fragmenting—and thus further endangering—groups of migrants. "The number of people who became lost after a chase involving a helicopter was significantly higher than the number of people who became lost after a chase without a helicopter," the authors state. "Helicopters' presence in the sky terrorizes people who are crossing" (idem, pp. 18-19).

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39 Although CBP does not officially acknowledge 'chase and scatter' as an approved or routine tactic, all of my interviewees used the phrase. This reflects both widespread recognition of a strategy and, potentially, the reach of *The Disappeared Report* within the larger humanitarian/activist community in the borderlands.

As I mentioned earlier in this chapter, part of the helicopter's power to evoke fear is its physical presence. Helicopters are loud, they carry blinding spotlights, and the wind created by their rotor wash is significant. But CBP helicopters evoke fear in other ways, too: "Often times there's an agent sitting on the side of the helicopter with an assault rifle," G. said. Beyond the direct threat implied by an armed agent on board, helicopters also signal the impending arrival of other agents—also armed—whom migrants may regard as additional threats. "People know that Border Patrol is a violent organization that has basically total impunity," G. told me. "There's no sense of having any kind of real protection when they're out there" (Personal communication, September 7, 2021). Between the helicopter's physical presence and its role as the advance guard of a law enforcement agency with a well-established reputation for violence, corruption, and general lawlessness (Graff 2014), it is not difficult to understand how its arrival could create terror.

"The other methods that they use for scattering that aren't helicopters are, like, calling out common Spanish names, having dogs to chase people, that sort of thing," J., who works in the San Diego area of California, said. "So it's really with the intention of breaking up a group. The helicopter's just another way of doing that." She believes that scattering does not increase the number of apprehensions or arrests made by the Border Patrol, but instead "is done with intent to get people lost." And although she noted, above, that there are multiple ways of scattering a group, she speculated that helicopters were likely more effective in doing so than other methods: "I don't know for a fact. But I would think so. If you think about how scary and loud a helicopter is, and knowing that they could see you from a really high vantage point, you would run longer and faster.

That's just my assumption" (Personal communication, October 13, 2020).

"It creates fear," K., who primarily works in the areas south of Tucson, Arizona, agreed. "But what they do is they kill people in the process. Because we hear stories all the time—'What happened to you?' 'Oh, the helicopter came and we ran and we couldn't find our group again'" (Personal communication, November 22, 2020).

Not all of my interviewees were certain that scattering was always an intentional tactic. "It's not uncommon to run into migrants who were part of a group that got chased or scattered," M. recalled of their experiences in the same zone south of Tucson. "I don't know how much of it is deliberately trying to disorient them or whether it's just a natural reaction to Border Patrol's appearance for everybody to run in different directions" (Personal communication, October 22, 2020). But the distinction is perhaps unimportant: ultimately, what is the practical difference between a pilot flying low in order to deliberately scatter a group and a pilot flying low without caring whether or not a group scatters? Either way, the outcome is the same, and "too common to be dismissed as the acts of a few rogue agents" (NMD/CDDH 2016a, p. 8).

There may be geographic variation in the practice. "It's not the most frequent, from what I hear, at least in our area, method of scattering people, but it is one way that they do it," J. said, referring to the areas of San Diego and Imperial County (Personal communication, October 13, 2020). "I don't believe it's happening as much [in Texas]," C. said. "It may not be where there's a lot of trees, a lot of tree cover, a lot of cactus, and a lot of brush. Right? So it may not be as effective as if it was out there in the mountains where there's very little vegetation, in Arizona" (Personal communication, February 2, 2021). Everyone I spoke to in Arizona was familiar with the use of helicopters for

scattering groups, and *The Disappeared Report* is a product of two Arizona-based groups who interact primarily with migrants crossing through that state. Regional variations in land ownership (federally vs. privately owned land), associated airspace rights, and terrain may influence the local prevalence of the tactic. But it is notable that the tactic has been most thoroughly documented in the areas where migrant traffic increased the most following the implementation of prevention through deterrence—the Arizona deserts (Madsen 2007, pp. 283 & 285). In that regard, it is logical to speak of 'chase and scatter' as an additional layer of violence built on top of existing border strategy.

Determining exactly how widespread the practice is at this time would require additional data sources. But my interviewees were firm that the practice is routine and ongoing: "It's something they deny. Border Patrol denies that they do that. But it's real. It's real," B. insisted (Personal communication, October 29, 2020). "I wouldn't say every case, but probably a majority of cases [in which migrants sought aid] people will describe some incident involving being chased and scattered by Border Patrol and the helicopter is often part of that," W. affirmed. "I've never seen people physically being scattered, but I have on many occasions seen the helicopter, from a distance or not that far away, down really low, clearly working something in the brush" (Personal communication, November 7, 2020). "I've seen this happen," K. claimed. "They're not supposed to do this but I've seen this happen […] We have been told that they weren't supposed to do that. And yet we've all seen them doing it" (Personal communication, November 22, 2020).

Multiple interviewees suggested that the danger created by helicopter scattering operations could be even greater when those operations occur at night. "I'd say that Border Patrol interactions in general are scarier at night, and helicopters as well," G. told

110

me (Personal communication, September 7, 2021). Darkness increases the odds that someone separated from their group will lose their bearings, J. explained: "Once you get lost from where you're going… if you're getting scattered at night time, with all these crazy lights and sound, and you don't know where you're going […] when it's daylight, everything looks the same. You have no idea where you're at" (Personal communication, October 13, 2020). W., based in Ajo, Arizona, expressed a similar idea in greater detail:

> My sense is that the Border Patrol helicopter is most effective as a tool of intimidation and fear when it's used at night, which it often is. They fly with their lights off, and I've run into it in those situations too, and it's even more disorienting. Because that's when it can be basically right on top of you, you start to hear it, but you can't see it, and then maybe the last minute they'll turn their lights on, spotlight on, something like that. That's, I think, a really important piece. And then it's probably most effective and most dangerous as a scattering tool when used at night, you know? When people run at night it's much easier to fall or become injured, or get lost from the rest of your group, get disoriented. So I suspect... I've had a few nighttime encounters with the helicopters and I can only imagine that it's probably most effective at night. (Personal communication, November 7, 2020)

Note the mention of the spotlight, which was introduced as part of the helicopter system decades ago and retains its power as a tool of intimidation. AMO pilots are able to fly with their lights off when using night-vision goggles (Broyles et al. 2020, pp. 535, 645, 679). Combining that capability with knowledge of the local terrain that allows them to remain unseen as long as possible, pilots maximize the disorienting effects of sudden noise, blinding light, and physically destabilizing rotor wash. Night flights are consequential because in many areas along the border daytime temperatures are too hot for crossers to move safely without risking dehydration or heatstroke. Moving at night offers some respite from the environmental risks of the journey, as well as a decreased chance of visual detection. But night flights alter that calculus, transforming the potential safety advantage of the night into yet another danger. They thus further enhance the

hostility of borderlands terrain, rendering it more dangerous to crossers, and a more effective ally to the institutions of enforcement.

My interviewees pointed out that the humanitarian posture CBP assumes in its press releases, public statements, and other forms of self-representation is at odds with the ongoing policy decisions that uphold prevention through deterrence and push migrants into increasingly dangerous situations. And they identified the helicopter as a particularly clear embodiment of this deceptive dualism: the same helicopter that arrives to rescue a desperate border crosser may have been used the night before to disperse that person's group. Nearly all of my interviewees expressed some variation of this essential point. I quote from multiple interviews below to demonstrate how widespread this view was among my respondents. (Emphasis has been added.)

> They were trying to present themselves as a search and rescue organization, you know. They would really highlight their search and rescue work. Which was always really dubious […] I think one of the basic ironies, contradictions, of it, is **the helicopter that rescues people is also the helicopter that chases them and scatters them**. It's like, alright, we're going to fly this helicopter out and harass you two or three times over the course of a week, and at the end of the week, when you give up, then we're going to go and rescue you. [...] No doubt, there's people who are in the middle of nowhere or something and might otherwise die and the helicopter shows up and picks them up and they live. So, call that a rescue, I suppose. But then that helicopter's also chasing people and causing a whole lot of pain and no doubt causing deaths. *(W., personal communication, November 7, 2020)*

> The helicopter would come in and do what they call dusting. It would fly low over the group and it would pick up all this dust and little pebbles and that. **First it would scare the people and split the group up.** […] Back then they started using it for that also, but for rescues. **They also use the helicopters for rescues and for search** […] at the beginning, I would say it was used mostly for the scattering of groups. *(O., personal communication, October 22, 2020)*

> But, see, that's what kind of strange about it. **We [the US] try to kill them on one**

hand, and then we try to rescue them on the other. It's a contradiction. *(K., personal communication, November 22, 2020)*

They're wonderful at PR. […] 'This year, we've rescued 300 people,' or whatever it might be. It's like, wait a minute—you can't have it both ways! You can't set up a system where you're creating these situations and then you go in to save someone, you act like you're saving them. Wait! **You created this system where you put them in danger, to create what happened to them, and now you're claiming that you're the hero?** No. […] We're gonna create this situation, and then we're gonna go in and save people from a situation that we've created, because we've made them vulnerable. Come on. *(B., personal communication, October 29, 2020)*

One of the things that we emphasize is that **they paint themselves to be the heroes in a problem of their making** […] But the problem is that so many people are dying as a result of this push and pull—that they're orchestrating, honestly. *(A., personal communication, October 13, 2020)*

This is an incisive perspective that resituates the technology and the tactics of border enforcement agents in the larger context of their work. These interviewees do not attribute danger solely to the environment itself, as CBP generally does, but to the combination of a hazardous natural environment *and* deliberate policy decisions that concentrate enforcement around the least hazardous routes across the border, thereby pushing potential migrants toward more remote and more dangerous areas. "The system, the policy, sets the crisis," C. in Texas told me. "When you have 'prevention by deterrence,' you are creating people going to the more remote areas […] and that's not going to deter people" (Personal communication, February 2, 2021). "The obvious effect of all of this is it pushes people into more remote, more treacherous terrain," G. said (Personal communication, September 7, 2021). By emphasizing how the infrastructure of desert rescue also contributes to the desert's violence—that the helicopter which rescues somebody may have been the same helicopter that separated them from their group and

pursued them to exhaustion—these activists contest the facade of benevolence projected

by Customs and Border Protection.

Multiple interviewees also stated that rescues are not a priority for CBP, and that

the agency's supposedly comprehensive knowledge of the borderlands conveniently

vanishes when volunteers attempt to recruit help for migrants in distress. O. said she

believed agents were not doing as much as they could to help locate missing persons:

> With the knowledge that they have of the desert area, because they're out there
> every day, the agents are out there every day on foot and in the air […] if I tell
> you, 'OK, I left this person' or 'I saw this person that was laying there on the
> ground in this area,' or they call in and report, 'We left somebody in this area,'
> they [CBP] can't find them for several days? Or several months? […] I think they
> could do more. Because like I've said, I've heard several stories where people
> have reported […] 'We called and nobody came,' or they come and search for a
> while and then they leave because they couldn't find anything. (Personal
> communication, October 22, 2020)

K. described the frustrating process of trying to communicate her location to an agent

over the phone:

> I told him exactly where we were, how many miles I'd gone and what the road
> numbers were. And he goes, 'Oh, we don't use the road numbers. We have our
> own system.' And I said, 'That's fine. We have our own system too [...] But we
> also know what the public uses, and I think it's a good idea that you might have a
> map of the Forest Service roads so if another layperson calls you you'll be able to
> know where they are.' And he says, 'Well, we're looking for a map right now.'
> And I go, 'What a good idea.' (Personal communication, November 22, 2020)

In contrast with that agent's insistence on an unknown, institutionally-specific system for

establishing location, consider the story of R., who has assisted with humanitarian aid and

recovery of remains in both California and Texas for many years:

> We know the border pretty well, because we've been doing it for years.
> Sometimes I've even gotten just a photograph of where they were, and I was able
> to identify the spot, and notify the authorities in that area and they were able to fly
> a helicopter in there and rescue that person. (Personal communication, January 25,
> 2021)

These anecdotal accounts of CBP being unwilling to mobilize its geographic knowledge or its geography-defying equipment for rescue purposes are reinforced by the third volume of *The Disappeared Report*, which found that CBP initiated search and rescue efforts in only a third of cases where such efforts were requested (NMD/CDDH 2021, p. 6). Often, the kind of bureaucratic defenses described by my interviewees are deployed: "Agents frequently state that they can't search for a missing person unless that person has placed a direct call to 911 from the field, and Border Patrol has been given exact GPS coordinates traced by 911 dispatchers" (idem, p. 21). Other times, the agency simply does not respond to requests for assistance (idem, p. 22). The authors of this report thus argue that non-response is "a logical extension of an overall strategy that uses death as a deterrent to enforce the border" (idem, p. 16). Although this report was released after my interviews were completed, I believe most of my interviewees would likely agree with this assessment, based on the statements highlighted above.

Yet CBP's continued assertions that its helicopters and pilots are contributors to rescues does reveal one important truth: many components of the border enforcement apparatus have the *potential* to be used in other ways. A helicopter is indeed a versatile, even exceptional tool for saving lives, if flown for that purpose. Air and Marine Operations pilots have the skills necessary for search and rescue operations, like low and slow surveillance flying. These state capacities could fulfill humanitarian functions. Unfortunately, those state capacities are currently held within the confines of an ideological framework that prioritizes the exercise of coercive force along the border and delegitimizes other state functions and modes of governing—a framework that Corva (2008) has identified as "illiberal governance."

<center>Disorderly spaces and governance by force</center>

Illiberal governance, Corva writes, is a term that describes "the legitimation and application of coercive power by liberal nation-states" like the US[40] to subjects and spaces that are politically constructed as incompatible with "the administration of freedom" (2008, p. 177). Warfare and aggressive policing are two of the primary and most recognizable manifestations of illiberal governance, and increasingly blur into one another as policing becomes transnationalized and warfare is reterritorialized within the state. "The police/military distinction in the age of modernity relied upon and reproduced the sovereignty of the liberal nation-state," Corva explains. "The military function acted upon disorderly subjects outside of, and the police functioned to engage disorderly subjects within, the borders of the nation-state" (2009, p. 163). Disorderly subjects and disorderly spaces become justifications for the exercise of coercive sovereign power. Illiberal governance is thus a thread running through the Vietnam War, the 'War on Drugs,' and the 'Global War on Terror,' among others: all are "connected by a shared discourse that [...] identifies specific global spaces that need to be governed in other ways" than the democratic and non-coercive means by which liberal states (supposedly) govern themselves (Corva 2008, p. 191). The US-Mexico borderlands are often framed as a space of disorder that must be governed forcefully in order to protect the social body of the US nation from unidirectional inward flows of "drugs, illicit economic trade, and unproductive labor" (Corva 2009, p. 168; see also Sorrensen 2014, p. 341). At the border, the enforcement of political-territorial sovereignty against individual migrants

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40 The US does not fit the classic definition of a 'nation-state' in political geography scholarship. Corva uses the term 'nation-state' in its popular though technically inaccurate usage as, effectively, a synonym for territorial states of all kinds. This should not distract from his key argument, which is the contradiction between the 'liberal' self-definition of the US and its illiberal politics of governance.

<center>116</center>

—"nonsovereign beings whose coerced actions are defined as active choices" (Coutin et al. 2002, in Corva 2008, p. 180)—remains the overriding concern of the federal government. This is the governing rationale of border enforcement, whether enacted by agents on the ground or helicopters in the sky.

When use of the tools of illiberal governance—which is to say, the state capacities developed to govern global 'disorderly spaces' and "excluded populations" (Corva 2008, p. 191)—becomes publicly unpalatable, they are promoted as multi-purpose tools, equally suited for compassionate humanitarianism as well as enforcement. This is the strategy used by CBP. While deploying helicopters to intimidate, terrorize, and endanger migrants, it claims those aircraft are necessary because of their possible use for saving lives. But that narrative is shallow and unconvincing to people like the interviewees I spoke to and the migrants they assist, who witness or experience the violence enacted through helicopter flights over the borderlands. The proliferation of rotorcraft along the border has paralleled the intensification of illiberal governance—a framework I find more useful than the popular idea of 'militarization' for explaining the current configuration of state capacities that comprises the border enforcement apparatus.

Corva makes one other important observation. "Neoliberalization produces social and economic vulnerability," he writes; "criminalization produces ways to *capitalize* on that vulnerability" (2008, p. 181, emphasis added). The term 'capitalize' is intended literally: Corva refers to the prison-industrial complex when he uses it, which turns incarceration into a source of revenue and profit. But the US has a border-industrial complex, too, and its influence is manifest in the third major category of aircraft in use at the border today: drones.

Conclusion

In this chapter, I described the relative prominence of helicopters in the borderlands today, based on my interviews with firsthand observers of enforcement operations. I summarized the history of rotary-wing flight in the context of border enforcement, and analyzed the connections between the end of the Vietnam War and the start of helicopter operations on the border. Based on those connections, I argued that the proliferation of helicopters along the border is best understood as an example of the spatial reconfiguration of surplus state capacities—an analytical framework which is more expansive than 'militarization' alone. Studying helicopters thus provides insight into the political-economic circumstances shaping the material apparatus of border enforcement. I then turned to the helicopter tours that Customs and Border Protection provides to elected or appointed officials, and to the press releases and public statements in which CBP frames its helicopters as tools of humanitarian assistance. Both, I argue, are part of an institutional effort to maintain the escalation of enforcement while denying responsibility for its lethal consequences. Based on the perspectives of my interviewees, I contend that helicopters embody the contradiction between CBP's public self-representation as compassionate, reluctant enforcers and the underlying strategies of illiberal governance that define border enforcement today. This chapter therefore addresses all three of the research questions guiding this project.

In this chapter I emphasized the influence of war on the availability of technology and expertise that could be repurposed for border enforcement. That theme is equally important when considering drones, the latest type of aircraft deployed for border enforcement. However, as I will demonstrate in the next chapter, making sense of drones'

role in border enforcement also requires more direct consideration of how border enforcement has become a venue for the circulation and valorization of capital. Especially when considered in the longer context of aerial border enforcement, drones cannot be satisfactorily understood without attention to the growth of the border-industrial complex. Although Ch. V, like this chapter, speaks to all three of my major research questions, the third question—on the political-economic circumstances that shape bordering—will be a particular focus, because the massive expansion of the border-industrial complex in the past 20 years means that the political-economic incentives for drone use are significantly different from those that influenced the adoption of helicopters or airplanes.

CHAPTER V

DRONES

Drones are the most recent addition to the aerial apparatus of border enforcement. In this chapter, I survey the historical connections between the development of drones and the US-Mexico border, and in the process dispel an early rumor about the initial adoption of drones for border surveillance.[41] I then describe the period of testing and gradual incorporation that created the Predator B program and the current scope of that program. Building on this background, I critically consider the current presence of drones in the borderlands, based on my interviews with humanitarian aid workers in that region as well as governmental analyses of drones' efficacy. Taken all together, these sections address my first research question about technological succession and the evolving roles of aircraft. And what emerges from these sources is a general consensus that drones do not contribute significantly to the effectiveness of border enforcement, do not have a physical presence in the borderlands comparable to other types of aircraft, and are likely not perceived as a significant deterrent. (It bears reiterating here that, although drones are often associated with the US program of targeted killings abroad, they have not ever been used for that purpose at the border—CBP's drones are not armed. See Eckardt & Castelli 2013, p. 3.) Given the lack of clear evidence that drones make a substantial contribution to the control of cross-border mobility, I consider alternative explanations of their possible value within the border enforcement apparatus: as 'media infrastructures' (Chaar López 2018) that form part of the state's means of self-representation, similar to helicopters; and as a means of political 'disavowal' (Chandler 2020), similar to the

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41 The complete story of the emergence of drones is much larger than I can capture here. Works like those by Newcome (2004), Shaw (2016), Michel (2017) and Chandler (2020) provide a more complete overview.

outsourcing of enforcement to the natural environment. Both of these explanations can be seen as potential answers to my second research question about the contributions of aircraft to public representations of bordering and the border. However, neither explanation sufficiently addresses the third question driving my research: in what ways does the use of aircraft in bordering reflect the larger political-economic circumstances shaping the evolution of the United States border enforcement apparatus? With this question in mind, I argue that we must also regard drones as evidence of the growing influence of the border-industrial complex, rather than simply evidence of militaristic government policy.

One brief note on terminology: US government entities use the formal terms 'unmanned aerial vehicle' (UAV) or 'unmanned aerial system' (UAS). These terms are somewhat misleading: although no pilot is on board, each Predator B aircraft flown by CBP requires as many as 20 personnel to control and support it throughout its flight (Haddal & Gertler 2010, p. 4). The US federal government does not formally call these aircraft 'drones,' because it reserves that term for UAVs capable of autonomous flight (CRS 2010, p. 1). However, that distinction is not shared in public usage (Custers 2016, p. 10-11). 'Remotely piloted aerial vehicle' is the most accurate description of CBP's Predator B aircraft, but for the sake of simplicity, and despite the possible risk of imprecision, I defer to the more recognizable term 'drone' throughout this chapter.

<u>Drone development and the border</u>

The regular use of drones for border enforcement in the US only began in 2005. But drones have been linked to the border for far longer. Chaar López writes that the US-Mexico border was "a fundamental space in the development of drone warfare" from at

least the end of World War II through the Vietnam War (2018, p. 25). During this period drones were used as mobile targets or stand-ins for enemy aircraft to help train Air Force pilots in aerial combat over the Gulf of Mexico, in a set of exercises code-named "Project William Tell" (idem, p. 36). It was in this period that the name 'drone' was coined (Chandler 2020, pp. 16-17). Such exercises strengthened the association between territorial intrusion and social danger, Chaar López contends, and "helped demarcate the nation's boundaries" at the same time that they provided practice for pilots (2018, p. 40). I regard Project William Tell as another example of the state reacting to the 'aerial anxiety' induced by technological changes that challenge our perceptions of territorial integrity (see Ch. III). The fact that early drones were tested near the southern border is not coincidental—rather, this "situated development" (Chaar López 2018, p. 26) reflects collective anxiety over the ability of the state to control access to its space. Thus the development of drone technology was justified, at least in part, by the same essential rationale that prompted calls for an airborne border patrol force in the early decades of the 20th century: a fear of incursions across the southern border by geography-defying aircraft. That fear was amplified by the new threat of nuclear weaponry (idem, pp. 64, 73), but its underlying logic dates back to the earliest days of powered flight.

One key developmental site within the borderlands was Fort Huachuca, a US Army base in southern Arizona originally established in 1877 to monitor and disrupt the cross-border movement of the Chiricahua Apache (Smith 1976, pp. 14-18). Though no longer officially responsible for securing the border, the fort was a key venue for the creation of surveillance technologies that would later be deployed for the purpose of border enforcement—including drones. After a brief deactivation in 1947, Fort Huachuca

was reopened by the Army four years later and gained two new facilities: Libby Army

Airfield (which doubles as the Sierra Vista Municipal Airport) in 1951, and the US Army

Electronic Proving Ground in 1954. A decade later, the LAT reported that the fort was

conducting "unending research" on "the use of unmanned drone aircraft" (Hartt 1965).

Some of that research was documented in the US Army's television series *The Big*

Picture, which shows the launch and recovery of a camera-equipped Northrop

Radioplane RP-71, an early surveillance drone built by a military contractor, at Fort

Huachuca ("TV 353 - Pictorial Report No. 26," n.d., 5:03 – 8:19). Though far less

technologically advanced, the RP-71 was one of the stepping stones toward the Predator

drones that fly out of Libby Army Airfield at Fort Huachuca today.

The Electronic Proving Ground was one of the testing sites for the electronic

surveillance systems at the core of a project known officially as "Operation Igloo White,"

and colloquially as the "McNamara Line," after defense secretary Robert McNamara.

Igloo White was an attempt to create a virtual 'wall' of surveillance across Vietnam and

Laos to cut off the so-called Ho Chi Minh Trail between North and South Vietnam

("Investigation Into Electronic Battlefield…" 1971, p. 109). Acoustic and seismic sensors

sent signals to aircraft circling overhead, which relayed those signals to a command post

that could, in theory, coordinate targeted strikes against supply transports (Nalty 2005,

pp. 12-13). The sensors destined for southeast Asia were first tested in southern Arizona:

"One of Huachuca's jobs these days," the LAT reported, "has been to help develop and

thoroughly test the supersecret devices which are used in Vietnam to locate and identify

unfriendly North Vietnamese as part of the top secret 'McNamara Wall'" (Sell 1968).

Operation Igloo White introduced a new role for remotely piloted aircraft beyond

simple photo-reconnaissance, something Chaar López does not acknowledge. There were three major components to the system: the electronic sensors, placed by special operations teams or dropped by air; the aircraft, flying over the sensors to relay their signals; and the command center, at Nakhon Phanom Air Force Base in Thailand, which was built and operated by the US ("Investigation Into Electronic Battlefield…" 1971, p. 111; Correll 2004, pp. 58-59; "Nakhon Phanom During the Secret War…" n.d.). The original aircraft used to relay the sensor signals carried crews of 17 to 18 people, exposing large numbers of Air Force personnel to significant danger. The Air Force's replacement was the QU-22B Pave Eagle II: "a single-engine, propeller-driven aircraft, a modified Beech Model 36 Bonanza, designed to fly in either a manned or unmanned mode" (Correll 2004, p. 59; see also "Investigation Into Electronic Battlefield…" 1971, p. 122). Although *technically* capable of remotely-controlled flight, the QU-22B was never reliable in that mode (Collins 2014; Correll 2004; Matheson; National Museum of the US Air Force). It always flew with a pilot during its use in Igloo White, allegedly because of the electronic systems' sensitivity to interference from atmospheric electrical activity (Matheson). Despite that practical limitation, the QU-22B was important because it roughly marked the beginning of the integration of drones into a larger, interconnected system of near-continuous electronic surveillance intended for the governance of terrestrial mobility.

The potential application of such a system at the US-Mexico border was not difficult to predict. In 1972, electronics and defense writer Robert Barkan published an article in *New Scientist*[42], in which he claimed that the Border Patrol had "adopted the

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42   Reprinted in the LAT and elsewhere.

same anti-infiltration barrier used by the military to detect troop and truck movements on the Ho Chi Minh Trail," including drones:

> The U.S. Air Force's QU-22B remote controlled pilotless aircraft—made surplus in Vietnam by the introduction of more sophisticated drones—have been returned to the United States, where they fly over the border to monitor the sensors and relay data to central control points. (Barkan 1972)

Barkan's claim was repeated more recently by Shaw (2016, p. 89). If true, it would move the date of the first drone flights over the border back by decades. But all available evidence suggests Barkan was mistaken.

Besides the fact that the QU-22B was incapable of remotely piloted flight outside of controlled tests, there were only 27 of the highly specialized aircraft built. Six were lost in combat. The remaining 21 were decommissioned, and members of the 553rd Reconnaissance Wing—the Air Force unit that piloted the QU-22B out of Thailand—have tracked the whereabouts of each one through FAA registration records (Westin 2018). Most were transferred to colleges or aviation schools, presumably after being stripped of their proprietary electronic systems. Just one plane is unaccounted for, which a squadron member speculated "may Have Been Used [sic] by the US Border Patrol" (Westin 2018). Though tantalizing, this assertion was denied by other former members of the 553rd Reconnaissance Wing. The compiler of the list said that the information he was able to find on that particular airplane was contradictory, and it might have been lost in combat (L. Westin, personal communication, July 6, 2020). "I am familiar with the 'Q-bird on the border' rumors also!" another ex-pilot wrote in an email. "I spent a lot of time from the late seventies and throughout my entire career flying into every Texas border town with an airport! Never did I hear of any facts surrounding that rumor!" (M. Berry, personal communication, July 7, 2020). Two former pilots reported having known an Air

Force flight instructor in California whose father might have flown a Beechcraft Bonanza for the Border Patrol, but that clearly would not have been a drone. "It didn't involve all the electronics, as I recall," one wrote, "but was used mainly because of the capabilities to stay airborne for extended periods of time" (D.L. Martine, personal communication, July 8, 2020). None of the former squadron members corroborated Barkan's article.[43]

Still, even if no drones flew over the US-Mexico border in 1972, Barkan was not completely mistaken. The sensors developed for Igloo White were indeed repurposed for use in select Border Patrol sectors at least as early as 1970 ("Investigation Into Electronic Battlefield…" 1971, p. 14; Chaar López 2018, pp. 115), becoming a permanent addition to the region where they were originally tested. Border authorities were beginning to construct an assemblage of electronic surveillance dedicated to identifying, locating, and detaining bodies or vehicles transgressing the planar boundary of the United States. The technology for remotely-piloted flight was not yet sufficiently mature to be integrated into that assemblage, but the Vietnam War and Robert McNamara's dream of a virtual wall had accelerated the pace of development. It would not take long for the capabilities of drones to begin to match their imagined uses. By 1986, the LAT was reporting that the technology necessary for drones to be "dispatched to remote areas to determine whether patrol personnel are needed" was "available" but prohibitively expensive (McDonnell). Finally, in 1990, drones came to the U.S.-Mexico border—for three weeks.

<u>Initial testing and acquisition</u>

The first tests of drones for surveillance at the US-Mexico border were conducted

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43 Barkan or one of his sources may have confused a different Beechcraft airplane for the QU-22B. The Border Patrol used other planes from that manufacturer, including the Bonanza 35 and the T-34B (Broyles et al. 2020, pp. 21, 72). If still in active use in 1972, either could plausibly have been mistaken for the rarer QU-22B.

by the Marine Corps, in collaboration with the Border Patrol—another example of the blurring between policing and military action that occurs so frequently at the border. "The small, remotely piloted aircraft sent television-like pictures to ground operators, surveying an 80-mile-long stretch of border west of Laredo, Texas," the LAT reported. "During the three-week [sic] that ended Feb. 26, the information provided by the Marines enabled federal agents to snare smugglers toting almost $1 million worth of marijuana and to double the number of undocumented workers captured for illegally crossing the border" (Zamichow 1990). Note the parallels between the lauded accomplishments of these first drones flown over the border and the anticipated uses of airplanes described by the same paper in 1913: "to locate and pursue a fugitive," and "in watching for smugglers" ("Is Aviation Any Real Benefit..."). These trials of remotely piloted aircraft, near the close of the 20th century, followed a logic that had existed since the earliest years of powered flight.

Further trials took place later in the decade in conjunction with the Army, Navy, and Marines ("Unmanned Systems Roadmap 2007-2032," 2007, p. 37). According to the Department of Defense, such trials occurred "one or more times annually" between 1990 and 2003 (ibid). But they attracted only sporadic media attention. For example, the Arizona Daily Star reported in 1997 that a Pioneer drone flown out of Fort Huachuca "crashed into a hillside" ("Unmanned Spy Plane Crashes…"). This may have been a border surveillance flight: the Border Patrol reportedly assisted in the recovery of the aircraft. In 1999, the Albuquerque Tribune reported that a drone was flying over western New Mexico and southeastern Arizona, monitoring the border ("Drone airplane watches border…"). That article also noted that the same craft had been previously tested

somewhere in south Texas, but did not specify when.

Drones were fully incorporated into the US border enforcement apparatus circa 2005, following the creation of the Department of Homeland Security—in the wake of September 11th—and the launch of that department's Secure Border Initiative (SBI). Although Boeing won the initial SBI contract from a field of well-established military-industrial contractors—Lockheed Martin, Northrop Grumman, and Raytheon among them—in part because its plan "put far less emphasis on costly unmanned aerial vehicles" (Lipton 2006), the department had also already begun testing those same vehicles as a complement to the network of surveillance cameras, sensors, and towers that the aerospace contractor promised ("Unmanned Systems Roadmap 2007-2032," 2007, p. 38; see also Lichtblau 2004). From a preliminary feasibility study conducted between June and September 2004, CBP officials determined that an Israeli-manufactured Elbit Hermes 450 drone would incur per-hour operational costs more than double that of an AS-350 A-Star helicopter, the Border Patrol's primary manned aircraft at the time (Aguilar 2004, p. 11). A General Atomics Predator B drone,[44] with its more substantial sensor package, would cost ten times as much as the A-Star to acquire and operate, again on a per-flight-hour basis (idem, p. 12). Despite the fact that the agency's own testing had thus far found that a drone was "neither as effective operationally nor as cost effective as an OBP [Office of Border Patrol] helicopter piloted by a Border Patrol agent," it argued that costs would fall and effectiveness increase as drones became more thoroughly integrated into the agency's systems and practices (idem, pp. 12-13). As will be discussed in greater detail below, those predictions have not been borne out.

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44   The Predator B is also known as the MQ-9 Reaper.

Despite the high acquisition and operation costs of the Predator B drone, this was the platform that DHS ultimately selected for its drone program in August 2005 ("Unmanned Systems Roadmap 2007-2032," 2007, p. 38). The very first Predator B flown for border surveillance inauspiciously crashed less than a year into service (Levin 2007; Wald 2007). Still, CBP continued to expand its Predator fleet, to five of the aircraft by 2009 and nine by 2016 (Archibold 2009; Nixon 2016). The expansion meant major contracts for General Atomics. CBP had predicted in 2004 that each additional Predator B would cost $5.4 million (Aguilar 50/3-C 2004, p. 11); by 2016, the reported cost per aircraft had risen to $17 million (Bier & Feeney 2018, p. 3). Those figures are only the initial purchase price, and do not reflect additional costs of ongoing support. In the first years of CBP drone operations, for instance, the Predators were "flown and maintained by contractor personnel" rather than CBP agents and employees ("Unmanned Systems Roadmap 2007-2032," 2007, p. 38). The total worth of the contracts between General Atomics and CBP reached hundreds of millions of dollars (Aizeki et al. 2021, p. 21). The agency finally halted its acquisitions of new Predators in 2016 after DHS "recommended CBP not expand its Predator B program beyond its current nine aircraft" (Gambler 2017, p. 26). Of the nine Predator B drones operated by the Office of Air and Marine, six are assigned to the US-Mexico border, divided evenly between Fort Huachuca in Sierra Vista, Arizona and Fort Bliss in El Paso, Texas, and three are deployed to the US-Canada border, flying out of Grand Forks, North Dakota (Nixon 2016).

CBP also operates at least 135 "small" or "hand-launched" drones (Davis 2020), remotely piloted aircraft weighing less than 55 pounds (Gambler 2017, p. 43). These include both small, fixed-wing drones that resemble hobbyists' remote-control planes and

lightweight quadcopters that strongly resemble—and may in fact be—off-the-shelf

commercial drones commonly used for cinematography or remote sensing (Davis 2020,

see images).[45] Like the Predator B, CBP hopes that these small drones will be able to "fly

unnoticed by human hearing and sight" (Aizeki et al. 2021, p. 21). Unlike the Predator B,

small drones may incorporate facial recognition technology and license plate readers

(ibid; see also Bier & Feeney 2018, p. 4). The agency has not yet publicly touted this

capability (see Davis 2020), and it may still be in a developmental phase. Concrete data

on the effectiveness and actual capabilities of these small drones are not yet available.

"[A]side from anecdotal evidence from trials that CBP says are promising," Ghaffary

writes, "it's hard to say exactly how useful these tools are proving" (2020). The use of

small drones in border enforcement does not appear to have been studied in depth by

academics or other independent researchers at this point, and Michel notes that "very

little scholarly inquiry and analysis have been applied to the use of small drones by the

military" either (2017, p. 9). Meanwhile, the proliferation of small, affordable drone

systems has also provoked renewed aerial anxiety: reports that cartels are flying

inexpensive commercial drones across the US-Mexico border echo the same fears that

repeated in newspaper coverage of airplanes in the 1920s and 1930s. "[W]e cannot know

how big the problem is. But what things we have seen suggests that the problem is much

larger than anybody realizes," one security consultant told *Air & Space Magazine*

(Wright 2020), sounding much like border officials describing unauthorized airplane

flights in the early twentieth century (see Ch. III). These so-called 'narcodrones' have

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45 Although a CBP official quoted by Davis claims that the drones used by the agency are "not the
    consumer-grade drones you might see in a big box retailer" but rather "Department of Defense-
    approved systems," Atherton (2018) has previously reported that the Department of the Defense does
    in fact use commercially available small drones at times.

been found to carry both explosives (though not into the US) and narcotics, mirroring the fears illustrated so vividly in the LAT a century ago (Henry 1919). It is at least clear that small drones deserve future attention and scrutiny—especially since CBP has stated its intention to quadruple the number of small drones in its use (Davis 2020).

Overall, the acquisition of drones for border enforcement followed a different pattern than the acquisition of either helicopters or airplanes. Both of these earlier types of aircraft initially became available to the Border Patrol through military decommissioning and the reconfiguration of surplus state capacities, as I discussed in Chs. III and IV. Although the agency eventually began purchasing some aircraft directly from manufacturers, it could not have gotten either its fixed-wing or its rotary-wing flight programs off the ground when it did without taking advantage of these surplus state capacities. In contrast, when the newly-formed CBP sought to incorporate drones into the border enforcement apparatus, it relied on cooperation with the military for initial testing but then contracted directly with the corporations building the aircraft, like Elbit and General Atomics. The overall availability of drones was still influenced by American wars abroad: as previously noted, the Vietnam War was a major impetus for drone development, and drones gained governmental acceptance and thus commercial viability through their use by the CIA and Air Force on combat missions in Afghanistan, Pakistan, Iraq, and beyond in the early 2000s (see Woods 2015, Chaar López 2018). But without a period of demobilization comparable to the aftermath of the Vietnam War, the state has not developed a stockpile of surplus drone aircraft available to non-military agencies. In consequence, the CBP drone program has been a lucrative opportunity for aerospace and defense contractors since its inception. Prior to the halt in new Predator acquisitions,

General Atomics was anticipating future purchases of drones worth almost half a billion dollars (Lipton 2013). If the enrollment of former military airplanes and helicopters into border enforcement demonstrated the porous ideological and material boundaries between law enforcement and military state agencies, the incorporation of drones demonstrates the increasing significance of the border-industrial complex in the post-9/11 era, and the degree to which the state practice of border enforcement has become an arena for the circulation and valorization of private capital.

I will return to that theme later in this chapter. For the moment, however, I turn to the question of current drone use. Although the use of drones in border surveillance is highly publicized, there is little to no documentation of how the presence of drones is actually experienced and perceived in the borderlands today. The interviews I conducted provide insight into the current use of drones along the border from the perspectives of people who ostensibly work beneath their gaze.

<u>Perceptions of drones in the borderlands</u>

To my surprise, nearly all of my interviewees for this project expressed little familiarity with CBP's drone operations. These individuals are, in general, highly knowledgeable about Border Patrol and CBP activities. Most have or have had regular contact with Border Patrol agents in the field, and some have built relationships with supervisory agents while negotiating search and rescue efforts. They are well aware of the multiscalar determinants of local impacts, citing federal and state-level policy decisions in conversation. Yet despite their broad familiarity with the US enforcement apparatus, they seemed largely unaware of—and unconcerned by—the current scope of drone flights.

"I haven't seen any drones," J., who works in the areas east of San Diego, told me. "There've been times when I've heard planes, and I've looked around and I couldn't see anything. Maybe they were up that high? I don't even know if they make noise" (Personal communication, October 13, 2020). M., whose field work takes place south of Tucson, shared a similar thought process. "There were times when I've wondered if I'd heard or seen a drone flying overhead, but I don't really know what to look or listen for," he explained. "So, I don't know. Certainly nothing that was hovering or circling like a helicopter" (Personal communication, October 22, 2020).

J. is essentially correct in surmising that drones flying overhead would likely be too high to hear. According to CBP, Predator B flights take place at a minimum altitude of 19,000 feet per Federal Aviation Authority regulations (Eckardt and Castelli 2013, p. 7). Remember that planes and helicopters engaged in border surveillance are often flying mere hundreds of feet above the ground—drone flights occur in an entirely different level of airspace. At that altitude, it is highly unlikely that anyone on the ground would be able to see or hear a drone. That, of course, is part of the technology's appeal to border enforcement authorities. It is therefore logical that so few interviewees reported potential drone observations.

I say 'potential' because even those interviewees who believed they had seen a drone could not feel completely certain. "I've only ever seen one drone," K. stated, and then explained:

> In the Altar Valley. Along the Baboquivari range. But I'm assuming that's what it was, because it was too small for an airplane, but it looked like an airplane, but it wasn't an airplane. And then I went, 'Oh, I bet it's a drone.' But I have no way of knowing 100% for sure that's what it was. […] I've seen pictures of some of the drones, and later I thought, 'Oh, that's what it was.' Because, I mean, we see airplanes, fixed-wing, all the time down there. It wasn't a fixed-wing. (Personal

communication, November 22, 2020)

It is difficult to judge from this description whether the aircraft in question was indeed a drone. The Predator drones flown by CBP are actually larger than a small, fixed-wing light airplane like the Piper Super Cub. (A Predator has a wingspan of 66 feet; the Super Cub just 35 feet.) But they are smaller than common small commercial airliners like the Boeing 737 (wingspan 93+ feet). Seen at a distance, the unknown aircraft remained just one of multiple curious sightings that could not be definitively identified. The combination of private, commercial, military, and law enforcement flights in the region may serve CBP's desire for surreptitious surveillance: there are always plausible alternate explanations for any single sighting, making patterns difficult to establish.

G. claimed to have seen drones on multiple occasions in the areas near Ajo and Arivaca, but "they were really high up in the sky," and he admitted he wasn't completely certain that they were indeed drones (Personal communication, September 7, 2021). Other volunteers, he asserted, had seen them closer. G. was also the only one of my interviewees who stated that migrants he had encountered had talked about seeing drones. Some migrants, he said, had expressed a belief that "there's drones everywhere," and this belief in widespread aerial surveillance likely influenced their decisions about where, when, and how—though not whether—to cross the border. But he specifically emphasized that "people are even more aware of the presence of surveillance towers," and said that those towers had a greater influence on decision-making than perceptions of aerial surveillance or drone operations, a theory somewhat supported by the recent research from Chambers et al. (2019). He was also skeptical of CBP's claims about the reach and efficacy of its drone surveillance operations. "They [Border Patrol agents]

134

think drones are really cool," he recalled. "They would always really play up their drone capabilities, and I remember reading at one point that they only had two active drones in the whole border region" (personal communication, September 7, 2021). In other words, there was a discrepancy between what agents on the ground were saying about the drone program's capacities and what was publicly known about the actual extent of the program. He did not believe that drones truly were "everywhere"—a belief supported by the limited available data on the actual frequency and extent of drone surveillance flights.

The only other interviewee who reported seeing a drone was O., who described an unexpected encounter while driving:

We were in the car, and I remember hearing a noise […] and I'm like, 'What is that?' And I looked out the window thinking I was going to see an airplane that was somewhere around, and there's this drone flying over us. I'd say it was like, several feet across. Not a huge one, but it was more than just a couple of feet. […] And I thought, 'Oh my god, this is… that's a drone.'

Interviewer: How could you tell that it wasn't a plane? Did it immediately look different?

Because it was right over us. It was not high up […] I don't remember exactly the distance. It was more than ten feet, I know that, but it wasn't way up there. (Personal communication, October 22, 2020)

CBP does use small drones, as previously discussed, and O.'s description resembles a hand-launched, fixed-wing small drone pictured in Davis (2020). No other interviewee mentioned seeing or hearing such systems in use, and O. did not recall ever encountering such an aircraft again. She did recall seeing something that, like the unknown aircraft observed by K., *might* have been a drone:

There was this smallish, not real small like the Cessna planes or anything like that, but one of the smaller, regular airplanes, flying right along the border wall […] in the Sasabe area. Which is east of Nogales. I don't remember seeing any numbers or letters or markings, definite markings. We were several miles from the wall. […] It wasn't a commercial airplane, and I don't know if it was a private

135

airplane or a government airplane or what. I just remember it was all gray. (Personal communication, October 22, 2020)

The size and color of this aircraft as described make it a plausible candidate for a drone sighting, but O. was not fully convinced. Again, there are simply too many equally plausible alternative explanations for her to state with confidence that she had seen one of the elusive Predator drones.

In general, my interviewees seemed unconcerned by CBP's much-publicized drone fleet. One potentially simple explanation for this absence of concern is that the borderlands are already dense with more obvious manifestations of border enforcement. "It feels like you're just in a state of surveillance," J. explained:

There's so much Border Patrol that's always driving around and stationed in different areas and undercover. I mean, we've been followed plenty of times, we get our vehicles inspected and logged. They know all of our volunteers' vehicles that come out on a regular basis. (Personal communication, October 13, 2020)

In this context, when humanitarian aid activists are already accustomed to being followed, tracked, and observed by agents on foot, in cars, or in helicopters, it is not difficult to understand how the unverifiable possibility of drone surveillance could be perceived as a materially inconsequential addition. It is also important to remember that because CBP's drones only perform surveillance and are not equipped or authorized to intervene directly in what happens on the ground, their presence might only be inferred similarly to how O. described figuring out the locations of the agency's automated sensors: "We knew when we had set off a sensor because pretty soon the helicopter would come by and fly over […] or all of a sudden, an agent would appear on the trail" (Personal communication, October 22, 2020). Unless a drone happened to be flying within sight or hearing, which is unlikely under existing FAA regulations, some other,

more concrete manifestation of enforcement authority would be the most likely evidence to activists on the ground that they might have been under observation by a remotely piloted aircraft—but in that case, their attention might well be focused on the immediate interaction with agents, rather than the system which triggered it.

Above all, what became clear from speaking to these interviewees was that drones do not have a clear physical presence along the border or in the borderlands. Even if drones are operating regularly, they are so far removed from the situations they are observing that people who are deliberately attentive to border enforcement operations and activities cannot confidently recognize them. Nor did possible drone activity seem to intrude significantly on the psyche of these interviewees. To be sure, the existence of the drone program contributes to, as G. described it, a "sense of constant *potential* surveillance": "It's always there, maybe—you're never really sure," he said, comparing the program to the logic of the panopticon (Personal communication, September 7, 2021). But drones do not appear to have accomplished the panopticon's purpose of inspiring self-regulation among the potentially observed: none of my interviewees expressed concern about the possibility of being watched by a drone, or described altering their behavior in any way based on that potential. "It hasn't been in my mind, in terms of… thinking that I'm being surveilled by a high-altitude drone or something," W. told me. "That hasn't been there" (Personal communication, November 7, 2020). W. was aware of the drone program in a general sense, knew that surveillance flights over the area where he worked were a possibility, and yet seemed no more than intellectually curious about the notion of being watched in that manner. And if G.'s impressions are accurate, the perception of drone activity may have motivated migrants to modify their crossing plans,

but not to abandon them. These interviews prompted me to reconsider the functions of drones in the context of the overall border enforcement apparatus.

<u>Assessments of drone efficacy</u>

In comparison with helicopters, which are regularly used to scare or intimidate migrants and enhance the effects of the prevention through deterrence strategy, drones seem to have almost no substantial material presence in the borderlands. Their contribution to the goal of deterrence is thus questionable. Although there is obviously inherent bias in relying on the reports of people who chose to cross the border, G.'s recollections suggest that drones have no greater deterrence effect than CBP's stationary surveillance towers (which themselves have been an unsuccessful deterrent). Given that drones often cannot be seen nor heard by the average person on the ground, their capacity to generate fear and thereby influence decision-making—the essential premise of deterrence as border enforcement policy—seems inherently limited. Overall, the interviews conducted for this research suggest that drones are not perceived as a major factor in the overall system of border surveillance and, if ever visible, could easily be mistaken for other, more common types of aircraft. Again, that provides an advantage in avoiding detection, but not in projecting an impression of watchful, omnipresent surveillance, or of an unavoidable enforcement presence. This conclusion is only tentative, however. At this time, it is unclear what proportion of potential border-crossers are aware of CBP's drone program, or how they perceive it.

Setting aside the question of deterrence for the moment, have drones increased CBP's ability to apprehend border-crossers or smugglers? The short answer is that, to date, CBP has provided no conclusive data to prove that drones make enforcement more

effective. What data are available suggest that the border drone program's extraordinary expense has not delivered proportionate increases in the agency's own preferred metrics of apprehensions and seizures. Despite the publicity drones have received since their enrollment into the US border enforcement apparatus in 2006, their demonstrable influence on the actual conduct of border enforcement has been relatively minimal. In contrast to the notion that drones provide a "persistent stare" or "constant stare" over swathes of inaccessible terrain (Chaar López 2018; Michel 2017), the actual extent and duration of drone flights has been quite limited. By 2013, drones "regularly patrolled only about 170 miles of the 2,000-mile southern land border" (Bier and Feeney 2018, p. 2). CBP's Predator drones averaged just 95 minutes of flight time per day, and at least 20 percent of scheduled flights were canceled because of unfavorable weather (idem, p. 1). In 2014, the Department of Homeland Security's Office of the Inspector General conducted an audit of the unmanned aircraft systems program and concluded that "CBP cannot prove the program is effective" (Bumgardner et al. 2014, p. 1). There was "little or no evidence" that the introduction of drones to border enforcement had led to "increased apprehensions of illegal border crossers, a reduction in border surveillance costs, [or] improvement in the U.S. Border Patrol's efficiency" (ibid). The audit also asserted that CBP was under-reporting the program's actual costs while falling far short of predicted flight hours. Although presented in the sterile language of bureaucracy, the report is quietly scathing, stating that CBP's drones cost more, fly less, and achieve less than the agency has claimed. Three years later, a separate review by the Government Accountability Office found that "mission data […] was not recorded consistently across all operational centers, limiting CBP's ability to assess the effectiveness of the [Predator

UAV] program" (Gambler 2017, "Highlights"). Both governmental reviews note that CBP has failed to develop clear metrics of performance or record sufficient data to effectively demonstrate that the program is successful or unsuccessful. Given that the program has been operational for 16 years, this persistent failure suggests either institutional disinterest in conclusively demonstrating the efficacy of drones, or an inability to do so.

Shokh (2016) acknowledges the lack of any compelling data showing drones' effectiveness, arguing that a more holistic view of the contributions of drones might be appropriate. She emphasizes the potentially underappreciated 'soft' results of drone surveillance flights—that is, cases in which drones supported agent operations without being directly responsible for an apprehension or seizure (p. 117). Such assistance, Shokh writes, might include "successfully vectoring agents to the location of the event" (p. 118), i.e. providing a location or directions, "preventing potential crossings"—how a drone would do this is unclear, as was previously discussed—or "identification of non-suspicious […] detections," i.e. confirming a non-event (p. 119). A more capacious accounting that records all of these possible support capabilities (which Shokh contends are not captured well in existing drone flight data) *might* make the program's extravagant costs appear more justifiable. But it seems highly doubtful that even the most generous record of drones' accomplishments would change the fundamental conclusion that the introduction of drones has not altered the conduct of border enforcement in any way comparable to the earlier introductions of airplanes or helicopters.

Of the three classes of aircraft considered in this thesis, drones appear to be the least materially consequential for border-crossers or for agents of enforcement. Why,

then, does the program continue?

<p style="text-align:center">Signaling strength and disavowing responsibility</p>

Here I consider two alternative explanations for the value of drones to the state, offered by scholars who focus specifically on drones. Both are centered around questions of communication and representation. Though I do not find either theory satisfactory as a *sole* explanation of drone use at the border, both are worth consideration as contributing factors in the continued use of drones for border enforcement.

Chaar López, in one of the most sustained and thorough analyses of the linkages connecting drones and the US-Mexico border, argues that CBP's drones function as 'media infrastructures' (2018). He uses this term to signify the literal operation of drones as components of surveillance systems that transform landscapes and individuals into images and data, "a plane of perception within which unauthorized border crossers were made perceptible and knowable" via digital transmission and reproduction (p. 173), but also—and, in my view, more importantly—the power of drones as communicative symbols that reinforce a particular image of border enforcement. In the latter regard, Chaar López builds on the analysis of Andreas, who contends that the escalation of border enforcement has frequently been "a public performance for which the border functions as a kind of political stage" (2009, p. 9). And his attention to the role that drones play in the image-making and representational efforts of enforcement authorities corresponds with what I have argued here about the similar (though not directly equivalent) functions of helicopters as tools for shaping public and political perception of the border 'problem.'

Drones, Chaar López writes, are an example of "the expressive role of law

<p style="text-align:center">141</p>

enforcement, the *communication* of the state's authority to mark and maintain the borderline" (2018, p. 152; emphasis added). To "a domestic audience moved by a border technopolitical regime predicated on the animosity towards and the exclusion of certain categories of racialized people" (ibid)—in other words, that fraction of the US population that believes strongly in the project of border enforcement—drones sustain the impression that the federal government is seriously committed to using all possible technological means to intensify the enactment of its territorial boundaries. Drones are part of what Andreas calls "successful image management," a project that "does not necessarily correspond with levels of actual deterrence" (2009, p. 9). The use of drones to communicate state authority and an image of successful border management can occur relatively directly: for instance, C. described the use of aerial surveillance footage in meetings with "conservative white ranchers" who had been "beating their drum about people going through their land:"

> They're demonstrating to those white ranchers that they're doing their job […]
> The more hardware, the more equipment, the more militarized it is, the more
> conservative ranchers that want more enforcement are impressed. […] They're
> depending on the ranchers to snitch, to report suspicious activity, right? […] So it
> behooves them [CBP] to cultivate that. (Personal communication, February 2,
> 2021)

But such communication can also occur indirectly through media reports (or academic articles), which often uncritically cite the presence of drones as evidence of a thoroughly monitored border, thus contributing to overestimation of the degree of government control effected within that space. As G. explained:

> On the left, at least, there's a general perception that the border region is highly
> surveilled and completely militarized. […] There's some truth to that, but it also
> masks the fact that lots of people are crossing the border every day and not getting
> caught and never being seen by Border Patrol. The desert is a vast wilderness, and
> it is possible to navigate through that successfully evading Border Patrol.

(Personal communication, September 7, 2021)

Credulous or incautious reporting on drone operations is a component of this "tendency to sensationalize surveillance capabilities a little bit," G. suggested. This serves the Border Patrol and CBP well, because it is in their interest to project an aura of omniscience, omnipresence, and inevitability. But none of those are true: even if CBP's surveillance capabilities "are pretty sensational, objectively" (G., personal communication, September 7, 2021), the agency is not omniscient, it is not omnipresent, and its continuance is not inevitable. We should not be persuaded otherwise by repeated invocations of drones.

Moreover, as media infrastructures, drones reinscribe troubling racial and biopolitical 'scripts', Chaar López asserts. "The Predator's technical vision did not hunt for White migrants from Western Europe but for those brown bodies marked as risks and threats," he writes (2018, p. 168). As his description implicitly acknowledges, these racial scripts are simultaneously geographical ones, linking racial categories to points of origin. In video or photographs captured by drones, migrants appear only as "the silhouette of a body pre-inscribed for exclusion along racial lines by public discussions and governmental policies" (idem, p. 161). The name of the drone, 'Predator' corresponded neatly with existing representations of border enforcement as a "cat and mouse game" or a type of hunting (idem, pp. 128,165)—metaphors that I encountered consistently in newspaper articles spanning more than half a century.[46] These metaphors dehumanize

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[46] Some selected examples: Hillinger 1959 ("the cat and mouse game"), Baskerville 1972 ("In The Border Game, Ab Taylor is the Hunter"), Crewdson 1977 ("The waiting game is about to turn into one of cat and mouse"), Montemayor 1980 ("a cat-and-mouse playground"), Reza 1984 ("Alien Smugglers Are Prey and Border Patrol Hunters"), Gross 1996 ("endless cat-and-mouse game"), Rowe 1999 ("a game of cat and mouse"), Martinez 2002 ("It's the thrill of the hunt, without the kill"), Romero 2005 ("their cat-and-mouse trip"), Lipton 2013 ("the cat-and-mouse game that plays out every day"), and Carroll 2015 ("an ever-evolving game of cat and mouse").

migrants (Cantú 2018, p. 110) and contribute to the scripting of interactions at the border: "The unauthorized border crossers played the role of the prey hunted by a predatory assemblage," while CBP aircraft and agents "were predators seeking to capture those that DHS had named as 'risks' and 'threats,'" Chaar López argues (2018, p. 172). Images of Predator drones—or stills from their video feeds—recirculate and reinforce these narrative scripts, circumscribing migrants within the category of hunted enemy and legitimating the perpetuation of enforcement.

Chaar López's 'media infrastructures' argument is one compelling explanation for how drones provide value to the apparatus of border enforcement through their symbolic, communicative power rather than their material efficacy. A second critical interpretation of drones, bridging the symbolic and material registers, comes from Chandler (2020). Chandler's argument centers on the concept of 'unmanning', and although it is not specific to the use of drones at the US-Mexico border, it is nonetheless a valuable contribution to our understanding of their function there.

Drones, in Chandler's perspective, represent "a disavowal of politics by technology" (2020, p. 2). The term 'unmanned aerial vehicles,' she writes, "collapses the operator, aircraft, and camera into a single technological unit" (p. 3) and obscures the role of human decision-making in the system of surveillance.[47] Chandler contends that the linguistic obfuscation of agency is deliberate:

> In World War II, drones were described as targets and prototype guided missiles,[48] and their flight was 'pilotless' or 'manless.' By 1946, usage shifted to 'unmanned,' indicating the negation of man, not just his removal […] The denial enacted by 'unmanning' positions drone flights in opposition to, rather than as an

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47 Or, in the case of warfare, the system of violence.

48 During the Vietnam War, the prototype drones tested in Operation Igloo White were classified as missiles in Air Force accounting ("Investigation Into Electronic Battlefield…" 1971, p. 147).

extension of piloted flight, while the drone's eventual use for surveillance by the United States disavows human action to outline its function as apolitical. The drone is constructed as monitoring the nation rather than enacting its politics. (2020, p. 62)

Though this rhetorical "disavowal of politics by technology" is perhaps subtle, it is nonetheless a troubling parallel to the ongoing rhetorical disavowal of the lethal effects of CBP's 'prevention through deterrence' strategy. As de León has demonstrated (2015), border enforcement authorities frame the desert environment of the southwestern borderlands as the only cause of the deaths of migrants who attempt to cross through it, downplaying the fact that it is US enforcement strategy that has consistently and intentionally driven migrants to the most remote, hostile zones of the border. Weaponizing the environment and substituting electronic systems for human pilot-observers both serve to distance the body politic from the material consequences created by the enforcement of territorial division on the ground, contributing to a deceptive narrative that suggests the border can "essentially enforce itself" (Warren 2015, p. 93). And allowing drones and the desert to carry out the work of bordering also reduces the direct risk to Border Patrol or CBP personnel, thus increasing the state's capability to simultaneously project force and protect its forces. This logic of multiplying the state's reach while minimizing the vulnerability of its agents is part of the fundamental appeal of air power (see Kaplan 2006, p. 404; Killingray 1984) and has been a guiding principle of the longer history of drone development. Chandler's writing is a reminder that this principle manifests in the practice of border enforcement, too.

Chandler also draws a connection between the use of drones for surveillance and the colonial violence through which the US-Mexico border was originally established. "[T]he illusion of automated machines," Chandler writes, "remov[es] the colonizer from

the act of continued violence implied by surveillance" (2020, p. 81). While this point is perhaps less directly explanatory of drones' current role in bordering, it does help connect the current, technologically advanced bordering regime back to the longer history of the border. It is worthwhile to reiterate the continuity between the current tools of territorial control and the long-historical context from which they emerged. Chandler's point complements Hernandez's insistence on recognizing the continuity of colonial violence inherent in the border (2018), as well as Gregory's exhortation to analyze not only on "the technical (or techno-cultural) object" that is the drone but on the "wider dispositions and propensities" that enliven it (2014, p. 7), including—in the context of the US-Mexico border—the ongoing "destruction of Indigenous lands and histories" (Chandler 2020, p. 81). The aerial surveillance conducted by drones "exposes the land, in turn defining the territory below as known, inspected, and watched by the United States," Chandler writes (idem, p. 78).[49] But again, it does so under the illusory premise of apolitical automation. From Chandler's perspective, we might conceive of drones as a form of psychological insulation against the ongoing consequences of colonization and bordering alike.

<u>The weight of the border-industrial complex</u>

Although these critical readings of drones are valuable in striving to comprehend the otherwise seemingly illogical continuance of CBP's Predator program, both are primarily focused on the state. In consequence, neither sufficiently addresses the role of the corporate border-industrial complex in creating and sustaining the ongoing drone surveillance program in the southwest. But there is simply no way to understand drone use at the border without attending to the role of capitalism. This requires us to "look

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49 It is worth noting that Mexico employs drones as part of its border surveillance efforts, too—ongoing processes of coloniality occur on both sides of the border.

behind and around the state," as Heyman (2012, p. 264) aptly phrases it.

As I discussed above, the Predator B drones operated by CBP cost tens of millions of dollars to acquire and maintain (see pp. 124, 127). And while tens of millions of dollars is already an extraordinary amount of money, it is merely the tip of the iceberg in the grand scheme of border profiteering. "Since 9/11 a border security juggernaut has swept across the Southwest," Barry writes (2011, p. 151). CBP's annual budget has tripled since 2003, from $5.9 billion to $17.7 billion (Aizeki et al. 2021, p. 22). Much of that money has flowed from the agency to private corporations. Miller writes that the consulting firm Deloitte, for instance, holds task orders and contracts with DHS worth more than a billion dollars (2019, p. 141). That arrangement, he notes, is an "example of the ever more commonplace privatization of border enforcement" (ibid).

The privatization of enforcement may be a global phenomenon, but like other trends in bordering, it is significantly driven and directed by US decisions at the border with Mexico (Miller 2019, 2014). At the forefront of the trend are those corporate entities, individual executives, and even academics whom Miller describes as "white-collar boundary builders" (2014, p. 43). These representatives of the interests of capital ally with state agency interests to compete for an ever-greater share of public tax revenue and private investment (Heyman 2012, pp. 268-269). To such actors, the division of political space appears as an opportunity for the multiplication of profits. Technologies like drones—sophisticated, proprietary, and expensive—are key to making border enforcement a lucrative opportunity.

The companies that have profited from the development, sale, maintenance, and even flight of drones have mostly been large and politically influential defense

147

contractors. But Silicon Valley start-ups are also increasingly pursuing contracts in this space (see, e.g. Ravindranath 2016, Metz 2021). "Surveillance and defense tech startups have found early success with the deployment of their tools like drones, AI software, and new sensors — some of them extending small-scale pilots into longer-term contracts," Ghaffary notes (2020). Larger digital technology companies also have contracts with border and immigration enforcement agencies, though their greater public prominence have made such contracts targets of critical attention from both employees and the general public (ibid). Smaller start-ups are less likely to draw comparable scrutiny.

To be clear, close links between border enforcement authorities and aircraft manufacturers preceded the implementation of the drone program. The daughter of a former Border Patrol pilot, interviewed in 2019, recalled that after her father helped negotiate a contract for the agency's first helicopters in Chula Vista, "he came home with baseball caps and key rings, and little tokens, obviously gifts from Hughes [Helicopters]" (Broyles et al. 2020, p. 565). These trinkets are symbols of corporate courting, evidence of effort to establish longer-term relationships between the company and the agency. But the scale of those contractual relationships has increased tremendously in the post-9/11 era of budget expansion. Remember that the Border Patrol acquired many of its earlier aircraft at little or no cost from the US military: after purchasing its first two helicopters from Hughes, the agency received at least 45 "free airframes" from the Army (Broyles et al. 2020, p. 225). It could not have afforded to purchase them. And neither helicopters nor airplanes—certainly not the small and simple Piper Super Cubs—were as expensive as drones. Even the most advanced commercial helicopter purchased by CBP, the A-Star, was an order of magnitude less expensive than a Predator B drone, measured on a per-

flight-hour basis (see p. 123). Drones are emblematic of the growth and intensification of the border-industrial complex, "the outgrowth of a US-government-constructed crisis predicated on the purported need for massive investment in border policing in response to an ever-expanding range of manufactured threats" (Aizeki et al. 2021, p. 21). Complex technological systems like the Predator B function exceedingly well as vehicles for the circulation and valorization of capital, despite demonstrating little actual effectiveness in the practice of border enforcement.

Recognizing that drones may benefit their manufacturers more than their government operators is also consistent with Warren's analysis of border security as an 'extractive industry' (2015, 2017, 2019). Warren, like Andreas (2009), has argued that "border smuggling and border security function as a kind of singular economic network, each largely dependent on the work of the other for the high profits and high funding that sustain them" (2015, p. 166). This tightly coupled "interdiction economy," he writes, is "mostly an extractive industry where the benefits of high profits, lucrative contracts, and increased funding are enjoyed elsewhere," while the costs are borne by migrants, borderlands residents, and the borderlands environment itself (idem, pp. 173, 201; 2017, p. 865). Drones, seen from this perspective, are at once a novel way to derive profits from the borderlands and consistent with longer histories of corporate extraction and exploitation in the region.

I do not want to encourage an oversimplified view of the business of border enforcement. The relationships between capitalism—"a dynamic network of relationships that moves unceasingly across geographic space"—and the geographically delimited territorial state are complicated, tense, and sometimes confusing (Heyman 2012, p. 264;

see also Andreas 2009, Sparke 2006). In the specific context of the US-Mexico border, Heyman points out that border enforcement cannot be said to serve the uncontested interest of a monolithic capital. He cites, for instance, underinvestment in official ports of entry, which causes freight delays and thus friction in the transnational flow of commodities and capital (2012, p. 267). While "between-port enforcement" can be lucrative for "the so-called homeland security-industrial complex," he contends that this industry is "a relatively modest agent of capital in comparison with the manufacturing and trade interests that are negatively impacted by poor-quality ports" (idem, p. 269), and suggests that the influence of the border-industrial complex has been overestimated. His broader point—that what benefits some capitalists may negatively affect others, and that some state decisions cannot be readily explained by reference to the interests of capital—is important to bear in mind.

It would be an oversimplification, therefore, to claim that profit motive alone explains the continued use of drones for US border enforcement. At the same time, it would be a mistake to forget that major government contractors have a significant financial incentive to maintain or expand the use of proprietary and profitable technologies in bordering. Capitalism is not the only reason that drones were enrolled into the border enforcement apparatus of the state. But it must be acknowledged as one of the reasons that drones continue to be deployed to reinforce and communicate the state's authority over geography despite the absence of proof of their efficacy.

<u>Conclusion</u>

In this chapter, I have attempted to survey the use of drones in US border enforcement in the southwest, and put that use into context through comparison with the

other types of aircraft employed by CBP, with the goal of answering my research question about the evolution of aerial bordering practices across successive technological platforms. However, there remains much that we do not know about the use of drones in US border enforcement. Because CBP guards much of the data on the Predator B program closely—and, according to internal audits, fails to collect sufficient data in the first place—it is difficult to assess the program thoroughly. Similarly, the agency's use of small drones is not well documented at this point. Despite these lacunae, some things are relatively clear.

The development of drones was significantly influenced by fears of aerial intrusion at the southwestern land border, and simultaneously by US attempts to control terrestrial mobility as part of military efforts abroad. The technological foundations of the current drone surveillance system were created, in part, within the borderlands—in San Diego, as Chaar López points out, and at Fort Huachuca, Arizona, which now serves as the center of flight operations for one-third of CBP's Predator B fleet. That system was also built, from the beginning, with the cooperation of military contractors, who have parlayed their experience navigating the military-industrial complex into prominent roles in the parallel border-industrial complex. Although the enrollment of drones into the apparatus of border enforcement has drawn significant public attention and criticism, publicly available data suggest that their direct contributions to enforcement is in fact quite limited. And interviews with humanitarian aid activists make clear that the physical presence of drones near the border is minimal. They are rarely, if ever, definitively seen or heard. Unlike helicopters, which play a direct and obvious role in both apprehension and deterrence, drones seem to be of little concern to these activists, and possibly to

151

migrants as well. Still, drones have potentially consequential symbolic functions. Their presence communicates the state's claim to authority over territory, and simultaneously helps to keep at a distance the violence generated by aggressive enforcement of that claim. While drones may have symbolic and representational value to the state, they also represent substantial monetary value for the border-industrial complex. That complex has grown in size and influence as a consequence of the political attention and federal funding devoted to reinforcing the territorial boundaries of the state in the twenty-first century. Such growth is unlikely to end soon: "There can never be 'total' security," write Aizeki et al., "and, thus, there will always be an alleged need for new technology to fill perceived gaps. Failure of any kind helps create a market for the next even more expensive product or service" (2021, p. 2; see also Boyce 2016). Indeed, drones continue to feature prominently in calls for a 'smart' border wall.

But the technological sophistication of drones should not distract us from the underlying political-territorial goals they are intended to accomplish. Drones are not a radical departure from the other types of surveillance aircraft that preceded them (Michel 2017; Chandler 2020). As Aizeki et al. argue:

> … all border policing—whether low-tech or 'smart'—shares a common goal: to control human beings and to deny entry to those deemed undesirable or undeserving. In other words, the goal of a 'smart' border is not increased humaneness, but greater effectiveness in advancing this violent enterprise (2021, p. 9)

Drones aloft and sensors below are new means to an old end. The US has been striving to control passage across the limits of its territory for over 150 years. It has been attempting to secure the vertical space above the border—both against intrusion, and as a position from which to exercise power—since the invention of powered flight. The use of drones

conforms to the pattern of the state's commitment to reinforcing (and reinscribing) its fixed edges in the face of clear challenges to territorial authority. Their most novel characteristic is not their often-overestimated contribution to the reach and persistence of border surveillance, but the degree to which they have transformed border airspace into a venue for the circulation of capital on a new and troubling scale.

CHAPTER VI

CONCLUSION

The fleet of airplanes, helicopters, and drones that patrols the international boundary between the US and Mexico today is a far cry from the first, floundering attempts to control the border from the air in the early decades of the twentieth century. The practice of aerial border enforcement in the US began with ex-World War I aviators flying unreliable biplanes nicknamed 'flaming coffins' (Hinkle 1970, p. 7), Customs Service agents commandeering the aircraft of smugglers, and an unsuccessful—and fatal—multi-year experiment with the now-forgotten autogiro. Now, Customs and Border Protection fields "the largest law enforcement air force in the world […] equivalent roughly to the size of Brazil's entire combat air force" (Graff 2014). The scale, scope, and sophistication of aerial enforcement have grown tremendously, enabled by the availability of surplus state capacities and later by the emerging border-industrial complex. But the underlying political-geographic justifications for the continuing work of bordering from above reflect the same fundamental territorial anxieties that have haunted the US since the establishment of its southwestern land border.

The purpose of this thesis is to improve scholarly understanding of the enrollment of aircraft into the apparatus of US border enforcement, the mutually constitutive relationships between public representations of the border and the apparatus of border enforcement, and the ways in which that material apparatus is shaped by changing political-economic conditions. My key sources for this research included remotely accessible newspaper archives, newly-published internal histories of US Border Patrol aviation, and remotely-conducted interviews with members of humanitarian aid groups

currently active in the US-Mexico borderlands. Additionally, I drew upon government documents, independent reports, and a wide variety of existing academic research. My research was guided by three questions: First, how have the functions of aircraft in US-Mexico border enforcement evolved with time and technological succession? Second, how have public representations of the US-Mexico border influenced the incorporation of aircraft into bordering, and how have those aircraft, in turn, contributed to public representations of the border? And, third, in what ways does the use of aircraft in bordering reflect and reveal the larger political-economic circumstances shaping the evolution of the United States border enforcement apparatus? In this final section, I review the key conclusions of the three preceding chapters and highlight the continuities between the three major categories of aircraft studied. I also discuss some of the limitations and 'loose ends' of this project, and suggest future directions of potential research that might reinforce, complement, or even challenge what I have presented here.

<u>Major findings</u>

In Chapter III, I analyzed how the proliferation of powered flight challenged ideas of territorial stability. Airplanes were perceived as a "geography-defying" technology (Butler 2001, p. 639), exposing the gap between three-dimensional human mobility and the planar, cartographic logic that dominated state conceptions of territory. Newspaper reports in the 1910s and 1920s promoted the notion that unchecked air traffic from across the border with Mexico was a threat requiring a response from the federal government. This aerial anxiety, as I have chosen to term it, became a persistent justification for expanding the capabilities of the state apparatus of border enforcement—and, at least in the beginning, for deploying airplanes to patrol the border. After a series of faltering false

starts, aerial enforcement became institutionalized in the 1940s and 1950s, helped by the availability of planes and pilots in the wake of World War II. Though guided by the Border Patrol's traditional practice of terrestrial 'sign-cutting' or tracking, enforcement by airplane also relied on radio communications and cooperation with ground agents, evidence of the increasing complexity and networked nature of border enforcement.

In Chapter IV, I argued that US military demobilization following the Vietnam War again created the conditions for a new expansion of border aviation. Following Gilmore (2007), I frame the Border Patrol's acquisition of decommissioned helicopters and its hiring of former military helicopter pilots as examples of the spatial reconfiguration of surplus state capacities: as the original justification for employing those capacities in one place lost political support, a new justification was established elsewhere. The multiple uses of helicopters by the Border Patrol (and later, Customs and Border Protection) reveal a major gap between how the agency represents itself to the public and how it actually conducts enforcement operations. On one hand, border enforcement authorities have consistently represented helicopters as a life-saving tool, enhancing their ability to conduct search and rescue missions in remote sections of the borderlands. On the other hand, as humanitarian aid activists working in the borderlands attest, helicopters are regularly used to intimidate, scatter, and disorient migrants attempting to cross remote sections of the borderlands, thereby enhancing the lethal effects of policies that already funnel migrants toward the most rugged and dangerous terrain. And when helicopters are not in use for direct enforcement operations, they are often used to carry politicians and journalists on carefully orchestrated tours above the border, helping border enforcement authorities reinforce public perception of the border

as a 'disorderly space' (Corva 2008) that must be dealt with through the continuing escalation of enforcement.

Finally, in Chapter V, I reconsidered the role of drones in the current border enforcement regime. Although the border region was key to the early development and testing of the technologies that made remotely piloted aerial surveillance systems feasible, interviews with humanitarian aid activists working in that region today suggest that drones have little material presence in the borderlands, and similarly little effect on the conduct of border enforcement. While there remains much that we do not know about CBP's use of drones—including, notably, the full extent and capabilities of its small-drone program—the data that exist reinforce those activists' perception. Government audits of CBP's drone program have found it provides no clear enforcement advantage while costing substantially more than traditional piloted flight operations. But drones can be understood as communicative technologies that, like helicopters, help CBP project the image of a formidable and necessary institution responding to an intractable problem. They also serve as a means of political disavowal, concealing the deliberate decisions that drive border policy beneath a facade of computerized automation. Still, even taking these potential rationales into account, we cannot ultimately make sense of the continued use of CBP's Predator B drones without acknowledging the rise of the border-industrial complex, which is accumulating its own inertia as the US pursues continued expansion and intensification of border enforcement on the ground and in the sky.

If there is one overarching narrative that unites these chapters, it is the gradual transition from portrayals and perception of aircraft as 'geography-defying' (Butler 2001) to aircraft as geography-*defining*. The ability of aircraft to define and enforce state

157

geography in terrain where the spatial limits of the state are otherwise weakly demarcated

is now more materially consequential, in the context of the US-Mexico border, than the

capacity of aircraft to disrupt or transgress that border. I hasten to add that the shift is

incomplete: the possibility of 'rogue' or 'foreign' aircraft intruding on US airspace

lingers, and periodically resurfaces in the discourse surrounding border security.

Nonetheless, the transition is significant. The vertical dimension, once perceived as an

uncontrolled arena of mobility that defied states' authority over the political division of

space, has now largely—though *not*, I stress, completely—become another domain for

the exercise of that authority. The human consequences of enforcement from the air have

changed as aerial technology evolved alongside US border policy, and the increasing

complexity of aerial technology has created new and troubling opportunities for the

privatization of enforcement, but on the whole the enrollment of aircraft into border

enforcement essentially reflects territory's 'continuing allure' (Murphy 2013)—the

enduring ideological primacy of the concept of strictly bounded political space.

Airplanes, helicopters, and drones have all been adopted as tools in service of the

political ambition to define and control space. The fact that this ambition is ultimately

non-finalizable (Kolossov and Scott 2013; Jones 2009) does not negate the fact that it

continues to be a major driver of state policy and a key determinant of how technologies

are perceived, developed, promoted, and deployed for bordering.

<div align="center">Limitations and future directions of research</div>

  The process of researching and writing this thesis raised at least as many

questions as it answered. Here I highlight some of the potential directions of future

research that might help to address the questions left unaddressed by this thesis.

One obvious starting point would be to speak directly to current, past, and/or potential migrants about their perceptions of the US aerial enforcement apparatus.[50] This thesis does not include the perspectives of migrants, except when repeated secondhand by humanitarian aid activists (e.g. Ch. V, p. 129). Although my interviews for this project and the internal histories of Border Patrol aviation certainly suggest that migrants' perception of the border regime and their decision-making are influenced by aerial enforcement, I cannot confidently claim to know precisely how influential aircraft are in this regard. Interviewing or other traditional ethnographic methods of study might provide some greater clarity. However, while research conducted in this manner could be illuminating, it is also important to recognize that the results of such research might well attract the attention of CBP, and could indirectly provide that agency with ideas on how to target or expand its enforcement efforts. Anyone undertaking such a project must seriously consider that potential risk.

An alternative approach using similar methods would be to research the people who fly the aircraft: Air and Marine Operations pilots and/or drone operators. This project drew upon the perspectives and recollections of past pilots, but only in indirect form. The volumes compiled by Broyles et al. have significant historical value but do not provide substantial insight into the current workings of enforcement. There are obvious institutional barriers to access that would complicate an attempt to study AMO employees; such research would likely require circumnavigating or subverting the information controls of CBP. But if someone were able to speak frankly with current aircraft pilots about their training, tactics, and culture it might provide significant insight

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50 While I found no English-language on migrants' perceptions of aerial enforcement, it may be the case that research or documentation exists in languages other than English.

into the human elements of the border enforcement apparatus.

Thinking beyond ethnographic methods, there is much more room to investigate the narrative constructions that legitimize border aviation. While this thesis included elements of discourse analysis, the range of materials considered within that analysis was limited to newspaper reports. There are numerous other materials that could be productive inclusions in a broader discourse analysis. In the specific context of aircraft, Chandler (2020) and Chaar López (2018) have shown the value of analyzing government documents from the early years of drone development, and Butler's (2001) work drew on international conference proceedings from the early 20th century. The same approach is broadly applicable to all kinds of discursive representations of border aviation. Though not writing about aviation in particular, Jones (2014) analyzed the television show *Border Wars* to show the disjuncture between the show's official narrative and the actual imagery included in it. Some of my discussions with my interviewees revolved around CBP's use of social media or podcasting to shape its public image, and these forms of representation are also potentially relevant to an expanded discourse analysis. In short, the wider discursive foundations of bordering from above deserve additional scrutiny.

This thesis does not include any significant use of spatial data or geographic information systems, but those geographic tools are clearly relevant to the study of border enforcement, as the work of Chambers et al. (2019) and others demonstrates. In the context of aviation, much information about the location of Border Patrol centers of operation is already publicly available, and the journalist Jason Paladino has demonstrated that some Predator B drone flights can be identified and tracked using open-source data (see Atherton 2020). To the best of my knowledge, that tactic has not

been used extensively in the border region. If successfully applied on a larger scale—and I freely admit that the technical questions involved are beyond my expertise—it might provide a way to locate the areas of greatest drone activity and/or the margins of drone surveillance, especially if combined with publicly available information about the technical capabilities of the Predator B platform. Aerial enforcement is not yet factored into the analysis conducted by Chambers et al. (2019), and adding that data might reveal new patterns in the varying spatial impact of border enforcement strategy.

A comparative study of aerial enforcement in other border contexts could also be valuable. Although some limited research exists on the use of drones for border surveillance in Switzerland (Pedrozo 2017) and on the emerging uses of drones to monitor and reproduce the external borders of the European Union (Garijo 2020, Oliveira Martins & Jumbert 2020), I have found only one intentionally comparative study to date (Koslowski & Schulzke 2018). That study focuses narrowly on the direct costs and 'benefits' of drone use, and does not explore the broader questions around bordering and territory that I have tried to engage here. Future critical geographic research on the uses of drones in border-making projects outside the US is warranted, both for its own sake and for the potential of better understanding the US border regime through comparison.

One might also take a broader historical perspective on the institutional evolution and divergences that have shaped US border enforcement in particular. As described in the introduction, the responsibility for guarding the US-Mexico border has been frequently transferred and divided between agencies since formal enforcement began. In this thesis, I have emphasized the continuities that persisted despite these periodic reorganizations. I acknowledge, however, that the effects of this institutional convolution

may be more complex than I have been able to describe here. The establishment of an independent Air Force after World War II, for instance, might have influenced the type of aerial enforcement operations pursued by the Border Patrol and Customs Service in the same period. When multiple agencies share the burden of the nation's aerial anxiety, how is responsibility ultimately divided? This question has both organizational and spatial implications, and likely merits greater consideration in the future.

Finally, I should also acknowledge that there are uses of aircraft by US border enforcement authorities that do not feature prominently in this thesis and may be regarded as oversights on my part. For example, I have not devoted significant space here to the practice of farm and ranch check, during which airplanes often served as overhead surveillance while agents searched for undocumented workers in agricultural fields. In my view this practice is more closely related to interior immigration enforcement than to directly policing movement across the border itself—though of course, I recognize that some readers may question that distinction. More notably, I have not written in this thesis about the use of aircraft in forced deportations, a practice which began in the 1960s (Broyles et al. 2020, p. 131) but was recently thrust into popular attention again by the high-profile deportation of thousands of Haitian migrants in September 2021 (see, for example, Sullivan &Jordan 2021; Sonmez & Miroff 2021). Early in my research process I decided to exclude these deportation flights from the scope of my analysis—partly as a practical choice, given the time constraints for this thesis, and partly because I viewed them as a separate issue requiring a separate analysis. Whether or not the latter judgment was correct, I hope that the use of aircraft for deportation will be the subject of future research. It is a tactic that intersects with both the strategy of prevention through

162

deterrence, which de León (2015) characterizes as the weaponization of geography, and the international expansion of the US bordering regime (Miller 2019). Multiple potential sources of data already exist: the internal histories compiled by Broyles et al. (2020) contain significant material on the history of the original so-called 'airlifts,' the volunteer organization Witness at the Border attempts to track and record current ICE deportation flights,[51] and the practice has been investigated by the Center for Human Rights at the University of Washington ("Hidden in Plain Sight," 2019). Further analysis of the development and impacts of this practice is warranted.

I am less concerned with the possibility that I may have given insufficient attention to the humanitarian uses of Border Patrol or CBP aircraft. These agencies are, as I have argued earlier in this thesis, continually attempting to represent themselves as compassionate, humane organizations. I refuse to assist them in that image-laundering effort. While there may well be compassionate individuals within the ranks of those agencies, US border enforcement is not a humane practice—it is, as Miller writes, "anti-human" (2014, p. 230) and cannot be redeemed by individual acts of kindness or by press-friendly helicopter rescues.

Parting thoughts

Omissions notwithstanding, this thesis is, to the best of my knowledge, the first attempt to analyze the successive incorporation of multiple types of aircraft into US border enforcement. It contributes to the broader conversation within political geography about the linkages between the discursive and material production of borders. Both "tangible arrangements of steel and concrete, wires and semiconductors, nuts and bolts"

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51 See witnessattheborder.org

(Winner 1986, p. 29) deployed in the name of border enforcement and narratives of territorial vulnerability—like those that originally justified the deployment of aircraft—are part of the means by which borders are reproduced. It is my hope that this work may motivate other research, particularly from a geographic perspective, into the technologies and representations that enable bordering and the ongoing effectuation of territory.

That research has theoretical importance, but it has an urgent practical importance, too. What happens at the border does not stay confined to the borderlands. The recent use of CBP drones to surveil Black Lives Matter protesters (Atherton 2020) and the use of a CBP helicopter to intimidate anti-pipeline protesters with wind, noise, and flying debris (Brown and Richards 2021) should not be seen as anomalous incidents. The tactics of illiberal governance practiced in bordering and the state capacities developed for that task are readily transferable to other contexts away from the borderline. It is imperative that we understand and denaturalize the political and geographical rationales legitimizing these tactics, and at the same time, that we prepare to resist them wherever they appear.

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